Academic Journal of Management and Social Sciences
ISSN: 2958-4396 | Vol. 13, No. 2, 2025

Influence of Psychological Security on Service Performance of Front-line Employees in Supply Chain Enterprises: A Simple Intermediary of Job Engagement

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Abstract: The purpose of this study is to explore the influence of psychological security of front-line employees in supply chain enterprises on service performance and its mediating role through job engagement. Data of 195 front-line employees of SF Express were collected through questionnaire survey, and the relationship among psychological security, job engagement and service performance was analyzed by structural equation model. The research results show that psychological security has a significant positive impact on service performance, and indirectly affects service performance by improving job engagement. Job engagement plays a partial intermediary role between psychological security and service performance. The research provides empirical evidence and strategic suggestions for supply chain enterprises to improve employees' psychological security and job engagement to improve service performance, and emphasizes the importance of creating a high psychological security working environment and the necessity of enhancing employees' job engagement through training and development plans.

Keywords: Supply Chain Enterprises; Psychological Security; Service Performance; Job Engagement.

1. Introduction

In supply chain enterprises, the psychological state and service performance of front-line employees are the key factors affecting the competitiveness of enterprises. As an important psychological capital, psychological security is considered to be an important factor affecting employees' work behavior and performance. However, how psychological security affects service performance and whether there are intermediary variables in this process have not been fully studied. As the embodiment of employees' positive work attitude, job engagement may play a bridge role between psychological security and service performance. The purpose of this study is to explore the influence of front-line employees' psychological security on service performance in supply chain enterprises, and to investigate the intermediary role of job engagement, so as to provide theoretical basis and practical guidance for supply chain enterprises to improve employees' psychological security and job engagement, and then improve service performance. Through empirical research, this study will provide a new perspective for understanding the relationship between psychological security, job engagement and service performance, and provide a scientific basis for the practice of human resource management in supply chain enterprises.

2. Literature Review and Research Hypothesis

2.1. Psychological Security and Service Performance

In the research field of psychological security and service performance, scholars have conducted in-depth discussions from different angles. Although Bai focuses on college students, the psychological security revealed by Bai provides an idea for understanding the shaping of service personnel's positive mentality through the promotion of psychological resilience, which is the key psychological basis for improving service performance [1]. Xu and Peng's summary clarified the positive influence of psychological security on individual work behavior, laid a theoretical foundation for discussing its relationship with service performance, and pointed out that psychological security can enhance employees' job engagement and innovative behavior, which may further improve service performance [2]. Zeng et al' s analysis of the influencing factors of public service performance indirectly suggests the importance of psychological security in the service industry. Service personnel with high psychological security may respond more actively to goal setting and government commitment, thus improving service performance [3]. Therefore, this study puts forward the following assumptions:

H1: Psychological security has a significant positive impact on service performance.

2.2. Psychological Security and Job Engagement

In the research field of psychological security and job engagement, Yi and Xiong found that psychological security played an intermediary role between transformational leadership and job engagement, which indicated that nurses' job engagement level could be effectively improved by creating positive psychological security, which revealed the important mechanism of psychological security in promoting job engagement and provided a new perspective for understanding the antecedents of job engagement [4]. Li and Cui studied the influence of psychological security on doctors' job engagement [5]. Their research shows that psychological security has a significant positive impact on doctors' job engagement, and doctors with high psychological security are more willing to put more energy and enthusiasm into their work, which further confirms the important role of psychological security in enhancing job engagement, and provides beneficial enlightenment for managers of medical

institutions, that is, by creating a good working environment and psychological security, the job engagement and job performance of medical staff can be effectively improved. Therefore, this study puts forward the following assumptions:

H2: Psychological security has a significant positive impact on job engagement.

2.3. Job Engagement and Service Performance

The research of Shan and Hou explored the relationship between job engagement and service performance [6]. They found that when the public service motives of leaders and subordinates are consistent, the job engagement of subordinates will be higher, thus improving service performance. This shows that job engagement plays an important role in service performance and provides a new perspective for understanding the role of job engagement in service industry. Rich et al studied the influence of job engagement on job performance from a broader perspective, and found that job engagement can significantly improve job performance, including task performance and peripheral performance [7]. This study provides a solid theoretical basis for understanding the relationship between job engagement and service performance, and shows that job engagement is one of the key factors to improve service performance. Sadiq et al further explored the relationship between job engagement and service performance, and introduced job satisfaction and customer-oriented behavior as intermediary variables [8]. Their research shows that job engagement can improve service performance by improving job satisfaction and customer-oriented behavior. This study reveals the indirect influence mechanism of job engagement on service performance, and provides useful enlightenment for service industry managers, that is, by enhancing employee job engagement, service quality and customer satisfaction can be effectively improved. Therefore, this study puts forward the following assumptions:

H3: Job engagement has a significant positive impact on service performance.

2.4. The Mediating Role of Job Engagement between Psychological Security and Service Performance

In the research on the relationship between psychological security and service performance, the intermediary role of job engagement has attracted scholars' attention. Wang et al revealed the mediating role of job engagement, indicating that job engagement can transform positive working environment factors into employees' positive behaviors, which provides a theoretical basis for understanding the mediating role of job engagement between psychological security and service performance [9]. Huang et al further emphasized the mediating role of job engagement [10]. Their research found that job engagement can effectively connect individual psychological state and work behavior, which indicates that job engagement may play an important mediating role between psychological security and service performance, that is, psychological security can promote service performance by enhancing job engagement. Therefore, this study puts forward the following assumptions:

H4: Job engagement plays a significant mediating role between psychological security and service performance.

To sum up, this study puts forward a conceptual framework that psychological security mediated by job engagement affects service performance, as shown in Figure 1.

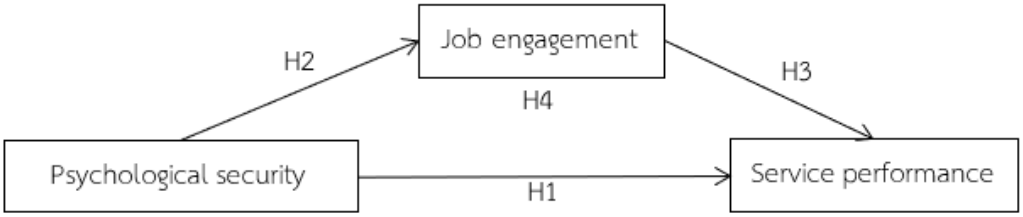


Figure 1. Conceptual Framework

3. Research Design and Methods

3.1. Questionnaire Design

Table 1. Questionnaire Scale

Variable	Item	References
Psychological security	I never dare to take the initiative to express my opinion.	Cong & An [11]
	I'm afraid to establish and maintain close relationships with others.	
	I often worry that my thoughts or emotions will get out of control.	
	I feel that life is always full of uncertainty and unpredictability.	
Job engagement	When I get up in the morning, I feel like going to work.	Schaufeli et al [12]
	At my work I always persevere, even when things do not go well.	
	To me, my job is challenging.	
	When I am working, I forget everything else around me.	
Service performance	I can actively tell customers the information they need (such as preferential information, etc.) during the service.	Rank et al [13]
	I will take the initiative to pay attention to the possible problems or needs of customers and actively propose solutions.	
	In case of traffic jams, accidents, failure to deliver as expected, I can make temporary solutions with my own judgment and understanding of risks.	
	I will take the initiative to check with customers whether I am satisfied with the service or meet customer expectations.	

The questionnaire design of this study mainly includes two parts. The first part is basic information, covering the basic situation of the respondents, such as gender, age, position, etc., aiming at understanding the characteristics of the sample and providing basic data for the follow-up analysis. The second part is the scale topic of three variables, aiming at psychological security, job engagement and service performance respectively. These scales are adjusted by referring to the mature scales of previous scholars and combining with the actual situation of front-line employees in supply chain enterprises to ensure their scientificity and applicability. The questionnaire uses Richter scale 5, ranging from "very different" to "very agree". See Table 1 for specific topics. This design not only ensures the rigor of the questionnaire, but also effectively collects the subjective feelings and evaluations of front-line employees in terms of psychological security, job engagement and service performance, and provides reliable data support for studying the influence of psychological security on service performance and the intermediary role of job engagement.

3.2. Data Collection

In the process of data collection, this study takes the front-line employees of supply chain enterprises as the main object of investigation, taking SF Express as an example. Questionnaires are distributed through the platform of Questionnaires to ensure the convenience and efficiency of the questionnaires. A total of 200 questionnaires were distributed in this survey, aiming at comprehensively understanding the psychological security, job engagement and service performance of front-line employees. During the investigation, employees actively participated, and finally 195 valid questionnaires were collected, with an effective recovery rate of 97.5%. These questionnaire data provide a rich empirical basis for the follow-up research, which is helpful to deeply analyze the influence of psychological security on service performance and the intermediary role of job engagement.

4. Data Analysis and Results

4.1. Reliability and Validity Analysis

(1). Reliability analysis

Through the results of reliability analysis in Table 2, we can see that Cronbach's Alpha values of three variables, namely psychological security, job engagement and service performance, all exceed 0.7, indicating that the questionnaire has high internal consistency. Specifically, the Cronbach's Alpha value of psychological security is 0.846, which shows that the questions of the scale have good consistency in measuring the concept of psychological security. Cronbach's Alpha value of job engagement is 0.725, which is slightly lower than psychological security, but it still reaches an acceptable level, indicating that the questionnaire has good reliability in measuring job engagement. The Cronbach's Alpha value of service performance is 0.761, which also shows that the scale has high consistency in measuring service performance. These results show that the questionnaire has high reliability in measuring the psychological security, job engagement and service performance of front-line employees in supply chain enterprises, and provides a reliable data basis for the subsequent analysis of mediation effect.

Table 2. Reliability Analysis of Questionnaire

Variable	Cronbach's Alpha
Psychological security	0.846
Job engagement	0.725
Service performance	0.761

(2). Validity analysis

Based on the validity analysis data provided in Table 3, the structural validity of the questionnaire can be evaluated. The applicable value of KMO sampling is 0.751, which shows that the sample data is suitable for factor analysis, because the value is greater than 0.7, which shows that there is moderate correlation between variables and it is suitable for further validity analysis. At the same time, the approximate chi-square value of Bartlett's sphericity test is 1642.889, the degree of freedom is 453, and the significance level is 0.000, far less than 0.05, which indicates that there is significant correlation between variables and it is suitable for factor analysis. These results show that the questionnaire not only has high reliability, but also has good structural validity when measuring the three variables of psychological security, job engagement and service performance of front-line employees in supply chain enterprises, which provides a solid foundation for the subsequent analysis of mediation effect.

Table 3. Validity Analysis of Questionnaire

KMO sampling suitability quantity		0.751
Bartlett sphericity test	Approximate chi-square	1642.889
	freedom	453
	Significance	0.000

4.2. Descriptive Statistical Analysis

In the investigation of the front-line employees of SF Express supply chain enterprises, the basic information of 195 employees was collected, including gender, age and position, so as to make descriptive statistical analysis of the samples. In terms of gender distribution, there are slightly more male employees than female employees, with male employees accounting for 55% of the total sample and female employees accounting for 45%. Such a gender ratio helps to ensure the wide applicability of the research results. In terms of age, the employees who participated in the survey were mainly between 25 and 45 years old, among which employees aged 30 to 35 accounted for the highest proportion, reaching 35%, which may be related to the fact that employees of this age group took on more front-line work in supply chain enterprises. In terms of job distribution, the employees who participated in the survey covered a number of front-line positions, including but not limited to warehouse managers, distributors, customer service representatives, etc. Among them, the proportion of warehouse managers and distributors was relatively high, accounting for 30% and 25% of the total sample respectively, while customer service representatives accounted for 20%. This position distribution reflects the diversity of front-line employees in supply chain enterprises, and also ensures that the research results can cover the work characteristics and needs of different front-line positions. Through such descriptive statistical analysis, it can provide a solid foundation for further analysis.

4.3. Correlation Analysis

According to the data in Table 4, the correlation coefficient between psychological security and service performance is

0.715, indicating that there is a significant positive correlation between them. This means that with the increase of psychological security of front-line employees, their service performance tends to improve. In addition, the correlation coefficient between job engagement and service performance is 0.761, which shows a stronger positive correlation, which further emphasizes the important role of job engagement in improving service performance.

Table 4. Correlation Analysis of Variables

Variable	Psychological security	job engagement	Service performance
Psychological security	1		
Job engagement	0.463	1	
Service performance	0.715	0.761	1

*P<0.05,**P<0.01

It is worth noting that the correlation coefficient between psychological security and job engagement is 0.463, which is relatively low, but it still shows that psychological security has a certain positive impact on job engagement. These correlation coefficients are all significant at the significance level of 0.01, which shows that the results of correlation analysis are statistically significant. These findings support the hypothesis that psychological security affects service performance through job engagement, and provide an empirical basis for supply chain enterprises to enhance employees' psychological security and job engagement to improve service performance.

4.4. Structural Equation Model Analysis

(1). Path analysis

According to the results of path analysis in Table 5, psychological security has a significant direct impact on service performance, with standardized coefficient of 0.269, non-standardized coefficient of 0.214, standard error of 0.069, critical ratio (C.R.) of 2.845 and P value of 0.000, indicating that psychological security has a significant positive impact on service performance. At the same time, psychological security has a significant impact on job engagement, with standardized coefficient of 0.354, non-standardized coefficient of 0.345, standard error of 0.051, C.R. value of 3.638 and P value of 0.000, indicating that psychological security can significantly improve job engagement. In addition, the influence of job engagement on service performance is also significant, with standardized coefficient of 0.290, non-standardized coefficient of 0.245, standard error of 0.036, C.R. value of 2.687, and P value of 0.001, indicating that job engagement is an important predictor of service performance. These results show that psychological security not only directly affects service performance, but also indirectly affects service performance by enhancing job engagement, which supports hypotheses H1, H2 and H3.

Table 5. Path Coefficient Test of Structural Equation Model

Suppose	Path			Standardization Coefficient	Non-Standardized Coefficient	S.E.	C.R.	P	Conclusion
H1	Psychological security	--->	Service performance	0.269	0.214	0.069	2.845	0.000	support
H2	Psychological security	--->	Job engagement	0.354	0.345	0.051	3.638	0.000	support
H3	Job engagement	--->	Service performance	0.290	0.245	0.036	2.687	0.001	support

***p<0.001; S.e.: standard error; C.R.: critical ratio.

(2). Intermediary effect

In the in-depth analysis of this study, the intermediary effect test reveals important findings. According to the analysis results in Table 6, the direct effect value of psychological security on job engagement is 0.164, the 95% confidence interval is [0.064, 0.264], and the P value is 0.000, which indicates that psychological security has a significant positive impact on job engagement. At the same time, the indirect effect of psychological security on service performance through job engagement is 0.285, the 95% confidence interval is [0.081, 0.158], and the P value is 0.000, which shows that psychological security can indirectly improve service performance by enhancing job engagement. In addition, the total effect value of psychological security on service performance is 0.264, the 95% confidence interval is [0.048, 0.236], and the P value is 0.016, which further confirms the significant positive total effect of psychological security on service performance. These results show that job engagement plays a partial intermediary role between psychological security and service performance, that is, psychological security not only directly affects service performance, but also indirectly affects service performance by enhancing job engagement, thus supporting the hypothesis that psychological security affects service performance through job engagement.

Table 6. Test Results of Intermediary Effect

Path	Effect Type	Effect value	Bootstrapping 1,000 times 95% CI		p
			Lower	Uper	
Psychological security-> Job engagement-> Service performance.	Direct effect 1	0.164	0.064	0.264	0.000
	Indirect effect 1	0.285	0.081	0.158	0.000
	Total effect 1	0.264	0.048	0.236	0.016

5. Conclusion

Through empirical analysis, this study discusses the influence of psychological security of front-line employees in supply chain enterprises on service performance and its mediating role through job engagement. The research results show that psychological security has a significant positive impact on service performance, and it also has a significant positive impact on job engagement, which in turn has a significant positive impact on service performance. Path analysis and intermediary effect test further confirmed that psychological security not only directly affects service performance, but also indirectly affects service performance by enhancing job engagement, which supported the

hypothesis that psychological security affects service performance through job engagement. These findings have important practical significance for supply chain enterprises, suggesting that enterprises should pay attention to creating a working environment with high psychological security, so as to promote employees' job engagement and improve service performance. In addition, the study also emphasized the key role of job engagement in improving service performance, and suggested that enterprises should enhance employees' job engagement through training and development plans to achieve better service performance. Generally speaking, this study provides a new perspective for understanding the relationship among psychological security, job engagement and service performance, and provides empirical basis and strategic suggestions for supply chain enterprises to improve employees' psychological security and job engagement to improve service performance.

References

[1] Bai, X. (2025). The impact of psychological safety on life satisfaction among college students: The mediating role of psychological resilience. Journal of Hubei University of Education, 42(07), 70-76.

[2] Xu, Z. H., & Peng, J. F. (2017). A review and prospect of psychological safety research. Modern Management Science, (04), 18-20.

[3] Zeng, L., Lv, L. S., & Li, Y. X. (2025). Goal setting, government commitment, and public service performance: An empirical analysis based on 1080 county-level samples. Public Management and Policy Review, 14(03), 135-150.

[4] Yi, S. L., & Xiong, H. (2021). The mediating role of psychological safety in the relationship between transformational leadership and job engagement among nurses. Nursing and Rehabilitation, 20(08), 1-5.

[5] Li, Y. Y., & Cui, Z. L. (2016). The impact of psychological safety on job engagement among doctors. Economic and Trade Practice, (24), 226+233.

[6] Shan, Y. Z., & Hou, N. (2019). Like-mindedness and better performance: Consistency of public service motivation between leaders and subordinates, work engagement, and service performance. China Human Resource Development, 36(2), 35–46.

[7] Rich, B.L., Lepine, J.A., & Crawford, E. R. (2010). Job engagement: Antecedents and effects on job performance. Academy of management journal, 53(3),617-635.

[8] Sadiq, M.A., Gunawan, A. 1., Sosianika, A., & Amalia, F. A. (2022). The link between engagement and service performance: The mediation role of job satisfaction and customer-oriented behavior. International Journal of Applied Business Research, 50-64.

[9] Wang, X. L., Chen, Y. S., Wu, D. F., Zhang, M., & He, X. F. (2025). The mediating effect of nurses' innovative self-efficacy and work engagement between challenge-hindrance stressors and innovative behavior. Evidence-Based Nursing, 18, 3767–3773.

[10] Huang, H. M., Jiang, G. M., Yang, X. M., Shen, Z. F., & Ma, L. (2025). The chain mediating role of empathy and emotional intelligence between nursing students' professional identity and work engagement. Chinese Journal of General Practice, 23(9), 1600–1604.

[11] Cong, Z., & An, L. J. (2004). Preliminary compilation of the security scale and its reliability and validity test. Chinese Journal of Psychological Health, 2, 97–99.

[12] Schaufeli, W. B., Salanova, M., González-Romá, V., & Bakker, A. B. (2002). The measurement of engagement and burnout: A two sample confirmatory factor analytic approach. Journal of Happiness studies, 3(1), 71-92.

[13] Rank, J., Carsten, J. M., Unger, J. M., et al. (2007). Proactive customer service performance: Relationships with individual, task, and leadership variables. Human Performance, 20(4), 363-390.