

**Leader-Member Exchange and Employee Creativity:
Mediating Role of Perceived Obligation**

by

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Abstract

How to effectively promote employee creativity is the focus of current research in the field of human resource management. Based on the social exchange theory, this study analyzes and tests the relationship between leader-member exchange, perceived obligation and creativity. Through the analysis of 396 pairs of leaders and employees, the results show that LMX has a positive effect on employee creativity and perceived obligation, and employees' perceived obligation plays a completely mediating role in the relationship between LMX and employee creativity.

Keywords: leader-member exchange, perceived obligation, employee creativity.

1. Introduction

Employee creativity is vital to the survival and development of enterprises, and is the foundation and source of enterprise innovation. At present, there are many studies on the influence of leadership factors on employee creativity. However, there is still little research on the interaction between Leader-Member Exchange (LMX) and employee creativity. Therefore, the research on the influence mechanism of leader-member exchange on employee creativity needs further in-depth discussion.

Perceived obligation was proposed by Eisenberger as an American social psychologist based on social exchange theory and organizational support theory. He believes that perceived obligation means normative beliefs about whether employees in an organization should pay attention to the organizational development and help the organization to achieve its interests. Social exchange theory points out that employment relationship is a transactional relationship in which employees obtain fixed income and social rewards through hard work and loyalty. When one person is kind to another, he also expects other people to be nice to him, based on the reciprocity principle (Wayne et al.,2002). There are few current studies on perceived obligation in the academic world, and the concepts and dimensions of the studies are derived from Eisenberger's studies. Domestic and international literature show that perceived obligation usually appears as a mediating variable, which depends on

the organizational support theory and social exchange theory, and has an impact on the organizational citizenship behavior and team-performance.

By establishing a model of the relationship between LMX and employee creativity and taking perceived obligation as a mediating variable, this study attempts to explore the mechanism of interaction between LMX and employee creativity, so as to make up for the shortcomings of existing research and provide suggestions for management practice.

2. Theoretical basis & Research Hypothesis

2.1 Leader-Member Exchange and Employee Creativity

High-quality exchange relationship can effectively promote employee creativity. employees rely on the resource, information and support provided by the leaders to better display their creativity. employees in high-quality exchange relationships will gain leaders' resources and support in time (Liden, R. C., & Graen, G.,1980), and have greater freedom and decision-making power (Scott, S. G., & Bruce, R. A.,1994;Tierney, P., Farmer, S. M., & Graen, G. B.,1999). All of these are key elements in promoting employee creativity. Basu & Green (1997) studies show that insiders can win more trust and guidance from leaders, and serve the enterprise more actively and voluntarily. Such high-quality exchange relationship can promote employees' innovative behaviors.

Oldham & Cummings (1996)'s studies show that employees' supportive perceptions of their leaders will improve innovation output. Amabile (2018) found that the development of individual creativity in an organization is positively correlated with the encouragement of leaders. Dunegan, Tierney & Duchon (1992) found that employees who maintain high-quality exchange relationships with their leaders believe they are in a leader-supported innovation environment. Therefore, many scholars have proved the promotion of high-quality exchange relationship on employee creativity through empirical research. Based on the above analysis, the following hypotheses are proposed:

Hypothesis 1: Leader-Member Exchange has a significantly positive effect on employee creativity.

2.2 The Mediating Effect of Perceived Obligation

Eisenherger (1987) believed that organizational employees can feel the support from the organization or its agents. When employees feel that the organization cares about their interests and benefits, recognize employees and constantly encourage them, employees will be well motivated, and will generate obligation and responsibility to give back to each other, thus encouraging employees to work harder. This is that the existence of organizational support strengthens the perceived relationship between leaders and employees, and the resulting perceived obligation causes employees to have a sense of obligation to care about the development of the organization and work from the interests of the organization, which then affects organizational performance, organizational commitment and in-role behavior. Settoon, Nathan Bennett, Robert C. Liden (1996) investigated different reciprocal efforts of employees in different exchange relationship, especially between the exchange of employee-leader, and between exchange of employee-organization. Their results show that perceived organizational support is associated with perceived obligations that lead to organizational commitment, while LMX is associated with perceived obligations that lead to citizenship and in-role behavior. Mossholder and so on (2005) apply this concept to the study of co-worker relationships, it is suggested that perceived obligation is normative beliefs that one should

care about the well-being of others. In this study, the exchange relationship between leaders and employees is related to social emotions and material resources, which are part of the individual leaders and part of the organization. All in all, the hypothesis is proposed.

H2: Leader-Member Exchange has a significantly positive correlation with perceived obligation.

Based on reciprocity behaviors, the support of leaders inspires the responsibility of employees and allows them to participate in the creativity to which leaders and organizations pay attention. The importance of this relationship lies in that the development opportunities and creativity-supported behaviors provided by leaders improve the level of knowledge, skills and abilities of employees regarding specific tasks, thus enabling employees to develop creative and innovative ideas. Employees may appreciate human-capital investment, which creates sense of obligation to return, if necessary, in multiple innovative ways. All in all, the hypothesis is proposed.

H3: Perceived obligation is positively correlated with employee creativity.

Ramamoorthy and so on (2005) found that income and job autonomy indirectly affect innovation work behavior by perceiving the mediating variable of innovation obligation. Pundt, Martins and Nerdinger (2010) thinks that employee creativity may be the result of a sense of obligation based on the reciprocity behaviors of resources provided by leaders and organizations. It is expected that LMX enhances employee creativity through triggering their felt obligation to care about their supervisor's creativity expectations. Chinese scholars also analyzed the influence of organizational support on organizational citizenship behavior and verified the mediating role of perceived obligation. The results show that organizational support has a significantly positive effect on organizational citizenship behavior. Perceived obligation is the mediating variable between organizational support and organizational citizenship behavior. Based on the above analysis and related research results, the following hypotheses are proposed in this study.

H4: Perceived obligation mediates the relationship between LMX and employee creativity.

In conclusion, the theoretical model of this study is shown in Figure 1.

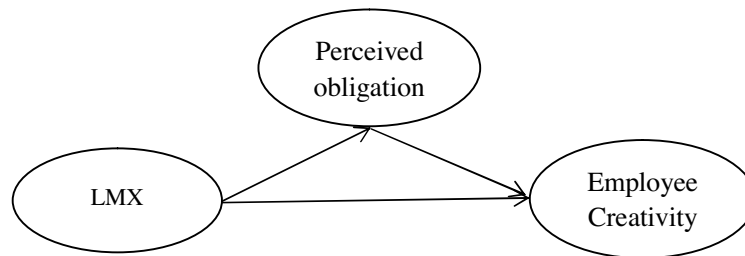


Figure 1 Theoretical Model

3. Research Methodology

3.1 Research Object

The survey samples of this study are from 18 different types of enterprises in 8 regions, including Kunming, Yuxi, Dalu, Qujing and so on. In order to maintain objectivity in data and eliminate homolog bias, Leader-Member matching samples is adopted for empirical analysis. Site investigation is adopted, that is, on-site questionnaires are sent to the immediate superior to evaluate the creativity of their immediate subordinates. Questionnaires are also sent to the employees to evaluate the exchange relationship and perceived obligation of their immediate superiors. Questionnaires will be collected back on-site. A total of 460 questionnaires were distributed. Removing those with incomplete information and the Leader-Employee ratio less than 1:3, the valid 396 questionnaires were collected with the recovery rate of 86%.

3.2 Research Tools

All scales used here are mature ones used in international literature, all items were quantified by the five-point Likert scale, and the quality of LMX relationship was measured by LMX-7 scale (Scandura, T. A., & Graen, G. B., 1984). Perceived obligation of employees is measured by using the 7-item scale developed by Eisenberger and so on (2001). Employee creativity was measured by using a scale developed by Zhou, J. & George, J. M. (2001). In order to better verify the hypothesis proposed in this study, we set control variables such as employees' gender, age, educational level, department size, work experience in the proposed model.

4. Data Analysis and Results

4.1 Confirmatory Factor Analysis

In this study, AMOS23.0 was used to conduct confirmatory factor analysis (CFA) on three variables. From Table 1, the data of the three-factor model is fitting better compared to the other two models ($\chi^2=4359.262$, $df=1646$, $RMSEA=0.074$, $CFI=0.833$, $TLI=0.827$). Moreover, the fitting degree is better than that of alternative models such as two-factor model and single-factor model. This indicates that the measurement model of this study fits well, the variables are well-differentiated and all the indicators meet the requirements.

Table 1 Confirmatory Factor Analysis

	χ^2	df	$\Delta\chi^2$	RMSEA	CFI	TLI
Model #1: Three-Factor Model	4359.262	1646	1249.211***	0.074	0.833	0.827
Model #2: Two-Factor Model	6413.044	1647	3302.993***	0.098	0.707	0.696
Model #3: Single-Factor Model	7884.290	1648	4774.239***	0.112	0.617	0.602

4.2 Correlation Analysis

In this research, Pearson's analysis method was used to examine the correlation among variables to prepare for the following regression analysis. From Table 2, we can make the following conclusions: there is a significantly positive correlation between LMX and perceived obligation ($r=0.506$, $p<0.01$), and a significantly positive correlation between LMX and employee creativity ($r=0.412$, $p<0.01$); Moreover, perceived obligation is positively correlated with employee creativity ($r=0.443$, $p<0.01$). To some degree, the rationality of the whole model and the relationship between variables were preliminarily verified. However, the correlation analysis did not exclude the influence of control variables, and the single variable could not be accurately verified. Therefore, the next step was to do the regression analysis.

Table 2 Mean-Standard Deviation and Correlation Coefficient Matrix of Each Variable

M	SD	1	2	3	4	5	6	7	8	
1. Age	1.95	0.99	1							
2. Gender	1.63	0.48	-0.155**	1						
3. Educational Background	2.90	0.86	0.010	-0.041	1					
4. Department Size	3.05	1.44	0.150**	-0.116*	0.139*	1				
5. Work Experience	2.57	1.38	0.775**	-0.167**	0.032	0.186**	1			
6. Leader- Member Exchange	3.87	0.83	0.115*	-0.059	-0.251**	0.043	0.220**	1		
7. Perceived obligation	4.07	0.68	0.113	0.032	-0.223**	0.029	0.243**	0.506**	1	
8. employee creativity	4.15	0.53	-0.024	0.034	-0.135*	-0.041	0.026	0.412**	0.443**	1

** A significant correlation at the level of.01 (bilateral); * There was a significant correlation at the 0.05 level (bilateral).

4.3 Regression Analysis

4.3.1 Regression Analysis of LMX and Employee Creativity

This part mainly verifies the impact of LMX on employee creativity. The analysis results are shown in Table 3. The tolerance of each variable is greater than 0.1, while the VIF value is less than 5, indicating that the multicollinearity between variables can be accepted. The analysis results of Model 2 showed that LMX had a significantly positive impact on employee creativity ($\beta=0.268$, $p<0.001$), and after adding the independent variable LMX, the degree of the explanatory model increased by 15.4%, and the explanatory effect of the regression equation significantly improved. Therefore, hypothesis H1 was verified.

Table 3 Results of Regression Analysis between LMX and Employee Creativity

Variable	Employee's Creativity		Co Linearity Diagnostics	
	M1	M2	Tolerance	VIF
Control Variable				
Age	-0.060	-0.026	0.395	2.532
Gender	0.032	0.048	0.961	1.040
Educational Background	-0.082*	-0.013	0.907	1.102
Department Size	-0.009	-0.015	0.940	1.064
Work Experience	0.049	-0.005	0.375	2.669
Independent Variable				
LMX		0.268***	0.874	1.145
R ²	0.026	0.180		
ΔR ²	0.026	0.154***		
F	1.568	10.706***		

Note: ***p<0.001 (Two-Tailed Test) , **p<0.01 (Two-Tailed Test) , *p<0.05 (Two-Tailed Test)

4.3.2 Regression Analysis of LMX on Perceived Obligation

This part mainly verifies the effect of LMX on perceived obligation. The analysis results are shown in Table 4. The tolerance of each variable is greater than 0.1, while the VIF value is less than 5, indicating that the multicollinearity between variables can be accepted. The analysis results of Model 2 showed that LMX had a significantly positive impact on perceived obligation ($\beta=0.639$, $p<0.001$), and after adding the independent variable LMX, the degree of the explanatory model increased by 53.4%, and the explanatory effect of the regression equation significantly improved. Therefore, it can be concluded that LMX is positively correlated with perceived obligation. Therefore, hypothesis H2 was verified.

Table 4 Results of Regression Analysis between LMX and Perceived Obligation

Variable	Perceived Obligation		Co Linearity Diagnostics	
	M1	M2	Tolerance	VIF
Control Variable				
Age	-0.133*	-0.052	0.395	2.532
Gender	0.089	0.126**	0.961	1.040
Educational Background	-0.185***	-0.020	0.907	1.102
Department Size	0.010	-0.003	0.940	1.064
Work Experience	0.200***	0.072**	0.375	2.669
Independent Variable				
LMX		0.639***	0.874	1.145
R ²	0.132	0.666		
ΔR ²	0.132***	0.534***		
F	8.938***	97.373***		

Note: ***p<0.001 (Two-Tailed Test), **p<0.01 (Two-Tailed Test), *p<0.05 (Two-Tailed Test)

4.3.3 Hypothesis Testing of the Mediating Role of Perceived Obligation

This study uses the three-step (hierarchical) multiple regression to verify the mediating effect of perceived obligation. The analysis results are shown in Table 5. The tolerance of each variable is greater than 0.1, while the VIF value is less than 5, indicating that the multicollinearity between variables can be accepted. The analysis results of Model 2 showed that LMX had a significantly positive impact on creativity ($\beta=0.268$, $p<0.001$). The results in Model 3 show that perceived obligation has a significantly positive impact on employee creativity, after adding the perceived obligation as mediating variable ($\beta=0.254$, $p<0.001$), the effect of LMX on employee creativity becomes insignificant ($\beta=0.106$, $p>0.05$). Meanwhile, the degree of the explanatory model increased by 13.5%, and the explanatory effect of the regression equation significantly improved. Therefore, perceived obligation plays a completely mediating role between LMX and employee creativity, and Hypothesis H3 & H4 have been verified.

Table 5 Regression Analysis of the Mediating Effect of Perceived Obligation

Variable	Employee Creativity			Co Linearity Diagnostics	
	M1	M2	M3	Tolerance	VIF
Control Variable					
Age	-0.060	-0.026	-0.013	0.392	2.549
Gender	0.032	0.048	0.016	0.939	1.064
Educational Background	-0.082*	-0.013	-0.008	0.906	1.104
Department Size	-0.009	-0.015	-0.014	0.940	1.064
Work Experience	0.049	-0.005	-0.023	0.366	2.734
Independent Variable					
LMX		0.268***	0.106	0.336	2.975
Mediating Variable					
Perceived Obligation			0.254***	0.334	2.994
R ²	0.028	0.180	0.215		
ΔR^2	0.028	0.154***	0.135***		
F	1.568	10.706***	11.425***		

Note: *** $p<0.001$ (Two-Tailed Test) , ** $p<0.01$ (Two-Tailed Test) , * $p<0.05$ (Two-Tailed Test)

In addition, in order to further verify the mediating effect, this study used nonparametric percentile bootstrap to test the mediating mechanisms again. It can be concluded from Table 6 that the mediating effect coefficient of perceived obligation between LMX and employee creativity is 0.163, the standard error is 0.073, and the 95% confidence interval CI [0.0326, 0.3174] does not contain 0. Therefore, the mediating effect is significant, further supporting Hypothesis 4.

Table 6 Analysis Table of Mediation Effect using Bootstrap

	Bootstrapping			
	B	SE	95% CI	
LMX→ Perceived Obligation→ Employee Creativity	0.163	0.073	0.0326	0.3174

5. Conclusion and Discussion

5.1 Research Conclusions

This paper proves the mechanism of leader-member exchange on employee creativity through empirical research. Through data analysis, the theoretical hypothesis of the study is supported by the empirical results. First of all, the empirical study shows that LMX has a positive impact on employee creativity. Secondly, the results of data analysis support the hypothesis that perceived obligation mediates the relationship between LMX and employee creativity.

5.2 Theoretical Contribution

The four research hypothesis has been well supported. The research results further enrich the leader-member exchange theory and employee creativity theory.

First of all, this paper proves that high-quality exchange relationship can effectively predict employee creativity through empirical research. employee creativity is crucial to the development of an enterprise. When employees show creativity at work, they respond creatively to the work and adopt new and useful ways to accomplish the task (Atwater, L., & Carmeli, A.,2009),such as designing a new program or process to get the job done better, and developing new products or services to better meet customer needs(Zhou, J., & Shalley, C. E.,2003). With the increasingly fierce competition, the knowledge economy is further developed, and creative talents play a bigger role than ever before, which requires enterprises to pay full attention to the cultivation of employee creativity. How to improve employee creativity is an important issue facing enterprises and also the purpose of this study. The results of this study show that high-quality exchange relationship is positively correlated with employee creativity, which requires Chinese enterprise to strengthen the relationship of employees, so that employees can contribute more creative results.

Second, perceived obligation plays a completely mediating role between leader-member exchange and employee creativity. This study introduces perceived obligation into mechanism of action between leader-member exchange relationship and employee creativity, and finds that employees' perceived obligation indeed plays an important mediating role between them. In other words, high-quality exchange relationship can stimulate employee creativity by strengthening their perceived obligation. Besides employees' love and devotion at work, creative output also needs some sustained support to motivate individuals' intention to persist in action and turn it into motivation to engage in creative work. Especially, when an individual is confronted with difficulties in creative activities, internal motivation mechanism is needed to ensure that the individual keeps working hard to achieve the goal, and perceived obligation plays such a role. This study proves that leader-member exchange has a positive effect on employee creativity through the mediation of perceived obligation, thus providing a theoretical framework for further understanding of the mechanism of leader-member exchange on employee creativity.

5.3 Management Implications

The conclusion of this study has strong practical significance. First of all, enterprises should pay full attention to the cultivation of employee creativity. Besides excellent management, product quality and service, competition of modern enterprise also needs employee creativity as an indispensable element. Therefore, it is particularly important to increase the creative talents and create an environment to encourages creativity of employees. Secondly, supervisors should actively improve the employee-supervisor relations. Supervisors should use the advantages of their abilities and position, give employees care and help in life and at work, provide employees more resources, and opportunities for career development etc., so as to stimulate employees' positive working attitude and maximize employees' value. Third, leaders can strengthen employees' responsibility to improve employee creativity by increasing employees' communications, getting feedback that can help them improve their work, or giving them suggestions of improving their own competitiveness, as well as improving the level of happiness of employees at work.

5.4 Limitations and Prospects

There are some limitations in this study. First of all, the study design adopts the cross-sectional design. Since the variables in the study are constantly changing dynamically with time, there may be a reverse causality. In the future, longitudinal research or experimental methods can be adopted for the study. Secondly, data of the empirical study come from some cities in one Province. Although the internal validity is good, the external validity is restricted. Future research should expand the sample survey area to explore the influence of leader-member exchange on employee creativity in different enterprises and the internal mechanism of action.

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Research on the Influence of Visionary Leadership on Employees' Voice Behavior: Psychological Resilience as a Mediating Variable

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