

## Article

# The Influence of Leadership Style in China SMEs on Enterprise Innovation Performance: The Mediating Roles of Organizational Learning

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**Abstract:** This study explores the relationship among leadership styles (transformation and transaction types), organization learning, and enterprise innovation performance in China SMEs. The main purpose of this study is to find out the innovation performance of Chinese SMEs, according to leadership styles. Thus, we collected data from 417 Chinese consumers through on/off line. The major empirical findings are as follows. First, the transformation leadership and transactional leadership style have a positive impact on organizational learning. Second, the research results of this study verify the positive impact of leadership style on innovation performance. Third, organizational learning has a forward impact on innovation performance. We conclude that organizational learning has a partial intermediary role on the relationship between leadership styles and enterprise innovation performance. This study enriches and expands research in leadership style and innovative performance, thus rationalizing improvements in corporate innovation performance. This study also contributes to the provision of theoretical support for leadership decisions of enterprises and other types of organization.



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**Keywords:** transformational leadership; transactional leadership; organizational learning; innovation performance; SMEs

## 1. Introduction

Small- and medium-sized enterprises are an important part of China's economy. With the economic development and the further implementation of enterprise reform, a large number of small- and medium-sized enterprises have emerged, accounting for half of the country, and have made great contributions to the development of the national economy. To further standardize the management of small and medium-sized enterprises, the Chinese government promulgated the Law of the People's Republic of China on Promotion of Small and Medium-sized Enterprises in 2002. The law classified enterprises into medium-sized enterprises, small-sized enterprises, and micro-sized enterprises, according to the indicators of enterprise employees, operating income, and total assets (such enterprises). Since then, small- and medium-sized enterprises have developed rapidly. Under the social background of "mass entrepreneurship and innovation", small- and medium-sized enterprises play an important role in mobilizing economic vitality and developing emerging industries. However, with the expansion of the market, Chinese small- and medium-sized enterprises are facing unprecedented fierce competition. It has become an urgent issue to strengthen management and leadership to improve the business performance of SMEs in China. The management system of large enterprises is standardized and systematic; the thinking mode and behavior codes of leaders are relatively mature and forward-looking. Therefore, large enterprises are more attractive to talents. They have stronger innovation ability, while the innovation ability of SMEs is relatively weak. Accordingly, this paper attempted to

investigate the relationship between leadership style and innovation performance and explore the development path for small- and medium-sized enterprises in China.

In the era of a knowledge economy, if companies are to grow and remain competitive in the market, they need new ideas and innovative solutions. In the era of the COVID-19 pandemic, the implementation of innovation on the organizational ground is particularly challenging, especially since it has had a negative impact not only on the economy, but also on social welfare systems and interpersonal relationships, resulting in an unprecedented global crisis. Therefore, such an unexpected pandemic reality has prompted many companies to change their approaches to business management and to focus on the adaptation of innovations by employees. It is worth noting that the success associated with innovation depends on corporate decision makers [1]. Therefore, innovation has played a great role in promoting the economic growth of enterprises. Leadership style is regarded as one of the most important personal influences on enterprise innovation from the leaders, because leaders can directly decide to introduce new ideas into the organization, set specific goals, and encourage subordinates' innovation initiatives [2,3]. It can be seen that leadership style has an important impact on enterprise development, especially innovation performance.

The adoption of innovation may bring progress and directly improve product quality. Decision-makers can choose to focus their limited resources on external investment. The environment, the organization, and employees can measure these positive qualities. This may lead to successful adoption. Organizational leaders can conduct self-assessment and strive to improve its organizational culture and attitude [4]. Different leadership styles have different impacts on enterprises. The values and cognition of senior managers will affect organizational performance; in other words, leadership style will affect organizational performance [5]. Chen and Huang [6] found that a transformational leadership style may significantly improve the innovation ability of enterprises. Osman and Bahari [7] also proved that transformational leadership can promote the generation of employees' innovation ability, and can thus improve enterprise innovation performance by affecting employees' innovation in improving employees' skills and enhancing innovation in management. Pieterse et al. [8] found that transformational leadership style has a more significant impact on organizational leadership innovation performance than other leadership styles. Shu [9] conducted a questionnaire survey to employees and managers of many companies, and found that transformational leadership style has a positive impact on enterprise technological innovation performance. Wang and Chen [10] found through empirical research that transformational leadership has a positive effect on innovation performance, and organizational learning plays a complete mediating role on the relationship between them.

Compared with transformational leadership, there is no consensus on the impact of transactional leadership on innovation performance [11]. Some scholars believe that transactional leadership overemphasizes employees' achievement of goals and has no flexibility, which is not conducive to employees' innovation and will make enterprises pay more attention to the accumulation of short-term innovation [8]. The transactional leadership style focuses on the completion of task objectives and delegates innovation tasks to employees. Employee innovation is related to employees' short-term performance. By encouraging employees to complete the task objectives of innovation, they can stimulate employees' innovative behavior, and continuously accumulate short-term innovation. Wang and Chen [10] divided transactional leadership into two dimensions: contingent reward and active exception management. The two dimensions of transactional leadership can promote the generation of employee innovation performance. Wei et al. [12] also concluded that, in highly authorized organizations, employees' positive innovation can be completed under the guidance of transactional leadership. Scott [13] also found that transactional leadership can promote innovation performance by supervising employees and correcting employees' behaviors.

Transformational leadership style was found to have a positive influence on innovation performance [14], while the impact of transactional leadership on innovation performance

has not reached a consensus. Previous studies mainly focused on the study of transformational leadership, and there were few studies on transactional leadership. Some scholars pointed out that company leaders should have these two characteristics at the same time [15–17]. Therefore, this paper discusses the two leadership styles in improving enterprise innovation performance. Organizational learning ability is an important source of maintaining competitive advantage. In order to obtain and maintain long-term competitive advantage, enterprises must pay attention to the cultivation of organizational learning ability. Therefore, this study is of great significance to observe the innovation achievements of enterprises through organizational learning.

The majority of scholars agreed on the impact of leadership behaviors on organizational learning. The company's managers can increase the learning atmosphere in the company's organization by authorizing subordinates and giving them timely feedback. Leadership style can significantly affect organizational learning, and organizational learning is a mediating variable between leadership style and organizational performance [18]. Berson et al. [19] analyzed the relationship between leadership style and organizational learning and found that leaders tend to promote organizational learning through favorable talent policies. Liu and Li [20] found that the evolution of leadership style is positively correlated with corporate culture and organizational learning. Vera and Crossan [21] put forward that both leadership styles promote organizational learning. The former will change the current state, and the latter will strengthen the learning atmosphere. The impact of leadership styles on organizational learning has been verified [22–24].

Seo and Yoon [25] regarded organizational learning ability as an important source of maintaining competitive advantage. To obtain and maintain long-term competitive advantage, enterprises must cultivate organizational learning ability [10]. Organizational learning is a dynamic process, which can improve organizational operation efficiency by increasing knowledge and enhancing the ability of organizational members in order to improve the dynamic ability and performance of enterprises. Organizational learning can bring new knowledge to enterprises, help enterprises better understand the internal and external environment, reduce business risks, and increase organizational innovation ability [26]. Hung et al. [27] also found that organizational learning can effectively promote innovation. Li [28] verified that organizational learning and innovation positively affect enterprise performance, and that organizational learning also affects innovation. Fang [29] also confirmed the significant impact of organizational learning on enterprise innovation performance through the investigation and research of small- and medium-sized enterprises.

To improve innovation performance, enterprises should not only develop organizational learning but should also cultivate appropriate leaders to guide organizational learning to better product innovation performance. Liu et al. [30] took small- and medium-sized enterprises as research objects and found that organizational learning plays a partial mediating role in the relationship between transactional leadership style and innovation performance. Wang and Chen [10] proposed that transactional leadership style and transformational leadership style can affect enterprise innovation performance through organizational learning. Alegre and Chiva [31] verified the importance of organizational learning to innovation performance. According to the research of the above scholars, this paper focuses on the relationship of organizational learning, leadership style, and innovation performance, and discusses the mediating role of organizational culture between leadership style and innovation performance.

The major contribution of this paper is mainly reflected in the following three points. First, this paper extends the research on leadership style. It extends the impact of leadership style from employee innovation behavior to enterprise innovation performance and enriches the research on the impact of leadership style on enterprise innovation performance. Second, this study explores the impact of two different kinds of leadership styles: transformational leadership style and transactional leadership style. At the same time, it measures transformational leadership style from four dimensions and transactional leadership style from three dimensions, which is different from the current situation of studying variables

as a whole. It provides a certain reference for the in-depth study of leadership style and enterprise innovation performance. This paper studies the relationship between transformational leadership style and transactional leadership style, organizational learning, and innovation performance of small- and medium-sized Chinese enterprises, which is helpful to understand the mechanism of them, and provide suggestions and countermeasures to improve the innovation performance of Chinese small- and medium-sized enterprises.

The innovation points of this paper are as follows. First, it is a new attempt to explore the relationship between leadership style and innovation performance in theory. At the same time, according to the previous research results, a set of index system suitable for Chinese SMEs' innovation performance is constructed. Second, organizational learning is creatively introduced as an intermediary variable; related concepts, mechanisms of action, measurements, and other aspects of organizational learning are sorted and analyzed; and research on antecedent variables and outcome variables of organizational learning in theory are enriched and expanded. Finally, an empirical analysis method is adopted to explore the impact of different leadership styles on organizational learning and innovation performance of SMEs, which makes up for the lack of empirical research in this area.

## 2. Theoretical Background and Research Hypotheses

### 2.1. The Impact of Leadership Styles on Organizational Learning

Leadership styles are found to have influences on the emergence and development of organizational learning. Vera and Crossan [21] put forward that transformational leadership is more willing to improve the current learning environment, while transactional leadership is more in line with the current learning environment. Amitay et al. [32] found that leadership style can significantly affect organizational learning. Vera and Crossan [21] further proved that both leadership styles can promote organizational learning. The former can make organizational members change the existing learning environment, while the latter can enhance the current learning environment. Transformational leadership style can promote organizational learning [24], and transactional leadership style also has a positive impact on organizational learning [30].

**Hypothesis 1.** *Transformational leadership style has a positive impact on organizational learning.*

**Hypothesis 2.** *Transactional leadership style has a positive impact on organizational learning.*

### 2.2. The Impact of Leadership Styles on Innovation Performance

In highly competitive markets, innovation adoption may be necessary to maintain one's market position [33]. Since the concept of transformational and transactional leadership style came into being, its impact on innovation performance has attracted scholars' attention. Gyanchandani [34] found that a transformational leadership style can significantly promote employees' innovation enthusiasm. Compared with employees of other enterprises, employees will be more willing to innovate and have a stronger sense of learning and innovation. Transformational leaders are good at motivating and creating an innovative organizational atmosphere. They can give employees the confidence that they can achieve organizational goals through new methods and technologies and do not need to worry about the impact of failure and have the spirit of creativity and reform [35]. Lee and Chang [36] also confirmed the positive impact of transformational leadership on innovation performance. Wen et al. [37] found that transformational leadership is positively correlated with innovation performance. Therefore, the following hypothesis is established.

**Hypothesis 3.** *Transformational leadership has a positive impact on enterprise innovation performance.*

Scholars have divided transactional leadership style into different dimensions. Bass and Avolio [35] divided transactional leadership style into contingent reward, active management by exception, and passive management by exception. Contingent rewards refer to the leader's expectation of the subordinate's work and the reward that the subordi-

nate will receive after completing the expected goal. For the behavior of active exception management, the leader will take the initiative to observe the behavior of employees, and correct their mistakes and problems in time to ensure the effective completion of tasks. Passive exception management means that, as long as the current work situation is acceptable, the leader will not interfere with the management behavior of his subordinates. Podsakoff et al. [38] divided transactional leadership style into contingent punishment and contingent reward. They believe that in innovation-oriented organizations, transactional leaders motivate subordinates to innovate by giving rewards; thus, the corporate innovation performance is improved. Based on Podsakoff's study, Chen and Cheng [39] found that employees who fail to achieve work goals or violate rules are subject to contingent punishment, and that contingent rewards are offered when employees complete performance on time in correlation with work performance. Pieterse et al. [8] concluded that the transactional leadership style will make enterprises pay more attention to the formation of short-term innovation performance. Thus, the following hypothesis is established.

**Hypothesis 4.** *Transactional leadership style has a positive impact on enterprise innovation performance.*

### 2.3. The Impact of Organizational Learning on Enterprise Innovation Performance

In order for companies to develop and stay on the market, they need new ideas and innovative solutions. Otherwise, there are the dangers of stagnation, worsening of the company's competitive position, or even failure [40]. Organizational learning can improve enterprise innovation performance by enhancing the knowledge and ability of organizational members. It is an important source of corporate competitive advantage. Organizational learning can enable enterprises to introduce new knowledge, improve their knowledge and skills, and enhance innovation performance [41]. Organizational learning will not only affect creativity at the individual level, but also affect creativity at the organizational level [42]. At the same time, organizational learning can promote enterprise innovation [43]. Scholars have proved that organizational learning has a positive impact on innovation performance [10,30,44]. Therefore, the following hypothesis is established.

**Hypothesis 5.** *Organizational learning has a significant positive influence on enterprise innovation performance.*

### 2.4. The Mediating Role of Organizational Learning

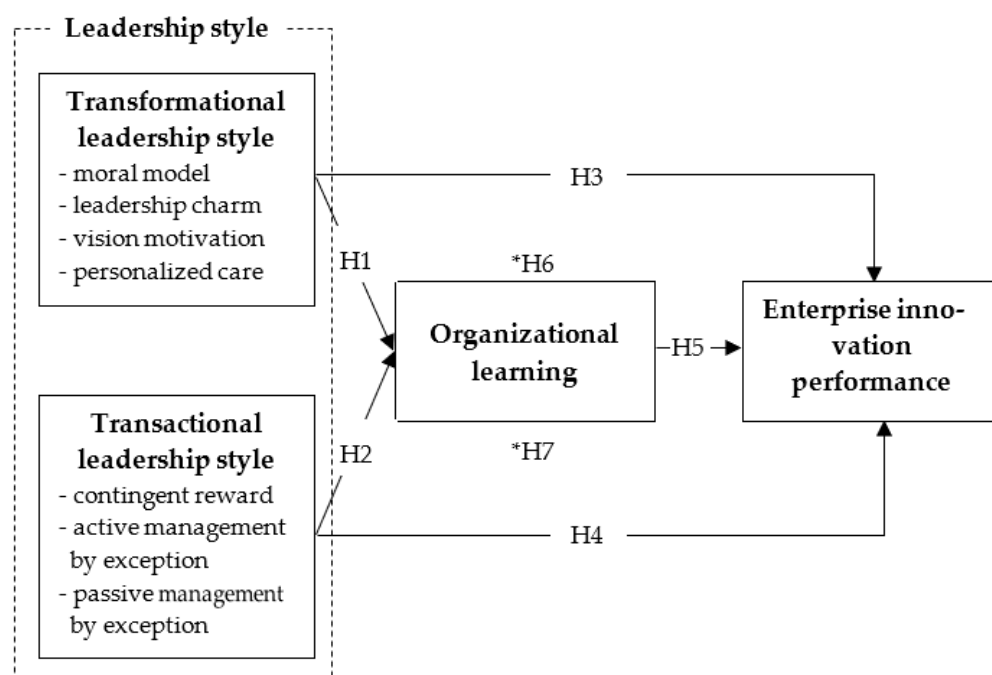
Slater and Narver [18] believe that a leader's behavior and organizational learning can significantly promote organizational performance, and through empirical research, it is found that organizational learning plays a mediating role in the relationship between a leader's behavior and enterprise performance. Chen [45] also proved that leadership behavior can significantly affect organizational learning. Through empirical research, he found that organizational learning ability plays a complete mediating role in the relationship between transformational leadership behavior and organizational performance. Under the guidance of differentiated leadership, organizational learning also showed strong and weak differences. Wang and Chen [10] also verified the mediating role of organizational learning in the relationship between leadership style and organizational performance in some regions of China through questionnaire surveys and empirical analyses. Therefore, the following hypotheses are established.

**Hypothesis 6.** *Organizational learning has a mediating role in the relationship between transformational leadership style and enterprise innovation performance.*

**Hypothesis 7.** *Organizational learning has a mediating role in the relationship between transactional leadership style and enterprise innovation performance.*

Based on the above hypotheses, the following conceptual model (Figure 1) is established.





**Figure 1.** Conceptual model.

### 3. Method

#### 3.1. Sample Selection and Data Collection

This study aims to explore the impact of leadership style on innovation performance. The main research objects are small- and medium-sized Chinese enterprises. This paper collects data by issuing questionnaires. In the setting of the questionnaire, questions about the establishment year and enterprise scale are investigated. The selected scales are mature scales modified by existing researchers many times. The distribution methods of the questionnaire mainly include the paper questionnaires and electronic questionnaires, starting from 1 August 2021 to 31 August 2021. The data were collected using utilizing employing through on-site distribution and online distribution. A total of 450 questionnaires were distributed and 417 questionnaires were recovered, with a questionnaire recovery rate of 92.7%. To increase the recovery rate of the research questionnaires, we provided some monetary incentive to the respondents.

#### 3.2. Measurement Tools

##### 3.2.1. Leadership Style Scale

Transformational leadership and transactional leadership are measured in the multi-factor leadership questionnaire developed by Bass and Avolio [35]. According to previous research results, transformational leadership style has four dimensions: moral model, leadership charm, vision motivation, and personalized care, which are measured by 12 items. Transactional leadership has three dimensions: contingent reward, active management by exception, and passive management by exception, which are measured by 9 items. The questionnaire adopts a 5-point Likert scoring method. The participants were asked to choose from the five options of “not at all”, “once in a while”, “sometimes”, “fairly often”, and “frequently” to reflect the actual situation of the enterprise. The corresponding scores of the five options ranged from 1 to 5. The scale is a classic scale in the field of transformational leadership and transactional leadership. It is studied and used by many scholars and has good reliability and validity. The measurement scales of leadership style are shown in Table 1.

**Table 1.** Measurement scale of leadership style.

Variable	Dimension	Item
Transformational leadership style	Moral model	He has always maintained a high degree of enthusiasm and devoted himself to his work He keeps forging ahead, has a strong sense of achievement motivation and direction, and is full of confidence in himself Others are noble, take the interests and development of employees as the premise, and sacrifice personal interests for the interests of the Department
	Leadership charm	He has always passed us the belief that “the goal will be achieved” and inspired us to work together for the organizational goal He enables employees to clarify the business philosophy and development objectives of their department He can let employees understand the development prospect of the Department and point out the goal and direction for employees
	Vision motivation	He focused on creating conditions and a good organizational atmosphere to let employees give full play to their strengths He can provide employees with multi angle problem-solving methods and stimulate their creativity He is considerate of employees, actively creates opportunities and encourages employees to actively participate
	Personalized care	He often communicates with employees to understand all aspects of employees He cares about the work and life of employees, and can sincerely put forward suggestions for the development and growth of employees He can give new members more care and care
Transactional leadership style	Contingent rewards	When everyone meets the requirements in the organizational task, they will express satisfaction Clearly recognize those who have contributed to the achievement of organizational goals Unite employees and let them work together with one heart and one mind.
	Active management by exception	Focus on all errors Focus on non-compliance with rules and regulations Support everyone so that they can work hard
	Passive management by exception	Show that you do not take action until the problem becomes serious Do not intervene until the problem becomes very serious Wait until something goes wrong

### 3.2.2. Innovation Performance Scale

This study uses the innovation performance scale compiled by Lovelace et al. [46] to measure the innovation performance of enterprises from five aspects: the number of new products produced by enterprises, the number of patent applications, the proportion of new product sales in total sales, the development speed of new products compared with other enterprises in the same industry, and the success rate of the new products. The Likert

5-point method was used. A summary of the items is provided in Table 2. The scale has good reliability and high internal consistency.

**Table 2.** Enterprise innovation performance measurement scale.

No.	Item
1	Large number of new products
2	Large number of patents filed
3	New product sales account for a high proportion of total sales
4	Quick launch of new products
5	High success rate for new products in R&D

### 3.2.3. Organizational Learning Scale

The measurement of organizational learning in this paper is based on the scale designed by Chen [45]. The scale is developed based on of the theory of the organizational learning process. When setting the evaluation index, more than nine abilities were completely retained; however, the original scale was slightly modified, and the question items set for each ability were reduced from three to two. Finally, the scale for measuring organizational learning ability consists of 10 question items, as shown in Table 3.

**Table 3.** Organizational learning measurement scale.

No.	Item
1	Enterprises can timely and accurately discover internal and external strengths, opportunities, weaknesses, and threats
2	Enterprises have long-lasting innovation and creativity
3	Enterprises can take timely and effective measures to deal with emergencies in the outside world
4	Enterprises can make decisions or choices quickly and correctly at critical moments
5	Enterprises can translate goals or plans into concrete actions on time
6	Enterprises can widely spread their successful experience and failure lessons internally
7	Enterprises have a perfect feedback mechanism to improve the successful methods and correct the causes of failure
8	Enterprises have the awareness and effective channels to actively obtain the latest information, knowledge and technology from the outside world
9	Enterprises shall keep the existing knowledge and experience in the form of electronic version or paper version
10	Enterprises often extract effective information from the established knowledge base to solve current or long-term problems

### 3.3. Data Analysis Method

This paper selects existing mature scales which were used to formulate a questionnaire. SPSS25.0 and Amos24.0 were used to analyze the collected data. Through the descriptive statistical analysis, reliability and validity test, confirmatory factor analysis, correlation analysis, and structural equation path analysis, the hypotheses proposed above are verified. The data analysis results are discussed after analyzing the data.

## 4. Analysis and Results

### 4.1. Descriptive Analysis

#### 4.1.1. Demographic Analysis of the Participants

The basic situation of the sample population was analyzed as follows. In terms of gender distribution, men and women account for 53.7% and 46.3%, respectively, which is relatively balanced. The age distribution covers a wide range, with each age group accounting for about 20%. The establishment period of the company is mainly 3–5 years and



6–10 years, accounting for 22.1% and 23.0%, respectively. The number of employees of the enterprise is mainly 50–100 and 100–500, accounting for 47.9% in total. In terms of enterprise type distribution, the top three are the real estate industry, the social service industry, the finance and insurance industry, and the post and telecommunications transportation industry, which account for 58.0% in total. Overall, the samples are widely distributed and representative.

#### 4.1.2. Descriptive Statistical Analysis of the Variables

This paper conducted descriptive statistical analysis on the question items in the scale, which mainly includes the mean, standard deviation, skewness, and kurtosis, to judge the basic level of the items in the scale and the distribution of data. The statistical analysis results of the data of each scale contained in the questionnaire, including the number of questionnaires, the minimum value, the maximum value, the mean, standard deviation, skewness, and kurtosis. Descriptive statistical analysis was used to verify whether the data obtained by the survey obey the normal distribution. Normal distribution of the data has a crucial impact on the subsequent analysis. When the absolute value of skewness is less than 3 and the absolute value of kurtosis is less than 10, the overall sample will obey the normal distribution. The absolute values of skewness and kurtosis of all variables in this study are less than 3 and 10, respectively. Both skewness and kurtosis meet the conditions of normal distribution, which indicates that the data collected from the questionnaire can be used for statistical analysis of reliability and validity.

#### 4.2. Reliability Analysis

The reliability analysis results of each variable are shown in Table 4. Based on the table below, the Cronbach alpha coefficients of transformational leadership style, transactional leadership style, organizational learning, and enterprise innovation performance are 0.899, 0.892, 0.938, and 0.902, respectively, i.e., all above 0.7. Therefore, the reliability of each variable is good and meets the research requirements.

**Table 4.** Reliability analysis results to the scales.

Scales	Variables	Cronbach'α	
Transformational leadership style	Moral model	0.857	0.899
	Leadership charm	0.784	
	Vision motivation	0.829	
	Personalized care	0.831	
Transactional leadership style	Contingent rewards	0.867	0.892
	Active management by exception	0.791	
	Passive management by exception	0.882	
Organizational learning	Organizational learning	0.938	
Enterprise innovation performance	Enterprise innovation performance	0.902	

#### 4.3. Confirmatory Factor Analysis

According to the basic requirements of SEM modeling, this study first used Amos24.0 software to test the reliability and convergent validity of the scale through confirmatory factor analysis (CFA). The specific results are shown in Table 5.

According to the data in the table,  $\chi^2/df = 1.065$ , which is between 1 and 3, indicating that the measurement model has good conformity as a whole. GFI = 0.955, AGFI = 0.944, and the index fitting results are greater than 0.8; RMR = 0.026 and RMSEA = 0.012, i.e., both are less than the critical values of 0.08; IFI = 0.997, TLI = 0.997, CFI = 0.997, and the fitting indexes are greater than the basic requirements of 0.9; and PGFI = 0.766 and PNFI = 0.844, i.e., both are greater than the standard of 0.5. It shows that the measurement model matches well with the sample data and has good convergent quality.

**Table 5.** Confirmatory factor analysis result.

Question Items		Variables	S.E.	C.R.	<i>p</i>	Standardized Load	CR	AVE
moral model	<—	transformational leadership				0.714		
leadership charm	<—	transformational leadership	0.068	12.231	***	0.678	0.812	0.520
Vision motivation	<—	transformational leadership	0.069	12.793	***	0.713		
personalized care	<—	transformational leadership	0.080	13.663	***	0.775		
Contingent rewards	<—	transactional leadership				0.762		
active management	<—	transactional leadership	0.062	12.412	***	0.712	0.769	0.526
by exception								
passive management	<—	transactional leadership	0.058	12.263	***	0.700		
by exception								
H1	<—	organizational learning				0.709		
H2	<—	organizational learning	0.070	16.065	***	0.813		
H3	<—	organizational learning	0.070	15.149	***	0.766		
H4	<—	organizational learning	0.073	15.255	***	0.772		
H5	<—	organizational learning	0.074	15.922	***	0.806	0.939	0.606
H6	<—	organizational learning	0.072	15.210	***	0.769		
H7	<—	organizational learning	0.073	16.183	***	0.819		
H8	<—	organizational learning	0.074	16.026	***	0.811		
H9	<—	organizational learning	0.078	14.636	***	0.740		
H10	<—	organizational learning	0.073	15.222	***	0.770		
I1	<—	enterprise innovation performance				0.825		
I2	<—	enterprise innovation performance	0.052	18.445	***	0.793	0.903	0.649
I3	<—	enterprise innovation performance	0.054	18.456	***	0.794		
I4	<—	enterprise innovation performance	0.053	19.08	***	0.813		
I5	<—	enterprise innovation performance	0.052	18.803	***	0.804		

\*\*\*  $p < 0.001$ ,  $\chi^2/df = 1.065$ , GFI = 0.955, AGFI = 0.944, RMR = 0.026, RMSEA = 0.012, IFI = 0.997, TLI = 0.997, CFI = 0.997, PGFI = 0.766, PNFI = 0.844.

The measurement model results in Table 5 show that the value range of standardized factor load is between 0.678 and 0.825, which meet the standard of a large factor load of 0.5. There was no negative measurement error and the standard error was small. The critical ratio of C.R. is greater than 3.29, and it passes the significance level test of 0.001 ( $p$ -value < 0.001, expressed by “\*\*\*”). This means that the measurement items of each variable have strong explanatory power to the measurement model, and the basic fitness of the model is good. The reliability of each dimension of variable transformational leadership style and transactional leadership style was 0.812 and 0.769, and the average variation extraction was 0.520 and 0.526. The composition reliability of organizational learning (H1–H10) was 0.939, and the average variation extraction was 0.606. The composition reliability of enterprise innovation performance (I1–I5) is 0.903, and the average variation extraction is 0.649, i.e., all greater than 0.5. Both reached the standard of convergence validity, and the fitness was also in an acceptable range. Therefore, the model was tested by confirmatory factor analysis, and the setting of variable dimensions was scientific and reasonable.

#### 4.4. Correlation Analysis and Discriminant Validity Analysis

In this study, the rigorous AVE method was used to evaluate the discriminant validity. In other words, if the square root of the AVE value of each variable is greater than the maximum correlation coefficient between variables, it can indicate that there is discriminant validity between variables. The discriminant validity of variables in this paper is shown in Table 6.

Table 6 shows that there is a significant positive correlation between transformational leadership style, transactional leadership, organizational learning, and enterprise innovation performance; that the  $p$ -value reached the significance level of 0.05; and that the value range of correlation coefficient is between 0.419 and 0.551. The value range of the AVE squared root is between 0.721 and 0.806. It can be seen that the absolute values of correlation coefficients between variables are less than the value of the AVE squared root,

indicating that the discriminant validity between the variables studied in this paper is good and meets the research requirements.

**Table 6.** Correlation and discriminant validity analysis results.

	1	2	3	4
Transformational leadership style	0.725			
Transactional leadership style	0.419 **	0.721		
Organizational learning	0.432 **	0.473 **	0.778	
Enterprise innovation performance	0.551 **	0.472 **	0.508 **	0.806
Mean	3.734	3.497	3.681	3.579
Standard deviation	0.639	0.793	0.918	0.847

\*  $p < 0.01$ ; \*\*  $p < 0.05$ ; \*\*\*  $p < 0.001$ . Correlation is significant at the 0.01 level (2-tailed). Note: 1–4 represent transformational leadership style, transactional leadership style, organizational learning, and enterprise innovation performance, respectively.

#### 4.5. Structural Equation Path Analysis

Table 7 shows that transformational leadership and transactional leadership have a significant positive impact on organizational learning, and that the standardized coefficients are 0.270 and 0.414, respectively. Organizational learning, transformational leadership, and transactional leadership have a significant positive impact on enterprise innovation performance, and the standardized coefficients are 0.228, 0.411, and 0.221, respectively. Therefore, the hypotheses H1–H5 are verified.

**Table 7.** Structural equation path analysis result.

	Path		Standardized Coefficient	S.E.	C.R.	$p$
Organizational learning	←	Transformational leadership	0.270	0.084	4.23	***
Organizational learning	←	Transactional leadership	0.414	0.064	6.015	***
Enterprise innovation performance	←	Organizational learning	0.228	0.058	4.058	***
Enterprise innovation performance	←	Transformational leadership	0.411	0.084	6.529	***
Enterprise innovation performance	←	Transactional leadership	0.221	0.062	3.392	***

\*\*\*  $p < 0.001$ .

#### 4.6. Mediating Effect Analysis

Bootstrapping analysis was conducted to test the mediating effects which were shown to be significant [47]. This study involves two mediating paths, as shown in Table 8.

In the mediating path of “transformational leadership → organizational learning → enterprise innovation performance”, the confidence interval under the 95% confidence level of indirect effect is [0.020, 0.110], excluding 0, indicating that there is a mediating effect. The confidence interval under the 95% confidence level of direct effect is [0.274, 0.544], which does not include 0, indicating that some mediating effect is significant. The indirect effect value is 0.062, the direct effect value is 0.411, the total effect value is 0.473, and the ratio of indirect effect value to total effect value is  $0.062/0.473 = 0.131$ , indicating that 13.1% of the impact of transformational leadership style on enterprise innovation performance is mediated by organizational learning.

**Table 8.** Bootstrap test results of organizational learning.

Mediating Paths	Indirect Effect			Direct Effect			Total Effect		
	SE	95% CI	<i>p</i>	SE	95% CI	<i>p</i>	SE	95% CI	<i>p</i>
Transformational leadership style → organizational learning → enterprise innovation performance	0.062 (0.023)	[0.020, 0.110]	0.004	0.411 (0.069)	[0.274, 0.544]	0.001	0.473 (0.066)	[0.339, 0.594]	0.001
Transactional leadership style → organizational learning → enterprise innovation performance	0.094 (0.034)	[0.032, 0.167]	0.004	0.221 (0.088)	[0.047, 0.395]	0.014	0.315 (0.072)	[0.179, 0.463]	0.001

The second mediating path is “transactional leadership → organizational learning → enterprise innovation performance”. In this mediating path, the confidence interval under the 95% confidence level of indirect effect is [0.032, 0.167], excluding 0, indicating that there is a mediating effect. The confidence interval under the 95% confidence level of direct effect is [0.047, 0.395], which does not include 0, indicating that the mediating effect is significant. The indirect effect value is 0.094, the direct effect value is 0.221, the total effect value is 0.315, and the ratio of indirect effect value to total effect value is  $0.094/0.315 = 0.298$ , indicating that 29.8% of the impact of transactional leadership style on enterprise innovation performance is affected by the mediating variable organizational learning.

## 5. Discussion and Conclusions

The purpose of the study is to explore the impact mechanism of leadership style on enterprise innovation performance. Two typical leadership styles, transformational leadership and transactional leadership, were selected to explore the impact of the two leadership styles on innovation performance and introduce organizational learning as the mediating variable. This part will summarize the research conclusions and explain the theoretical contribution and management enlightenment and put forward some potential direction for future research.

### 5.1. Findings and Discussion

Through the empirical research, this paper analyzed the collected data, based on the results of the research hypotheses above. This paper reached the following findings:

- (1) Transformational leadership and transactional leadership style have a positive impact on organizational learning and enterprise innovation performance;
- (2) Organizational learning has a positive impact on enterprise innovation performance;
- (3) Organizational learning plays a mediating role in the relationship between leadership style (transformational/transactional) and innovation performance.

From the above findings, it can be seen that transformational leadership has a positive impact on enterprise innovation performance because transformational leadership can create an appropriate environment for the innovation team, actively encourage employees to tackle problems from a new point of view, cultivate their innovation ability, acquire new knowledge, stimulate them to rethink and review their previous understanding of innovation ability, encourage them to evaluate existing problems incorporate strategies and objectives, and achieve the purpose of effective innovation by actively discovering and solving problems. This is consistent with Shao et al. [23], who also proposed that transformational leaders can help organization members think creatively, change the thinking of organization members, and encourage organization members to go beyond the rules and give full play to their potential to achieve organizational goals.

The results also show that transactional leadership style has a positive impact on innovation performance because, under transactional leadership style, leaders and subordinates are often based on transactions. When organization members perform tasks and achieve goals according to the requirements of leaders, they can receive a certain reward [48]. Through benefit negotiation and reciprocal transaction to jointly achieve the

goal, it will stimulate the motivation of employees to actively complete the task, in order to promote the innovation performance of enterprises. It can be seen that under the guidance of realizing innovation performance, transactional leadership takes the means of reward to guide employees to understand the enterprise innovation objectives and participate in innovation activities, strengthen the enterprise innovation atmosphere, and promote enterprise innovation performance. Therefore, under the guidance of tasks, although employees are not willing to innovate, they can also achieve the purpose of innovation and actively affect management innovation and technological innovation. Those employees who pay attention to external motivation will pay attention to whether their work results can be affirmed and rewarded by others and will take extra care around the views of others or colleagues; thus, they work hard to obtain these external rewards and then actively show innovative behavior.

We can also see that organizational learning has a positive impact on innovation performance. Compared with other enterprises, those enterprises that attach importance to and actively carry out organizational learning are more able to successfully carry out innovation activities. Therefore, organizational learning is directly related to innovation, especially in small- and medium-sized enterprises, whereby individual and organizational learning can guide innovation. Organizational learning is of positive significance for enterprise scientific and technological innovation and management innovation. It can improve the innovation performance of enterprises and is the only way for enterprises to maintain competitive advantage.

From the mediating effect analysis, the impact of leadership style on enterprise innovation performance is largely influenced by the mediating variable of organizational learning, which shows that leadership style affects both organizational learning and innovation performance. At the specific operational level, transactional leaders generally create value by initiating organizational learning to strengthen the current situation and achieve the purpose of innovation by improving and expanding the existing capabilities, technologies, and paradigms. Transformational leadership supports the collective organizational learning process, provides knowledge stimulation, and encourages team members to jump out of fixed thinking when considering problems [49] and adopting exploratory thinking, which lays a foundation for innovation.

### 5.2. Management Enlightenment

The results of this paper verify the positive relationship between leadership style and innovation performance, as well as the mediating role of organizational learning between them. According to the research results, this paper puts forward the following suggestions, hoping to provide some suggestions and countermeasures to improve the innovation performance of Chinese small- and medium-sized enterprises.

- (1) Transformational leadership style and transactional leadership style will promote the formation of enterprise innovation performance. Although transformational leadership style and transactional leadership style are different, they can promote the formation of innovation performance. In actual enterprise management, if transformational leadership and transactional leadership style can be effectively combined, they will be more conducive to the formation of enterprise innovation performance. This is consistent with the results of previous scholars. In other words, leaders do not need to pursue to become transformational leadership or transactional leadership. If they can effectively combine the two leadership styles of transformational leadership and transactional leadership, they will more effectively stimulate the innovation ability of enterprises. As Bass and Avolio [35] pointed out, only by combining transformational leadership and transactional leadership style can leaders better stimulate the innovation ability of organization members. It can be seen from the empirical analysis results of this paper that both transformational and transactional leadership styles can positively influence enterprise innovation performance in order to promote and complement each other. The ideal leader should possess both of these two leadership

styles. In other words, leaders do not need to pursue transformational leadership or transactional leadership. The effective combination of transformational leadership and transactional leadership can better stimulate enterprise innovation ability and improve enterprise innovation performance.

- (2) Bass and Avolio [35] believes that if an organization wants its employees to fulfill their potential and achieve the organization's goals and vision. If leaders are good at the interactive application of transformational leadership and transaction leadership, they can stimulate employees' learning and innovation. Therefore, leaders, on the one hand, should establish a clear vision and objectives for employees, give personalized care to employees, create an appropriate environment for employees, and encourage subordinates to put forward new ideas and ideas. On the other hand, once employees have innovative achievements, they should also give appropriate feedback and fair rewards so that everyone's talents can be brought into play, in order to create a competitive advantage for the whole organization. Especially in today's rapidly changing industrial environment, in order to improve the efficiency of the organization, leaders should give more praise and courtesy to members to encourage organization members to continue their efforts. When subordinates complete their work or have good performance, appropriate rewards will motivate subordinates to continue to give full play to their innovative behavior. At the same time, in daily work, leaders should also actively pay attention to employees' mistakes or misconduct, actively ask for follow-up assessment, take immediate action to solve problems when they are found, assess their subordinates' performance when it does not meet expectations or standards, and improve organizational performance [50].
- (3) Organizational learning plays a mediating role between leadership style and innovation performance. If managers want to improve the innovation performance of enterprises, they not only need to cultivate appropriate leadership styles, but also pay attention to the cultivation of organizational learning in enterprises. Leadership style affects the innovation performance of enterprises by affecting organizational learning. In practical management, transformational leaders generally encourage employees to adopt exploratory thinking mode, jump out of the fixed thinking mode, and produce innovative performance by supporting organizational learning of enterprises. Transactional leadership generally achieves the purpose of innovation by strengthening the existing learning achievements and improving and expanding the existing ability and technology. This study shows that organizational learning has a positive impact on enterprise innovation performance and plays a partial intermediary role between leadership style and enterprise innovation performance. It can be seen that only learning organization can provide continuous power for enterprises to improve innovation performance, reminding managers to pay attention to enterprise innovation results, establish learning organization, create a learning atmosphere in a competitive environment, and improve the learning ability of enterprises.
- (4) Compared with foreign enterprises, state-owned enterprises, or large enterprises, managers of small- and medium-sized enterprises need to engage in more specific work and tackle more complicated tasks. The results of this study concluded that the improvement in leadership styles is crucial to promote the innovation performance of SMEs. First of all, enterprises should cultivate appropriate leadership style conducive to the creation of an enterprise innovation atmosphere. Secondly, the research has found that many managers of small- and medium-sized enterprises only pay attention to the short-term profits of the enterprise, but pay little attention to the long-term development of the enterprise. If the enterprise wants long-term development, it must improve the leadership style of managers. As verified in this study, leadership style can promote the improvements in enterprise innovation performance; however, the improvement in leadership style also needs the investment of resources to maintain, which may become effective after a long period of time. Enterprise managers can make slight changes to improve enterprise short-term performance, but they need to



enhance the leadership style to increase human capital and organizational capital in order to enhance the overall economic performance of the enterprise. In other words, Chinese SEMs should take practical measures to guarantee sustainable development and create more value in the dynamic competitive environment in the face of new problems and challenges arising from their development practices.

### 5.3. Limitations and Directions for Future Studies

#### 5.3.1. Limitations

- (1) Theoretical aspects. Although this paper summarized and explored the theories related to leadership style, organizational learning, and enterprise innovation performance, it is difficult to state the relevant theoretical system completely and in detail, which still needs further consideration and discussion in the future.
- (2) Samples. Due to the limitation of the research scale and resources, only 417 questionnaires were collected. The sample size of this study only reaches the level of medium-sized samples, and the sample size needs to be further expanded. The SMEs' results will be more representative if the samples are larger.
- (3) Variable aspect. Enterprise innovation performance is affected by many factors. This paper only studies and discusses influencing factors of leadership style and organizational learning. There are many factors affecting enterprise innovation performance. Future studies could explore other influencing factors and their different working mechanisms.

#### 5.3.2. Directions for Future Studies

Because of the above research limitations, this paper puts forward the following directions for future studies.

- (1) Future studies should continue to explore the theories related to leadership style, organizational learning, and enterprise innovation performance in order to provide strong theoretical support for future research.
- (2) The samples should be broadened to increase the representativeness of the samples. Representative enterprises from all over the country can be selected for investigation and research, and sampling surveys can be conducted in proportion according to the nature and scale of types in order to increase the source of sample information to verify the universality of this conclusion.
- (3) Future research should not only discuss the relationship between leadership style, organizational learning, and enterprise innovation performance, but also study the influencing mechanism of organizational innovation climate, organizational change characteristics, and human resource management efficiency in order to make the research more in-depth and representative.

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