Research Article

A Study on the Correlations among Organizational Learning, Dynamic Capabilities, and Innovation Performance of Innovative Firms

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Innovation is the core of China's national policy and the lifeline of enterprises at the local and global market. There has been a huge amount of research on innovation and elements contributing to innovation performance; however, few of them built a theoretical model to study the correlations among organizational learning, dynamic capabilities, and innovation performance. Based on the existing studies and literature at home and abroad and considering the development status of innovative enterprises in China, this paper decomposes organizational learning into three dimensions of learning commitment, shared vision, and open-mindedness and divides dynamic capabilities into three dimensions of environmental insight capability, resource integration capability, and organizational flexibility capability. To verify the model of LDP (learning-capability-performance) and hypotheses, the authors conducted a survey in Beijing, Tianjin, Hebei, Shanghai, and Qingdao, which have ranked top in the number of innovative enterprises in China in recent years. A sample of 232 valid questionnaires were collected and validated with SPSS23.0 software. The result shows that organizational learning and its three dimensions have significant positive effects on innovation performance, while only two dimensions of dynamic capabilities, resource integration capability and organizational flexibility capability, have significant positive effects on innovation performance. The third dimension of environmental insight capability has no significant positive effects on innovation performance. The dynamic capabilities and its three dimensions play a partial intermediary role between organizational learning and innovation performance.

1. Introduction

1.1. Research Background. Innovative companies are companies that rely on innovation-driven development, whose core value and philosophy is to implement a continuous innovation strategy and to obtain continuous growth and development of benefits [1].

In the analysis of the innovative enterprise concept, there are two questions worth exploring: how to achieve a continuous innovation drive and how to achieve continuous growth in business efficiency. To achieve these two things, continuous learning and progress are essential. On the one hand, in the knowledge economy, knowledge is the basis of innovation, and the acquisition and application of knowledge is an important source of the innovation drive. Wu and

Wang [2] stated that resource-based view theory, organizational learning theory, and dynamic capability theory agree that organizational learning is an effective way to maintain lasting competitiveness in a dynamic internal and external organizational environment. On the other hand, in the context of China's economic transformation, the external competitive environment of enterprises presents a highly variable and dynamic nature, but new enterprises have an inherent lack of resource endowment due to difficulties in accessing resources.

While resource-based theory can only explain the heterogeneous resources that firms rely on to gain competitive advantage in a static environment, at present firms are in an unpredictable and dynamic environment. This predicament requires firms to constantly break their existing competitive

advantages and dynamically update their core competencies; otherwise, they will fall into core rigidity.

In this context, Teece et al. [3] have proposed the concept of dynamic capabilities, arguing that companies must have "the ability to dynamically integrate and reconfigure their internal and external resources, technologies, and competencies to meet the changing requirements of the environment" to gain superior profits and establish a competitive advantage in a hypercompetitive environment. Organizational learning is considered an important factor in the evolution of dynamic capabilities, and through organizational learning, it is possible to improve the dynamic capabilities of an organization to respond to changes in the environment.

From this, it is reasonable to envisage whether and how organizational learning affects a firm's innovation performance based on dynamic capabilities and whether dynamic capabilities can play a mediating role in the process of organizational learning affecting firm performance.

This paper attempts to empirically investigate the above issues through a quantitative approach, using Chinese innovative firms as the object of study. The purpose of this study is trying to contribute to the practice of strategic management theory and theoretical research and provide useful lessons for Chinese innovative firms to ultimately improve their corporate performance.

1.2. Research Objectives. Innovative enterprises are market players with significant economic and social impact, and the steady and rapid growth of their innovation performance has a direct impact on the development of the enterprise and, consequently, on the country's economic development. The aim of this paper is to investigate the relationship among organizational learning and dynamic capabilities and innovation performance so that innovative firms can convert acquired knowledge into innovation capabilities to sustain their life cycle.

This paper investigates the mechanism of the relationship between organizational learning and innovation performance by systematically reviewing and integrating previous research, taking dynamic capabilities as the starting point and innovative enterprises as the research object, and constructing a theoretical model with organizational learning as the independent variable, dynamic capabilities as the mediating variable, and enterprise innovation performance as the dependent variable [4]. Based on the scales already developed by previous authors, the existing scales are modified and improved, and new scales and research models with reference are proposed, considering the current level of innovation development in China. And through the questionnaire survey and enterprise innovation report summary, SPSS data analysis was conducted to verify the hypothesis to draw conclusions.

1.3. Research Gaps. After years of research, most scholars affirm the existence of the relationship between organizational learning and corporate innovation performance but always feel the lack of strong supporting elements between the two. To solve this confusion, researchers refine and split the organization into competency dimensions, such as decomposition into technical competencies, dynamic competencies, core competencies, and so on. And these explorations have played a crucial role in promoting the study of the relationship between organizational learning and innovation performance.

Dai [5] targeted the study on Chinese industrial firms and investigated the mechanism of the role of organizational learning, dynamic capabilities, and performance in international business performance as the dependent variable. In addition, the moderating variable of environmental factors was introduced, and the results obtained indicated that for Chinese industrial firms, the three variables were significantly positively related, organizational learning was also positively related to dynamic capabilities, and environment also played a moderating role. Lin [6] investigated 317 firms in the Guangdong Pearl River Delta and obtained a slightly different conclusion; she concluded that firms' organizational learning did not have a significant effect on innovation performance, but dynamic capabilities could make organizational learning have a significant effect on performance through its fully mediating role. Yang et al. [7] selected manufacturing firms for their study and similarly obtained a significant correlation among organizational learning, dynamic capabilities, and innovation performance.

1.4. Research Methodology

1.4.1. Literature Research Method. Online authoritative databases such as "China Knowledge Network," "Baidu Academic Discovery System," and the library of Beijing Jiaotong University for relevant literature, materials, and master's and doctoral theses at home and abroad were sorted through. Offline, the National Library of China has a collection of books and journals from home and abroad, which can be read in physical form. Two-way aggregation was conducted to understand the status of contemporary research on innovation performance in innovative enterprises, to identify research questions, to define the concepts and dimensions of core variables, and to lay the theoretical foundation.

1.4.2. Qualitative Research Method. Interviews were conducted to collect the views and suggestions of experts in the field of management and middle and senior leaders of innovative enterprises on innovation performance and to build an evaluation system for innovation performance by drawing on existing indicator systems and scales. Theoretical knowledge is also summarized and analyzed in depth.

1.4.3. Quantitative Research Methods

(i) *Questionnaire Analysis Method*

Firstly, the preliminary design of the questionnaire was carried out according to the research content and hypothesis of the article, taking innovative enterprises as the main body. Secondly, the

questionnaire was distributed in a small scale and handed over to three to five experts in the field for initial review, and the dynamic capabilities and organizational learning scales were revised according to the feedback, while the questionnaire was improved to ensure its scientific rigor. Finally, the improved questionnaires were distributed and collected on a large scale to provide real and reliable data for the study. The questionnaire is attached as appendix in the paper.

(ii) *Multivariate Data Analysis Method*

The data collected from the questionnaires were analyzed statistically. SPSS statistical software was used to carry out multivariate analysis, including descriptive statistical analysis, reliability and validity analysis, and multiple regression analysis and mediation effect test. The results obtained were used to test the hypotheses of this paper one by one and explore the profound relationship between organizational learning, dynamic capabilities, and innovation performance.

1.5. Research Novelty. Based on extensive reading of relevant literature and systematic combing of previous theoretical studies, this paper has the following innovative points.

(1) The grounding of the study is novel. According to the existing literature, most of the studies on enterprise performance are from the perspective of technological innovation or financial performance. There is no research on the relationship between organizational learning and innovation performance from the perspective of dynamic capabilities. Based on the logical paradigm of "learning-competence-performance," this paper constructs a theoretical model of "organizational learning-dynamic capability-innovation performance" for innovative enterprises. This paper provides a new way of thinking in performance research.

(2) Previous scholars have more often studied the impact of a single variable on performance, with the entry point being traditional performance rather than innovation performance, and mostly based on resource-based theory, without taking the dynamics of environmental change into consideration as a moderating factor. This paper combines the dynamic capability theory of Teece and other scholars while considering the dynamics of the environment to improve the innovation and completeness of the theoretical model.

(3) This paper extends theoretical and empirical research on innovation performance in innovative firms. Research on organizational learning, dynamic capabilities, and innovation performance has previously focused on the manufacturing sector or has not clearly identified the target firms. This paper, however, is a targeted analysis of innovative firms, rigorously selected and investigated in accordance with the article's definition of innovative firms, and has important real-life guidance on the current state of China's strong support for the development of innovative firms.

2. Literature Review

2.1. Study between Organizational Learning and Innovation Performance. The organizational learning is the process of acquiring knowledge. Garvin et al. [8] defined organizational learning as a range of activities, such as systematic problem solving, trial and error, learning from mistakes, learning from others, and accelerating the diffusion of knowledge within the organization. The essence of innovation is to acquire new knowledge or recombine existing knowledge for the enterprise's R&D activities. Therefore, many scholars have conducted relevant studies around enterprise performance starting from organizational learning and focused on innovation performance, which takes innovation as an important breakthrough. Some scholars studied the direct relationship between the two, while some introduced intermediate variables.

Fiol and Lyles [9] argued that there is a hypothesis in the study of organizational learning that it improves the future performance of organizations. Sinkula et al. [10] argued through extensive empirical research that organizational learning is more effective in interpreting and remembering market information over longer time, thus improving firm performance. Some scholars introduced intermediate or adjustment variables. Baker and Sinklua [11] combined the market orientation factor to study the effect of bivariate with organizational learning on firm performance and concluded that a good learning environment in a firm can effectively optimize market orientation and capture more market share than competitors, thus providing a sustainable competitive advantage to the firm. Daniel and Marie-Claude [12] also introduced market orientation factors, and the study obtained that both organizational learning and market orientation can contribute to performance.

In China, Liu and Jin [13] investigated firms in North, Central, and South China and found that organizational learning can indirectly improve performance by enhancing firms' capabilities in strategy, technology, and marketing. Yang et al. [14] conducted an empirical study on 267 firms and obtained that intellectual capital plays a fully mediating role as a mediating variable by distributing questionnaires and other quantitative analysis methods. Xia [15] made a specific survey of top IT companies in China in 2021. She concluded that organizational learning provides the firms with opportunities in investing new business and introducing new technologies. As a result, those firms that are good at organizational learning are more competitive than competition.

At the strategic management level, the existing knowledge resources become one of the most important strategic resources for enterprises, and the more comprehensive the acquired resources are, the more valuable the strategic planning of enterprises is. At the same time, facing the dynamically changing economic and technological

environment, the updating speed of existing knowledge resources often fails to keep up with the speed of development, and innovative enterprises are facing severe challenges. Therefore, the article includes dynamic capabilities as an intermediate variable and forms an LDP model with organizational learning and innovation performance to explore the interrelationship amid the three.

2.2. Study between Organizational Learning and Dynamic Capabilities. The inseparable link between organizational learning and dynamic capabilities has been confirmed from existing studies. Nonaka pointed out that a firm's learning capabilities can contribute to the formation of dynamic capabilities and that continuous development of new knowledge and continuous learning can achieve better results than mere knowledge accumulation. Meng [16] stated that through this innovative and dynamic learning process, companies can better and faster accept changes in the environment and integrate into the new environment. Eisenhardt and Martin [17] held that a good learning environment and learning context in an organization can be invariably upgraded to an organization-specific competitiveness, which is one of the dynamic capabilities of an enterprise:

(1) From the perspective of organizational learning segmentation, some scholars divided the promotion mechanism of organizational learning on dynamic capabilities into two levels. On the one hand, total commitment to learning will help enterprises improve their sensitivity to the environment and can quickly capture the changes in the environment; on the other hand, some talents with excellent learning ability are usually more willing to enter enterprises that attach importance to learning and work in enterprises that focus on continuous learning. In return, they will have an important impact on the company, helping the company to integrate and reorganize its resources as soon as possible in a changing environment and stabilize the state of the company.

Miner divided organizational learning into three categories: real-time improvised learning, design-based experimental learning, and action-based trial-and-error learning. He concluded that all three types of learning styles have an impact on dynamic capabilities. Based on Miner's research, Zahra et al. [18] further proposed that the above three different types of organizational learning have different effects on dynamic capabilities. With the increasing size of the enterprise and the improvement of the enterprise hierarchy and system, the benefit brought by improvised learning will become weaker, while the impact of experimental learning will become stronger, and trial-and-error learning will show an inverted U-shaped state of increasing and then decreasing.

(2) From the perspective of evolution, some scholars have combined dynamic capabilities and practices.

Zollo and Winter [19] classified three different organizational learning mechanisms, namely, natural accumulation of experience, knowledge representation process, and knowledge storage process. They believed that it was the interaction of these three mechanisms that triggered dynamic capabilities and enhanced them. Based on this theory, in 2002, the two scholars concluded a new formulation that dynamic capability is a collective learning model. Through continuous evolution, organizational learning can facilitate the transformation of knowledge and the construction of new knowledge, which is important for dynamic capabilities. In particular, "intentional learning" in organizational learning can effectively avoid the trap of corporate growth caused by rigidity and enable companies to develop dynamic capabilities in a targeted manner. Chinese scholars also agreed with the evolutionary view and have conducted further research based on it. They believe that efforts are needed from both internal knowledge development and external knowledge absorption in order to effectively improve dynamic capabilities. Their integration will lead to a transformation mechanism that converts new knowledge into profits and helps enterprises gain sustainable competitive advantages.

(3) Synergistic evolution of dynamic capability and organizational learning: organizational knowledge is the synthesis of individual knowledge, but it is far above individual knowledge. Organizational knowledge represents a collection of information, values, processes, and beliefs about the organization, and it is the basis of dynamic capabilities. But without a continuous learning process, organizational knowledge is only a paper product and is less likely to become a dynamic capability that can help companies renew their existing capabilities.

According to Nelson and Winter, organizations are made up of a series of interdependent management practices and operations that change and evolve based on feedbacks from organizational performance. The refinement of organizational processes in an enterprise must be achieved through long-term uninterrupted learning, which also represents organizational learning as a necessary path for the formation of dynamic capabilities in an enterprise.

The relationship between dynamic capability and knowledge learning is shown in Figure 1.

As can be seen from the figure, knowledge and information are the two basic elements for organizations to carry out learning. In the stage of knowledge acquisition and integration, enterprises store the existing knowledge in the management process of the organization through dynamic ability, thus forming the existing new ability of the enterprise. In the process of knowledge dissemination and use, it will gradually integrate to form new practices, that is, to form new organizational capabilities. Together with the already possessed capabilities, they constitute dynamic capabilities. Dynamic capabilities enable an enterprise to take the
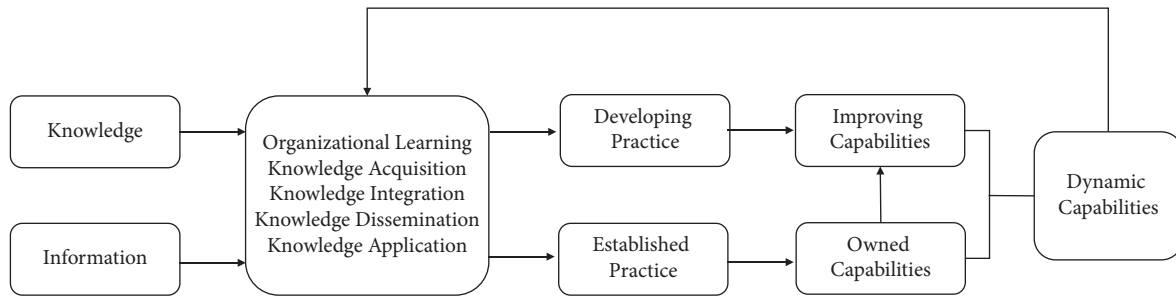
FIGURE 1: The relationship between dynamic capabilities and organizational knowledge learning.

initiative in the fierce market competition, to adapt to environmental changes one step ahead of competitors, and to achieve temporary victories. This victory will motivate the organization to carry out further and deeper learning to continue to gain competitive advantage, and the organization will receive positive incentives and feedbacks for learning and reach a state of virtuous circle between the two and dynamic capabilities. The realization of this virtuous circle is also an important reason to determine whether the enterprise can always maintain a competitive advantage.

2.3. Study of Dynamic Capabilities and Innovation Performance. Liu [20] defined innovation performance as a significant increase in the effectiveness and productivity of a firm's innovation process by investing a certain amount of factor resources in it, but Drucker [21] proposed that innovation performance is not just a process, but secondly a combination of all the elements of innovation.

Dynamic capabilities of firms have occupied a place in the field of strategic management, and research must necessarily bring tangible benefits to firms as one of the important purposes, so the study of the relationship between dynamic capabilities and performance production is gaining increasing attention. Zott [22], by using computer simulation, explored which specific element of dynamic capabilities affects performance, and the results showed that three attributes of the dynamic capabilities, namely, timing of resource allocation, learning, and cost, bring differences in the performance of firms under the same industry.

Referring to the research of domestic scholars, entrepreneurial resources [23] obtained a positive correlation between dynamic capabilities and performance by collecting a large sample of high-tech firms in Taiwan. Su and Liu [24] constructed a theoretical model among dynamic capabilities of complex product system innovation, innovation strategy, and innovation performance and collected data by questionnaire research for quantitative analysis. The analysis results indicated that dynamic capabilities influence product innovation performance through innovation strategy, and this influence is significantly positive. Zhang et al. [25] investigated 129 small- and medium-sized technology enterprises to explore the relationship between dynamic knowledge management capabilities and innovation performance of such enterprises, and the test results showed that dynamic knowledge management capabilities can

effectively promote the improvement of innovation performance of enterprises.

In the age of digital transformation, Liu et al. [26] studied Xuzhou Construction Machinery Group (XCMG) and Shaanxi Motors Group, verifying the contribution of digital transformation on innovation performances. Zhang and Jing [27] surveyed 1198 innovative companies listed between 2007 and 2019 at Shanghai and Shenzhen Stock Markets, finding that digital transformation as innovative firms' crucial dynamic capability makes significant positive effect on innovation performance in today's technology paradigm shift.

Among many domestic and foreign scholars' studies, some study the direct relationship between dynamic capability and performance, while some introduce different intermediate variables to verify through multidimensionality. This paper takes dynamic capability as a mediating variable as an entry point to provide theoretical support for opening the "black box" of the influence of organizational learning on innovation performance.

3. Theoretical Model and Research Hypothesis

Based on the previous introduction of organizational learning, dynamic capabilities, and innovation performance, the paper firstly compares the relationship between each variable in detail and puts forward relevant hypothetical propositions. Then, a theoretical model among the three is constructed based on the proposed hypotheses.

3.1. Formulation of the Research Hypothesis

3.1.1. Research Hypothesis on Organizational Learning and Innovation Performance. The resource-based view holds that organizational learning is the process of knowledge acquisition, and the knowledge and competencies possessed by a firm become heterogeneous resources that distinguish it from its competitors. Such knowledge and skills are considered effective only if they lead to significant improvements in firm performance. According to the outcome-based view, the mission of organizational learning is to be used to improve performance, and the key factor for enterprises to gain competitive advantage originates from innovation; therefore, the improvement of innovation performance through organizational learning is one of the important purposes of conducting organizational learning.

This paper divides organizational learning into three dimensions: learning commitment, shared vision, and open-mindedness. Commitment to learning is a prerequisite to ensure smooth and stable organizational learning. A top-down commitment to active learning, positive learning, and continuous learning will greatly facilitate the acquisition of knowledge and further promote the future development of the company; shared vision is a way for the company's goals and plans to be uploaded to as many employees as possible and to reach a consensus on them, which can better fit the value of organizational learning. Open-mindedness is the prerequisite to construct innovation environment. If an enterprise cannot get rid of the old and outdated thinking and think openly according to the changing environment, it will hinder the innovation process and thus prevent the effective improvement of innovation performance. The following hypotheses are proposed:

H1: organizational learning is positively related to firm's innovation performance

H1a: learning commitment has a significant positive effect on firm innovation performance

H1b: shared vision has a significant positive effect on innovation performance

H1c: open-mindedness has a significant positive effect on innovation performance

3.1.2. Research Hypothesis on Organizational Learning and Dynamic Capabilities.
Innovative enterprises are more innovative and open-minded than traditional enterprises, which means that innovative enterprises have more advantages in knowledge acquisition and utilization and should pay more attention to it. The digestion and absorption of knowledge can not only improve the overall quality of the organization, but also improve the organization's ability to respond to sudden changes in the environment and make faster changes than its competitors. This shows the importance of organizational learning in the process of organizational development.

From the literature reviewed, dynamic capabilities cannot exist in isolation, or that they cannot be effective on their own. Dynamic capability relies on the internal and external resources possessed by the organization and is built on the knowledge accumulated by the organization, which is acquired through organizational learning.

Li [28] from Tsingtao University defined that organizational learning starts from knowledge transfer, which includes knowledge acquisition, knowledge integration, and knowledge creation. The organization provides knowledge transfer with tools and system and compensate what is missing in knowledge transfer. Organizational learning is the fundamental way of sustaining and developing dynamic capabilities. In essence, it is integrating all sorts of external resources into internal and helping the firm absorb, create, and finally grow core competence to win.

Based on previous studies, the following hypotheses are proposed:

H2: organizational learning is positively related to dynamic capabilities

H2a: learning commitment has a significant positive effect on dynamic capabilities

H2b: shared vision has a significant positive effect on dynamic capabilities

H2c: open-mindedness has a significant positive effect on dynamic capabilities

3.1.3. Research Hypothesis on Dynamic Capabilities and Innovation Performance.
Dynamic capability emphasizes "dynamism," which is the ability to make rapid changes to the changing environment, including the ability to see market opportunities, the ability to observe market changes, the ability to accurately identify consumer needs, and the ability to respond to competitors' competitive methods. Dynamic ability belongs to a kind of higher-order ability, which can ensure that the enterprise is not eliminated by the macro environment, always maintain stability, and has its own place in the market competition. Through dynamic capabilities, the anachronistic and old systems or conventional capabilities can be changed in a timely manner so that the company can always keep pace with the market and improve the conversion rate of business results brought by technological innovation and service innovation of the company and then effectively improve the innovation performance of the company.

Lu and Wu [29] stated that dynamic capabilities can help companies analyze themselves, calibrate their positioning, and deploy strategies with accurate positioning to promote self-innovation. Chen and Wu [30] pointed out that SMEs can flexibly adjust corporate strategies and organizational structures, absorb new resources, and adjust existing resources in a turbulent environment. So, it can be seen that dynamic capabilities are very important for SMEs in the growth period. O'Connor et al. [31], standing in the perspective of system theory and innovation theory, argued that dynamic capabilities are the triggers of innovation, which can accelerate the flow and dissemination of knowledge within the enterprise. It covers all levels of the enterprise faster and reacts in a timely manner, bringing about an effective renewal of resource allocation for the enterprise. It is easy to see that dynamic capabilities contribute to the enhancement of enterprise flexibility, remove barriers to innovation, and further bring about effective improvement in innovation performance. The hypothesis is proposed as follows:

H3: dynamic capability is positively related to firm's innovation performance

H3a: environmental insight capability has a significant positive effect on innovation performance

H3b: resource integration capability has a significant positive effect on innovation performance

H3c: organizational flexibility has a significant positive effect on innovation performance

3.1.4. Research Hypothesis on the Mediating Role of Dynamic Capabilities. Dynamic capability adapts to changes in the environment and realizes the reallocation of resources by integrating the resources possessed by the company through insight into the external environment. The resources possessed by an enterprise do not enable it to obtain performance directly, but to transform the resources into competitive advantages through dynamic capabilities, which play their mediating role. Knowledge, as the most important resource of an organization or an enterprise, plays a vital role in the improvement of enterprise performance. The lack of knowledge will lead to the backwardness of technology level and management level and the risk of being eliminated by the market. Therefore, enterprises need to continuously acquire external knowledge to enrich their resource reserves.

However, the knowledge acquired from outside cannot be directly applied to product research and development or service innovation, but has to be screened, digested and absorbed, and integrated internally and externally before it can become the resources available to enterprises. In the process of processing new knowledge, the enterprise's own digestion and absorption ability and integration ability are also continuously strengthened. Generally speaking, the acquisition of external knowledge not only expands the objective accumulation of knowledge, but also improves its own dynamic ability in the process of digestion and absorption of such new knowledge, and the effective improvement of dynamic ability can make the externally acquired knowledge transform into new products and services of enterprises, thus realizing the improvement of enterprise innovation performance.

Therefore, based on the logical sequence and mechanism of "knowledge-competence-performance" and the research of scholars, the following hypotheses are proposed:

> H4: dynamic capabilities mediate the relationship between organizational learning and innovation performance
>
> H4a: the environmental insight dimension of dynamic capabilities mediates between organizational learning and innovation performance
>
> H4b: the resource integration dimension of dynamic capabilities mediates the relationship between organizational learning and innovation performance
>
> H4c: the organizational flexibility dimension of dynamic capabilities mediates the relationship between organizational learning and innovation performance

3.2. Model Construction. The conceptual model as shown in Figure 2 suggests that a firm's organizational learning can have a direct impact on innovation performance and can also directly influence dynamic capabilities, while dynamic capabilities can not only have a direct impact on innovation performance but can also act as a mediator to regulate the relationship between organizational learning and dynamic capabilities so that organizational learning can have an indirect impact on innovation performance.

4. Data Analysis and Hypothesis Testing

4.1. Descriptive Statistics of the Data. In this paper, the collected questionnaires are counted, and the basic information mainly includes two parts: enterprise information and personal information. The nature of the enterprise, the industry of the main business, the location of the enterprise, the time of establishment, the number of employees, the position of the respondent, and other specific information are summarized and consolidated as shown in Table 1.

Among them, 86% of the innovative enterprises participated in the survey, especially most of them were private enterprises; nearly 90% of the respondents were middle and senior managers, and a small number of them were grass-roots managers of large enterprises, so the completed questionnaires were more rigorous and reliable. The location of enterprises is mainly Beijing, Tianjin, Hebei, Shanghai, Qingdao, and a small number from Guangzhou, Shenzhen, Suzhou, Shenyang, and other places. According to the major categories of manufacturing and service industries, more enterprises belong to the service industry, accounting for 51.17%, and 48.29% belong to the manufacturing industry, which is not a big difference in general. From the perspective of the size of employees, small enterprises and large enterprises show a polarized leadership, accounting for 31.56% and 28.52%, respectively. However, in a comprehensive view, SMEs with 500 and less than 500 employees account for the majority, about 56.66%.

This study also conducted descriptive statistical analysis of the large sample, which was used to analyze the data characteristics and normal distribution. The means of all samples were distributed between 3.6 and 4.3, and the standard deviations were all below 1.2, which indicates that the sample data do not fluctuate much. Meanwhile, from the indicators of skewness and kurtosis, the absolute values of most of the data are less than 2, which can be considered that the data are close to symmetric distribution, that is, close to normal distribution, and can be analyzed later.

4.2. Reliability and Validity Tests. This study will use SPSS 23.0 software to conduct exploratory factor analysis to test the reliability and validity of the sample and to lay the foundation for the regression analysis model in the later section.

4.2.1. Confidence Level Test. The reliability test is generally expressed by Cronbach's α coefficient. It can test whether each question item of each variable can measure the same or similar characteristics and generally requires an α coefficient greater than 0.7 to meet the reliability requirements of each variable and pass the reliability test of the variable. The reliability test for each dimension of the three variables of organizational learning, dynamic ability, and innovation performance meets the requirement of $\alpha > 0.7$, and the overall α coefficient is well above 0.7, and the sample passes the reliability test.
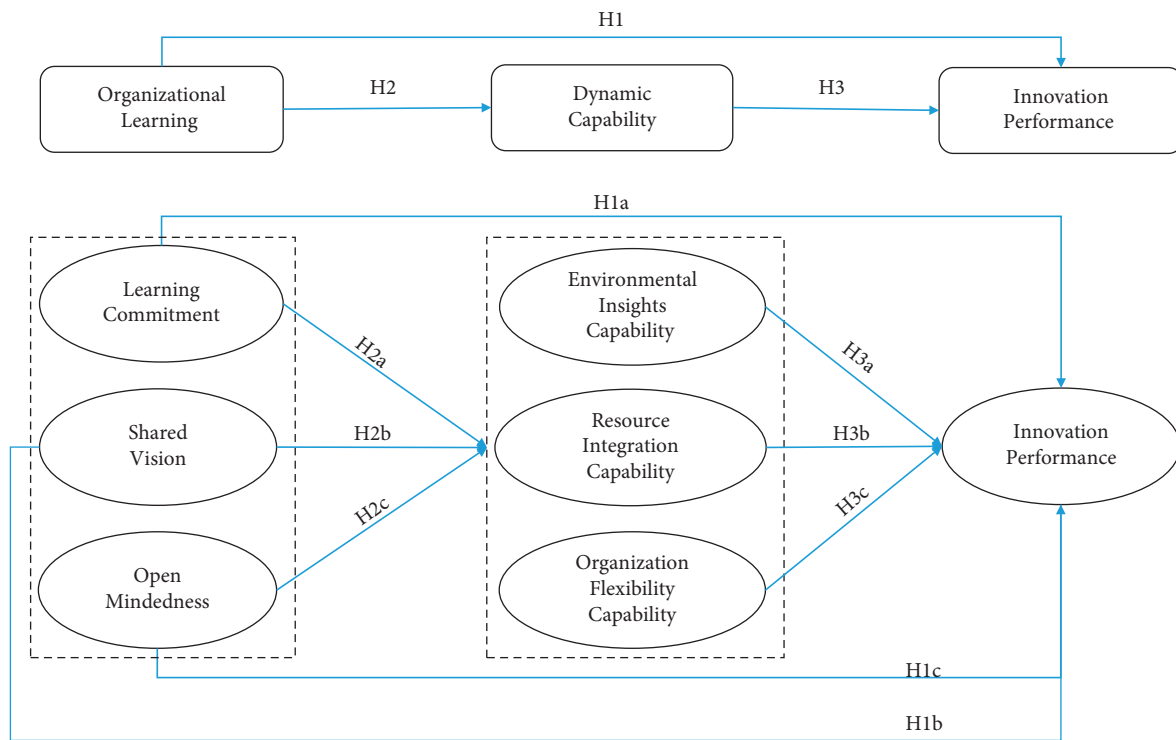
FIGURE 2: Conceptual model of organizational learning, dynamic capabilities and innovation performance.

4.2.2. Validity Test

(1) Validity Analysis of the Innovation Performance Scale.
The KMO sample measure of innovation performance is
0.965, which is much larger than 0.7; the Bartlett sphericity
test results show that the approximate chi-square value is
8457.856, with a significance of 0.000 ($p < 0.01$), and the
overall structural validity of the innovation performance
scale is very good.

In this paper, principal component analysis was chosen
to extract factors with eigenvalues greater than 1. The total
ANOVA table of innovation performance showed that a
total of 1 common factor was extracted from 7 question
items, which could explain 76.235% of the overall hetero-
geneous variables, much greater than 60%, indicating that
the validity of this innovation performance scale is good.

(2) Validity Analysis of the Organizational Learning Scale.
The validity test of the organizational learning scale was
conducted, and the KMO sample measure was 0.936, which
was greater than 0.7; the Bartlett sphericity test showed that
the approximate card placement value was 2944.214, with a
significance of 0.000 ($p < 0.01$), which indicated that the
scale had good structural validity, and the 14 items of or-
ganizational learning were suitable for factor analysis in the
next step. Factor analysis was conducted using principal
component analysis, and factors with eigenvalues greater
than one were extracted. A total of three male factors were
extracted from the organizational learning scale, which were

able to explain 77.920% of the overall heterogeneous vari-
ables, more than 60%, and the validity of organizational
learning can be known to be good.

(3) Validity Analysis of Dynamic Ability Scale. The validity
test of the dynamic ability scale showed that the KMO
sample measure was 0.953 > 0.7; the Bartlett sphericity test
showed that the approximate card placement value was
3,163.745, with a significance of 0.000 ($p < 0.01$), indicating
that the scale had good structural validity and the 12 items of
dynamic ability were suitable for factor analysis in the next
step. Factor analysis was conducted using principal com-
ponent analysis, and factors with eigenvalues greater than 1
were extracted. A total of three male factors were extracted
from the dynamic ability scale, which were able to explain
84.999% of the overall heterogeneous variables, more than
60%. The validity of the dynamic ability can be known to be
good.

4.3. Regression Analysis.
The above tests of reliability and
validity confirm that the measurement model in this study
has good representational effects and can be subjected to the
next step of structural analysis. In this paper, we will use
stepwise regression analysis to examine the effects of or-
ganizational learning and dynamic capabilities on firms'
innovation performance, the effects of organizational
learning on dynamic capabilities, and the mediating role of
dynamic capabilities, respectively.

TABLE 1: Summary of the basic situation of research enterprises.

Variables	Category	Quantity	Percentage
Ownership	State-owned enterprises	91	39.6
	Private enterprises	108	46.06
	Joint ventures	12	4.56
	Foreign wholly owned enterprises	10	3.8
	Others	42	5.97
Positions	Senior managers	94	35.59
	Middle level managers	139	53
	Grassroots managers	30	11.41
Industries	Manufacturing including mechanical, construction, electronics, chemistry, materials	127	48.29
	Services including consulting, trade, telecom, finance, tourism, medicine	136	51.71
Location	Beijing	73	27.8
	Tianjin	22	8.4
	Hebei	30	11.4
	Shanghai	55	20.1
	Qingdao	82	31.18
	Others	11	4.19
Duration of operation	Below 5 years	48	18.25
	6–10 years	52	19.77
	11–20 years	69	26.24
	Above 20 years	94	35.74
Size of employees	Below 100	83	31.56
	101–500	66	25.1
	500–2000	39	14.83
	Above 2000	75	28.52

4.3.1. Correlation Analysis. Before the subsequent testing of the hypotheses, correlation analysis is performed to determine whether there is a correlation between two variables and to indicate the degree of correlation. In this study, Pearson's correlation analysis was conducted using SPSS for each variable, and since there are multiple items for different dimensions of each variable, SPSS was used to find the correlation between "commitment to learning," "shared vision," "open-mindedness," and "environmental insight," "resource integration," "organizational flexibility," and "innovation performance," and then correlated the new variables after averaging. The three dimensions of organizational learning (i.e., commitment to learning, shared vision, and open-mindedness) were significantly and positively correlated with environmental insight, with correlation coefficients of 0.642, 0.730, and 0.751, respectively; with resource integration, with correlations of 0.627, 0.731, and 0.782, respectively; and with organizational flexibility, with correlations of 0.634, 0.707, and 0.783, respectively. From this, it can be concluded that organizational learning is significantly and positively related to dynamic capability. The three dimensions of organizational learning and innovation performance are also significantly positively correlated, with correlation coefficients of 0.626, 0.679, and 0.730, and $p < 0.01$; the three dimensions of dynamic capability and innovation performance are also significantly positively correlated, with correlation coefficients of 0.728, 0.793, and 0.843, and $p < 0.01$. Therefore, the basic research hypothesis of this paper can be initially confirmed, and subsequently, the structural equation analysis laid the foundation.

4.3.2. Three Major Problem Tests for Regression Analysis

(1) Multicollinearity Test. Before conducting regression analysis, the explanatory variables in the model should be tested for multicollinearity to prevent the existence of highly correlated relationships between variables that make the model difficult to predict accurately. Usually, VIF is used as a criterion to test whether there is multicollinearity among the variables. When $0 < VIF < 10$, it means there is no multi-collinearity among the variables, and when $VIF > 10$, it means there is strong multicollinearity among the variables, and further processing of the data is needed. As shown in Table 2 below, it is the VIF test for each dimension of the variables, and the test results of VIF are all less than 10, indicating that there is no multicollinearity. As shown in Table 3, it is a factor downscaling by principal component analysis, and the three dimensions of the independent variable organizational learning and the mediating variable dynamic capability are expressed by one total variable each so as to test the multicollinearity with innovation performance, and the results show that the VIF values are all $3.172 < 10$, and there is no multicollinearity among the variables.

(2) Serial Correlation Test. Serial correlation test, also called autocorrelation test, is used to test whether there is a correlation between the overall regression model and the random error term. In this study, it is very meaningful to prove the existence of the regression equation by DW test. When the value of DW is greater than 1.5 and less than 2.5, it can be considered that there is no serial correlation in the regression model.

As shown in Table 4 below, the DW regression result of the model in this paper is 1.823, which meets the criteria, so it can be considered that there is no serial correlation between the independent variables.

(3) Heteroscedasticity Test. The heteroscedasticity test is also an a priori condition before the regression test. In this study, scatter plots are used to determine whether there is heteroscedasticity in the model. By observing the scatter plot, if the scattered points are scattered, independent, and irregular, it can be judged that there is no heteroscedasticity. By observing Figure 3, the scatter plot obtained in this study meets the requirements such as irregularity, and it can be judged that there is no heteroscedasticity problem. Combining the above multiple covariance and serial correlation tests, the basic requirements of the data structure for the subsequent study are satisfied.

TABLE 2: VIF test results of each dimension.

Model	Nonstandard factors		Standard factors	t	Weights	Collinearity	
	B	Errors	Beta			Tolerance	VIF
(Constants)	0.055	0.171		0.319	0.750		
Learning commitment	0.099	0.056	0.090	1.772	0.078	0.451	2.220
Shared vision	0.55	0.69	0.053	0.807	0.421	0.268	3.725
1 Open mindedness	0.045	0.075	0.044	0.604	0.546	0.215	4.646
Environment insights	0.010	0.072	0.010	0.144	0.886	0.240	4.169
Resource integration	0.182	0.086	0.174	2.106	0.036	0.171	5.845
Flexibility capability	0.551	0.073	0.555	7.549	0.000	0.216	4.633

TABLE 3: VIF test results of variables.

Model	Nonstandard factors		Standard factors	t	Weights	Collinearity	
	B	Errors	Beta			Tolerance	VIF
(Constant)	3.781	0.033		115.544	0.000		
1 Organizational learning	0.161	0.058	0.175	2.750	0.006	0.315	3.172
Dynamic capability	0.632	0.058	0.690	10.819	0.000	0.315	3.172

TABLE 4: Variable DW test results.

Model	R	$R2$	Adjusted $R2$	Errors in standard estimation	DW
1	0.841a	0.707	0.704	0.49840	1.823

4.3.3. Regression Analysis of Organizational Learning and Innovation Performance. One main hypothesis and three subhypotheses were proposed in the previous section regarding the relationship between dynamic capabilities and innovation performance. To test hypotheses H1, H1a, H1b, and H1c, regression analyses were conducted with organizational learning and its three dimensions as independent variables and innovation performance as dependent variables, respectively.

(1) Regression Analysis of Organizational Learning on Innovation Performance as a Whole. The regression analysis was conducted using the direct entry method with organizational learning as the independent variable and innovation performance as the dependent variable. The DW value was $1.825 < 2.0$, and it could be obtained that this regression model did not have the problems of multicollinearity and serial correlation. The probability of significance of the constant t-test is $0.000 < 0.05$, so the constant term can enter the regression model; the probability of significance of the organizational learning t-test is $0.000 < 0.05$, which can also enter the regression equation. The resulting regression equation between organizational learning and innovation performance was obtained as

$$\text{Innovation performance} = 0.683 * \text{organizational learning} \\ + 3.781. \tag{1}$$

It can be seen that organizational learning has a significant positive effect on innovation performance, and the regression coefficient is not equal to zero; therefore, hypothesis H1 holds.

(2) Regression Analysis of Each Dimension of Organizational Learning on Innovation Performance. The stepwise regression method is used, and the independent variable is selected as three dimensions of organizational learning, and the dependent variable is innovation performance, and the regression analysis is conducted. The adjusted $R2$ value gradually becomes larger as the variables increase, indicating that the regression equation can express the contribution of the variables entering the equation. The DW value is $1.842 < 2.0$, indicating that the regression equation does not have the problems of multicollinearity and serial correlation. The ANOVA analysis shows that the model overall significance tests were all $0.000 < 0.05$, reaching a significant level. The explanations of innovation performance by the predictor variables entering the regression equation all reached significance and the regression coefficients were not equal to zero.

Table 5 shows that the probability of significance of the t-test for the constant term is $0.085 > 0.05$, which does not pass the significance test, indicating that the constant term cannot enter the regression equation. All three dimensions of organizational learning entered the regression equation, and the significance probabilities of the t-test were 0.000, 0.004, and 0.040, which were less than 0.05, so the regression equation of each dimension of organizational learning and innovation performance was obtained as follows:

$$\text{Innovation performance} = 0.459 * \text{open mind} + 0.186 \\ * \text{learning commitment} \\ + 0.169 * \text{shared vision}. \tag{2}$$

The regression equation shows that open-mindedness, commitment to learning, and shared vision all have a
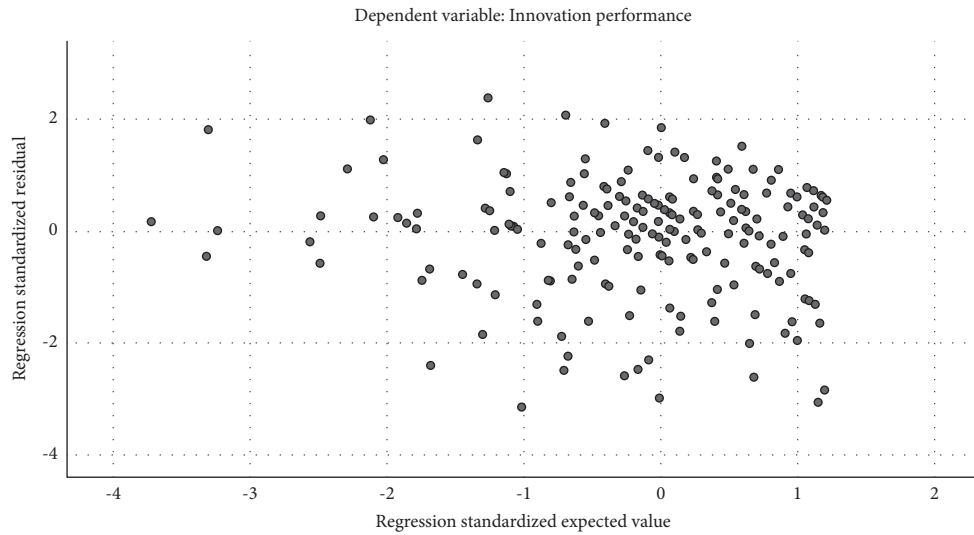
Dependent variable: Innovation performance

FIGURE 3: Residual scatter plot of the regression model.

significant positive effect on the innovation performance of the company. And the regression coefficients are 0.459, 0.186, and 0.169, respectively, with the most significant contribution of open-mindedness to corporate innovation performance. Therefore, hypotheses H1a, H1b, and H1c are valid.

4.3.4. Regression Analysis of Organizational Learning and Dynamic Capabilities

(1) Regression Analysis of Organizational Learning on Dynamic Capability as a Whole. With organizational learning as the independent variable and dynamic capability as the dependent variable, the regression analysis was conducted using the direct entry method. The DW value was $1.739 < 2.0$, which shows that this regression model does not have the problems of multicollinearity and serial correlation. The probability of significance of the constant t-test was 1.000, which was not significant, and the constant term could not enter the regression model; the probability of significance of the organizational learning t-test was $0.000 < 0.05$, which could enter the regression equation. The resulting regression equation between organizational learning and dynamic capability was obtained as follows:

$$\text{Dynamic capability} = 0.828 * \text{organizational learning}. \quad (3)$$

It can be seen that organizational learning has a significant positive effect on dynamic capability, and the regression coefficient is not equal to zero; therefore, hypothesis H2 holds.

(2) Regression Analysis of the Dimensions of Organizational Learning on Dynamic Capability. The stepwise regression method was used, the independent variable was selected as three dimensions of organizational learning, and the dependent variable was dynamic capability, and the regression analysis was conducted. The adjusted $R2$ value gradually became larger as the variables increased, indicating that the

regression equation could express the contribution of the variables entering the equation. the DW value was $1.802 < 2.0$, indicating that the regression equation did not have multicollinearity and serial correlation problems. The ANOVA analysis showed that the model overall significance tests were all $0.000 < 0.05$, reaching the significant level. The explanations of dynamic capacity by the predictor variables entering the regression equation all reached significance, and the regression coefficients were not equal to 0.

Table 6 shows that the probability of significance of the t-test for the constant term is $0.000 < 0.05$, which passes the significance test and the constant term can enter the regression equation. All three dimensions of organizational learning entered the regression equation, and the significance probabilities of t-test were 0.000, 0.001, and 0.007, which were all less than 0.05, so the regression equation of each dimension of organizational learning and dynamic capability was obtained as follows:

$$\text{dynamic capability} = 0.528 * \text{open} - \text{mindedness}$$
$$+ 0.226 * \text{shared vision} \quad (4)$$
$$+ 0.144 * \text{learning commitment}.$$

The regression equation shows that open-mindedness, commitment to learning, and shared vision all have a significant positive effect on the dynamic capability of the company. And the regression coefficients are 0.459, 0.186, and 0.169, respectively, where open-mindedness has the most significant contribution to dynamic capabilities, followed by shared vision, and learning commitment has the least correlation. Therefore, hypotheses H2a, H2b, and H2c all hold.

4.3.5. Regression Analysis of Dynamic Capability and Innovation Performance. With dynamic capability as the independent variable and innovation performance as the dependent variable, the regression analysis was conducted using the direct entry method, and the DW value was $1.784 < 2.0$, which shows that this regression model does not

TABLE 5: Regression coefficient table of organizational learning on innovation performance.

Model		Nonstandard factors		Standard factors	t	Weights
		B	Errors	Beta		
1	(Constants)	0.806	0.188		4.286	0.000
	Open-mindedness	0.746	0.046	0.730	16.209	0.000
2	(Constants)	0.440	0.210		2.097	0.037
	Open-mindedness	0.587	0.063	0.574	9.293	0.000
	Learning commitment	0.242	0.068	0.222	3.586	0.000
3	(Constants)	0.366	0.211	0.459	1.731	0.085
	Open-mindedness	0.469	0.085		5.528	0.000
	Learning commitment	0.204	0.070	0.186	2.925	0.004
	Shared vision	0.176	0.085	0.169	2.067	0.040

Note. The dependent variable is innovation performance.

TABLE 6: Regression coefficient table of dynamic ability of organizational learning dimensions.

Model		Nonstandard factors		Standard factors	t	Weights
		B	Errors	Beta		
1	(Constants)	−3.638	0.173		−21.048	0.000
	Open-mindedness	0.912	0.042	0.818	21.572	0.000
2	(Constants)	−3.874	0.176		−21.974	0.000
	Open-mindedness	0.657	0.074	0.589	8.917	0.000
	Shared vision	0.313	0.075	0.276	4.174	0.000
3	(Constants)	−4.092	0.191		−21.401	0.000
	Open-mindedness	0.589	0.077	0.528	7.688	0.000
	Shared vision	0.257	0.077	0.226	3.344	0.001
	Learning commitment	0.172	0.063	0.144	2.737	0.007

Note. The dependent variable is dynamic capabilities.

have the problem of multicollinearity and serial correlation. The probability of significance of the constant t-test is $0.000 < 0.05$, so the constant term can be entered into the regression model; the probability of significance of the dynamic capability t-test is $0.000 < 0.05$, which can also be entered into the regression equation. The resulting regression equation between dynamic capability and innovation performance was obtained as follows:

$$\text{innovation performance} = 0.765 * \text{dynamic capability} \\ + 3.781. \quad (5)$$

It can be seen that dynamic capability has a significant positive effect on innovation performance, and the regression coefficient is not equal to zero; therefore, hypothesis H3 holds.

(1) Regression Analysis of Dynamic Capability Dimensions on Innovation Performance. In this paper, we use stepwise regression method to analyze the three dimensions of dynamic capability as independent variables and innovation performance as dependent variables. Two factors in dynamic capability enter into the regression equation, and the

adjusted $R2$ value gradually becomes larger as the variables increase, indicating that the regression equation can express the contribution of the variables entering into the equation. The DW value is $1.906 < 2.0$, indicating that the regression equation does not have the problems of multicollinearity and serial correlation. The ANOVA analysis table shows that the overall significance tests of the model are all $0.000 < 0.05$, reaching a significant level. The explanations of dynamic capacity by the predictor variables entering the regression equation all reached significance, and the regression coefficients were not equal to 0.

Table 7 shows that the probability of significance of the t-test for the constant term is $0.041 < 0.05$, which passes the significance test and the constant term can enter the regression equation. The two factors of dynamic capability entered the regression equation and the significance probabilities of t-test were 0.000 and 0.000 were less than 0.05, so the regression equation of the two dimensions of dynamic capability and innovation performance was obtained as follows:

$$\text{innovation performance} = 0.625 * \text{organizational fleaxibility capacity} + 0.252 * \text{resource integration capacity} + 0.308. \quad (6)$$

The regression equation shows that environmental insight capability does not enter into the equation, while organizational flexibility capability and resource integration capability have a significant positive effect on the innovation performance of enterprises. And the regression coefficients are 0.625 and 0.252, respectively, and the organizational flexibility capability has the most significant contribution to the firm's innovation performance. Therefore, hypotheses H3b and H3c are valid and hypothesis H3a is not valid.

4.3.6. Analysis of the Mediating Effect of Dynamic Capability. The regression coefficients between organizational learning and dynamic capability and its three dimensions (environmental insight capability, resource integration capability, and organizational flexibility capability) are significant. In order to test hypotheses H4, H4a, H4b, and H4c, this study constructs four regression models with organizational learning and dynamic capability and its three dimensions as independent variables and innovation performance as dependent variables, respectively, to compare and analyze the mediating effect of dynamic capability.

Model 1 in Table 8 shows that when dynamic capabilities are added, the standardized coefficient of organizational learning is 0.175 and the regression coefficient is $0.006 > 0.005$, which can be considered insignificant; the standardized coefficient of dynamic capabilities is 0.690 and the regression coefficient is significant at the level of 0.000. According to the test of mediating effect, it can be concluded that there is a mediating effect of dynamic capability between organizational learning and innovation performance, which verifies hypothesis H4.

Model 2 shows that the standardized coefficient of environmental insight capability is 0.375 and the regression coefficient is significant at the level of 0.001. When controlling for environmental insight capability, the standardized coefficient of organizational learning is $0.454 < 0.746$ and the regression coefficient is significant at the 0.001 level. According to the test procedure, it can be concluded that environmental insight capability partially mediates the relationship between organizational learning and innovation performance. The regression analysis of organizational learning on dynamic capabilities shows that the standardized coefficient of environmental insight capability is 0.779, because from the calculation, the mediated utility of environmental insight capability accounts for $0.779 * 0.375/0.746 = 39.159\%$ of the total utility, which verifies hypothesis H4a.

Model 3 shows that the standardized coefficient of resource integration capability is 0.540, and the regression coefficient is significant at 0.001 level is significant. When controlling for resource integration capability, the standardized coefficient of organizational learning is $0.322 < 0.746$ and the regression coefficient is significant at the 0.001 level. According to the test procedure, it can be concluded that resource integration capability partially mediates the relationship between organizational learning and innovation performance. By calculation, the mediated utility of resource integration capability accounts for $0.789 * 0.540/0.746 = 57.113\%$ of the total utility, which verifies hypothesis H4b.

Model 4 shows that the standardized coefficient of organizational flexibility capability is 0.666 and the regression coefficient is significant at the 0.001 level. When controlling for organizational flexibility capacity, the standardized coefficient of organizational learning is $0.227 < 0.746$ and the regression coefficient is significant at the 0.001 level. According to the test procedure, it can be concluded that organizational flexibility capability partially mediates between organizational learning and innovation performance. The hypothesis H4c was verified by calculating that the mediated utility of organizational flexibility capability accounts for $0.779 * 0.666/0.746 = 69.546\%$ of the total utility.

Through correlation analysis and stepwise regression analysis of 232 valid questionnaires with the help of SPSS23.0, the following findings were obtained: organizational learning and its three dimensions all have significant positive effects on firms' innovation performance, so hypotheses H1, H1a, H1b, and H1c all hold; organizational learning and its three dimensions also have significant positive effects on dynamic capabilities, so hypotheses H2, H2a, H2b, and H2c are all valid. There is no significant correlation between environmental insight capability and innovation performance, while the remaining two dimensions, resource integration capability and organizational flexibility capability, have a significant positive impact on innovation performance, so hypothesis H3a does not hold, and hypotheses H3, H3b, and H3c hold. Finally, all three dimensions of dynamic capabilities play a mediating utility between organizational learning and innovation performance; therefore, hypotheses H4, H4a, H4b, and H4c are all valid.

5. Management Suggestions

Through extensive literature reading and practical investigation, combined with the research content and direction of this study, this paper gives relevant management recommendations on how innovative enterprises can improve their innovation performance, taking Beijing-Tianjin-Hebei, Shanghai, and Qingdao as the main sample sources.

Through the empirical study, it is found that organizational learning plays an important positive influence role in promoting the growth of innovation performance; therefore, building a learning organization and fostering a good environment for organizational learning are very beneficial to the sustainable development of enterprises. During the research, it was found that innovative enterprises in Beijing, Tianjin, Hebei, and Qingdao regions did not pay enough attention to organizational learning, like to shout empty slogans and named empty policies without implementing them into actions. At the same time, by verifying the positive influence of dynamic capability on innovation performance and its intermediary role, the author believes that innovative enterprises should improve their dynamic capability on the basis of solid organizational learning. This

TABLE 7: Regression coefficient table of dynamic capability dimensions on innovation performance.

Model		Nonstandard factors		Standard factors	t	Weights
		B	Errors	Beta		
1	(Constants)	0.531	0.141		3.772	0.000
	Organization flexibility capability	0.837	0.035	0.843	23.751	0.000
2	(Constants)	0.308	0.150		2.050	0.041
	Organization flexibility capability	0.620	0.069	0.625	9.048	0.000
	Resource integration capability	0.264	0.072	0.252	3.655	0.000

Note. The dependent variable is innovation performance.

TABLE 8: Dynamic capacity mediation.

Model		Nonstandard factors		Standard factors	t	Significance
		B	Errors	Beta		
1	Organizational learning	0.161	0.058	0.175	2.750	0.006
	Dynamic capability	0.632	0.058	0.690	10.819	0.000
2	Organizational learning	0.416	0.060	0.454	6.926	0.000
	Environmental insights	0.387	0.068	0.375	5.707	0.000
3	Organizational learning	0.295	0.056	0.322	5.235	0.000
	Resource integration	0.565	0.064	0.540	8.775	0.000
4	Orga learning	0.208	0.050	0.227	4.147	0.000
	Flexibility capability	0.661	0.054	0.666	12.161	0.000

should be an important development direction for innovative enterprises in the future.

This paper will give the following management suggestions for reference from the constitutive dimensions of organizational learning and dynamic capability:

(i) Based on open-mindedness, innovative firms should foster an open-mind culture rather than a traditional way of top-down in Chinese companies.

(ii) Based on learning commitment, innovative firms should strengthen their training systems.

(iii) Based on shared vision, innovative firms should embrace all employees and promote all's involvement.

(iv) Based on organizational flexibility, innovative firms should build its responsive mechanism to environment changes and uncertainties.

(v) Based on resource integration, innovative firms should make best use of cross-function resources and strengthen coordination.

6. Research Limitations and Outlook

6.1. Limitations of the Study. This paper mainly selects Beijing-Tianjin-Hebei, Shanghai, and Qingdao as the main respondents of innovative enterprises and explores the relationship between organizational learning, dynamic capabilities, and innovation performance by means of distributing questionnaires. Due to the limited resources available and personal research level, there are many shortcomings in this study, which are mainly summarized as follows:

(1) *Limitations of the Sample Area and Number*

On the one hand, the research regions selected for this study are Beijing, Tianjin, Hebei, and Shanghai, where there are many innovative enterprises, and Qingdao, which is a region with great potential for innovation development and is better known. The regional coverage is relatively narrow, and the findings may have some regional characteristics, which do not guarantee the generalizability of the findings. On the other hand, although the sample size is sufficient for this study, it is still small in terms of rigor, which may also affect the results.

(2) *The Time Limitations of Organizational Learning Research*

Organizational learning is a long-term process, and it takes a period of time to monitor the learning process from the initial learning to the acquisition of learning outcomes. Therefore, when the same time point is selected to obtain data, the degree and stage of organizational learning varies from one innovative company to another, and the degree of impact on dynamic capabilities and innovation performance also varies. In the future, we will improve the selection of time periods and conduct longitudinal tests to obtain more accurate and rigorous research results.

(3) *Subjective Limitations of Questionnaires*

These are the most important source of data for this study. Unlike objective information and data, subjective answers are bound to be personal, and even though the questionnaire has been revised, the nonobjective nature of the questionnaire cannot be avoided.

6.2. Research Outlook. Looking at the whole study, combined with the findings and limitations of the study, there are many areas for improvement and further research in this paper, mainly the following:

(1) Expand the scope of the study. The selection of innovative enterprises should not be limited to a few famous first- and second-tier cities, but should cover all regions of the country, such as northern China, northeast China, southeast China, and southwest China, and conduct research according to different geographical classifications, or through the division of first-, second-, and third-tier cities to classify research so that the results of the study can be more comprehensive and representative.

(2) Explore the detailed influence paths between each dimension of organizational learning and each dimension of dynamic capability and innovation performance. The impact between dimensions and subdimensions is divided in more detail. At the same time, the study of the pathway relationship between variables and subdimensions can also be included in the scope of the study to make the study more rigorous and complete.

(3) Adopt a longitudinal research approach. The article is based on the acquisition of data at a specific cross section of time. The disadvantage of this approach is that it does not reflect the dynamic process of change. Therefore, the data should be collected over a longer period depending on the content of the study, measured in years, and recorded over a number of years so that the relationship between variables can be analyzed through a longitudinal comparison of the data. Alternatively, other influencing factors, such as the dynamics of the environment, could be added to minimize possible confounding factors in the study to obtain more scientific findings.

Appendix

Questionnaire

Questionnaire about correlation among organizational learning, dynamic capabilities, and innovation performance.

Dear Sir/MAdam, Dear Sir/MAdam, Hello! THank you for taking the time to participate in this questionnaire.

This questionnaire examines the relationship between organizational learning, dynamic capabilities, and innovation performance in innovative companies. The aim of the study is to capture the dynamic capabilities of companies to enhance their organizational learning capabilities and thus improve the innovation performance of innovative companies. The questionnaire is designed to obtain data for research purposes only and will not be used for any commercial purposes. This questionnaire is completely anonymous, and your personal answers will be treated in strict confidence, so please do not have any concerns. If you would like to know the results of this statistical survey, please leave your e-mail: _____

Thank you for your cooperation and support!

School of Economics Management.

Beijing Jiaotong University.

Part I: Basic Information

(i) The following is a description of the basic situation of the enterprise and your personal situation, please draw "☑" on the corresponding option.

(1) The nature of your company's business:

(a) State-owned enterprise
(b) Private enterprise
(c) Wholly foreign-owned enterprise
(d) Sino-foreign joint venture
(e) Other

(2) Your company's industry:

(a) Manufacturing (machinery, construction, electronics, chemicals, materials, outsourcing production, food processing, etc.)
(b) Service industry (consulting services, commerce, trading, telecom, finance and insurance, catering and tourism)

(3) The number of employees in your company is approximately

(a) less than 100
(b) 100–500
(c) 501–1000
(d) more than 1000

(4) The actual number of years your company has been in existence is

(a) less than 5 years
(b) 5–10 years
(c) 11–20 years
(d) more than 20 years

(5) Your current position belongs to

(a) Senior management
(b) Middle management
(c) Basic management
(d) General staff

(6) The city where your company is located: _____

Part II: Organizational Learning. Please evaluate your degree of agreement/disagreement towards the following statement and please draw "☑" based on your evaluation. The rating is as follows (Table 9): 1—strongly disagree; 2—disagree; 3—neutral; 4—agree; and 5 —strongly agree.

Part III: Dynamic Capabilities. Below is a description of your company's dynamic capabilities. Please draw "☑" based on your evaluation of your company status. The rating is as follows:1—strongly disagree; 2—disagree; 3—neutral; 4—agree; and 5 —strongly disagree. (Table 10).

Part IV: Innovation Performance. Please draw "☑" based on your assessment. The rating is as follows: 1—strongly disagree; 2—disagree; 3—neutral; 4—agree; and 5 —strongly agree; (Table 11).

TABLE 9: Questions for organizational learning.

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
Learning commitment					
(1) Organizational learning is critical for firms to gain competitive advantages	1	2	3	4	5
(2) Management regards learning a method to improve job performance	1	2	3	4	5
(3) Learning and training to employees is regarded as investment not cost	1	2	3	4	5
(4) Managers and employees believe stopping learnings will increase future risks	1	2	3	4	5
(5) Managers believe learning is the basis for sustainable development	1	2	3	4	5
Shared vision					
(6) The company from top managers to working levels have just one shared goal or vision	1	2	3	4	5
(7) Managers share future vision with employees	1	2	3	4	5
(8) All employees work hard to achieve the goal	1	2	3	4	5
(9) Employees believe they are responsible for the company future	1	2	3	4	5
(10) All have a clear understanding of the company's positioning and future business plan	1	2	3	4	5
Open-mindedness					
(11) Company values and appreciates originated opinions and advice	1	2	3	4	5
(12) Managers motivate employees to take different perspectives in thinking	1	2	3	4	5
(13) Managers welcome reasonable advice	1	2	3	4	5
(14) Managers often discuss failure and success cases	1	2	3	4	5

TABLE 10: Questions of dynamic capabilities.

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
Environment insights					
(1) Deep understanding of industry rules and trend	1	2	3	4	5
(2) High sensitivity to external changes	1	2	3	4	5
(3) Capabilities to identify opportunities and develop action plans	1	2	3	4	5
(4) Multi channels to gain customer insights	1	2	3	4	5
Resource integration					
(5) Dynamic coordination of cross function actions	1	2	3	4	5
(6) Secured allocation of resources cross functions	1	2	3	4	5
(7) Coordination meets each function's expectation	1	2	3	4	5
(8) Best use of extra resources according to market changes	1	2	3	4	5
Organizational flexibility					
(9) Allow employees to break conventional ways of working to be responsive and dynamic	1	2	3	4	5
(10) Set up adequate channels/mechanism to hear employee feedbacks	1	2	3	4	5
(11) Allow employees to decide and take actions based on market reality	1	2	3	4	5
(12) Change or adjust strategic actions ahead of competitors	1	2	3	4	5

TABLE 11: Questions for dynamic capabilities.

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
(1) More products/service than competitors	1	2	3	4	5
(2) More IP/patents than competitors	1	2	3	4	5
(3) More revenue from new products/service	1	2	3	4	5
(4) Continuous success rate in new product development	1	2	3	4	5
(5) Faster speed than competitors to launch new products	1	2	3	4	5
(6) Continuous cost down along with technology improvements	1	2	3	4	5
(7) Active adoption of new policies to improve performance	1	2	3	4	5

Data Availability

The data used to support the findings of this study are available from the corresponding author upon request.

Conflicts of Interest

The authors declare no conflicts of interest.

Acknowledgments

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