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THE DIMENSION OF KNOWLEDGE-BASED LEADERSHIP AND ITS IMPACT ON ENTERPRISE PERFORMANCE IN CHINA'S SCIENCE AND TECHNOLOGY-BASED SMALL AND MEDIUM-SIZED ENTERPRISES

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Background of the Study of The advent of the era of knowledge economy

Since the 1980s, the mutual penetration and role of knowledge and economy have become stronger and stronger, which has caused a fundamental change in the global economy. On the one hand, knowledge factors have a higher degree of participation in economic activities; In the economic activities aimed at improving competitiveness, the knowledge orientation is continuously enhanced, and the knowledge content of products and services is continuously increasing.Today, economic growth is more dependent on the production, diffusion and application of knowledge than ever before new Economic form the knowledge economy, with its vigorous vitality, indicates that the 21st century will be the era of knowledge economy.The famous management guru Peter Drucker puts: "What is knowledge? Knowledge is our primary wealth." Knowledge and wealth will be unanimously unified, and the richer knowledge will be the richest person in material wealth. According to estimates by the American Association of Future Studies, in 2010, the wealthiest people will be knowledge tycoons, 60% to 70% of the most profitable jobs will be held for them.In modern society, knowledge products have become the fashion of society, and knowledge has truly become synonymous with wealth. The investment in intangible assets is much faster than the investment in tangible assets.At present, many intangible assets of high-tech companies in the United States have exceeded 60% of total assets. People with knowledge get higher paying jobs, and companies with most independent intellectual property rights are the best in the market.

China's technology-based SMEs need Knowledge-based leaders

With the development of the knowledge economy, the industrial structure is accelerating, the product life cycle is shortened, and new technologies and new technologies are emerging. In

the past, the focus of technology-based enterprises was to increase productivity, reduce product costs, and expand market share. How can today's technology-based enterprises be effective? It is becoming more and more important to use a variety of information tools to collect, utilize and develop relevant knowledge, improve the efficiency of business operations and accelerate the research and development and innovation of enterprise products, and actively adapt to the ever-changing market environment.Economic globalization has made the market competition environment faced by technology-based enterprises increasingly complex and fierce. This requires that technology-based enterprises must meet the challenges of global competition in an efficient management manner.In the era of knowledge economy, the competition among technology-based enterprises is actually the competition between science and technology, knowledge and talents. Knowledge has higher value than other production factors, and it has become the most important strategy for science and technology enterprises to enhance their core capabilities. Sexual resources can greatly increase the value of corporate products and services, and help to enhance the competitive advantage of enterprises. Knowledge-based leadership is a new type of leadership model developed under this new situation and is increasingly becoming a much-needed leader of SMEs.

The importance of Knowledge-based leadership style for business performance

In the period of knowledge economy, knowledge resources are the decisive resources for the future wealth creation and maintenance of competitive advantage. Its role in the current evolution from industrial economy to knowledge economy and the entire era of knowledge economy is irreplaceable by any other resources.Peter Drucker, the American management authority, believes: "In the modern economy, knowledge is becoming the real capital and the primary wealth." Practice has proved that companies with more knowledge are the winners of market competition.Knowledge-based leaders will be an important force in the development of the enterprise in the fast-changing knowledge, not breaking and expanding.Business leaders must choose to study tirelessly, learn by doing, turn the process of leadership into a process of learning, and create themselves before making others.Only through learning, business leaders can stand in the leading position of knowledge and wisdom, in order to gain insight into the environment in which enterprises are located and choose the right direction for enterprise development.Knowledge-based leaders who master and manage knowledge resources are an important source of lasting competitive advantage and excellent performance.

Problem Statement

In the context of the era of knowledge economy, the role of corporate leaders is critical to business development. The results of many empirical studies have shown that the Knowledge-based leadership style can effectively enhance the construction of knowledge-based organizations, improve their learning and creativity, and improve corporate performance. However, previous research on the contextuality of the Knowledge-based leadership style has focused more on organizational and external influences, and more research needs to examine the dimensions of the Knowledge-based leadership style and the various dimensions of Knowledge-based leadership. How to influence business performance.

At present, there has been a lot of research and theory focusing on Knowledge-based leadership, which has become a new leadership paradigm. Knowledge-based leadership is named after its intellectual literacy, humanism, and innovation. He is a personalized leader with comprehensive characteristics in the era of knowledge economy. Knowledge-based leadership is a deep understanding of the importance of information and knowledge in the knowledge economy era, aimed at improving organizational knowledge acquisition and innovation. At the same time, Knowledge-based leadership is a process-oriented leadership style. Leaders promote the learning behaviour and Knowledge Management Ability activities by establishing role models, rewarding employees' learning behaviours and creating a learning atmosphere, and building a Knowledge-based leadership to meet organizational knowledge. Demand to achieve the goal of Jiangsu private education enterprise. However, the theoretical research of Knowledge-based leadership is still very limited. The literature that can be searched is very limited, which brings many difficulties to the research. What does the "knowledge-based leadership" bring to the company? We believe that few companies can give scientific and clear answers. This paper is to build a model to guide Chinese SMEs to implement effective corporate management by leveraging the multi-dimensional role of Knowledge-based leadership, thereby improving corporate performance and surviving and growing in the fierce market competition.

Research Questions

Based on the above statement, this article is devoted to the following two issues:

First, what are the dimensions of Knowledge-based leadership? What tools can be used to measure and evaluate the knowledge-based leadership level objectively and scientifically. Knowledge-based leadership is not a one-dimensional concept, but a composite concept consisting of multiple dimensions. At present, some people like to directly use the knowledge-based leadership theory proposed by Western scholars to analyse the leadership style of Chinese SMEs. This study believes that this will inevitably be biased. Western scholars' research results are based on Western companies. Their perfect management system, diversified organizational forms, and relatively high overall education level have laid the foundation for the formation of Knowledge-based leadership. In contrast, China is quite different from the West in many aspects. Therefore, whether the research results of Western scholars can be directly applied to Chinese SMEs needs further investigation and verification. Some scholars in China have proposed some Knowledge-based leadership theories from the national conditions, but the operability of applying these ideas is still far from being solved. There are two reasons for this: First, the study of Knowledge-based leadership theory the research method is still relatively simple, and the systematic empirical research in the process of forming the theoretical framework is relatively lacking. Second, the various dimensions of Knowledge-based leadership are not behaviour-based, but conceptual and abstract descriptions, which make each dimension The connotation and extension are not clear enough, which makes the measurability and accuracy of the measurement greatly affected. Only by clarifying the framework of the knowledge-based leadership theory and solving the problem of the evaluation-measurement of the knowledge-based leadership, the knowledge-

based leadership dimension can be scientifically guided in order to have an objective basis for further targeting.

Second, how does the dimension of corporate performance in this study constitute? The connotation of balanced scorecard theory and the practical basis for global use. How does he influence and guide the four dimensions of defining enterprise performance in this study?

Third, how does the multi-dimensionality of Knowledge-based leadership affect the performance of the company? Scientifically and clearly answer the Knowledge-based, the Internal Operation, the Learning and Development, and the Financial Condition. The impact is very meaningful. This can help companies clearly see the benefits of Knowledge-based leadership, and then clarify the goals and objectives of Knowledge-based leadership. At the same time, they take targeted measures to improve leaders' own deficiencies. Improve overall performance. At present, most of the discussion about the impact of Knowledge-based leadership on corporate performance is qualitative description, and the research methods are not perfect. Therefore, using empirical and quantitative methods to prove that the Knowledge-based leadership dimension has an impact on all aspects of corporate performance. An important topic. This article will focus on China's technology-based SMEs, revealing the relationship between Knowledge-based leadership and corporate performance, and providing some reference for corporate management and development.

Research Objectives

The purpose of this study is to provide a theoretical framework and guidance for the establishment of the Knowledge-based leadership theory and to enrich the theoretical system of the Knowledge-based leadership research field by confirming the foundation-based leadership dimension and providing theoretical framework and guidance for the formation of the Knowledge-based leadership system. .At the same time, this paper studies the scales obtained by the study, provides an effective measurement tool for assessing the level of the kindergarten-private education in Jiangsu, and then provides a scientific basis for improving the current work and planning future leaders' cultivation, thus promoting the company's Knowledge-based The process of leadership application. In this study, through the discussion of the influence of the knowledge-based leadership dimension on the performance level of private education enterprises in Jiangsu, it is empirically clear which dimensions of Knowledge-based leadership have an impact on the performance level of enterprises, and provide a theory for improving corporate performance and improving management decision-making. In accordance with. The specific objectives are as follows:

   (1) Selecting the results of the more systematic and mature Knowledge-based leadership theory research and obtaining the corresponding measurement scale to solve the Knowledge-based leadership measurement tools. On this basis, the paper proposes the composition of the company's Knowledge-based leadership. Through the empirical research, the paper validates the applicability of the knowledge-based leadership dimension in China's technology-based SMEs. Through the revision, exploration and verification analysis, it reorganizes and refines the existing dimensions and finally determines the knowledge of China's technology-based

SMEs. -based on the composition of leadership.

(2) Based on the performance measurement questionnaires used by foreign scholars in relevant research, the composition dimension of enterprise performance is proposed. Through the empirical research to verify the applicability of the enterprise performance component dimension in China's technology-based SMEs, through the revision, exploration and verification analysis, the existing dimensions are reorganized and refined, and the enterprise composition dimension of China's technology-based SMEs is finally determined. .

(3) Using Knowledge-based leadership measurement tools and enterprise performance evaluation tools, obtain relevant data, and explore the impact of the Knowledge-based leadership dimension on corporate performance levels through statistical analysis of relevant analysis and regression analysis.

LITERATURE REVIEW

Historical Review of Enterprise Performance

Definition

Chinese scholars Wei Liqun and Wang Zhihui (2002) believe that corporate performance is the result of the combination of top management characteristics, entrepreneurial abilities, entrepreneurial productive efforts, and the amount and quality of resources and external random interference that entrepreneurs have. The true causal link between top management and business performance depends more on the perception and mental processes of top management.

Previous Research

Research on corporate performance is relatively mature and systematic, and the research development trend is relatively clear. Most of the existing research on corporate performance revolves around the two aspects of corporate performance management and corporate performance evaluation. The research direction of this paper is the multi-dimensional impact of Knowledge-based leadership on corporate performance. To measure the impact of the impact, it is more necessary to conduct research from the perspective of enterprise performance evaluation. Therefore, in the preliminary research on enterprise performance, this paper focuses on the research and analysis of the influencing factors of enterprise performance evaluation, so as to find a theoretical basis for the research of this paper.

I. The concept of enterprise performance evaluation

Performance Valuation mainly refers to an behaviour in which an evaluation subject makes an objective evaluation of the business performance and development status of a certain period of time in accordance with a specific evaluation purpose and adopts certain indicators, standards and methods. In the enterprise performance evaluation, the evaluation subject and

the evaluation purpose are the starting point, the indicators, standards and methods are the means, and the performance and operation of the enterprise constitute the object of the evaluation.

Bates and Holton pointed out: "Performance is a multidimensional construction, and the factors are different, and the results will be different" (Michael Armstrong, Angela Barony, 1998).Schneider (1986) argues that a performance management system should be a complete cycle, including measurement and standards, contracting, planning, monitoring, and assistance. In summary, performance management is based on a complete system and is linked to many elements. Therefore, to define performance, performance is a general term for performance and efficiency, including the two layers of efficiency of the activity process and the results of the activity. Business performance refers to the contribution of managers to the survival and development of the company in the process of managing the enterprise; management efficiency refers to the profitability, core competitiveness and resource integration ability of the company in the process of obtaining business performance. A concentrated reflection of innovation capabilities and so on. According to the Longman dictionary, performance management is "The act of performing or the state of being performed". At present, the general understanding of Corporate Performance is that enterprise performance refers to the amount of output that a company must invest under certain conditions, or the net output of unit inputs.

For a long time, enterprise performance evaluation is considered to be an evaluation of the input and output performance of enterprises, and it is a historical evaluation behaviour. According to the Interim Measures for the Administration of Comprehensive Performance Evaluation of Central Enterprises promulgated by Order No. 14 of the State-owned Assets Supervision and Administration Commission of the State Council (implemented on May 7, 2006): Comprehensive performance evaluation refers to the analysis of input and output as the basic method. Through the establishment of a comprehensive evaluation index system, in accordance with the corresponding industry evaluation criteria, comprehensive evaluation of profitability, asset quality, debt risk, business growth and management status during the specific business period of the enterprise. The comprehensive performance evaluation of an enterprise consists of two parts: quantitative evaluation of financial performance and qualitative evaluation of management performance.

Shi Jiafang and Zhang Yuan (2002) combined the supply chain with the balanced scorecard and proposed a new supply chain performance evaluation method—balanced supply chain scoring method (BSC-sc).This view combines the characteristics of the supply chain with the characteristics of the balanced scorecard itself. From the perspective of the interests of the supply chain, customers, and enterprises, and with the aim of improving the core competitiveness of the enterprise, it has established a set of customer-oriented perspectives and supply chains. A new theoretical framework in six aspects: internal operational perspective, information technology perspective, supplier relationship perspective, future development perspective and financial value perspective.

Wang Huacheng and Liu Junyong (2004) reviewed the historical evolution of performance

evaluation, from the early performance evaluation and financial evaluation to the current economic value added and balanced scorecard. On this basis, the performance evaluation was divided into three modes. That is, the financial model, the value model, and the balance model. By comparing the three models, it is believed that Chinese SMEs should be more inclined to choose a balance model.

Yang Zongchang and Xu Bo (2003) believe that the enterprise performance evaluation system should be oriented. By establishing a performance evaluation system that combines short-term business objectives with long-term business objectives, it will help to continuously improve corporate competitiveness and corporate value. They applied the agency theory, based on the operating mechanism and management characteristics of telecom enterprises, and targeted the maximization of enterprise value, and applied the method of index chain to construct a value-oriented enterprise performance evaluation system.

Previous Research on the Relationship between Stimulating Learning and Firm

Foreign literature review of Stimulating Learning

Foreign countries have begun to study Stimulating Learning very early, and have developed a relatively complete incentive mechanism. The research mainly includes the following aspects.

Early research on Stimulating Learning was mainly about the study of employee motivation, mainly related to the various factors influencing employees' participation in learning.Duncan Wald and Merian (1986) explored the psychosocial interaction model of adult participation in learning in the book Adult Education - The Foundation of Practice.Based on this model, if a person's environment requires or encourages him to continue learning, he will regard the continuous growth of knowledge as a high personal value or benefit.A person's perception of the value of learning will determine his intention and willingness to participate in the study.Research by Aslanian and Brickell found that most adults continue their learning under the stimulation of external "evoked factors", and nine out of ten of these "inducing factors" exist. In the work.

Gerald Burke (2011) analyzed the factors that motivate corporate investment training, and believes that companies will have more incentives for investment training in the following situations: Increased productivity of trained employees; effective training In the case of employees, the working hours of employees are not compressed; the smaller proportion of productivity growth income is paid to employees' wages and salaries; the training is cost-effective; the company is aware of the benefits of training. In addition, Gerald Burke also pointed out that regardless of the cost and benefits of employee learning and training, if there is a lack of funds, then individuals and businesses will be limited in this regard, so business managers provide funds to support employee learning. is crucial.

Literature review of domestic Stimulating Learning

Ying Yongxiang (2011) and other believe that the Stimulating Learning mechanism mainly refers to the policy and institutional system for corporate training formulated by motivating

employees to continue their learning. Song Xiaozhong (2010) believes that the Stimulating Learning mechanism is an institutionalized work system that mobilizes employees' enthusiasm for learning. It also points out that the Stimulating Learning mechanism provides support and guarantee for the realization of organizational learning goals, and provides inexhaustible motivation for the sound development of the organization. Mobilize people's enthusiasm, initiative and creativity, tap people's potential, and realize people's all-round development.

Yan Diantao (2005) combined with the characteristics of professional and technical personnel of enterprises, proposed the continuous learning incentives such as target incentives, constrained incentives, intensive incentives, support incentives, care incentives and role models. He believes that continuing learning should be included in the scope of corporate manager's responsibility as an important condition for serving, and it is also proposed to implement the continuation of learning assessment level certification system to deposit employee files, and implement the continuing learning training fee "reimbursement system" to stimulate employee learning enthusiasm.

Hypothesis

Based on the above literature research and analysis, the hypotheses proposed in this study are as follows:

H1: Knowledge-based leadership dimensions include: Stimulating Learning, Knowledge Management Ability, Model Roles, Communication and Motivation, Promoting Innovation.

H2: Enterprise performance dimensions include: Market and Customer, Internal Operation, Learning and Development, Financial Condition.

H3a: "Stimulating Learning" has significant predictive power for "Market and Customer".

H3b: "Stimulating Learning" has a significant predictive power for "Internal Operation".

H3c: "Stimulating Learning" has significant predictive power for "Learning and Development".

H3d: "Stimulating Learning" has a significant predictive power for "Financial Condition".

H4a: "Knowledge Management Ability" has significant predictive power for "Market and Customer".

H4b: "Knowledge Management Ability" has significant predictive power for "Internal Operation".

H4c: "Knowledge Management Ability" has significant predictive power for "Learning and Development".

H4d: "Knowledge Management Ability" has significant predictive power for "Financial Condition".

H5a: "Model Roles" has significant predictive power for "Market and Customer."

H5b: "Model Roles" has significant predictive power for "Internal Operation".

H5c: "Model Roles" has significant predictive power for "Learning and Development."

H5d: "Model Roles" has significant predictive power for "Financial Condition".

H6a: "Communication and Motivation" has significant predictive power for "Market and Customer".

H7b: "Communication and Motivation" has significant predictive power for "Internal Operation".

H7c: "Communication and Motivation" has significant predictive power for "Learning and Development".

H7d: "Communication and Motivation" has significant predictive power for "Financial Condition".

H8a: "Promoting Innovation" has significant predictive power for "Market and Customer".

H8b: "Promoting Innovation" has a significant predictive power for "Internal Operation".

H8c: "Promoting Innovation" and "Learning and Development" have significant predictive power.

H8d: "Promoting Innovation" has a significant predictive power for "Financial Condition".

Research Framework

This study designed the research framework through literature analysis and hypothesis, as follows (Figure 2-1):
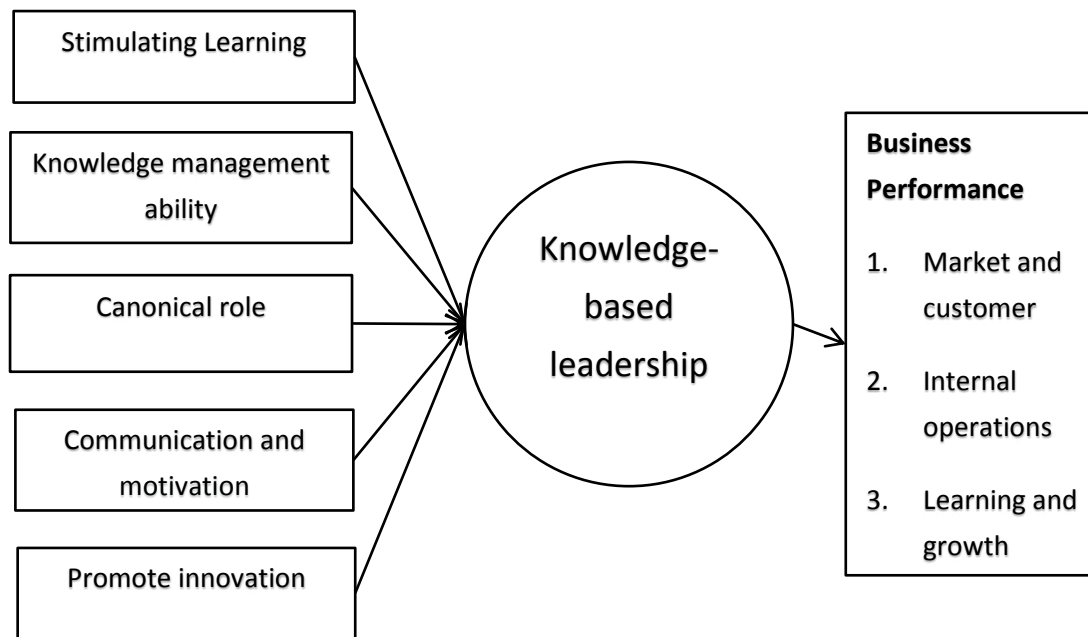
Figure 2-1 Research Framework

Source: Author

This chapter reviews the previous research on the performance of the dependent variable in this study, and based on the BSC Balanced Scorecard Theory, the most important tool of performance management, determines the four dimensions of enterprise performance in this study: Market and Customer, Internal Operation , Learning and Development, Financial Condition;

This paper reviews the previous studies of the five independent variables Stimulating Learning, Knowledge Management Ability, Model Roles, Communication and Motivation, Promoting Innovation, and the predecessors' research on the relationship between their variables and firm performance. It also analyzes the Knowledge-based leadership theory, including its definition, dimensions and measurement scales.

Based on the above research, this paper identifies the hypothesis and research framework of this study. It will determine the Knowledge-based leadership dimension and explore the impact of each component dimension on the performance level of the company. It is hoped that empirical research can establish a Knowledge-based leadership for the company. Style provides a reliable theoretical basis, provides an effective tool for leadership performance evaluation, and provides a reference for companies to improve their performance and improve performance management.

Research Design (Research Design)

Overview of research design

Through a large amount of literature reading and analysis, we have a deep understanding of the knowledge of the knowledge-based leadership dimensions and corporate performance related to the research at home and abroad, and based on this, form specific research ideas, conceptual models and research hypotheses.

This paper mainly uses quantitative research methods. And the most important form of quantitative research is used: the survey method. In addition to the interview method used in the questionnaire item setting process. Other methods of data collection are based on questionnaires. Due to the limited time of research work, the survey method in this paper uses cross-sectional research. A questionnaire survey was conducted to collect data on the Knowledge-based leadership dimension and corporate performance for statistical analysis.

Sampling design: This study adopts a random sampling method to randomly sample samples from Chinese SMEs of different industries and types in Shanghai, Nanjing, and Wuxi, and then randomly selects employees from each of the selected enterprises. Answer the questionnaire to ensure that the distribution of the functional departments and positions of the respondents can be balanced.

Econometric analysis methods such as correlation analysis and regression analysis were used to statistically analyze the valid questionnaire data collected by statistical software spss22.0 to verify whether the conceptual model and research hypothesis were established.

The main task of the fourth stage is to conduct an empirical analysis of the impact of the dimensions of Knowledge-based leadership on the level of corporate performance, mainly through the analysis and regression analysis to explore which dimensions of Knowledge-based leadership have an impact on corporate performance. At the same time, the research results are reasonably explained and the contribution and value of the research are elaborated.

Questionnaire collection object

After determining the list of research companies, this paper selects different departments within China's technology-based SMEs based on the needs of research, including: General Manager Office, Administration Department, Finance Department, Production Department, Marketing Department, Technical Department, Human Resources Department, etc. Employees at different levels include senior management, middle management, and unmanaged technical staff to issue questionnaires.

Analysis of the Knowledge-based Leadership Dimensional Measurement Scale

The establishment process of the initial scale content

The source of the scale
In the study of this article, Knowledge-based leadership is viewed as a multi-dimensional

concept, and each dimension can be represented by descriptive items, which can be used to quantify the value of Knowledge-based. A review of literature on Knowledge-based leadership research This paper selects a scale based on the Knowledge-based Presence Measurement Scale developed by Riitta Viitala (2004).Innovative on the basis of the previous research, the initial questionnaire contains 40 items, 5 dimensions, the number of items is moderate, and it is easier to obtain a valid questionnaire.

The revision process of the scale item

(1) Correction of initial scale items

The research is based on the following: Because the research object of this paper is Chinese science and technology small and medium-sized enterprises, the respondents of the questionnaire are the employees of Chinese high-tech SMEs. Therefore, the description of the questionnaire items needs to be suitable for their language habits and working environment. Therefore, it is necessary to modify and adjust according to the familiar language environment of Chinese SMEs. At the same time, it is necessary to check whether the items in the original scale have verbose and duplicate content, and properly merge and delete the problem areas. Less.

Since Chinese SMEs have relatively few English-speaking employees, the Knowledge-based Sentence Questionnaire is based on the translation of the questionnaire designed by Riitta Viitala. Some translations are not necessarily in line with China's Chinese science and technology. The actual situation of the enterprise.

This study was revised and organized after exploration and analysis in the literature, and identified five dimensions of Knowledge-based leadership, 35 items. But is this innovative formulation appropriate?

Therefore, in order to examine whether it is necessary to correct the description of the questionnaire items, the description of the items is in line with the daily working language habits and social language environment of Chinese SMEs, so that employees can fully understand the questionnaire questions when answering the questionnaire. The meaning of the item, and there is enough motivation to answer; on the other hand, it is necessary to check whether the content of the questionnaire needs to be supplemented or streamlined. The first survey was conducted in this study. The purpose of this survey was to correct the items in the initial questionnaire. During the period from May to June 2017, the author first conducted a group interview with 20 employees from 5 companies, and then conducted a personal interview with a scholar engaged in leadership research. Five university professors in the field of research conducted telephone interviews. Through interviews, I gained a lot of information about my usual working language habits, business management situations, and scale correction techniques. Subsequently, the description of the item was revised, which greatly improved the language expression, and it was closer to the daily working environment and language habits of Chinese SMEs.

After careful identification of the items and the results of the interviews, the study was moderately deleted and formed the Knowledge-based Leadership Questionnaire for the 35 items used in this study.

(2) Explore the results of the questionnaire

In order to initially explore the results of the questionnaire generation and further consult with the employees of the Chinese company, in August 2016, 30 companies from Nanjing, Wuxi and Suzhou were selected, and 10 enterprise managers were selected from each enterprise. The employee issues an initial questionnaire. All the questionnaires were collected. The results of the questionnaires of 300 employees were initially confirmed. The questionnaires did not have obvious tendency to fill in. The questions were in place and the items were moderate. So all the items in the initial scale were retained. The initial scale of the Knowledge-based leadership measurement has been formed. There are 35 items. The specific content of the item can be found in the questionnaire in the appendix of this article. The scale is scored by 6 points, so that the respondent can describe it according to the item. In the case of the actual situation of the organization in which it is located, from "never do" to "always consistent", give 1 to 6 points respectively.

3.4.2 Factor Analysis of the Knowledge-based Initialization Scale

After sorting out the items of the Knowledge-based initials scale, it is necessary to collect data for factor analysis and to obtain a Knowledge-based leadership dimension model for Chinese SMEs.

In September and October 2016, the researchers distributed Knowledge-based questionnaires to 46 companies in Nanjing, Wuxi, and Suzhou, totaling 460, and 432 samples were collected, which were valid after removing some invalid samples. 416 samples.

Firstly, the SPSS22.0 statistical analysis software was used to conduct exploratory factor analysis to obtain the Knowledge-based leadership initial dimension. Then, using the structural equation model method, the LisreI8.7 statistical software was used for confirmatory factor analysis to verify the explored dimensional model. Then confirm the dimensions of the Knowledge-based leadership. According to statistical factors, relevant mercury, exploratory factor analysis and confirmatory factor analysis were each used independently. Therefore, the data collected from this questionnaire is divided into two parts, the first part is 207 samples for exploratory factor analysis, and the second part is 209 samples for confirmatory factor analysis to test exploratory factors. Analyse the structural validity of the results.

3.4.2.1 Analysis of exploratory factors
Exploratory factor analysis generally requires the number of samples to be more than 5 times the number of items. The number of samples used for exploratory factor analysis is 207, the number of items is 35, and the number of samples is 5.91 times the number of items. The requirements of the analysis of prime factors.

(1) Project analysis

Project discrimination, also known as the discriminative power of the project, indicates the ability of the project score to distinguish or discriminate between the actual ability or the psychological trait level of the subject, that is, the degree to which the score of the project is consistent with the actual measurement. In this paper, the factor analysis method is used to analyse the project discrimination degree in the factor analysis. Firstly, some common factors in the test are found through factor analysis, and then the factor load of each item on each common factor is analysed, according to the load amount. To pick a topic, when a topic has a higher load on the pre-assumed measurement factors, the problem is considered to have a higher degree of discrimination, and the factor load that can be accepted by the problem cannot be less than 0.30.

(2) Process of factor extraction

In the process of constructive factor analysis, the principal component method is used to extract the common factor with the eigenvalue greater than 1. Since the correlation coefficient between the factors may be considered, the Promax rotation method is used to perform the oblique rotation processing. Each item has a large difference in the load of each common factor, which in turn facilitates the identification and naming of common factors. In order to ensure the degree of project differentiation, the item is selected according to the factor load of each item in each common factor, and the item with the factor load above 0.30 is reserved to ensure the discriminating power of the item, and the well is more conducive to more clearly Identify the structure of the scale. For those items whose load factors are less than 0.30 among the common factors, they should be eliminated; for those items with less difference in the load of two or more common factors, the items should be excluded. When deleting the items, they should be deleted one by one, and each factor should be re-extracted after each item is deleted. Repeatedly until a clearer structure is obtained. At the same time, it should be noted that when retaining and deleting items, attention should be paid. The number of items in each common factor should be balanced as much as possible. At least 2-3 items with large load factors are selected for each factor. For the missing values in the data, the observed values are not analyzed in all the variables. The method is processed.

(3) Results of exploratory factor analysis and related indicators

According to the above exploratory factor analysis process, the factors are repeatedly extracted, and 30 items are finally retained, and five common factors are extracted. The relevant indicators obtained by exploratory factor analysis are as follows:

1 KMD value analysis and Bartlett's ball port test. Factor analysis first performed KMO value analysis and Bartlett's spherical test. The results are shown in Table 3-1:

KMO is the sampling appropriateness quantity of Kaiser-Meyer-Olkin. When the KMO value is larger, the common factor among the variables is more. According to the scholar Kaiser (1974), when the KMO value is less than 0.50, it is not suitable for the factors. Analysis, after analysis, the KMO value of this scale is 0,91, greater than 0.90, which is very suitable for factor analysis. In addition, after Bartlett's spherical test, the $x2$ value is 1376.61 (freedom of 153), which is significant, indicating that there are similar factors between the matrices of the

maternal population, which is suitable for factor analysis.

Table 3-1 KMO Values and Bartlett's Spherical Test (N=157)

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	0.91
Bartlett's Test of Sphericity Approx. Chi-Square	1367.61
df	153
Sig.	0. 00

The factor load matrix of the 2-factor load matrix factor analysis is shown in Table 3-2 after the skew rotation.

It can be seen from Table 3-2 that after factor analysis, the number of items in the scale is reduced from 35 to 30.Thus, factor 1 contains items 2, 3, 4, 5, 6, and 7; factor 2 includes items 8, 9, 10, 11, 12, 13, and 14; factor 3 includes items 16, 17 , 19, 20, 21; factor 4 includes items 23, 24, 25, 26, 27, 28; factor 5 includes items 29, 30, 31, 33, 34, 35.

Table 3-2 Factor Load Matrix (N=207)

Item	Factor 1	Factor 2	Factor 3	Factor 4	
1	0.49				
2	0. 83				
3	0. 83				
4	0. 60				
5	0.59				
6	0. 79				
7	0.60				
8		0.60			
9		0.66			

10	0.67			
11	0.67			
12	0.80			
13	0.63			
14	0.76			
15		0.53		
16		0.91		
17		0. 83		
18		0. 42		
19		0.57		
20		0.66		
21		0.79		
22			0.54	
23			0.88	
24			0.82	
25			0. 56	
26			0. 73	
27			0.77	
28			0.72	
29				0.58
30				0.61
31				0.72

32				0.46
33				0.69
34				0.87
35				0.90
Eigenvalues 8.30	1.08	1.02	1. 24	1.27

The factor of 3 factors for the overall interpretation of the variance.

The eigenvalue of each common factor divided by the total number of questions is the amount of variation that can be explained by the common factor. The purpose of factor analysis is to simplify the structure of the factors, hoping to explain the variation to the greatest extent with the least common factors. The larger the variation of the cumulative interpretation, the better. It can be seen from Table 3-3 that the cumulative variation of the factors explained in this paper has reached 64.62%, and the extraction effect of the factors is better.

Table 3-3 Factor Analysis Total Variation Interpretation (N=207)

factor	Interpreted variation (%)	Cumulative interpretation of variation (%)
Factor 1	46.11	46.31
Factor 2	5.99	52.10
Factor 3	5.64	57.74
Factor 4	6.88	64.62
Factor 5	5.67	57.82

Confirmatory factor analysis

In the previous Knowledge-based Evidence Study, scholars often used a cross-validation approach to explore the underlying structure of the Knowledge-based Leadership by using an exploratory factor analysis (EFA) model and establish a theoretical model. In another sample, confirmatory factor analysis (CFA) is used to validate and revise these structures, thereby ensuring that the Knowledge-based leadership dimension can best reflect the characteristics of the Knowledge-based leadership and support theoretical research. This paper also uses cross-validation methods to achieve confirmatory factor analysis through structural equation

modeling software LiserL8.7, and examines the exploratory structure of the Knowledge-based leadership scale with 209 samples collected to determine Knowledge. - the dimension of the above-mentioned leadership.

The hypothetical model used in this study is a structural-based leadership structure model derived from exploratory factor analysis. The confirmatory factor analysis uses the maximum likelihood method (ML, Maximum Likelihood) to estimate the hypothesis model parameters with the sample data, and then reconstructs the variance covariance according to these parameter multiples, and then reconstructs the variance covariance matrix as much as possible. The observed variance covariance matrices are matched. When the variance covariance matrix of the model reconstruction is very close to the observed covariance matrix, the elements of the staggered matrix are close to zero. In this way, the model can be considered to fit better.

In this paper, eight confirmatory factor analysis model fitting indicators are selected, as follows:

X2/df, where $\chi 2$ is the most commonly used fitting index. The chi-square test is a measure of "fitness inferiority". A small chi-square value indicates a better fit Generally, the ratio of the chi-square to the degree of freedom is multiplied by the goodness of the model. When $\chi 2/df$ is less than 5, it indicates that the model fits well. If it is greater than the model, the model is not well fitted.

Gfi and agf1 are the goodness-of-fit index and the goodness-of-fit index, respectively. They are the appropriate overall indicators of the model. The values are all between 0-1. The closer to 1, the better the overall fit, when the value is Above 0.90, the model fits very well.

Nfi and nnfi are the norm fit index and the non-normal fit index, respectively. The estimated model is evaluated by comparing the chi-square value of the set model with the chi-square value of the independent model, and the value is between 0-1. The closer to 1, the better the model. If it is greater than 0.90, the model fits well.

Cfi is a comparative fitting index. It is also compared with the independent model to evaluate the degree of fitting. The value is also between 0-1. If it is greater than 0.90, it means that the model fits better.

Srmr is the root mean square of the residual residuals. Generally, the recommended value for srmr is 0.08, that is, when the srmk is less than 0.08, the model is considered acceptable. When the srmr is greater than 0.08, the model is considered to be poorly fitted.

RMSEA is the root mean square of the approximate error, which is generally required to be less than 0.1, which indicates a good model fitting effect.The model fitting indicators of the Knowledge-based leadership 5 model hypothesis model obtained through the model validation analysis using Lisrel statistical software are shown in Table 3-4:

Table 3-4 Confirmatory Factor Analysis Model Fitting Parameter Results (N=209)

	χ^2	df	χ^2/df	GFI	AG FI	NF I	NN FI	CFI	SR MR	RMS EA
Initial structural model fitting parameters	220.40	129	1.71	0.90	0.83	0.95	0.98	0.98	0.06	0.08

Source: Author

As can be seen from the above table, the value of χ2/df is less than 2; the value of GFI is 0.90; the values of NFI, NNFI, and CFI are all greater than 0.95; the value of SRMR is 0.06, which satisfies the requirement of less than 0.08; the value of RMSEA is 0.08. , meet the requirement of less than 0.1; only the value of AGFFI is slightly lower, only 0.83, but it basically meets the requirements.Based on the above indicators, it can be seen that the Knowledge-based leadership 5 dimensional structure model has been well verified.

3.5.2.1 Exploratory factors

Exploratory factor analysis generally requires that the number of samples be more than five times the number of items. The number of samples used for exploratory factor analysis of enterprise performance is 139, and the number of items in the initial scale is 22, which is consistent with exploratory factor analysis. Sample requirements, since all the items in the initial questionnaire are positive questions, the process of exploratory factor analysis mainly includes two parts: project analysis and factor extraction. Using the method of determining the number of factors, according to the process of exploratory factor analysis, the item deletion and factor extraction were repeated, and finally 17 items were retained, and 4 factors were extracted. The relevant indicators of exploratory factor analysis are as follows:

（1）KMO value analysis and Bartlett's spherical test. The results are shown in Table 3-6:

Table 3-6 KMO Values and Bartlett's Spherical Test (N=139)

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.90
Bartlett/ s Test of Sphericity	Approx. Chi-Square	1091.10
df		105
Sig.		0.00

(2) Factor load matrix. The factor load matrix after the result of the factor analysis is shown in Table 3-7:

As can be seen from Table 3-8, the enterprise performance measured in this paper

Table 3-7 Factor Load Matrix (N=139)

Item	Factor 1	Due to tired 2	Factor 3	Factor 4
1	0.85			
2	0.87			
3	0.77			
4		0. 54		
6		0.81		
7		0.93		
8		0，72		
9		0. 84		
12			0.80	
14			0.S2	
15			0.86	
19				0. 46
20		0.31		0. 59
21				0.86
22				0. 96
Eigenvalues	1.41	7. 44	1.03	1.00

contains 4 factors and 15 items, 20 of which have load on factor 2 and factor 4, considering the difference between the two loads and The content of the item retains this item in factor 4.In this way, the load of all items is greater than 0.40, which has a good project discrimination. Among them, factor 1 includes items 1, 2, and 3; factor 2 includes items 4, 6, 7, 8, and 9: factor 3 includes items 11, 14, and 15, and factor 4. Includes items 19, 20, and 21 ,twenty two.

(3) The variation of factors on the overall interpretation

It can be seen from Table 3-8 that the cumulative variation of the factors explained in this study reached 72.11%, and the effect of factor extraction was better.

Table 3-8 Variations on The Overall Interpretation of The Factors (N=139)

factor	Interpreted variation: (%)	Cumulative variation (%)
Factor 1	9. 42	9.42
Factor 2	49. 63	59. 04
Factor 3	6.20	65.25
Factor 4	6.86	72.11

(4) Enterprise performance measurement structure confirmation and dimension naming

The results of the final exploratory factor analysis show that the enterprise performance of this measurement contains 4 factors and 15 items. According to the items included in the above factors and referring to the relevant literature analysis, each factor is defined:

Factor 1 contains items 1, 2, and 3, which are mainly related to the performance of the company at the market and customer level. Therefore, the factor 1 is named "Market and Customer", that is, the enterprise develops and maintains the customer and the product has a market share; Factor 2 contains items 4, 6, 7, 8, and 9, which are mainly related to the basic situation of the enterprise Internal Operation, and thus the factor 2 is named "Internal Operation", that is, the efficiency of the enterprise Internal Operation and the completion of the core work; factor 3 Including items 11, 14, and 15, mainly reflecting the learning situation of employees in the enterprise and their participation in the construction of the enterprise, so the factor 3 can be named "Learning and Development", that is, the enterprise for employee learning and product innovation. Investing, employees' awareness of participation, etc.; Factor 4 includes items 19, 20, 21, and 22, all of which reflect the financial indicators of the company's operations. Therefore, the factor 4 is named "Financial Condition", which is the financial measure of business operations. Compared with the knowledge performance and financial performance items in the original questionnaire, factor 4 is obtained by expanding and correcting the items based on the original financial performance, while the items originally used to represent knowledge performance are analysed by exploratory factors. It is subdivided into factor 1, factor 2 and factor 3.

3.5.2.2 Confirmatory factor analysis

In this study, the structural equation modeling software Lisre18.7 was used for confirmatory factor analysis, and the 139 data samples collected were used to test the exploratory structure of the enterprise performance scale to determine the structure of the enterprise performance measurement. The hypothesis model used in the study is the 4 factor structure model of enterprise performance obtained by exploratory factor analysis. The model fitting parameters of the 4 factor hypothesis model obtained by trial statistical software for model validation analysis are shown in Table 3-9:

As can be seen from Table 3-10, the value of χ2/df is less than 2; the values of NFI, NNFI, and CFI are all greater than 0.95; the value of SRMR is 0.05, which satisfies the requirement of less than 0.8; the value of RMSEA is 0.06, which satisfies less than 0.10. The requirements of GFI and AGFI are slightly lower, 0.89 and 0.84 respectively, but they are basically in line with the requirements. Combining the above fitting parameters, it can be considered that the 4 factors of enterprise performance obtained by exploratory factor analysis are well verified. .

Table 3-9 Confirmatory Factor Analysis Model Fitting Parameter Results (N=139)

	χ^2	df	χ^2/df	GFI	AGFI	NFI	NNFI	CFI	SRMR	RMSEA
Initial structural model fitting parameters	134.06	84	1.60	0.89	0.84	0.96	0.98	0.98	0.05	0.08

4.4.5 Results and discussion

From the results of relevant analysis and regression analysis, the following results can be obtained from the impact of the technology-based SMEs' performance-based leadership on the performance level of the SMEs:

(1) Analysis of the impact of the "Knowledge Management Ability" dimension of the technology-based SMEs on corporate performance

The "Knowledge Management Ability" dimension of the technology-based SMEs' positive leadership has positive for all four dimensions of "Market and Customer", "Internal Operation", "Learning and Development" and "Financial Performance" in corporate performance. The impact, that is to say, if the enterprise can establish a complete Knowledge Management Ability system, and the manager has the execution ability of the Knowledge Management Ability, the enterprise performance level will be improved in all aspects.

(2) Analysis of the impact of the "Stimulating Learning" dimension of the technology-based SMEs on the performance of enterprises

The "Stimulating Learning" dimension of Knowledge-based leadership in technology-based SMEs has a positive impact on the "Learning and Development" dimension of corporate performance, which means that if there is an advocacy learning and a positive cultural atmosphere within the company, It has a positive effect on the "Learning and Development" of enterprises and their employees. In short, the knowledge-based leadership is to stimulate the enthusiasm of employees to achieve the common growth of enterprises and employees.

(3) Analysis of the impact of "Model Roles" dimension of technology-based SMEs on corporate performance

The "Model Roles" dimension of the technology-based SMEs' positive leadership has a

positive impact on the two dimensions of "Internal Operation" and "Learning and Development". The Model Roles of the leader naturally uses the power of subtle influence to stimulate and encourage employees to learn and grow, which in turn enables the company to have superior human resources to serve the enterprise, improve the internal Operation environment of the enterprise, and achieve the goal of enterprise growth performance. Model Roles, as a manifestation of non-powerful influence, is a manifestation of good relations between leaders and the masses. It is the premise for achieving leadership functions, the condition for improving leadership efficiency, and the most solid foundation for leadership influence.

(4) Analysis of the impact of the "Communication and Motivation" dimension of the technology-based SMEs on the performance of the company

The "Communication and Motivation" dimension of the technology-based SMEs has a positive impact on the "Internal Operation" and "Learning and Development" of corporate performance. In order to stimulate the enthusiasm of employees to learn, we must first change their concepts and raise their awareness. It makes the importance of learning from the inner heart, but the importance of learning is not obvious to every employee of the company. To accept this idea, effective leadership communication is an indispensable method, which is to change employees. A good way of thinking inside. Motivation is about inspiring and encouraging people to act toward the desired goals.

(5) Analysis of the impact of the "Knowledge-based leadership" Promoting Innovation dimension on business performance

The "Promoting Innovation" dimension of the technology-based SMEs has a positive impact on the "Market and Customer" and "Financial Condition" dimensions of corporate performance, that is to say, in the context of the knowledge economy era, Business leaders can spare no effort in Promoting Innovation, and the economic performance of the company will be improved to some extent. Innovation is the foundation of the survival and development of an enterprise. Innovation is good, and innovation is not dead. Schumpeter, a well-known economist in the United States, said: Innovation is the recombination of entrepreneurs' factors of production. Innovation can promote the improvement of organizational forms and management efficiency, so that enterprises can continuously improve efficiency and constantly adapt to the requirements of economic development.

Based on the above analysis results and discussion, a comprehensive model of the influence coefficient of the Knowledge-based leadership dimension on each dimension of enterprise performance level can be obtained, as shown in Figure 4-1.
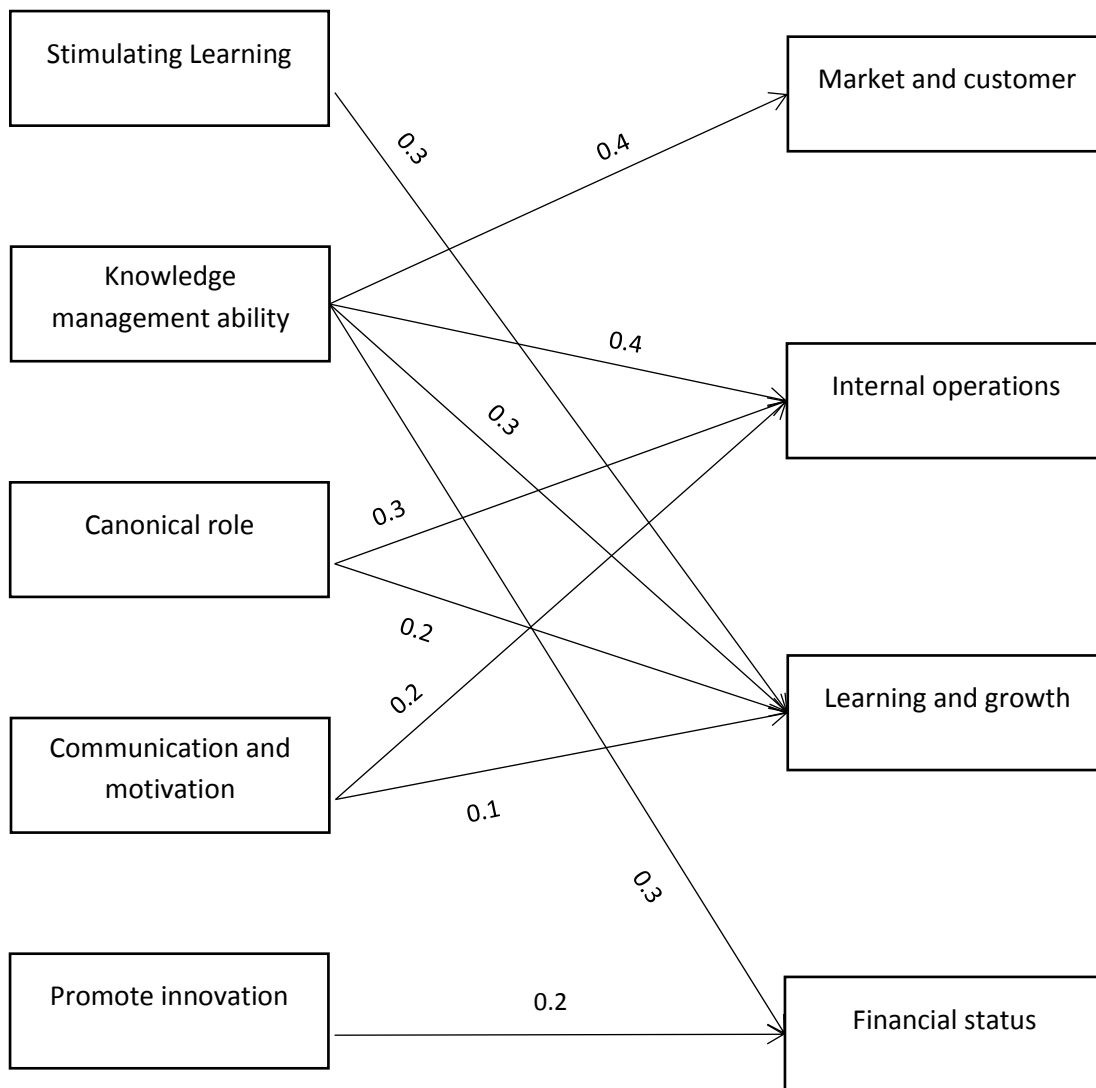
Figure 4-1 The Impact of The Knowledge-based Leadership Dimension on Business Performance

Source: Author

Conclusion

This study will affect the planning of SMEs to strengthen their performance based on their own characteristics.

Technology-based SMEs have unique corporate characteristics. First of all, technology-based SMEs are an important force in cultivating high-tech industries with independent intellectual property rights. They are small and medium-sized enterprises that are mainly engaged in the research, development, production and service of high-tech products. It has developed rapidly in recent years. Due to its strong vitality, it has been booming in China and has brought tremendous driving force for the sustainable development of China's economy.2. The manufacturing industry has emerged a large number of scientific research and production enterprises with strong vitality. This research and production company is led by new

"entrepreneurs" who are mostly graduates of scientists, engineers, prestigious universities and technical colleges, and senior managers from large companies. Their philosophy is to transform scientific new concepts and new knowledge into products with social needs and practical value as soon as possible. Therefore, these companies are committed to developing new technologies, new processes, new products, and constantly innovating.3. Technology-based SMEs take the lead in technological innovation. Many high-tech products that are widely used now are invented by technology-based SMEs. In China, technology-based SMEs provide special technology, quality service and continuous introduction of new products to win by technological advancement and invention.4. At the micro level, the development skills of enterprises are continuously improved. Technology-based SMEs are not only easy to manage, easy to operate, but also the individual talents of employees. In today's information age, companies can find capital, technology, markets, talent, and partners through the Internet to achieve the goals that only large companies could achieve in the past. At the same time, technology-based SMEs are sensitive to the market and have rapid decision-making. They can adapt to the rapid changes and fluctuations of modern society's consumer demand, and their ability to cope with economic crisis is superior to that of large enterprises.

Based on the above characteristics, based on the theory of bsc, SMEs pay more attention to market expansion, product innovation, talent management, knowledge management, etc., paying attention to the investment of enterprises at the above levels, and as an important factor to improve corporate performance. means.

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