

Study of the Impact of Ethical Leadership on Innovation Performance: The Mediating Role of Interaction Equity

Yifan Zhang*

School of Economics and Management, Beijing Jiaotong University, Beijing, China

*Corresponding author e-mail: zyf82667193@qq.com

Abstract. Based on equity theory, this study constructs the influence mechanism of ethical leadership on innovation performance. This study uses questionnaire surveys to investigate more than 10 enterprises in Hubei, Henan, Hunan, Shanghai, and Beijing, and finally collected 235 valid samples. Using SPSS26.0 and Mplus7.4, hierarchical regression analysis is used to verify the hypotheses put forward in this study. Finally, a total of four conclusions are obtained. First, ethical leadership has a positive effect on employees' innovation performance. Second, interaction equity mediates the relationship between ethical leadership and employees' innovation performance. Third, leader-member exchange(LMX) positively moderates the relationship between ethical leadership and interaction equity. That is, the higher the degree of LMX, the stronger the positive influence of ethical leadership on interaction equity is. Fourth, LMX moderates the mediating role of interaction equity between ethical leadership and innovation performance. That is, the higher the degree of LMX, the stronger this mediating role is. This study not only expands the research on ethical leadership, but also provides management enlightenment for enterprises to implement appropriate management methods and improve innovation performance.

Keywords: Ethical Leadership; Interaction Equity; Innovation Performance; Leader-member exchange.

1. Introduction

In the context of innovation and entrepreneurship, innovation performance as a part of job performance can positively contribute to employee performance and corporate performance [1], and therefore has become a focus of researchers' attention. Existing research shows that leadership style is an important factor influencing employees' innovative performance, and transformational leadership [2] and authentic leadership [3] can promote employees' innovative performance. Ethical leadership refers to interpersonal two-way interactive communication that reinforces followers' ethical values and promotes followers' implementation of ethical behaviors [4]. Current research related to ethical leadership focuses on the behavioral attitudes of employees, and there is a lack of aspects closely related to corporate development, such as innovation performance, which makes it difficult to highlight the positive impact of ethical leadership on corporate dimensions. Therefore, the study of the mechanism of ethical leadership on innovation performance has strong theoretical and practical significance.

Ethical leaders not only possess personal traits such as respect and justice, but also work with concern for the future development of their employees and encourage them to express their ideas and participate in decision-making [5-6]. The behavior of ethical leaders can influence employees' perceptions of organizational justice. Organizational justice is an individual's subjective perception of the organizational climate and is evaluated by the individual's subjective psychological perception of whether the organization treats them fairly or not [7-8]. Organizational equity is positively correlated with innovation behavior [9] and positively contributes to employees' cooperative innovation behavior and innovation performance [11-12] by increasing employees' sense of responsibility and organizational citizenship behavior [10]. Interaction equity, as one of the structural dimensions of organizational equity, focuses on the perceived justice of interpersonal treatment of leaders in decision making [8] and is an important influence on the effectiveness of leadership behavior, which can motivate positive work behavior. Since organizations in the Chinese context are more personalized, interaction equity, which reflects the quality of interpersonal relationships

between leaders and employees, is a better predictor of individual performance and behavior than other structural dimensions of organizational equity [13]. Therefore, this study selects interaction equity as a mediating variable to explore the mechanism of ethical leadership's influence on employees' innovative performance.

Despite the ability of ethical leadership to influence employee values and behaviors, little is known about "whether different employees respond differently to ethical leadership"[14]. Leader-member exchange (LMX), an important indicator of the degree of emotional exchange between leaders and employees in terms of resource sharing and mutual support [15], can play a positive role in the reciprocal process of ethical leadership influence on employees [16]. Equity theory suggests that in a high-quality LMX relationship, there is trust and respect between the leader and the member, which is in line with the qualities of ethical leadership. Leaders provide informational, material, and interpersonal support to employees, which helps employees gain a higher scope of autonomy and fewer restrictions [17], thus stimulating a sense of responsibility. Employees are autonomous to innovate at work, which leads to improved innovation performance. Therefore, this study suggests that LMX may be a key factor influencing the level of effect between ethical leadership and interaction equity.

In summary, this study explores the impact of ethical leadership on innovation performance, the mediating role of interactive equity and the moderating role of LMX based on equity theory, in an attempt to promote the continuous development of research in the field of ethical leadership and to provide theoretical references and practical references for the search of appropriate leadership management in organizations.

2. Theoretical Basis and Assumptions

2.1 Ethical Leadership and Employees' Innovation Performance

Innovation performance is the generation of novel and potentially useful ideas by employees at the individual level [18-19]. Innovative performance cannot be improved without an increase in employees' willingness to innovate. Only when employees are less worried about the risks of innovation and increase their innovative behaviors can they improve their innovative performance, which in turn contributes significantly to the improvement of organizational performance [20].

Combining the existing studies, ethical leadership has significant direct and indirect effects on employees' innovation performance [21]. High ethical behavior of ethical leaders can significantly motivate employees' constructive behavior [22], and employees' constructive behavior positively affects innovation performance. In a stronger organizational innovation climate, ethical leaders have a stronger contribution to employees' innovation performance [23]. According to the traits of ethical leadership, ethical employees are easily supported and rewarded by ethical leaders, which affects employees' perceptions of organizational support. It is an important factor in enhancing innovation performance [24].

Considering that employees' innovation behavior is influenced by the combination of innovation environment and perceptions of innovation consequences, in an organizational climate dominated by ethical leaders, ethical innovation concepts and behaviors are supported by leaders, and employees are less worried about innovation failure and more willing to take the initiative to innovate and thus generate innovation performance. In addition, the social exchange between ethical leaders and employees affects the work output of employees. The attributes of ethical leadership such as caring for employees, respect, and justice are conducive to building employees' trust in their leaders and positively motivating them to come up with innovative ideas and generate creative behaviors, thus enhancing innovation performance [25]. The following hypothesis is therefore proposed.

H1: Ethical leadership has a positive effect on employees' innovation performance.

2.2 The Mediating Role of Interactive Equity

According to the definition of ethical leadership and interactional equity, ethical leadership enhances employees' perception of interactional equity. Interaction equity consists of two major elements: interpersonal equity and information equity [26]. Interpersonal equity refers to leaders treating employees with courtesy and respect, while information equity refers to leaders sharing information with employees and proactively informing them [27]. In management practice, ethical leaders possess traits such as honesty and justice, and are able to demonstrate ethical behavior in resource allocation and interpersonal processes [28], treat employees equally, and create a fair organizational environment. In addition, ethical leaders' qualities such as accountability and justice can promote the fair operation of systems such as performance evaluation and reward distribution [29-31]. According to the equity theory and due process evaluation system, ethical leaders can make fair organizational decisions through adequate notice, fair hearing, and evidence-based judgment, which helps strengthen employees' interactive perception of justice. Finally, ethical leaders attach importance to two-way communication with employees, which is conducive to the formation of frank and open interaction with employees and enhances employees' understanding and support [32], thus consolidating employees' interactive perception of justice.

In recent years, many scholars have conducted empirical studies on the impact of interaction equity on employees' innovative performance or creativity. Studies have shown that procedural justice, interactional justice, and leadership justice have significant positive effects on employees' creativity and innovative behavior at work [34], and interactional justice is significantly and positively related to individual innovative performance [33]. Equity theory suggests that there is a long-term social exchange between employees and the organization, and the organization provides a place for employees to establish and maintain social relationships [38]. Through the information exchange between the organization and employees, employees are able to judge whether they are treated fairly by the organization. When employees perceive that the interaction between output and input ratios is fair, employees are more willing to engage in activities that benefit the organization [35] and reduce negative behaviors. In addition, interactional justice affects individuals' internal motivation. When individuals perceive being treated fairly, individuals become more motivated and internally motivated to work on tasks [36], and internal motivation positively contributes to employees' willingness of innovative awareness and behavior [37].

According to equity theory, it is because of the qualities of ethical leaders who respect, share information, and allow employees to actively voice their opinions and participate in decision making that ethical leaders can promote a balance between organizational and personal interests, thereby enhancing employees' perceptions of interactive justice. When employees' perception of interactional justice is high, employees are more willing to trust their leaders' decisions [28], enhancing the sense of organizational support [40]. Therefore, employees tend to give back to the organization through autonomous innovative behaviors, thus improving innovation performance. Therefore, the following hypothesis is proposed.

H2: Interaction equity mediates the relationship between ethical leadership and employees' innovation performance.

2.3 The Moderating Role of Leader-Member Exchange (LMX)

According to the definition of LMX and interactive justice, it can be concluded that leaders are the allocators of organizational resources and employees' work, so LMX is a strong predictor of employees' job performance evaluation, promotion frequency, etc. [41]. Different employees and leaders have different quality exchange relationships with each other, and therefore their perceptions of justice are different. Specifically, trust between leaders and employees is higher in high-quality LMX relationships. Employees are able to establish good exchange relationships with ethical leaders, share information and participate in decision-making, and enhance their perceptions of interactional justice in leadership decisions [42]. Employees have a higher level of identification and emotional attachment to ethical leaders. Even when deviations from expected behavior occur in practice,

employees' identification and emotional attachment to the leader make them willing to believe that the leader's behavior involves interactional justice. At the same time, ethical leadership behaviors such as respect, empowerment, and caring contribute to deeper employee identification and trust, which can facilitate the formation of high-quality LMX relationships [43] and further contribute to employees' perceptions of interactional equity.

In low-quality LMX relationships, employees view information sharing with leaders, participation in decision-making, and voicing opinions as incidental events. Even if ethical leaders perform ethical behaviors in the organization, employees do not correctly perceive the true intentions of leaders and do not easily develop positive evaluations of leaders. The positive effect of ethical leadership is not easily reflected and employees do not easily perceive the justice of the interaction. Therefore, the following hypothesis is proposed.

H3: LMX positively moderates the relationship between ethical leadership and interaction equity. That is, the higher the degree of LMX, the stronger the positive influence of ethical leadership on interaction equity is.

As a result, this study can be further represented as a mediated model that is moderated. Specifically, interaction equity mediates the effect of ethical leadership on innovation performance, and the magnitude of this mediating effect depends on the quality of the LMX. In high-quality LMX relationships, as employees develop more trust, they are more supported and empowered by ethical leaders [44], and have more perceptions of their ethical behavior in terms of interactional equity, so employees are prone to develop a sense of obligation and responsibility to reward their leaders and the organization [45], and to give back to their leaders through positive innovative behaviors [46], facilitating innovative performance. When interaction equity differences are low, the moderating effect through LMX can have an indirect effect on employees' work tasks and innovative performance [47]. In contrast, in low-quality LMX relationships, the exchange between employees and ethical leaders is limited to formal communication, employees' perception of interactional equity is reduced and they are more willing to follow the stereotypical way of working and avoid the risks associated with innovation, which is not conducive to innovative performance. The following hypothesis is therefore proposed.

H4: LMX moderates the mediating role of interaction equity between ethical leadership and innovation performance. That is, the higher the degree of LMX, the stronger this mediating role is, while the lower the degree of LMX, the weaker this mediating role is.

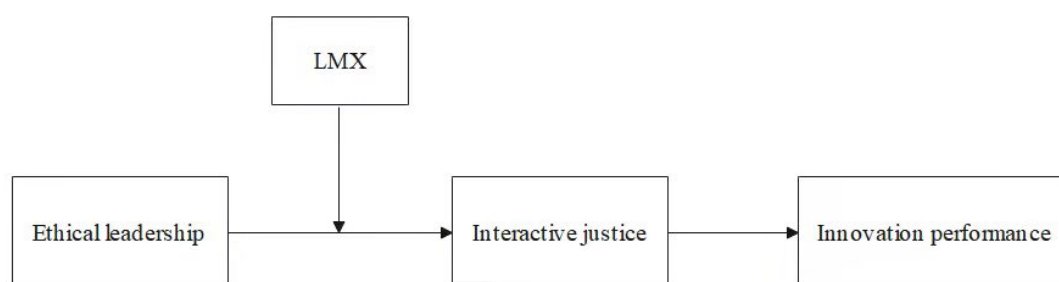


Figure 1. Theoretical Model

3. Study Design

3.1 Collection Process of Research Sample and Data

The subjects of this study came from more than 10 enterprises in Hubei, Henan, Hunan, Shanghai, and Beijing. Before the formal research, this study discussed the content of the questionnaire through some employees of the enterprises, on the basis of which some questions were adjusted to ensure the validity of the questionnaire. A total of 300 questionnaires were distributed in this study, 235 valid questionnaires were collected, with a valid return rate of 78.33%. Among the final valid sample, 23.85%

were male and 76.15% were female. 0.77% were aged 18-25, 4.23% were aged 26-35, 23.85% were aged 36-45, and 71.15% were aged 46 and above. 16.92% had high school education or less, 28.08% had college education, 48.08% had university Bachelor's degree, and 6.92% had postgraduate degree or above. 3.08% have served for 1 year or less, 6.92% for 2-5 years, 8.46% for 6-10 years, and 81.54% for 11 years or above.

3.2 Variable Measurement

In this study, all English scales were translated and back-translated to ensure the accuracy of translation. All scales were on a seven-point Likert scale, with 1 to 7 indicating "strongly disagree" to "strongly agree".

Ethical leadership. The scale adapted from Brown (2005) by Tian et al. (2015) [48] includes 10 questions such as "Leaders will regulate employees' behavior that violates ethical standards". The Cronbach's α value for this scale was 0.956.

Interaction justice. A scale developed by Colquitt (2001) [27] was used, including nine questions such as "The leader treats me politely". The Cronbach's α value for this scale was 0.963.

Leader-member exchange. The scale developed by Zhao Kehan et al. (2013) [49] was used and included seven items such as "I have a good working relationship with my leader". The Cronbach's α value for this scale was 0.893.

Innovation performance. A scale developed by Han Yi (2006) [50] was used, including eight questions such as "I will provide new ideas to improve the existing situation". The Cronbach's α value for this scale was 0.950.

Control variables. Individual characteristics that may have an impact on interaction equity, LMX, and innovation performance were controlled for in this study's analysis, including employee gender, age, education level, and years of service in their current job [51-52].

4. Data Analysis and Results

4.1 Validated Factor Analysis with Common Method Bias Test

The discriminant validity of the four variables of ethical leadership, interaction equity, LMX, and innovation performance is examined by Mplus 7.4 software. The results of the analysis show (see Table 1) that the four-factor model has the best fit compared to the one-factor, two-factor, and three-factor models ($\chi^2/df=2.651$, RMSEA=0.084, CFI=0.977, TLI=0.969, SRMR=0.023), indicating that the core variables involved in this study has good discriminant validity and are representative of different constructs.

In addition, this study uses SPSS 26.0 software to test for common method bias by Harman's one-factor test. The results of Harman's one-factor test find that the first principal component without rotated factors accounted for 39.668%, which is below the critical criterion of 50%. Therefore, there is no serious common method bias in the sample data.

Table 1. Verification Factor Analysis and Comparison

Models	Contained factors	χ^2/df	RMSEA	CFI	TLI	SRMR
Four-factor model	EL;IJ;LMX;IP	2.651	0.084	0.977	0.969	0.023
Three-factor model	EL+IJ;LMX;IP	10.329	0.199	0.864	0.824	0.070
Two-factor model	EL+IJ+IP;LMX	19.775	0.283	0.716	0.646	0.088
One-factor model	EL+IJ+LMX+IP	20.517	0.288	0.699	0.632	0.086

Note: EL indicates ethical leadership; IJ indicates interaction equity; LMX indicates leader-member exchange; IP indicates innovation performance; + indicates two factors combined into one factor.

4.2 Descriptive Statistics and Correlation Analysis

As shown in Table 2 means, standard deviations, and correlation coefficients, ethical leadership is significantly and positively correlated with interaction equity ($r=0.723$, $p<0.001$), LMX ($r=0.764$, $p<0.001$), and innovation performance ($r=0.650$, $p<0.001$) respectively. Interaction equity is significantly and positively correlated with LMX ($r=0.821$, $p<0.001$), and innovation performance ($r=0.652$, $p<0.001$). LMX is significantly positively correlated with innovation performance ($r=0.670$, $p<0.001$). The correlation analysis among the variables provides the necessary support for the subsequent hypothesis testing.

Table 2. Means, standard deviations, and correlation coefficients of variables

Variables	M	SD	1	2	3	4	5	6	7	8
1.Gender	1.760	0.430								
2.Age	3.710	0.542	-0.014							
3.Education level	2.480	0.839	-0.126	-0.045						
4.Years of service	3.740	0.658	-0.012	0.337***	0.212**					
5.Ethical leadership	4.583	1.409	0.066	-0.095	-0.060	-0.112	0.956			
6.Interaction justice	4.672	1.242	0.008	-0.092	0.027	-0.042	0.723***	0.963		
7.Leader-member exchange	4.350	1.130	-0.013	-0.068	0.007	-0.076	0.764***	0.821***	0.893	
8.Innovation performance	5.009	1.094	-0.059	-0.117	-0.003	-0.046	0.650***	0.652***	0.670***	0.950

Note: $n=235$; * indicates significant correlation at the 0.05 level (two-sided), ** indicates significant correlation at the 0.01 level (two-sided), *** indicates significant correlation at the 0.001 level (two-sided), same below; bolded data are Cronbach's coefficients of the variables α .

4.3 Hypothesis Testing

1. A main effect test of ethical leadership to innovation performance. Hierarchical regression analysis is used to test the main effect of ethical leadership on innovation performance. Controlling for demographic variables such as employee gender, age, years of service, and education level, the results of the regression analysis of model 6 in Table 3 show that ethical leadership has a significant positive effect on innovation performance ($\beta=0.656$, $p<0.01$). Therefore, H1 is supported.

2. The test of mediating role of interaction equity. From the results of the regression analysis of model 2 in Table 3, it can be seen that ethical leadership has a significant positive effect on interaction equity ($\beta=0.730$, $p<0.01$). And from model 7, it can be seen that interaction equity has a significant positive effect on innovation performance ($\beta=0.648$, $p<0.01$). When both ethical leadership and interaction equity predict innovation performance, as shown by model 8, the predictive effect of interaction equity diminishes but remains significant ($\beta=0.370$, $p<0.01$). Therefore, H2 is supported and interaction equity plays a partially mediating role in the effects of ethical leadership on innovation performance.

3. Tests for moderating effects of LMX. Hierarchical regression is used to conduct the test for moderating effects, and after controlling for demographic variables, the independent variables, moderating variables, and interaction terms are sequentially entered into the equation to predict the outcome variable. To avoid multicollinearity, the independent and moderating variables are separately centered before conducting the regression. The results of the analysis are presented in Table 3. From Table 3 model 4, it is clear that the interaction term between ethical leadership and LMX has a significant positive effect on interaction equity ($\beta=0.094$, $p<0.05$). In addition, this study plots the moderating effect with one standard deviation above and one standard deviation below the LMX mean respectively, and as shown in Figure 2, the positive effect of ethical leadership on interaction equity is enhanced when LMX quality is high and weakened when LMX quality is low. Therefore, H3 is supported.

Table 3. Results of Hierarchical Regression Analysis

Variable type	Interactive justice				Innovation performance			
	Model1	Model2	Model3	Model4	Model5	Model6	Model7	Model8
Control variable								
Gender	0.010	-0.034	0.004	0.001	-0.062	-0.102*	-0.069	-0.089
Age	-0.084	-0.034	-0.039	-0.028	-0.117	-0.072	-0.062	-0.059
Educational level	0.028	0.057	0.026	0.024	-0.015	0.010	-0.034	-0.011
Years of service	-0.019	0.039	0.041	0.034	-0.005	0.048	0.008	0.034
Independent variable								
Ethical leadership		0.730***	0.235***	0.237***		0.656***		0.386***
Intermediate variable								
Interactive Justice							0.648***	0.370***
Adjustment variable								
Leadership Membership Exchange			0.642***	0.655***				
Moderating effects								
Ethical Leadership*Leader- Member Exchange				0.094*				
R2	-0.008	0.520	0.692	0.699	0.001	0.427	0.422	0.490
F	0.547	51.752	88.437	78.588	1.032	35.823	35.114	38.479

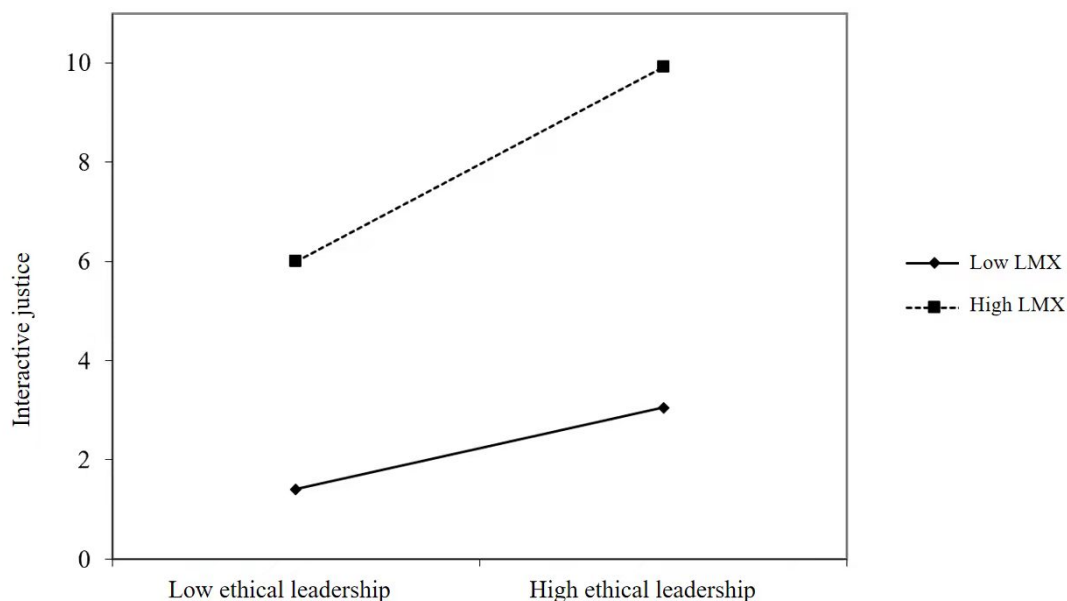


Figure 2. The moderating role of leader-member exchange between ethical leadership and interactive justice

4. Moderated mediating effect test. H4 is a moderated mediating effect and is analyzed in this study by using the SPSS 26.0 software macro program PROCESS, and the results after a sample of 5000 runs are shown in Table 4. The indirect effect of ethical leadership via interaction equity on innovation performance is significant when LMX quality is one standard deviation above the mean (0.092, 95% confidence interval [0.044, 0.164], excluding 0), while the indirect effect of ethical leadership via interaction equity on innovation performance is not significant when LMX quality is one standard deviation below the mean (0.044, 95% (confidence interval [-0.007, 0.110], including 0). In addition, the indirect effect value of the mediated model with moderation is significant (0.021,

95% confidence interval [0.002, 0.046], excluding 0). This suggests that LMX moderates the mediating role of interaction equity between ethical leadership and innovation performance. It is proved that the higher the quality of LMX, the stronger the mediating role of interaction equity in the relationship between ethical leadership and innovation performance is, and conversely, the lower the quality of LMX, the weaker the mediating role of interaction equity in the relationship between ethical leadership and innovation performance is. Therefore, H4 is supported.

Table 4. Results of the analysis of the mediating role of justice in leader-member exchange regulation interaction

	Degree of influence	Effect	Standard error	95%confidence interval	
				Lower limit	Upper limit
Leader-member exchange	Low quality	0.044	0.029	-0.007	0.110
	High quality	0.092	0.029	0.044	0.164
	ind	0.021	0.011	0.002	0.046

5. Conclusion and Outlook

5.1 Research Findings

This study explores the mechanisms of the influence of ethical leadership on innovation performance based on equity theory. The study found that:

First of all, ethical leadership has a positive impact on employees' innovation performance. According to equity theory, the respect and justice traits of ethical leadership help to establish a social exchange relationship of trust and recognition with employees, which will stimulate a rewarding mentality toward leadership and manifest as positive intrinsic motivation and positive extrinsic behavior, thus stimulating innovation willingness and innovation behavior and promoting innovation performance.

Secondly, ethical leadership positively influences innovation performance through interactive justice, which is an important path to stimulate employees' innovative behavior and enhance innovation performance. According to equity theory, ethical leaders possess ethical traits such as justice and respect for employees, and create a fair and interactive climate through ethical behaviors such as proper decision-making and two-way communication [53], thus enhancing employees' perception of interactive justice. Employees with high perceptions of interactive justice have increased trust and support for their leaders and are more willing to give back to the organization through their own innovative behaviors, thus improving innovation performance.

Thirdly, in the path of ethical leadership influencing innovation performance through interaction equity, LMX is the key factor that reinforces the positive influence of ethical leadership on interaction equity. The higher the quality of LMX, the stronger the positive influence of ethical leadership on interaction equity, and the stronger the mediating role of interaction equity between ethical leadership and innovation performance is. As LMX quality increases, ethical leaders tend to build trusting, shared exchange relationships with employees, thereby increasing employees' perceptions of interactional justice in leadership behavior and ignoring leaders' deviations from expected behavior in management practices. In high-quality LM tionships, employees have reduced perceptions of interactional justice and are reluctant to exchange with ethical leaders through information exchange, voicing opinions, and proactive innovation. Employees' preoccupation with stereotypical ways of working and elevated concerns about innovation risk are detrimental to innovation performance.

5.2 Theoretical Significance

First, this study responds to PILLAIR's (1999) claim that interactional equity can serve as a mediating variable for the effectiveness of leadership behavior [54] by focusing on interactional equity and developing a model for influencing innovation performance through interactional equity based on employees' psychological perceptions. Previous studies have mostly explained the

mechanism of ethical leadership on innovation performance from the perspective of employees' psychological activities [55-56]. This study proposes that ethical leadership, as a positive and effective leadership style, can enhance employees' innovation performance by promoting employees' perceptions of interactional equity, thus opening the "black box" of ethical leadership on employees' innovation performance in the Chinese cultural context.

Second, this study proposes and tests the moderating effect of LMX on the relationship between ethical leadership and interaction equity influence and the mediating mechanism. Compared with the current studies that use leadership style as the entry point and mostly use LMX as a mediating variable, this study investigates LMX as a moderating variable, strengthens its organizational climate attribute, deepens the existing theory of LMX [57], expands the nature of ethical leadership as a moderating variable at the social exchange level, and advances the existing research on the influence of ethical leadership on employees' innovation performance and the mediating mechanism.

5.3 Practice Inspiration

First, organizations should pay attention to the ethical performance of existing leaders and set high ethical standards to promote the transformation of existing leaders into ethical leaders. Existing leaders should not only enhance their own ethics, but also influence employees' ethical and moral concepts through their own ethical behaviors, and take measures such as institutional supervision and resource allocation to promote the formation of an ethical climate in the organization [13]. Ethical leaders should also provide appropriate support to employees who trust their leaders and take the initiative to propose innovative ideas, so as to enhance employees' initiative to innovate and promote innovative performance.

Secondly, organizations should pay attention to cultivating employees' perception of interactive justice. For employees with low perception of interactive justice, they can understand employees' problems or grievances through heart-to-heart talks, conduct timely and efficient two-way communication based on understanding employees' personalities and respecting employees' wishes to solve problems and improve employees' perception of interactive justice [58]. In addition, leaders can also provide innovation skills training for employees, so that employees have the ability to implement innovative ideas and improve innovation performance.

Third, leaders in the organization can take appropriate actions to build high-quality LMX relationships. Actions such as giving more job autonomy, sharing key information, and encouraging participation in organizational decision-making enhance LMX quality [32], and improve employees' perceptions of interactional justice by leading by example, treating employees fairly, and caring for them to promote innovative performance improvement.

5.4 Research Limitations and Perspectives

Due to the constraints of subjective and objective conditions, this study still has some shortcomings that can be further improved in the future. First, in terms of research methodology, the concept of innovation performance emphasizes the continuous change of innovation behavior, and this study only investigates innovation performance at a single point in time, which is cross-sectional data, and does not pay enough attention to the dynamic changes of innovation performance. Future research should be conducted in longitudinal tracking studies to measure innovation performance multiple times in order to better reveal the relationship between variables and dynamic change trends. Second, this study only explores individual-level variables, but does not address organizational-level variables related to innovative behavior, such as organizational innovation climate and high-performing work systems. Future research is supposed to include organizational situational level variables to explore the effects of organizational characteristics on innovation performance. Third, the positive effect of interaction equity on innovation performance is not directly reached, and there are still potential influence variables in this influence mechanism. This study only explores the positive impact of interaction equity on innovation performance without examining its impact mechanism. Future research can further explore the impact of employees' perceived interaction equity on innovation

performance in terms of personality traits such as due diligence and openness. Fourth, although this study confirms the mediating role of interactional equity, there may be multiple pathways of action for the impact of ethical leadership on innovation performance. Distributive justice and procedural justice as two other dimensions of organizational justice may also play a mediating role in this influence mechanism, and future research should consider the role of distributive justice and procedural justice in the influence of ethical leadership on innovation performance.

References

- [1] Xu P, Bai G Y, Chen Z J. Research on the Relationship between Knowledge Workers' Participation Motivation and Innovation Performance: The Nonlinear Intermediary Role of Organizational Citizenship Behavior[J]. *Science of Science and Management of S.&T.*, 2016(5):129-137.
- [2] Feng C L, Zhang L H. Influences on Transformational/Transactional Leadership to Employee Innovative Behavior in the Context of Dual Organizational Change: A Cross Level Study[J]. *Science of Science and Management of S.&T.*, 2014, 35(08):172-180.
- [3] Han y, Yang B Y. The Authentic Leadership, the Psychological Capital and Employees' Innovative Behavior: The Mediating of the Leading Members[J]. *Management World*, 2011(12):78-86+188.
- [4] Trevino L K, Hartman L P, Brown M. Moral person and moral manager: How executives develop a reputation for ethical leadership[J]. *California management review*, 2000, 42(4): 128-142.
- [5] Brown M E, Treviño L K. Ethical leadership: A review and future directions[J]. *The leadership quarterly*, 2006, 17(6): 595-616.
- [6] Chen A S Y, Hou Y H. The effects of ethical leadership, voice behavior and climates for innovation on creativity: A moderated mediation examination[J]. *The leadership quarterly*, 2016, 27(1): 1-13.
- [7] Greenberg J. A taxonomy of organizational justice theories[J]. *Academy of Management review*, 1987, 12(1): 9-22.
- [8] Greenberg J. Organizational justice: Yesterday, today, and tomorrow[J]. *Journal of management*, 1990, 16(2): 399-432.
- [9] Akram T, Lei S, Haider M J, et al. The impact of organizational justice on employee innovative work behavior: Mediating role of knowledge sharing[J]. *Journal of Innovation & Knowledge*, 2020, 5(2): 117-129.
- [10] Erkutlu H. The moderating role of organizational culture in the relationship between organizational justice and organizational citizenship behaviors[J]. *Leadership & Organization Development Journal*, 2011.
- [11] Hui J. The role of organizational citizenship in human resource management [J]. *Leadership Science*, 2017(26):55-58.
- [12] Li B Z, Xu G Y, Su Q. The forming mechanism research of co-innovation behavior of small-medium-sized enterprises based on theory of planned behavior[J]. *Studies in Science of Science*, 2014, 32(05):777-786+697.
- [13] He X. Can Interactive Justice cure the disease of silence? A local empirical study with the doctrine of the Mean as a moderating variable[J]. *Management World*, 2009(04):128-134.
- [14] Zhu W, He H, Treviño L K, et al. Ethical leadership and follower voice and performance: The role of follower identifications and entity morality beliefs[J]. *The Leadership Quarterly*, 2015, 26(5): 702-718.
- [15] Graen G, Dansereau Jr F, Minami T. Dysfunctional leadership styles[J]. *Organizational behavior and human performance*, 1972, 7(2): 216-236.
- [16] Zhang Y J. The Influence of Ethical Leadership on Employees' CWB: from Social Learning and Social Exchange Perspective[J]. *Journal of Business Economics*, 2012(12):23-32.
- [17] Saeed B B, Afsar B, Cheema S, et al. Leader-member exchange and innovative work behavior: The role of creative process engagement, core self-evaluation, and domain knowledge[J]. *European Journal of Innovation Management*, 2019.
- [18] Malik M A R, Butt A N, Choi J N. Rewards and employee creative performance: Moderating effects of creative self-efficacy, reward importance, and locus of control[J]. *Journal of Organizational Behavior*, 2015, 36(1): 59-74.

- [19] Shalley C E, Zhou J, Oldham G R. The effects of personal and contextual characteristics on creativity: Where should we go from here? [J]. *Journal of management*, 2004, 30(6): 933-958.
- [20] Schoen J L. Effects of implicit achievement motivation, expected evaluations, and domain knowledge on creative performance[J]. *Journal of organizational behavior*, 2015, 36(3): 319-338.
- [21] Yiao Y H, Zhou H P, Li Y F, Xia D. The Impact of Ethical Leadership on Employees' Innovative Behavior[J]. *Statistics& Information Forum*, 2015, 30(02):94-99.
- [22] Liang J. Ethical Leadership and Employee Voice: Examining a Moderated-Mediation Model[J]. *Acta Psychologica Sinica*, 2014, 46(02):252-264.
- [23] Chen A S Y, Hou Y H. The effects of ethical leadership, voice behavior and climates for innovation on creativity: A moderated mediation examination[J]. *The leadership quarterly*, 2016, 27(1): 1-13.
- [24] Zhong L F, Meng J, Gao L. The Effect of Ethical Leadership on Employee Innovation Performance: The Mediating Effect of Social Exchange and The Moderating Effect of Power Distance Orientation[J]. *Management World*, 2019, 35(05):149-160.
- [25] Guo Y R, Li X L, Song J W. A Study of Ethical Leadership on Employees' Creativity: The Mediating Effect of Intrinsic Motivation and Social Exchange[J]. *Human Resources Development of China*, 2016(03):19-27.
- [26] Liu Y, Long L R, Li Y. The influence of Organizational Fairness on organizational effectiveness variables[J]. *Management World*, 2003(03):126-132.
- [27] Colquitt J A. On the dimensionality of organizational justice: a construct validation of a measure[J]. *Journal of applied psychology*, 2001, 86(3): 386.
- [28] BROWN M E, TREVINO L K, HARRISON D. Ethical Leadership: A Social Learning Perspective for Construct Development and Testing [J]. *Organizational Behavior and Human Decision Processes*, 2005, 97(2): 117-134.
- [29] Mcshane S, Von Glinow M A. *Organizational Behavior, Chinese (Traditional-Taiwan) Translation*[M]// Not available. McGraw-Hill, 2006: 592.
- [30] Greenberg J, Cropanzano R. The social side of fairness: Interpersonal and informational classes of organizational justice[J]. *Justice in the workplace: Approaching fairness in human resource management*. Hillsdale, NJ: Lawrence Erlbaum Associates, 1993.
- [31] Xu A J, Loi R, Ngo H. Ethical leadership behavior and employee justice perceptions: The mediating role of trust in organization[J]. *Journal of Business Ethics*, 2016, 134(3): 493-504.
- [32] Hong Y, Wang D X. Can Supervisors Win over Followers by Virtue? Study on the Effects of Ethical Leadership from Perspectives of Social Learning and Social Exchange[J]. *Science of Science and Management of S.& T.*, 2011, 32(7):175-179.
- [33] Hannam K, Narayan A. Intrinsic motivation, organizational justice, and creativity[J]. *Creativity Research Journal*, 2015, 27(2): 214-224.
- [34] Kim W, Park J. Examining structural relationships between work engagement, organizational procedural justice, knowledge sharing, and innovative work behavior for sustainable organizations[J]. *Sustainability*, 2017, 9(2): 205.
- [35] Colquitt J A, Greenberg J. Organizational justice: A fair assessment of the state of the literature[J]. 2003.
- [36] Zapata-Phelan C P, Colquitt J A, Scott B A, et al. Procedural justice, interactional justice, and task performance: The mediating role of intrinsic motivation[J]. *Organizational behavior and human decision processes*, 2009, 108(1): 93-105.
- [37] Li J J. Research on the Effect Mechanism between Innovation Orientation, Organizational Climate and Knowledge Worker Innovation Behavior[D]. Jilin university, 2016.
- [38] Homans G C. Social behavior as exchange[J]. *American journal of sociology*, 1958, 63(6): 597-606.
- [39] Piccolo R F, Greenbaum R, Hartog D N, et al. The relationship between ethical leadership and core job characteristics[J]. *Journal of organizational behavior*, 2010, 31(2-3): 259-278.
- [40] Cheung Y K. Finite strip method in structural analysis[M]. Elsevier, 2013.

- [41] Graen G B, Uhl-Bien M. Relationship-based approach to leadership: Development of leader-member exchange (LMX) theory of leadership over 25 years: Applying a multi-level multi-domain perspective[J]. *The leadership quarterly*, 1995, 6(2): 219-247.
- [42] Manogran P, Stauffer J, Conlon E J. LEADER-MEMBER EXCHANGE AS A KEY MEDIATING VARIABLE BETWEEN EMPLOYEES PERCEPTIONS OF FAIRNESS AND ORGANIZATIONAL CITIZENSHIP BEHAVIOR[C]//Academy of Management Proceedings. Briarcliff Manor, NY 10510: Academy of Management, 1994, 1994(1): 249-253.
- [43] Zhang Y Y. Ethical leadership and employee creativity: the role of leader-member exchange and creative self-efficacy[D]. Nanjing Normal University, 2019.
- [44] Zhang Z, Wang M O, Shi J. Leader-follower congruence in proactive personality and work outcomes: The mediating role of leader-member exchange[J]. *Academy of management journal*, 2012, 55(1): 111-130.
- [45] Liden R C, Graen G. Generalizability of the vertical dyad linkage model of leadership[J]. *Academy of Management journal*, 1980, 23(3): 451-465.
- [46] Li X B. Study on the influence mechanism of relationship between leader-member exchange and employee's creative [D]. Shanxi University of Finance and Economics.
- [47] He W, Long L. A multilevel model of interactional justice, leader-member exchange, and employee performance[C]//Academy of Management Proceedings. Briarcliff Manor, NY 10510: Academy of Management, 2014, 2014(1): 10766.
- [48] Tian Q, Liu Y, Fan J. The effects of external stakeholder pressure and ethical leadership on corporate social responsibility in China[J]. *Journal of Management & Organization*, 2015, 21(4): 388-410.
- [49] Zhao K H, Jia L D, Cai Y H, Wang X Y, Li Y X. The negative effects of suppressing team relationship conflict: a Chinese context study[J]. *Management World*, 2014(03):119-130.
- [50] Han Y. Model of development and empirical study on employee job performance construct[D]. Huazhong University of Science and Technology, 2006.
- [51] Wang Y Y, Ye J J. Ethical Leadership, Creative Self-Efficacy, and Employees' Creativity: The Moderate Effect of Performance[J]. *Science of Science and Management of S. & T.*, 2015, 36(09):164-172.
- [52] Gu Q, Tang T L P, Jiang W. Does moral leadership enhance employee creativity? Employee identification with leader and leader-member exchange (LMX) in the Chinese context [J]. *Journal of business ethics*, 2015, 126(3): 513-529.
- [53] Ng T W H, Feldman D C. Ethical leadership: meta-analytic evidence of criterion-related and incremental validity[J]. *Journal of applied psychology*, 2015, 100(3): 948.
- [54] Pillai R, Schriesheim C A, Williams E S. Fairness perceptions and trust as mediators for transformational and transactional leadership: A two-sample study[J]. *Journal of management*, 1999, 25(6): 897-933.
- [55] Li J S, Zhang D. Core Corporate's Ethical Leadership and Collaborative Innovation Performance [J]. *Science & Technology Progress and Policy*, 2018, 35(18):135-144.
- [56] ERDEM A T. Ethical Leadership, Service Innovation and Psychological Capital Interaction: A Research in Nevşehir Hotel Sector[J]. *Uluslararası Anadolu Sosyal Bilimler Dergisi*, 2021, 5(2): 515-532.
- [57] Deng X C, Pan X X, Dong X. Research progress of leader-member exchange theory in China[J]. *Journal of Guizhou Normal University (Social Sciences)* 2017, (04):86-96
- [58] Tan Y L, Liao J Q, Li J. Evolution, Mechanism and intervention of managers' unethical behavior to organizational corruption: An analysis from the perspective of psycho-social microcosm[J]. *Management World*, 2011(12): 68-77.