THE EFFECT OF COMPETITIVE STRATEGY ON ENTERPRISE PERFORMANCE: AN EMPIRICAL STUDY OF SMALL AND MEDIUM-SIZED ENTERPRISES OF MANUFACTURING INDUSTRY IN CHINA

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ABSTRACT

In today's rapidly changing business landscape, small and medium-sized manufacturing enterprises (SMEs) face the challenges of adapting and thriving amidst fierce competition. To maintain a competitive edge in such an environment, understanding the dynamic factors driving enterprise performance is crucial. This study empirically examines the relationship between competitive strategy and enterprise performance within SMEs. It delves deeply into the mediating roles of several factors, notably the capital structure of enterprises, innovation, corporate governance structure, and human capital, and how they influence the connection between competitive strategy and enterprise performance. Utilizing confirmatory factor analysis (CFA), structural equation modeling (SEM), and comparative analysis, the research provides a comprehensive survey of SMEs in the manufacturing sector.

The study unveils the key determinants affecting enterprise competition and performance and elucidates the complex relationship between competitive strategies and multiple mediating variables. A novel aspect of this research lies in its holistic contribution to the literature, illustrating how competitive strategies translate into enterprise performance in the SME context, while emphasizing the pivotal role of mediating factors. The findings reveal that competitive strategy has a significant positive impact on enterprise performance, with capital structure, innovation, corporate governance, and human capital serving as important mediating factors. Specifically, the study shows that a strong and flexible capital structure allows SMEs to leverage resources more effectively, while fostering innovation leads to improved competitiveness. Additionally, effective corporate governance enhances strategic decision-making, and the development of human capital is crucial for executing competitive strategies. The research highlights that the positive relationship between competitive strategy and enterprise performance is stronger when these mediating factors are optimized. These findings

provide actionable insights for SMEs, suggesting that to maximize their performance, they should focus on enhancing their capital structure, fostering innovation, improving governance practices, and investing in human capital. The study offers valuable guidance for both academics and practitioners in the field of SME management and strategy.

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CHAPTER 1
INTRODUCTION

1.1 Background and Significance

The manufacturing sector has long been the backbone of China's rapid economic growth and development. Over the past few decades, China has emerged as the "world's factory," producing a vast array of goods that cater to both domestic and global markets. Within this vast manufacturing landscape, small and medium-sized enterprises (SMEs) play an indispensable role. They contribute significantly to employment, innovation, and regional economic development. However, these SMEs also face unique challenges, especially when navigating the complexities of the competitive landscape.

In the era of globalization and technological advancements, the competitive dynamics of the manufacturing industry have undergone significant transformations. The rise of Industry 4.0, digitalization, and the increasing emphasis on sustainable and green manufacturing practices have reshaped the rules of competition. Furthermore, the recent economic shifts, trade tensions, and the global pandemic have added layers of uncertainties and challenges for these enterprises. In such a volatile environment, the strategies that SMEs adopt to remain competitive become crucial determinants of their success and overall performance.

As Scholars emphasized in his seminal work on competitive advantage, strategies are pivotal in positioning an enterprise within its industry context and against its competitors (Shehadeh & Mansour, 2019). Given the evolving challenges in the manufacturing sector, understanding the nuances of competitive strategy becomes paramount. A recent report by Kharub et al. (2022b)highlighted the increasing complexities faced by manufacturing SMEs, especially in emerging markets like China, further underscoring the importance of strategic positioning. The choice of competitive strategy as a primary variable stems from its fundamental role in determining an enterprise's direction, actions, and decisions to achieve a competitive edge. Meanwhile, The capital structure of enterprises, as (Serrasqueiro & Caetano, 2015) posited, can influence a firm's value and its competitive stance. Innovation capabilities have been spotlighted in recent years, with a study by Z. Y. Chen et al. (2023) revealing that Chinese SMEs with robust innovation mechanisms outperformed their peers by 20% in terms of revenue growth. Corporate governance structures, as emphasized by the OECD's guidelines, play a crucial role in determining a firm's strategic decisions and its relationship with stakeholders. Lastly, human capital, often termed as the most valuable asset by scholars like Hutahayan (2020), directly impacts a firm's ability to execute its strategies.

These factors, frequently discussed in academic literature and industry reports, have shown significant interplay with competitive strategies, thereby affecting enterprise performance.

Competitive strategy is a commonly used strategy in the development of enterprises, including low-cost strategy, differentiation strategy, mixed strategy, and other different forms. With the development of society, competitive strategy is of great significance to the internal structure adjustment, external resource utilization, and internal and external collaborative development of enterprises, and it is an effective way for enterprises to achieve market expansion (Sengul, 2019). The essence of competitive strategy is competition, in which the brand effect of an enterprise can be spread and the comprehensive strength of the enterprise itself can be enhanced (Kharub et al., 2022b).

Innovation refers to the behavior of improving or creating new things, methods, elements, paths, and environments in a specific environment based on idealized needs or to meet social needs, guided by the existing mode of thinking that is different from the conventional or ordinary people's ideas (Khurosani, 2017). In the modern competition of the Internet era, innovation can continuously realize the diversified design of products or the transformation of applications, which is an inexhaustible driving force to promote the development of society, organizations, and enterprises (Frasquet et al., 2022).

Corporate governance structure is an indispensable organizational form in the construction of modern enterprises. The corporate governance structure includes ownership structure, responsibility structure, personnel structure, and other basic contents, which are of great significance to the sustainable development of the company, the implementation of the strategy, and the daily production and operation.

Enterprise capital structure is a diversified enterprise ecosystem, which is an important part of the company's financial data flow and business data flow. Capital structure is related to whether the enterprise can achieve the balance between profit and debt, investment and financing, and has far-reaching significance for the stable development of the enterprise. Human capital is a concept of Western economics, also known as "non-material capital", which is embodied in the capital of workers, as opposed to "material capital". Such as the knowledge and skills, cultural and technical level, and health status of workers. Its main feature is that it is associated with personal freedom and is not transferred with the sale of products (Serrasqueiro & Caetano, 2015).

With the development of society, human resources are becoming more and more important for social production, science and technology, and cultural development. enterprise performance is an important indicator to measure the development ability, development level, and development quality of an enterprise, and also an important reference to evaluate the stability of an enterprise. enterprise performance ability is related to the future development

and production efficiency of an enterprise. For an enterprise, it is necessary to enhance the performance management level and improve the performance ability from various aspects (Idolor et al., 2023).

For small and medium-sized enterprises, competitive strategy can provide a theoretical basis for their market expansion and future development, competitiveness enhancement, brand image shaping, and so on. The low-cost strategy can stimulate them to invest in rapid production and achieve market penetration at the bottom. Through the differentiation strategy, it can ensure the characteristics of its products and enhance the influence of its products. The hybrid strategy will help enterprises obtain the coordinated development of external resources and internal resources according to the actual situation of their small and medium-sized enterprises.

Innovation can provide a continuous internal driving force for enterprises. Through product innovation, channel innovation, and mode innovation, enterprises can gain more room for growth and enhance their voice in competition with other small and medium-sized enterprises (Khurosani, 2017).

As an internal form structure, the structural level of corporate governance structure is related to the efficiency of the internal operation of enterprises. For small and medium-sized enterprises, the more perfect the governance structure is, the more perfect the expression of its functions is, and the more living space it can obtain (Hui, 2021). Capital structure is the holding form and capital utilization form of SMEs, as well as an important structural form for SMEs to obtain funds. Capital structure determines the voice of SMEs in production and operation. Different from large listed companies, the overall impact of capital structure on SMEs is enormous (Sarwary, 2020).

Human capital is an important support for the expansion of production scale and expansion of small and medium-sized enterprises. Because most small and medium-sized enterprises lack perfect intelligent systems or Internet of Things systems, they still rely on human capital to achieve the completion of various business indicators in most cases (Hutahayan, 2020). enterprise performance is the embodiment of the comprehensive production capacity and marketing ability of small and medium-sized enterprises, which has a strong reference significance for enterprise financing, sustainable development, and future strategy formulation.

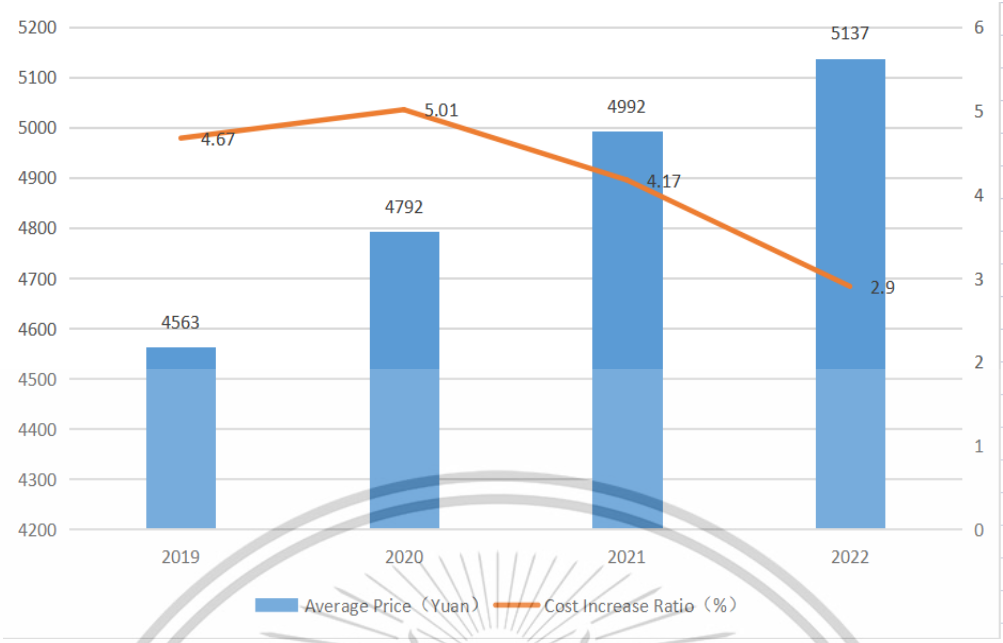


Figure 1.1: Labor price and growth ratio of small and medium-sized manufacturing industry (2019-2022)

Data source: Prospective industry research

For manufacturing enterprises, especially small and medium-sized manufacturing enterprises, the above elements are also of great significance. Among manufacturing enterprises, competitive strategy can help them obtain more industrial markets, and make them better adapt to society by reducing manufacturing costs, optimizing manufacturing processes, and improving manufacturing services.

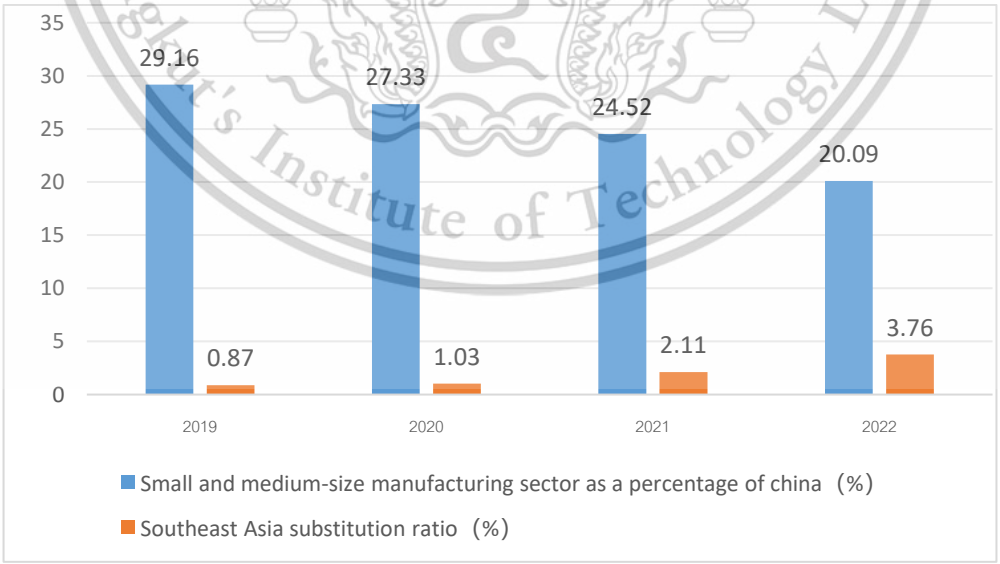


Figure 1.2: The proportion of small and medium-sized manufacturing enterprises and the replacement ratio of Southeast Asia(2019-2022)

Data source: Prospective industry research

At present, the number of small and medium-sized manufacturing enterprises is increasing, and the internal and external competition is becoming more and more exciting. Constructing a competitive strategy framework based on the actual situation of small and medium-sized manufacturing enterprises is also of great significance for promoting the innovation capability and performance level of enterprises (Frasquet et al., 2022). The main competitive disadvantage of small and medium-sized manufacturing enterprises is that their innovation ability is still insufficient compared with large enterprises.

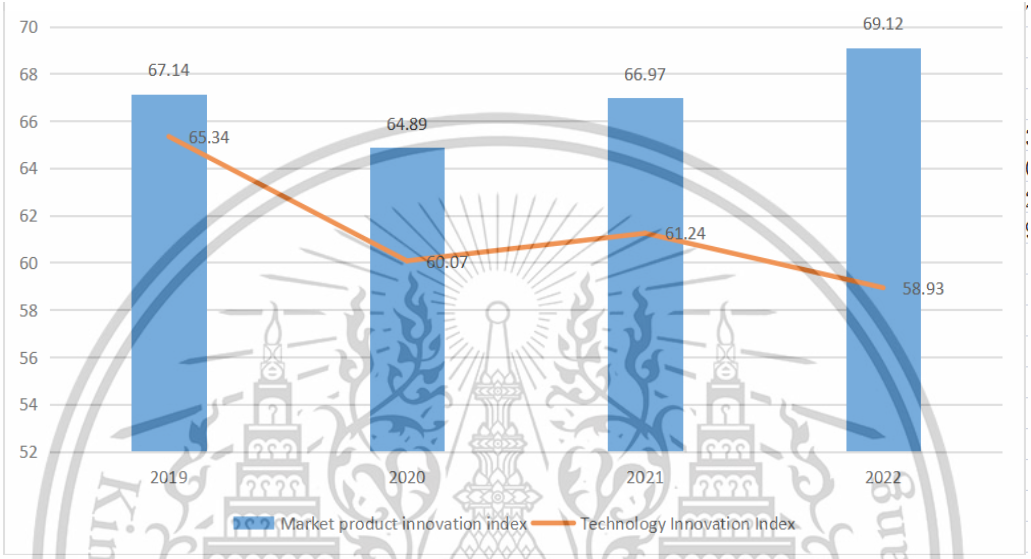


Figure 1.3: Product and technology innovation index situation(2019-2022)

Data source: Prospective industry research

Therefore, through the innovation of products, channels, services, and other aspects, we can help them constantly change the backward capacity structure and adapt to future development. enterprise performance is an important manifestation of small and medium-sized manufacturing enterprises' production capacity, market adaptability, financing ability, and competitiveness, and it is also the most intuitive expression of their financial level and production efficiency, which is also worthy of attention. And, the work governance structure of small and medium-sized manufacturing enterprises mainly adopts vertical governance, which is relatively imperfect.

For manufacturing enterprises, a perfect governance structure is of great significance for their process reengineering and manufacturing control. Capital structure and human capital structure are the basic parts of labor-intensive enterprises such as small and medium-sized manufacturing enterprises. Capital structure determines whether they can develop for a longer time, and human capital determines how to optimize and innovate better in future development.

With the proposal of "Made in China 2025", the intelligent transformation of enterprises has gradually become a trend. In this case, how to effectively promote Innovation, combine it

with enterprise competitive strategy closely, and jointly promote the development of performance enterprises, and how to play the intermediary role and convergence role of innovation? It is also a very important issue. In this case, it is very important for the future development of the manufacturing industry to explore the relationship between enterprise competitive strategy, Innovation, and enterprise performance.

1.2 Research Problem

Economic globalization and environmental dynamics make the competition among enterprises more intense and complex. If enterprises want to occupy a favorable position in the competition and obtain sustainable competitive advantage, they must formulate a clear competitive strategy. Understanding and controlling performance is the main way in which the field of strategic management is distinguished from other organizational sciences (Acheampong et al., 2021).

Therefore, strategic management scholars have been committed to exploring the reasons for the differences in strategic actions and performance of enterprises, and the exploration of the origin of competitive advantage has always been the basic issue of strategic management. Das and Canel (2023) put forward three basic competitive strategies: low cost (also known as cost leadership), differentiation, and concentration strategy, and believed that any one of the three basic strategies could bring competitive advantage to enterprises, but Porter did not make clear which strategy was the best, so many scholars began to analyze the relationship between competitive strategy and enterprise performance. Compare and study the innovation benefit and performance level of different competitive strategies. At the same time, a large number of latent variables and mediating variables are introduced.

Previous studies are from the perspective of the simple direct relationship between the two, and this broad research conclusion has limited guiding value for business management practice. Even in an industry, Sarwary (2020) the performance of enterprises implementing low-cost strategy is generally better than that of enterprises implementing differentiation strategy, which does not mean that all enterprises in the industry should implement low-cost strategy. The characteristics of the external environment and internal resources of enterprises are different, and the impact of competitive strategy on performance may also be different. Therefore, it is necessary to break through the limitations of the existing research framework from a direct perspective and further investigate some new issues.

First, how does competitive strategy affect enterprise performance, directly or through the transmission process of intermediate variables? What are the mediating variables?

Recently, mediating variables have been widely used in the analysis of strategic

management problems, but according to the literature search by the author, few mediating variables have been used in the study of the impact of competitive strategy on enterprise performance. The addition of mediating variables can further reflect the transformation path from competitive strategy to performance growth more clearly and effectively, and excavate the internal mechanism of the black box. This study argues that an important variable is innovation. A large number of studies have shown that Innovation is an important way to improve organizational performance. At the same time, every basic competitive strategy attaches importance to innovation (Bing & Qian, 2010). Then, does innovation mediate the impact of competitive strategy on enterprise performance? Moreover, there are different types of innovation activities. Are different competitive strategies different in innovation choices? These problems are worthy of further study.

Secondly, in addition to innovation variable, are there any other variables that will have a certain impact on the performance of enterprises, and are they have mediating effect between competitive strategy and enterprise performance?

In recent years, there have been many empirical studies on the influencing factors of enterprise performance, involving enterprise organizational structure, enterprise scale, enterprise technology development, and so on. Corporate governance structure, capital structure, and human capital are the three most important factors in the commonly used analysis, especially in the analysis of the factors affecting the performance of small and medium-sized manufacturing enterprises. Enterprise strategic management experts (Liu et al., 2014; Shehadeh & Mansour, 2019), have verified and analyzed the relationship between these three indicators and enterprise performance. Among. The corporate governance structure is the key to improving organizational efficiency and economic benefits; the corporate capital structure is the material source of wage performance; human capital is the most direct manifestation of enterprise productivity. On the basis of the existing research, it is of great practical significance to further explore the relationship between the three and enterprise performance for the improvement of enterprise performance capability.

Third, in addition to the mediating role of above variables, are there potential variables that play a key moderating role in firm competitive strategy and performance?

The introduction of environmental variables: The key to the comparison of several basic competitive strategies is not which strategy is better, but which competitive strategy is better for enterprises to implement in a certain environment. In order to obtain good performance, the formulation of a competitive strategy needs to match the environment in which the enterprise is located. As a moderating variable, the environment defines the boundary conditions of the relationship between competitive strategy and performance. How does it affect the relationship between competitive strategy and enterprise performance under the

condition of China's transitional economy? For the research on the moderating effect of the environment, some scholars use the concept of a single dimension to study the moderating effect of environmental uncertainty on the relationship between competitive strategy and enterprise performance. However, environmental uncertainty has multiple dimensions, and different environmental dimensions have different moderating effects on the relationship between competitive strategy and performance, which need to be treated differently. Lutfi (2020) standardized the three dimensions of environmental characteristics: dynamic, complex, and loose. Then, how the environment regulate the relationship between competitive strategy and enterprise performance? These problems need to be discussed and verified in the context of China's transitional economy.

This study breaks through the simple and direct relationship perspective of previous studies and adds mediating variables and moderating variables in the research system, which makes the research system a more scientific and accurate description of the impact mechanism of competitive strategy on enterprise performance, and the conclusions are more credible. The research of this study will enrich and deepen the research on the impact of competitive strategy on enterprise performance.

1.3 Research Questions

This study aims to answer the following research questions:

RQ1: How do competitive strategies impact the performance of small and medium-sized manufacturing enterprises (SMEs) in the Chinese manufacturing industry?

RQ2: What are the mediating effects of innovation, corporate governance, capital structures, and human capital on the relationship between competitive strategies and business performance in Chinese manufacturing SMEs?

RQ3: How does the broader business environment moderate the relationship between competitive strategies and business performance in Chinese manufacturing SMEs?

1.4 Research Objectives

The main objective of this empirical study can be divided into four major parts.

Objective 1: To investigate the various competitive strategies employed by SMEs in the Chinese manufacturing sector.

Objective 2: To analyze the direct impact of these competitive strategies on business performance metrics such as profitability, market share, and growth.

Objective 3: To explore how innovation influences the effectiveness of competitive

strategies in enhancing business performance.

Objective 4: To examine the role of corporate governance structures in shaping the impact of competitive strategies on performance.

Objective 5: To evaluate the influence of different business environments on the effectiveness of competitive strategies.

1.5 Significance of the study

1.5.1 Theoretical Significance

The theoretical significance of this study lies in its substantial contribution to advancing the academic understanding of the intricate relationships between competitive strategy and enterprise performance, particularly within the context of small and medium-sized enterprises (SMEs) in the Chinese manufacturing industry. While previous research has explored the direct relationship between competitive strategy and performance, this study takes a step further by integrating several mediating variables—such as innovation, corporate governance structure, capital structure, and human capital—thereby offering a more nuanced understanding of how competitive strategies translate into tangible business outcomes.

This research enriches the existing literature by providing empirical evidence on how these mediators, individually and collectively, influence the effectiveness of competitive strategies in driving enterprise performance. For example, it highlights the significant role of innovation as a catalyst for strategic execution, the importance of a robust corporate governance structure in aligning strategic objectives with organizational capabilities, the mediating effect of capital structure in optimizing resource allocation, and the crucial influence of human capital in executing strategic initiatives. By elucidating the mechanisms that underlie these relationships, this study contributes to the theoretical development of strategic management theories, offering a comprehensive model that links competitive strategy to performance through the lens of these mediating variables.

Moreover, the examination of environmental factors as moderators further broadens the theoretical scope of this study. By focusing on how environmental dynamics, complexity, and innovation influence the competitive strategy-performance link, this research offers a richer perspective on the contextual conditions that shape strategic outcomes. This addition enhances the theoretical framework by acknowledging that the impact of competitive strategy is not uniform but is instead contingent on external factors, such as the level of environmental dynamism or innovation. The incorporation of environmental moderators brings a more holistic view of strategic management, moving beyond the static relationship between strategy and performance to account for the dynamic interplay between internal capabilities and external conditions.

Furthermore, the study contributes to the body of knowledge on SMEs and the Chinese manufacturing sector, which has been underrepresented in strategic management literature. Given the unique challenges SMEs face in this rapidly evolving market, such as limited resources, regulatory hurdles, and the need for agility in competitive positioning, this research provides insights into how SMEs can leverage competitive strategies in a complex and volatile environment. By focusing specifically on Chinese SMEs, the study also contributes to the understanding of how local economic, political, and cultural factors interact with global strategic trends, offering valuable theoretical insights into the specific challenges and opportunities of firms operating within China's manufacturing sector.

Overall, the theoretical significance of this research lies in its ability to bridge gaps in the current literature by integrating multiple mediating and moderating factors that influence the relationship between competitive strategy and enterprise performance. The study not only deepens our understanding of the strategic management processes within SMEs but also lays the groundwork for future research in this area, suggesting new directions for exploring the complexities of strategy formulation and execution in dynamic, resource-constrained environments. Through its comprehensive approach, this research advances theoretical foundations in strategic management and provides a robust framework for understanding how SMEs in the Chinese manufacturing industry can develop and execute competitive strategies to achieve sustainable success.

1.5.2 Practical Significance

The practical significance of this research is multifaceted, offering valuable insights for both small and medium-sized enterprises (SMEs) in the Chinese manufacturing sector and for policymakers and industry stakeholders aiming to foster a more supportive ecosystem for these enterprises.

Firstly, the findings of this study provide actionable guidance for SMEs seeking to enhance their competitive positioning and improve overall performance in a highly dynamic and competitive market environment. By understanding the critical mediating factors—such as innovation, corporate governance, capital structure, and human capital—SMEs can make more informed decisions that align their internal capabilities with the demands of the market. For example, the study highlights the importance of innovation as a key driver of competitive advantage, offering practical recommendations for SMEs to invest in research and development (R&D) and foster a culture of creativity and technological advancement. Similarly, the research underscores the role of corporate governance in improving strategic alignment and organizational transparency, which can enhance decision-making and accountability within SMEs. The findings also emphasize the necessity of optimizing capital structure, balancing debt and equity to ensure financial flexibility, and the critical role of human capital in executing

competitive strategies effectively. SMEs that focus on strengthening these key areas can not only improve their operational efficiency but also enhance their resilience to external shocks, leading to sustainable growth and performance in the long term.

Moreover, the study draws attention to the moderating role of environmental factors, particularly the dynamics, complexity, and innovation within the business environment. This highlights the need for SMEs to remain adaptable and responsive to changes in market conditions, regulatory frameworks, and technological advancements. By understanding how environmental shifts influence the effectiveness of their strategies, SMEs can refine their approaches to better align with external opportunities and threats, thereby gaining a competitive edge. This adaptability is especially important in the Chinese manufacturing sector, where global competition and rapid technological changes present both challenges and opportunities for SMEs. The research provides practical tools and frameworks that can help SMEs better navigate these external conditions, enhancing their ability to thrive in an ever-evolving marketplace.

Secondly, this research has significant implications for policymakers and industry stakeholders who are tasked with creating a conducive environment for SME growth and development. The study's findings offer valuable insights into the key drivers of SME performance, providing evidence-based recommendations for crafting policies that can foster a more favorable business environment. For instance, by understanding the crucial role of innovation, policymakers can design initiatives that encourage technological advancements and knowledge transfer within SMEs. Similarly, by emphasizing the importance of corporate governance and capital structure, the research suggests that policymakers should consider promoting better access to finance, corporate governance training, and regulatory frameworks that support transparent decision-making and financial sustainability. These initiatives can help SMEs overcome common challenges, such as limited access to capital and inadequate management practices, which often hinder their growth.

Additionally, the findings related to environmental factors, such as the role of market dynamics and innovation, suggest that policymakers should focus on creating an ecosystem that supports agility and innovation within SMEs. This may include promoting industry clusters, innovation hubs, and partnerships between SMEs and research institutions to foster technological development and collaboration. By aligning public policies with these critical performance drivers, policymakers can create a more supportive environment for SMEs, which in turn can contribute to broader economic growth and sustainability. Moreover, this research can inform industry stakeholders, such as business associations, consultants, and financial institutions, by helping them understand the specific needs and challenges of SMEs in the Chinese manufacturing sector. By providing tailored support, these stakeholders can play a key

role in enhancing the competitiveness and resilience of SMEs.

In summary, the practical significance of this study extends beyond theoretical contributions, offering concrete recommendations for SMEs, policymakers, and industry practitioners. For SMEs, the research provides valuable insights into the internal and external factors that drive performance, enabling them to make more strategic decisions. For policymakers, it offers a foundation for designing policies that support SME growth, innovation, and sustainability. Ultimately, this research serves as a bridge between academia and practice, providing actionable insights that can enhance the competitiveness and long-term success of SMEs in the Chinese manufacturing sector, while also contributing to the broader economic development of the region.

1.6 Scope of Research

This study takes the competitive model as the theoretical framework to explore the main influencing factors of enterprise performance. The theoretical model mainly includes competitive strategy, innovation, and enterprise performance. At the same time, it also introduces three basic elements of capital structure, corporate governance structure, and human capital, and analyzes the relationship between them and enterprise performance. In addition, this study extends the variables studied by the model to the environment. In the investigation of the performance level of Chinese SMEs, the competitive strategy and corporate governance structure are integrated.

Variables: the variables used in this study are in three categories, exogenous-variables, endogenous variables, moderating latent variable and mediating variables. variables as follows:

a) The exogenous latent variables consisted of observed variables:
   i) Competitive strategy:
      - Low cost strategy
      - Differentiation strategy
      - Hybrid strategy

b) The mediating latent variable consisted of
   i) Innovation
      - Incremental innovation
      - Flexible innovation
      - Breakthrough innovation
   ii) Corporate governance structure
      - Organizational structure
      - Control structure
      - Management structure

iii) Capital structure of enterprises

- Ownership structure
- Operating structure
- Structure of financial indicators

iv) Human capital

- Human resources
- Human resource capacity

c) The moderating latent variable consisted of

i) Environment

- Dynamics
- Complexity
- Environmental innovation

d) Endogenous latent variables consisted of observed variables

i) Enterprise performance

- Financial performance
- Non-financial performance

Scope of population: The population size of this study is 119 small and medium-sized manufacturing enterprises in China, which are officially registered manufacturing enterprises with business licenses. They are the main persons in charge, core management, supervisors, etc., and a representative sample of this population was obtained. The research of this study is divided into two parts:

Part 1: Review existing literature related to current research, such as reviewed articles, books, magazines, and other credible sources.

Part 2: Primary quantitative data are collected from a selected sample of respondents. Data A structured questionnaire was used to collect data.

Scope of Time: The study will take 1 year to complete and included ethics committee approval, data collection, data analysis, article publication, and final proofreading to include comments from all committee members.

1.7 Definition of Terms

1.7.1 Competitive strategy

Competitive strategy is a kind of survival plan formulated by enterprises based on the macro perspective and starting from the internal and external environment (Das & Canel, 2023; Kharub et al., 2022b).

1. Low cost strategy

Low-cost strategy is a way to enhance the competitiveness of enterprises by minimizing the cost of production and sales.

2. Differentiation strategy

Differentiation strategy is a strategy to distinguish from other brands through diversified innovations such as products and sales, with the main purpose of ensuring brand personalization

3. Hybrid strategy

Hybrid strategy is mainly based on a combination of differentiation strategy and low-cost strategy, covering the basic content of maximizing differentiated competition at the optimal cost .

1.7.2 Corporate Governance Structure

The corporate governance structure refers to a set of institutional arrangements in which the owners (shareholders) supervise, motivate, control, and coordinate the company's management and performance in order to achieve the effectiveness of resource allocation (Ngatno et al., 2021; Toms & Wright, 2002).

1. Organizational structure

The organizational structure mainly refers to the division of labor among different personnel in the corporate governance structure and the internal organizational form, including vertical organizational structure, horizontal organizational structure, and mixed organizational structure.

2. Control structure

Control structure mainly refers to the relationship between various departments and staff in the corporate governance structure, as well as the linear logic related to the adjustment and management of departments and staff .

3. Management structure

Management structure mainly refers to the level distribution and power distribution of corporate governance structure, including the proportion of managers and non-managers, the proportion of management departments and grass-roots departments, etc .

1.7.3 Corporate Capital Structure

The capital structure of an enterprise refers to the source and proportion of all the funds of the enterprise, including not only sovereign capital, and long-term debt funds, but also short-term debt funds(Graham & Leary, 2011; Liu et al., 2014) .

1. Ownership structure

It mainly refers to the equity allocation and allocation in the capital structure of enterprises, including the number of major shareholders, the number of shareholders, the rights of shareholders, and so on.

2. Operating structure

Operating structure mainly refers to the allocation of financial indicators and operating benefits in the course of operation, including operating costs, operating efficiency, operating quality, etc .

3. Structure of financial indicators

The financial structure mainly refers to the allocation of quantitative financial indicators such as solvency, profitability, and growth ability.

1.7.4 Human capital

Human capital, also known as "non-material capital", is the capital embodied in workers, as opposed to "material capital". Such as the knowledge and skills, cultural and technical level, and health status of workers. Its main feature is that it is associated with personal freedom and is not transferred with the sale of products (Hutahayan, 2020; Liu et al., 2014).

1. Human resources

Human resources refer to the workforce within an organization, encompassing their skills, knowledge, and overall capabilities. It involves not only staffing levels but also strategic management of employees to align with the company's goals and enhance performance.

2. Level of human resource capacity

It mainly refers to the knowledge and skills, cultural and technological level, and health status of enterprise personnel, which is the core of human capital.

1.7.5 Innovation

Innovation refers to the existing thinking mode that is different from conventional or ordinary thinking ideas as the guidance, using the existing knowledge and material, in a specific environment, in line with the idealized needs or to meet the needs of society, and improve or create new things, methods, elements, path, environment, and can obtain certain beneficial effect of behavior (Achdiat et al., 2023; Bing & Qian, 2010; Khurosani, 2017).

1. Incremental innovation

Incremental innovation is a kind of innovation based on the perspective of quantitative change, which is based on existing products or services.

2. Breakthrough innovation

Breakthrough innovation is mainly a kind of innovation through the transformation of existing products or services.

3. Flexible innovation

Progressive innovation is mainly a dynamic and balanced innovation mode established based on the strategic needs of enterprises. It is mainly to maximize the optimization of the strategy and timely reconstruct the innovation structure guided by the strategic needs.

1.7.6 Enterprises Performance

It means the operating efficiency of the enterprise during a certain period of operation, mainly refers to the level and quality of enterprise operation and development (Idolor et al., 2023; PHAM, 2020; Shah & Ahmad, 2019).

1.Financial Performance

Company’s profitability, debt repayment capacity, operational efficiency, and growth potential. It provides key information about the company's financial health and its economic performance over a specific period to the company's management, shareholders, creditors, and other stakeholders.

2.Non-Financial Performance

Company's performance in areas such as employee satisfaction, social responsibility, product or service quality, environmental protection, innovation capabilities, and relationships with various stakeholders.

1.7.7 Environment

The environment includes material factors including atmosphere, water, soil, plants, animals, microorganisms, and behavior; both natural factors and social factors; both non-living forms and living forms (Idolor et al., 2023; Lutfi, 2020).

Dynamic, A process of persistent change based on an equilibrium morphology (Holling, 1973).

Complex, Content, structure, elements and other material or non-material forms of multiple forms.

Environmental innovation, innovation in the external environment.

1.7.8 Small and medium-size enterprises (SMEs) of Manufacturing

Small and medium-sized enterprises refer to enterprises established in accordance with the law within the territory of the People's Republic of China with relatively small scale of personnel and operation, including medium-sized enterprises and small enterprises (Begum et al., 2020; Kharub et al., 2022b).

Medium-sized enterprise is mean more than 300 or less than 1000 employees and operating income more than 20 million yuan or less than 400million yuan.

Small sized enterprise is mean more than 20 or less than 300 employees and operating income more than 20 million yuan or less than 3 million yuan.

CHAPTER 2
LITERATURE REVIEW

This chapter combs the relationship between innovation, competitive strategy, corporate governance structure, corporate capital structure, human capital and enterprise performance, and introduces the latent variable environment to elaborate, and puts forward specific assumptions. Comprehensive collection, collation, analysis and summary of relevant variables and literature types lay the foundation for the next test model.

2.1 Theoretical Concept of Small and medium-sized enterprises (SMEs) of Manufacturing

2.2 Theoretical Concept of Enterprise performance

2.3 Theoretical Concept of Competitive strategy

2.4 Theoretical Concept of Innovation

2.5 Theoretical Concept of Corporate Governance

2.6 Theoretical Concept of Capital structure of enterprises

2.7 Theoretical Concept of Human Capital

2.8 Theoretical Concept of Environment

2.9 Variables relationship analysis and hypothesis

2.10 Conceptual Framework

2.1 Theoretical Concept of Small and medium-size enterprises (SMEs) of Manufacturing

2.1.1 The concept of small and medium-sized manufacturing enterprises

A quantitative criterion to distinguish large enterprises from small and medium-sized enterprises (Simon, 2022).

However, in China's practice, the relevant concepts have been unified. According to the document issued by the State Council of the People's Republic of China, small and medium-sized enterprises refer to enterprises established in accordance with the law within the territory of the People's Republic of China with relatively small scale of personnel and operation, including medium-sized enterprises and small enterprises. The criteria for the classification of medium-sized and small enterprises shall be formulated by the department of the State Council responsible for the comprehensive administration of Manufacturing enterprises mainly refer to the enterprises that use certain resources (materials, energy, equipment, tools, capital, technology, information, manpower, etc.) in the era of the machinery industry to transform into

large-scale tools, industrial products, and consumer products for people to use and utilize through the manufacturing process according to market requirements (Hayakawa, 2022).

At present, China's manufacturing enterprises mainly include the following types: agricultural and sideline food processing enterprises; Food manufacturing enterprises; Beverage and refined tea manufacturing enterprises; Tobacco products enterprises; Textile enterprises; Leather, feather and their products and shoemaking enterprises; Wood processing and wood, bamboo, rattan, palm and grass products enterprises; Furniture manufacturing enterprises; Paper and paper products enterprises; Printing and recording media reproduction enterprises; Manufacturing enterprises of cultural, educational, artistic, sports and recreational goods; Petroleum processing, coking and nuclear fuel processing enterprises; Chemical raw materials and chemical products manufacturing enterprises; Pharmaceutical manufacturing enterprises; Chemical fiber manufacturing enterprises; Rubber and plastic products enterprises; Non-metallic mineral products enterprises; Ferrous metal smelting and rolling processing enterprises; Non-ferrous metal smelting and rolling processing enterprises; Metal products enterprises; General equipment manufacturing enterprises; Special equipment manufacturing enterprises; Automobile manufacturing enterprises; Railway, ship, aerospace and other transportation equipment manufacturing enterprises; Electrical machinery and equipment manufacturing enterprises; Computer, communication and other electronic equipment manufacturing enterprises; Instrument manufacturing enterprises; Other manufacturing enterprises. According to the material form used in production, manufacturing enterprises can be divided into discrete manufacturing enterprises and process manufacturing enterprises. The business process of manufacturing enterprises includes product manufacturing, design, raw material procurement, equipment assembly, warehousing and transportation, order processing, wholesale operation, retail, and so on (P. s. R. o. China, 2022).

Small and medium-sized manufacturing enterprises mainly refer to manufacturing enterprises that conform to the characteristics of small and medium-sized enterprises (see Table 2-1 for the quantitative criteria for the scale and classification of relevant enterprises, that is, manufacturing enterprises that conform to Table 2-1 and the relevant concepts of manufacturing enterprises are small and medium-sized manufacturing enterprises). At present, the definition of SMEs is not very clear. Hermann Simon, a German scholar, in his book Invisible Champions: Pioneers of Future Globalization, regards turnover of 5 billion euros as the promotion of small and medium-sized enterprises in conjunction with the relevant departments of the State Council, in accordance with the indicators of employees, business income and total assets of enterprises, and in light of the characteristics of industries, and shall be submitted to the State Council for approval. Small and medium-sized enterprises are widely distributed in processing and manufacturing, retail trade, services, and other fields, with the characteristics of a large number

of enterprises, small scale of assets, short life of enterprises, and so on (Simon, 2022). Fiscal and Tax Document No.13, issued in 2019, unified the criteria for defining small and medium-sized enterprises. See Table 2-1 for details:

Table 2.1 Classification Criteria for Small and Medium-sized Enterprises

Enterprise type	Large enterprise	Medium-sized enterprise	Small sized enterprise
Industry (mining, manufacturing, power, heat, gas and water production and supply)	More than 1000 employees or operating income of more than 400 million yuan.	More than 300 or less than 1000 employees and operating income more than 20 million yuan or less than 400million yuan.	More than 20 or less than 300 employees and operating income more than 20 million yuan or less than 3 million yuan.

Source: 2022 Statistical Yearbook of the People's Republic of China.

2.1.2 Scale and characteristics of small and medium-sized manufacturing enterprises

In terms of the scale of China's manufacturing industry, over the past 60 years since the founding of the People's Republic of China, the proportion of industrial-added value in GDP has increased from 17.6% in 1952 to 38.85% in 2022. In terms of international comparison, China's manufacturing industry accounted for 2.7% of the world's total in 1990, ranking ninth in the world. It rose to 6.0% in 2000, ranking fourth in the world, and reached 13.2% in 2007, ranking second in the world. It was 19.8% in 2010, ranking first in the world, and has remained above 20% since then, reaching 27.89% in 2022. At present, breakthroughs have been made in manned spaceflight, lunar exploration projects, manned deep submergence, new regional aircraft, large liquefied natural gas ships (LNG), high-speed rail transit, and other fields. The technical level of equipment products such as UHV power transmission and transformation equipment, million-ton ethylene complete equipment, wind power generation equipment, and petaflop supercomputer has leaped to the forefront of the world (Board, 2022).

From the perspective of the scale of manufacturing enterprises in China, according to the statistics of Prospective Industry Research Institute, by 2022, the number of manufacturing enterprises in China will reach 21,900, and the market size will reach 5.98 trillion US dollars. Among them, there are 3865 A-share listed companies (including listed companies), of which 2439 are manufacturing listed companies, accounting for 63.10%, which is slightly higher than the same period in 2019. The largest number is equipment manufacturing enterprises, totaling 2102, accounting for 86.2% of listed manufacturing companies (Institute, 2022). According to the relevant statistics of (Z. Song et al., 2023), as of May 2023, the total output value of Chinese manufacturing enterprises has reached 67.25 trillion US dollars, of which the output value of equipment manufacturing enterprises and machinery manufacturing enterprises has

reached 3.421 billion US dollars and 22. $9.2 billion. From 2010 to 2022, the average growth rate of the market scale of Chinese manufacturing enterprises is 7.43%.

From the perspective of the scale of China's small and medium-sized manufacturing enterprises, the statistics of China's small and medium-sized enterprises in 2022 have not been published, but the market scale of China's Small and medium-sized manufacturing enterprises in 2021 has been made public. According to N. B. o. S. o. china (2021) , by 2021, the cumulative output value of small and medium-sized manufacturing enterprises in China has reached 12.15 trillion US dollars, of which machinery manufacturing, prevention and control, metallurgy, electric power, steel, and other manufacturing enterprises are the main ones, accounting for more than 70%, while the number of small and medium-sized manufacturing enterprises in telecommunications, finance, education, and transportation is less than 10%. In terms of market size, it reached 27.29 trillion US dollars in 2021, an increase of 542% over the previous year, with an average annual growth rate of 8.23%.

The characteristics of small and medium-sized manufacturing enterprises are different from manufacturing enterprises, with small scale, single industrial structure, and other characteristics. In the form of a questionnaire survey, Kharub et al. (2022b) selected small and medium-sized manufacturing enterprises from a large number of manufacturing enterprises in Southeast Asia as empirical research objects and analyzed these 30 small and medium-sized manufacturing enterprises, and concluded that small and medium-sized enterprises have the following characteristics: the organizational structure of enterprises is simple; The chief executive officer (CEO) is directly involved in the work of the operation level; The responsibilities of various departments are vague and there are no clear boundaries. It has a special production and operation mode, and a considerable number of small and medium-sized enterprises are auxiliary manufacturers of large enterprises. The deviation between the actual production and the planned forecast is large; Changeable orders require quick response; Require the shortest production time; and High employee turnover; Because of the special requirements of customers, the products produced are often required to meet certain special standards. Lutfi (2020) analyzed the characteristics of small and medium-sized manufacturing enterprises in China and proposed that their advantages are as follows: vigorous enterprise spirit; Quick decision-making and strong adaptability; The organizational structure is flat, the life cycle of commodities is short, and the decision-making process is short. The production mode is diverse and small, and the production line is adjustable; The disadvantages are: lack of scientific management; Lack of economies of scale; Inadequate financial, technical, and human resources; Attaching importance to short-term interests, and lack of long-term planning; Distribution channels are long and vulnerable to exploitation by middlemen. Chumnangoon et al. (2023) believes that compared with large enterprises, small and medium-sized manufacturing

enterprises in China have less capital, less talent, closed information, and backward management. Compared with the small and medium-sized enterprises in developed countries, the small and medium-sized manufacturing enterprises in China have a poor degree of specialization and cooperation in the field of production, low office efficiency, lack of market information, poor adaptability to changes, and great difficulty in management.

To sum up, the characteristics of small and medium-sized manufacturing enterprises in terms of personnel are as follows: centralization of senior managers, direct participation in operations, shortage of talents, and high mobility of employees; In terms of management, it is characterized by flat organizational structure, rapid decision-making and strong adaptability, but lacks long-term planning, pays attention to short-term interests, lacks scientific management, vague responsibilities among departments and great difficulty in management. In terms of environment and resources, restricted by large enterprises, business is changeable, production is difficult to plan and predict, there are special requirements, funds are small, and information is not well-informed; In terms of technology, it is backward in technology and weak in strength.

2.1.3 Number and distribution of small and medium-sized manufacturing enterprises

According to the statistics of Prospective Industry Research Institute, the number of manufacturing enterprises in China has reached 421900 by 2022, of which 2439 are listed manufacturing companies, accounting for 63.10%. The specific regional distribution is shown in Table 2-2. From the perspective of industry, machinery manufacturing enterprises, metallurgy, textile, steel, and other industries accounted for 12.18%, 10.96%, 8.71%, 5.67%, and 11.16% respectively.

Table 2.2 Distribution of manufacturing enterprises

Region	Quantity (Thousand)	Proportion
East China	123.8	29%
South China	119.7	28%
Northeast	32.5	8%
Southwest	42.4	10%
Northwest	19.9	4.7%
Central China	53.6	13%
Southeast	30.1	7.3%

Source: 2022 Statistical Yearbook of the People's Republic of China.

From the actual situation of small and medium-sized manufacturing enterprises, according to China Association of Small and Medium Enterprises by 2021, the number of small and medium-sized manufacturing enterprises in China has reached 341200, an increase of 8.5% over the same period last year. In terms of regional distribution, it is mainly located in coastal areas. In terms of industry distribution, machinery manufacturing, prevention and control,

metallurgy, electric power, steel, and other manufacturing enterprises are the main ones, accounting for more than 70%, of which machinery manufacturing reaches 22.87%, and the number of small and medium-sized manufacturing enterprises in telecommunications, finance, education, and transportation is less than 10%. At the same time, the regional distribution of small and medium-sized manufacturing enterprises is uneven, mainly in the southeast coastal areas (Enterprises, 2021) .

Table 2.3 Distribution of small and medium-sized manufacturing enterprises

Region	Quantity (thousand)	Proportion
East China	68.7	20%
South China	92.1	27%
Northeast	34.5	10%
Southwest	58.8	17%
Northwest	9.8	3%
Central China	50.4	15%
Southeast	26.9	8%

Source: 2022 Statistical Yearbook of the People's Republic of China.

2.2 Theoretical Concept of Enterprise performance

2.2.1 Concepts related to enterprise performance

According to the relevant definition of performance management expert Rolstadås (1998), enterprise performance refers to the business efficiency and operator performance during a certain period of operation. The level of operating efficiency of enterprises is mainly manifested in the profitability, asset operation level, solvency, and follow-up development ability of enterprises. The enterprise performance introduced in this study mainly refers to the company's performance management from a macro perspective, which is divided into financial performance and non-financial performance.

For SMEs in manufacturing, the financial performance of enterprise performance is mainly a kind of data content, while non-financial performance mainly refers to the operation situation and future development situation of the enterprise (Fan et al., 2021).

At present, the research in this area is relatively rich. Relevant researchers and definitions are shown in the table below:

Table 2.4 Enterprise Performance Definitions

Researchers	Related definitions
Rolstadås (1998)	Financial indicators and non-performance development indicators to measure the company's performance
Frasquet et al. (2022)	Including business performance and market performance.

Researchers	Related definitions
	Business performance refers to the level of profitability, productivity and ultimate performance of an enterprise in the past. Market performance reflects past levels of entry into new markets and market entry of products and services.
Tran and Vo (2020)	Past business performance and market performance. Business performance refers to the level of profitability, productivity and ultimate performance of an enterprise in the past. Market performance reflects the level of successful entry into new markets and the entry of products and services into markets
Ma et al. (2022)	Focuses on competition-related performance and identifies three dimensions of company performance: operational optimization, revenue growth, and customer relationships. Business optimization refers to improving the responsiveness and productivity of enterprises to customers. Businesses must balance operational costs with service levels based on the lead time of customer needs. Customer relationship concerns focus on the connection and loyalty between the business and the customer, as well as the business's unique knowledge of customer preferences. Revenue growth included sales of existing and new products.
Sarwary (2020)	Widely used financial indicators, including cost, profitability, debt service and growth capacity indicators.
Nizam et al. (2019)	In addition to financial indicators, some non-financial indicators, such as growth, brand recognition, customer satisfaction and loyalty, have deeper significance in reflecting the performance of enterprises and show the following characteristics: (1) the measurement criteria are related to the strategy, and (2) not only focus on the evaluation of results, but also on the results. In addition, we begin to notice that the status of process evaluation (3) financial evaluation as the basis of enterprise performance evaluation can not be changed.

Source: Based on relevant literature.

2.2.2 Latent and observed variables

Enterprise Performance

1.Financial performance

Financial performance can be conceptualized as the subjective evaluation by business managers of their firm's economic activities and outcomes over a specific period (Hutahayan, 2020). This assessment is not solely rooted in tangible financial metrics but also encompasses perceptions about the firm's financial health, economic achievements, and alignment with anticipated objectives (Ngoc et al., 2021; Nizam et al., 2019). In the context of small to medium-sized manufacturing enterprises, financial performance from the following perspectives:

(1) Alignment with Financial Objectives: This dimension captures the perception of business managers regarding the extent to which the firm has met or exceeded its financial benchmarks (Al-Ahdal, Alsamhi, Tabash, Farhan, et al., 2020; PHAM, 2020).

(2) Perceived Industry Standing: The perception of a firm's financial performance relative to industry competitors is pivotal, as it can influence strategic decisions and resource allocation .

(3) Perceived Return on Investment: The perception of whether the firm's investments have yielded satisfactory returns is crucial for evaluating the efficacy of investment decisions .

(4) Perception of Long-term Financial Stability: The long-term financial health of a firm forms the cornerstone of its sustained existence and success. Managers' perceptions in this regard can influence their stance on future investments and risk.

(5) Perception of Short-term Financial Liquidity: Short-term financial liquidity is integral to the daily operations of a firm. Managers' perceptions in this domain can influence decisions related to short-term capital management.

(6) Comparative Financial Health: By juxtaposing current data with past records, managers can discern whether the firm's financial health is on an upward trajectory or in decline, thereby facilitating strategic reconciliations.

2.Non-financial performance

Non-financial performance encompasses the subjective evaluations by business managers regarding various non-monetary aspects of their firm's operations and outcomes (Hutahayan, 2020). Rather than being solely rooted in quantifiable metrics, it delves into perceptions about the firm's operational efficiency, stakeholder satisfaction, social responsibility, and overall market presence (PHAM, 2020).In the context of small to medium-sized manufacturing enterprises, non-financial performance from the following perspectives:

(1) Operational Efficiency: This dimension captures the perception of business managers regarding the effectiveness and smoothness of daily operations, encompassing aspects like production efficiency, supply chain management, and process optimization.

(2) Stakeholder Satisfaction: The satisfaction levels of various stakeholders, from employees to customers to suppliers, play a pivotal role in a firm's long-term success and reputation in the market.

(3) Social Responsibility: In today's business landscape, a firm's commitment to social

responsibility, encompassing environmental sustainability and community engagement, is integral to its brand image and stakeholder trust.

(4) Market Presence and Brand Image: The perception of a firm's standing in the market, its brand recognition, and overall reputation can significantly influence its non-financial performance metrics.

(5) Innovation and Adaptability: In a rapidly evolving market, a firm's ability to innovate and adapt to changes is crucial. Managers' perceptions of their firm's innovative capabilities can be a key non-financial performance indicator.

Table 2.5 Literature on enterprise performance

Researchers	Latent variable	Observed variables	Item
Ojokuku and Sajuyigbe (2015)	Enterprise performance	Financial performance	Rate of return on investment
Frasquet et al. (2022)	Enterprise performance	Financial performance	Sales profit margin
Park and Park (2018)	Enterprise performance	Financial performance	Cash flow operation
Yanlong et al. (2022)	Enterprise performance	Non-financial performance	Market share
Mongkol (2021)	Enterprise performance	Non-financial performance	Enterprise products
Idolor et al. (2023)	Enterprise performance	Non-financial performance	Enterprise work

Source: based on relevant literature.

From the literature, concepts, theories and researchers, the following model for Enterprise performance and the observed variables, as shown in below.

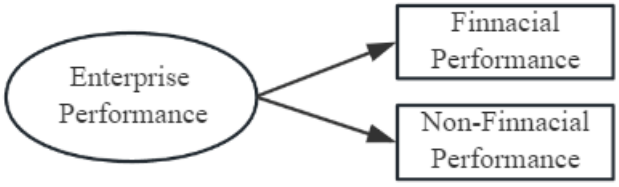


Figure 2.1 Model for Enterprise performance

2.3 Theoretical Concept of Competitive strategy

2.3.1 Concept of strategy and competitive strategy

With the development of human social practice, the word "strategy" has been widely applied to the field of enterprise management, and given a new meaning. The strategy is to solve fundamental, overall, and long-term problems. In his book Strategy and Structure, Chandler believes that strategy is an important decision-making, approach and action taken by enterprises to compete for the realization of strategic objectives, as well as a mode of allocating the main resources of enterprises to achieve the objectives. This definition embodies strategy as a series of actions (Kharub et al., 2022b). According to Shah and Ahmad (2019)study that enterprise strategy is a decision, a decision about the nature of enterprise operation . Bing and Qian (2010) believes that strategy combines the main objectives, policies, and activities of an enterprise into a close whole in a certain order. The essence of enterprise strategy lies in the conscious decision of the enterprise's goals and objectives, guidelines and policies, activities or projects according to the internal conditions and external environment of the enterprise and its changing trend before the business action. As a unified, comprehensive, and integrated plan, strategy provides enterprises with alternatives in various situations. Each line of authority in a large organization should have its strategy. The sub-strategy must achieve self-improvement more or less to a certain extent, and communicate and support each other with other sub-strategies (Kharub et al., 2022b)

The content of the competitive strategy of small and medium-sized manufacturing enterprises agrees with the essence of the competitive war strategy, and the relevant elements also have universal characteristics (Das & Canel, 2023). At present, the relevant research is as follows

Table 2.6 Competitive strategy definitions

Researchers	Related definitions
Sengul (2019)	According to Mintzberg, strategy is a plan, a conscious and anticipated action, and a policy to deal with a certain situation. Strategy is a strategy, which is used by enterprises as a means to deter and defeat competitors in a specific environment; Strategy is a kind of mode, which reflects a series of actions of the enterprise. No matter whether the enterprise has considered the strategy in advance, as long as there is a specific business behavior, there will be a strategy

Researchers	Related definitions
Kharub et al. (2022b)	Strategy is a kind of positioning, which is the position of an organization in its own environment, so that the internal conditions of the enterprise are more harmonious with the external environment, and the important resources of the enterprise are concentrated in the corresponding place to form a product.The growth circle of products and markets; strategy is a concept, which reflects the inherent way of understanding the objective world in the organization, and is shared through the expectations and behaviors of the members of the organization. From any point of view, strategy is the core content of all business activities of enterprises
Das and Canel (2023)	In 1980, Porter described competitive strategy in his book Competitive Strategy as taking offensive or defensive actions, establishing a well-founded position in the industry, and successfully dealing with five competitive forces, so as to win extraordinary investment returns for the company. The central issue of competitive strategy is the relative position of the firm in its industry. The basic idea of general strategic thought is that competitive advantage is the core of all strategies, and the competitive advantage of a company is the micro-foundation of its international competitiveness, and it is the unique and lasting attribute of an enterprise when it provides valuable goods or services to customers
Haiyan et al. (2021)	From the internal analysis of the enterprise, the competitive strategy of the enterprise is a process based on the core competence to continuously gain competitive advantage. The identification, cultivation, diffusion and application of core competence in enterprise strategy advocated by core competence theory are the key Links of enterprise core competence management
Mishra and Yadav (2021)	British Dave. Francis wrote in ""Advanced Competitive Strategy"" that the winning competitive strategy is a combination of advantages, that is, enterprises can attract enough customers to choose your products or services rather than your competitors at the cost of sustained profitability. All enterprises are striving for this ""combination of advantages"" -- technically called ""value"". Value is usually determined by

Researchers	Related definitions
	customers (or customer groups called ""market segments""). Competitive strategy requires enterprises to ensure that three balls operate at the same time: providing super value, Winning enough customers, and effectively managing costs 。
Shah and Ahmad (2019)	Competitive strategy is regarded as a part of enterprise strategy, which is the plan and action to guide and manage specific strategic business units under the constraints of the overall strategy of the enterprise.

Source: based on relevant literature.

2.3.2 Description of latent and observed variables

From the development of small and medium-sized manufacturing enterprises, The classification of competitive strategy types is the key for enterprises to better clarify and choose their competitive strategy orientation and provides a theoretical basis for empirical research. In the current classification framework, Porter (1980) basic competitive strategy model is considered to be the most complete and mature representative of the business-level strategy and is a division suitable for empirical research (Porter, 1980). At the beginning of 1980, Michael was a famous American strategic management scientist. Professor Porter put forward his own theory of competitive strategy through the practice of the manufacturing industry in the United States, Europe, and Japan. In his book Competitive Strategy, he described competition:

The strategy is described as taking offensive or defensive actions, establishing a well-founded position in the industry, and successfully dealing with the five competitive forces, so as to win extraordinary investment returns for the company. Porter (1980) competitive strategy theory holds that enterprises should choose attractive industries through the analysis of industrial structure, and then gain competitive advantage by looking for favorable links in the value chain and taking advantage of cost leadership or performance differences. Under this guiding ideology, Porter put forward three basic strategies to gain competitive advantage: cost leadership strategy, differentiation strategy, and target agglomeration strategy (Shah & Ahmad, 2019).

Low-cost strategy, also known as cost leadership strategy, refers to a strategy in which enterprises reduce costs through effective ways, so that the total cost of enterprises is lower than the cost of competitors, even the lowest cost in the same industry, so as to gain competitive advantage. Low cost requires actively establishing production facilities to achieve effective scale, making every effort to reduce costs on the basis of experience, grasping the control of costs and management costs, and minimizing the cost of research and development, service,

marketing, advertising, and other aspects (Porter, 1980), so as to establish a competitive advantage. In order to achieve these goals, it is necessary to pay great attention to cost control in management. Although quality, service, and other aspects can not be ignored, the theme running through the whole strategy is to make the cost lower than the competitors.

Differentiation strategy refers to a strategy adopted to distinguish the products of an enterprise from those of its competitors and to form distinctive characteristics. The core of this strategy is to obtain some unique value for customers. There are many ways to achieve a differentiation strategy: design or brand image. Mercedes Benz's reputation in the automotive industry), technical features , cosmetic features , customer service , distribution networks and other aspects of uniqueness. The ideal situation is for companies to differentiate themselves in several ways. It should be emphasized that a differentiation strategy does not mean that the company can ignore the cost, but at this time the cost is not the company's primary strategic objective (Kharub et al., 2022a).

Hybrid strategy is the result of applying differentiation and low-cost strategy to a specific target market, focusing on a specific customer group, a subdivision of a product chain, or a regional market. While both low cost and product differentiation are intended to be achieved on an industry-wide scale, the agglomeration strategy as a whole is built around serving a specific goal well, and every functional policy it formulates takes this goal into account (Alnoor et al., 2022). The premise of this strategy is that the company can serve a narrow strategic target with higher efficiency and better results, thus surpassing its competitors in a broader range. As a result, companies can either differentiate themselves by better meeting the needs of a particular object, or achieve a lower cost in serving that object, or both. Although from the perspective of the whole market, the concentration strategy fails to achieve low-cost or differentiation advantages, it does gain one or two dominant positions in its narrow market objectives (Sarwary, 2020).

Each basic strategy may also require a different leadership style, which can be reflected in different company cultures and corporate climates, competitive strategy refers to a series of actions and decisions taken by enterprises to gain a competitive advantage in the market (Porter, 1980). These strategies are typically formulated based on a company's internal capabilities and the external market environment. In this study, we focus on three key strategic dimensions: low-cost strategy, differentiation strategy, and hybrid strategy. By measuring these three dimensions of competitive strategy, we can gain a more detailed understanding of which strategy is more suitable for the development needs of current small and medium-sized enterprises. (1) Low-cost strategy: This dimension mainly focuses on how companies reduce production and operational costs to offer competitively priced products or services, thereby attracting price-sensitive consumers. (2) Differentiation strategy: This dimension primarily

examines how companies offer unique and high-quality products or services to distinguish themselves, catering to specific market segments . (3) Hybrid strategy: This dimension looks at how companies combine both low-cost and differentiation strategies to achieve a broader competitive advantage in the market.

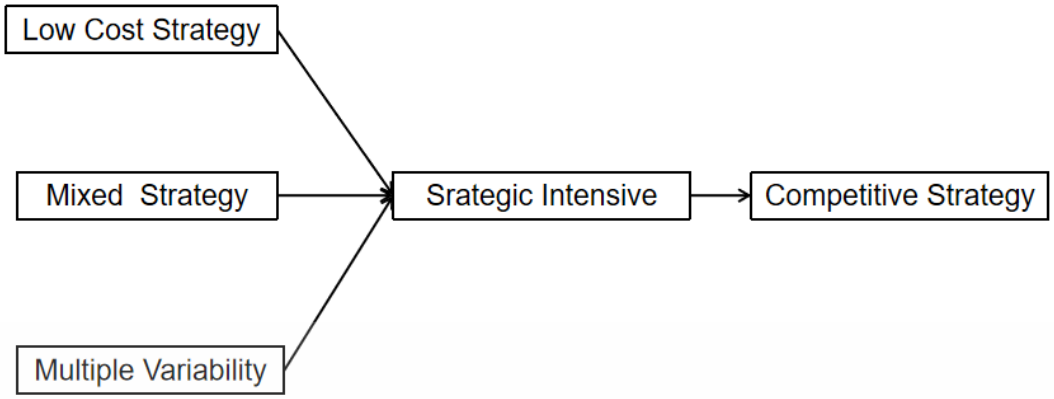
As a latent variable, the introduced observation variables of competitive strategy in this study mainly include the above three, and the correlation is summarized as follows:

Table 2.7 Literature on Competitive Strategy

Researchers	Latent variable	Observed the variables	Item
Kharub et al. (2022b); Sengul (2019)	Competitive Strategy	Low cost strategy	Reducing costs
Das and Canel (2023)	Competitive Strategy	Low cost strategy	Best value
Lestari et al. (2020)	Competitive Strategy	Low cost strategy	Cost control
Simmons et al. (1988)	Competitive Strategy	Differentiation strategy	Strategy affects the difference
Shah and Ahmad (2019)	Competitive Strategy	Differentiation strategy	New products
Porter (1980)	Competitive Strategy	Differentiation strategy	Product brand and advertising
Haiyan et al. (2021)	Competitive Strategy	Hybrid strategy	4P

Source: Based on relevant literature.

The literature, theory, and concept related to competitive strategy are given above. From the current literature research, there are three observation variables of competitive strategy: low-cost strategy, hybrid strategy, and differentiation strategy. Among the relationship models of the three, the current mainstream framework structure is shown in the figure:



Source: Alkasim et al. (2018), Baroto and Abdullah (2011), Mohsenzadeh & Ahmadian (2016), Wekesa et al. (2023)

From the literature, concepts, theories and researchers, the following model for competitive strategy and the observed variables, as shown in below.

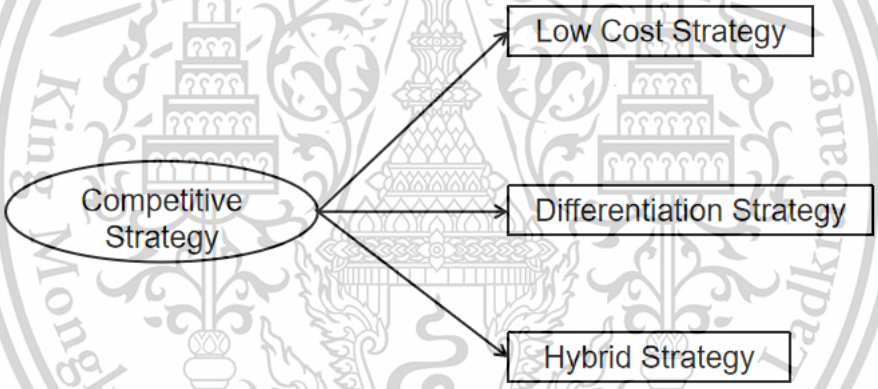


Figure 2.2 Model for competitive strategy

2.4 Theoretical Concept of Innovation

2.4.1 Basic concepts of innovation

The development of small and medium-sized manufacturing enterprises cannot be separated from innovation. The innovation of small and medium-sized manufacturing enterprises fits half of the concepts and characteristics of innovation (Khurosani, 2017). From the perspective of the implementation of China's modernization, 30% of its innovation comes from small and medium-sized manufacturing enterprises, and the innovation of small and medium-sized manufacturing enterprises plays an important role. The theoretical viewpoint of innovation was first put forward by (Schumpeter, 2000), an Austrian-American economist, in

his Theory of Economic Development (1912), which has a history of nearly 80 years. According to Schumpeter (1912), "innovation" is to establish a new production function, that is to say, to introduce a new combination of production factors and production conditions into the production system. It includes the following five situations: introducing new products; introducing new technologies, i.e., new production methods; opening up new markets; tapping new sources of supply of raw materials; and realizing a new organization of the enterprise. Obviously, Schumpeter's concept of innovation has a wide range of meanings. It refers to all kinds of new activities that can improve the efficiency of resource allocation, involving technological changes and non-technological changes (Schumpeter & Swedberg, 2021).

Until the 1980s, people were still unable to agree on the concept of innovation. Many scholars have done a lot of research and discussion on the meaning of innovation from different angles, such as from the perspective of new things, the process of developing new things, the process of adopting new things, and so on. At present, the research and theory on innovation are relatively rich. this study summarizes some major views on innovation at home and abroad, as shown in Table 2.8.

Table 2.8 Related researchers and definitions of innovation

Author	The meaning of innovation
Frasquet et al. (2022)	Establish a kind of new production function, that is to say, a kind never had had about factor of production and produce The "new combination" of production conditions is introduced into the production system.
Bing and Qian (2010)	Technological improvements and better ways and means of doing things in the form of product changes, process changes, new Marketing methods, new forms of sales, and concepts for new areas
Armbruster et al. (2008)	An activity in the production and application of new knowledge. They believe that the main meaning of innovation lies in technology, but It does not necessarily depend on technology, but is likely to be artistic.
Khurosani (2017)	An invention, when it is first applied, can be called a technological innovation.
Hutahayan (2020)	Technological innovation is the process of creation, evolution and development of technological products.
Haiyan et al. (2021)	When a new product is introduced for the first time, the technology, design, production, finance, Many steps of management and marketing activities
Patwary et al. (2024)	Technological innovation is the first time that scientific inventions have been imported into the production system, and through research and development efforts, business has been formed.

Author	The meaning of innovation
	The process of business transaction
Fan et al. (2021)	The process by which an enterprise develops an invention or research result and makes a profit by selling it.
Lam et al. (2021)	Innovation refers to the process of using knowledge or relevant information to create and introduce something useful and new.

Source: According to the current research results of relevant scholars summary

In recent years, the word "innovation" has been used more and more frequently in our country. To sum up, the understanding of the meaning of innovation is mainly as follows.

(1) Agree with Schumpeter's definition that innovation refers to the establishment of a new production function, that is to say, the introduction of a new combination of production factors and production conditions that has never been introduced into the production system. Almost all the professional dictionaries of economic management published in China explain the term "innovation" in this way. This definition reflects the original meaning of the word innovation and the fact that it is introduced from abroad.

(2) It is believed that innovation refers to people's activities of breaking the old establishing the new and seeking comprehensive benefits. This definition distinguishes "innovation" from "technological innovation" and reflects the new content of innovation development.

(3) Think that innovation refers to the creation of new things. Most of the explanations of "innovation" in general dictionaries published in China belong to this category.

(4) It contains two meanings, one is to create new things, and the other is to introduce a kind of creation into the enterprise production and operation system or social and economic system for the first time in a certain environment in order to obtain comprehensive benefits. Creation here refers to the creation of unprecedented things, which includes a wide range, and all the achievements of human understanding of the world (discovery) and transformation of the world (invention) are creations. The first emphasis is to distinguish innovation from innovation diffusion. Emphasizing the environment is to make it clear that innovation takes place in a specific time, space, and condition, which is the main object of innovation theory research.

It is worth noting that innovation is actually a dynamic and historical category, which changes with the development of the times. Even in the works of Schumpeter, the initiator of the concept of innovation, the concept is changing in different periods. In his early works, he put more emphasis on the role of entrepreneurs in innovation activities and the randomness of

innovation activities; With the development of monopolistic competition in society and the increase of R&D investment in large enterprises, he emphasized that innovation was endogenously determined by enterprise behavior, and that innovation was mainly the result of enterprise's conscious investment in R&D activities, not just the random behavior of entrepreneurs or uncertain and unpredictable activities.

By the middle of the 20th century, science and technology played a more and more important role in economic development. Enterprises consciously invested in R&D activities, and innovation activities became a regular activity of entrepreneurs. With the advent of the era of the knowledge economy, innovation has become the most important driving force for economic development.

2.4.2 Latent and Observed Variables

For small and medium-sized manufacturing enterprises, Innovations mainly include Incremental Innovation, Breakthrough Innovation, and Flexible Innovation.

The significance of Incremental Innovation, Breakthrough Innovation, and Flexible Innovation.

Innovation is to establish a new production function and introduce an unprecedented combination of production factors and production conditions into the production system. Low-cost strategy and differentiation strategy both attach importance to innovation, but they are different in the choice of innovation mode, so it is necessary to further divide the types of innovation. In order to meet the needs of research, people often classify them from their own research perspectives.

Due to the differences in research perspectives, innovation is divided into several different types. For example, knight divides innovation into procedural innovation and non-procedural innovation from the perspective of the institutional state; Wang and Zhou (2021) puts forward three types of innovation from the perspective of the initial focus of innovation: technological innovation, value-centered innovation, and structural innovation; From the perspective of organization, innovation is divided into independent innovation, joint innovation, and introduced innovation; Lutfi (2020) divide innovation into two types, namely, institutional innovation and technological innovation. In 2021, Fan et al. (2021) divided innovation into incremental innovation and breakthrough innovation according to the extent of innovation in his book The Innovator's Dilemma: When New Technology Causes the Failure of Big Enterprises.

Although some literature has defined or analyzed incremental innovation and breakthrough innovation before, they cannot systematically and especially study innovation like this book. The viewpoints expounded in this book have caused great shock in American

academic circles, and Christensen has become the most important representative of innovation research, especially breakthrough innovation research. Christensen's classification of innovation has been adopted by many scholars, and a number of related studies have emerged (Frasquet et al., 2022; Lam et al., 2021; Nyawu & Schultz, 2020), and so on. In 2022, Wan et al. (2022) introduced a balanced state on the basis of gradual innovation and breakthrough innovation, namely: elastic innovation. Flexible innovation is mainly an innovation mechanism based on the perspective of enterprise development, which has certain precision and reliability.

Incremental innovation is the gradual, small, and continuous innovation caused by the improvement of existing technology. Gradual innovation has great cumulative benefits for the reduction of product cost and the improvement of product performance. This innovation involves changes in existing technology and production capacity, which can make full use of the potential of existing technology and often strengthen the advantages of existing mature companies, especially the organizational capacity of existing enterprises. Through gradual innovation, enterprises can improve existing product design, expand existing knowledge and skills, expand and enrich existing product lines, improve the efficiency of existing distribution channels, and provide better service for existing customer groups (Nyawu & Schultz, 2020).

Breakthrough innovation refers to the new products and new technologies launched by enterprises to the market for the first time, which represents a fundamental change with revolutionary changes in technology, which is manifested as a clear separation from the existing practice. Breakthrough innovation is a radical innovation behavior with the intention of seeking new possibilities (Kumari et al., 2023). Enterprises design new products through breakthroughs and innovation, open up new market segments, develop new distribution channels, and provide services for new consumer groups. Technological innovation, which is based on a new knowledge base completely different from the existing knowledge base, can replace and destroy the existing technology until the emergence of a technology-led paradigm. The difference between these two kinds of innovation is that breakthrough innovation contains more new knowledge and new technology than incremental innovation. Breakthrough innovation often leads to the emergence of new products and new processes, while incremental innovation is mostly manifested in the improvement and optimization of products and processes on the original basis. The importance of distinguishing abrupt innovation from incremental innovation lies in the fact that these two different types of innovation play different roles in the requirements of internal factors, the environment, and the innovation of enterprises (Patwary et al., 2024).

As a new innovation mode, the strategy adapted to the environment must be given full play to its strategic significance, achieve strategic goals, and establish competitive advantages

through the effective and correct innovation implementation mechanism. The flexible innovation theory also believes that when faced with uncertainties including strategic risks, the competitive strategies adopted to improve resilience should be matched with their existing resources and capabilities. Companies implementing a cost-leading strategy need to expand them by reducing costs (Begum et al., 2020).

Profit space is the enterprise to improve efficiency and reduce the cost ability to put forward higher requirements, and incremental innovation represents efficiency management activities, is advantageous to the enterprise through specialized resources, mechanical structure, standardized process, and competitive external relations to improve efficiency at the same time reduce production cost and management cost, and achieve the strategic goal, is conducive to cost leading strategy to better achieve its strategic objectives, establish the competitive advantage. Enterprises that establish the strategic orientation of cost leadership will pay more attention to the improvement of efficiency management ability, and better cope with the uncertainties in the process of production and operation through the management ability, Establish the competitive advantage of cost leadership, and improve enterprise performance and enterprise value (Azeem et al., 2021).

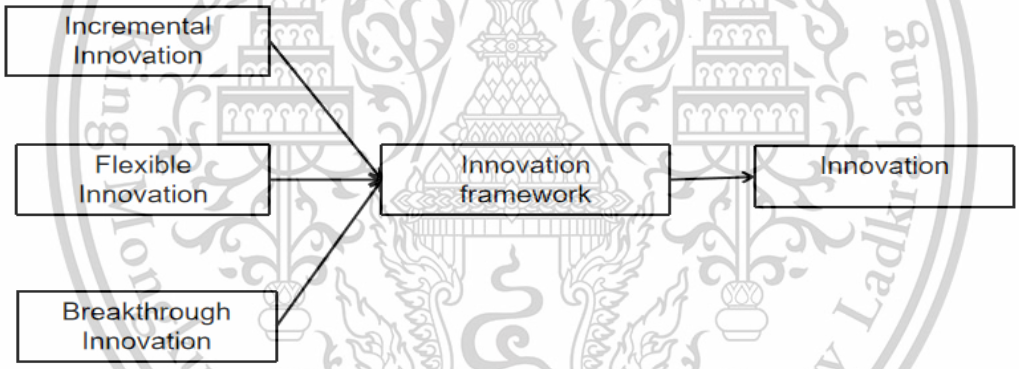
Table 2.9 Literature on Innovation

Researchers	Latent variable	Observe the variables	Item
Khurosani (2017)	Innovation	Incremental innovation	Improvement product
Achdiat et al. (2023)	Innovation	Incremental innovation	Improving existing technologies
Frasquet et al. (2022)	Innovation	Incremental innovation	Improving process technology.
Bing and Qian (2010)	Innovation	Incremental innovation	Improving technology by market demand
Lam et al. (2021)	Innovation	Breakthrough innovation	Checking product
Armbruster et al. (2008)	Innovation	Breakthrough innovation	Producing new technology
Armbruster et al. (2008)	Innovation	Breakthrough innovation	Redefinition product

Researchers	Latent variable	Observe the variables	Item
Hutahayan (2020)	Innovation	Flexible innovation	Product design
Haiyan et al. (2021)	Innovation	Flexible innovation	Accumulating experience
Patwary et al. (2024)	Innovation	Flexible innovation	Better data growth

Source: Based on relevant literature.

The above table describes the literature, concepts, and related theories about innovation. From previous studies, it can be found that there are three main observed variables of innovation: Incremental innovation, Flexible innovation, and Breakthrough innovation. Relevant scholars have studied the three types of innovation models, and given specific analysis and theoretical relationship models. This study will discuss these relationships in depth below. The specific application model is as follows:



Source:Abiodun (2017), X. Chen et al. (2024), (Homayoun et al. (2024)

From the literature, concepts, theories and researchers, the following model for Innovation and the observed variables, as shown in below.

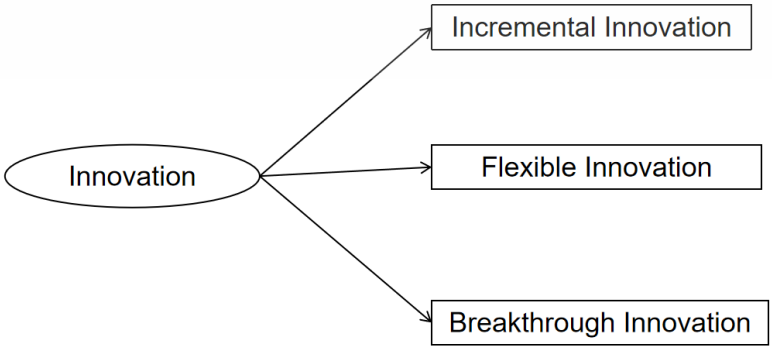


Figure 2.3 Model for Innovation

2.5 Theoretical Concept of Corporate governance structure

2.5.1 Basic concepts of corporate governance structure

The development of small and medium-sized manufacturing enterprises cannot be separated from the scientific corporate governance structure, which has the similarity between the corporate governance structure and the general corporate governance structure, and which can also be interconnected in concept. From the research, Ronoowah and Seetanah (2023) pointed out that corporate governance structure refers to a set of institutional arrangements in which the owners (shareholders) supervise, motivate, control, and coordinate the company's management and performance in order to achieve the effectiveness of resource allocation. It reflects the relationship between the participants who determine the company's development direction and performance. A typical corporate governance structure is a certain mutual relationship framework formed by the owner, the board of directors, and the executive managers.

According to international practice, the internal governance structure of large-scale companies is usually composed of shareholders, a board of directors, managers, and a board of supervisors, which divide their work and check and balance each other according to the rights, responsibilities, and interests given by law. Some scholars have clearly defined the module of corporate governance. The main definitions are as follows: (1) Ngatno et al. (2021) proposed that the corporate governance structure is an organizational structure formed by three members, namely, the owner of the company, the board of directors of the company, and the senior managers within the company. In order to optimize the corporate governance structure, it is necessary to clarify the respective functions, powers, and obligations of shareholders, board of directors, and managers, so that the three are inseparable and mutually restrictive.Ronoowah and Seetanah (2023) also discussed the content of the module on corporate governance when he explained the importance of the economic market environment. He believes that every enterprise has an internally established governance structure, which refers to the process by which the owner of the company supervises the operation, management, and financial performance of the enterprise. At the same time, Jan et al. (2021) also pointed out that under realistic conditions, the corporate governance structure usually defined by people actually refers to the internal management structure or the structure directly controlled by the company. Yang and Morgan (2011) pointed out that, the earliest published in China and known as the "barometer" of corporate governance of listed companies, has been published for 16 consecutive years since 2003. Successively accumulative total carries on a series of analysis research and appraises to 30854 sample companies. Wu et al. (2024)believe that corporate governance (that is, corporate governance structure) can be distinguished in a broad and narrow

sense. Su and He (2012)point of view is that corporate governance in a narrow sense refers to a set of supervision and checks and balances mechanisms formulated by the owners (mainly shareholders) of the company to the managers of the company. Its main feature is that the board of directors, shareholders, board of supervisors, and managers use the internal governance structure to supervise the company. In a broad sense, corporate governance is to use of a set of formal or informal, external or internal systems to coordinate corporate management with the interests of all stakeholders in the company, including but not limited to government agencies, creditors, shareholders, directors, communities, and so on. Zhong (2015) believes that the corporate governance structure in a narrow sense only refers to the institutional planning and arrangement of the composition and function of the board of directors and the rights and functions of shareholders, while the corporate governance structure in a broad sense is aimed at the internal operation management and business activities of enterprises. These systems define the company's development direction and development goals, as well as the functions of various departments. He also believes that the corporate governance structure in a broad sense refines the ownership of enterprises. Toms and Wright (2002) broad understanding of corporate governance is to make the rights of enterprises reasonable and effective.

In a narrow sense, the company organization grants the ownership of the company to the management personnel within the company, and the corresponding management personnel supervise the activities of the company and the respective responsibilities of employees. Under the modern enterprise system, there is no connection between the ownership and the management rights of an enterprise. Enterprise management is to authorize the holders of management rights by the holders of enterprise ownership from the perspective of enterprise management rights, and the latter, based on authorization, formulates a series of mechanisms aimed at achieving business objectives. Corresponding to enterprise management, corporate governance is to authorize professional managers from the ownership holders at the level of enterprise ownership and supervise the daily business activities of professional managers. This study summarizes the relevant research as follows:

Table 2.10 Corporate governance structure definitions

Researchers	Related definitions
(Ngatno et al., 2021)	The corporate governance structure is mainly based on the structural combination mode of the distribution of shareholders' equity.
(Toms & Wright, 2002)	A complete set of systems with legal significance is formulated for the internal operation management and business activities of enterprises.
(Ehikioya, 2009)	The ownership of the Company is vested in the management

Researchers	Related definitions
	personnel within the Company, and the corresponding management personnel supervise the activities of the Company and the respective responsibilities of the employees.
(AA Zaid et al., 2020)	The combination mechanism of the respective functions, powers and obligations of the shareholders, the board of directors and the management personnel
(Ronoowah & Seetanah, 2023)	Corporate governance structure refers to the structural institutional arrangement of checks and balances between corporate ownership and management rights based on trust responsibility in order to achieve the best business performance of the company.

Source: Based on relevant literature.

2.5.2 Latent and Observed Variables

The corporate governance structure combined with the reality of small and medium-sized manufacturing enterprises, mainly includes two parts and three parts, as follows:

(1) Organizational structure

Organizational structure refers to the division, grouping, and coordination of work tasks. Organizational structure is a model that indicates the order, spatial location, gathering and dispersing state, contact mode, and the relationship between the various elements of the organization, and it is the "framework" of the whole management system. It is a structural system formed by all members of the organization in terms of job scope, responsibilities, and rights to achieve organizational goals and carry out division of labor and cooperation in management (AA Zaid et al., 2020). It is the dynamic structure system of the organization in terms of duties, responsibilities, and powers. Its essence is a division of labor and cooperation system adopted to achieve the strategic objectives of the organization. The organizational structure must be adjusted with the major strategic adjustment of the organization. As far as corporate governance is concerned, organizational structure is a very important part. The perfection of organizational structure is related to the reliability and execution of corporate governance (L. Zhang et al., 2007).

(2) Control structure

Control is to check whether the work is carried out according to the established plans, standards, and methods, find out the causes of deviations, and correct them to ensure the realization of organizational objectives. It follows that the control function encompasses almost all the activities of managers to ensure that actual work is consistent with the organization's plans. Control and planning are two sides of the same coin and are relatively closely related.

The clearer, more comprehensive, and complete the plan, the better the control will be. The purpose of control is to make the actual work conform to the original planned objectives by taking corrective measures. Control structure is an important part of corporate governance structure, which is related to the distribution of rights within the enterprise and the implementation of the distribution plan (Toms & Wright, 2002).

(3) Management structure

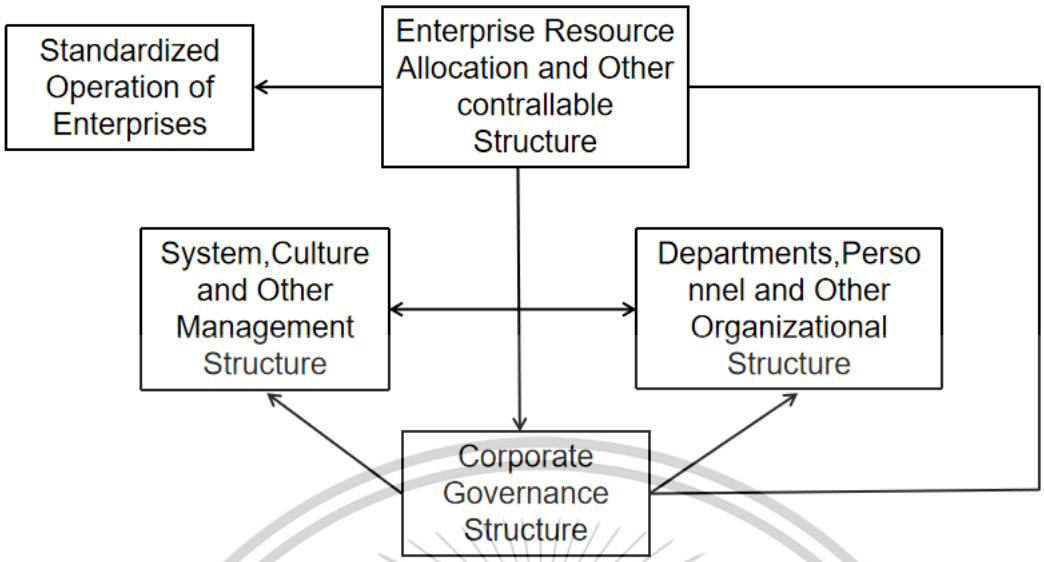
Management structure is the number of management positions set up in the chain of authority. When the size of the organization is quite limited, one manager can directly manage the activities of each operator, and then there is only one management structure in the organization. When the expansion of the scale leads to the management workload beyond the scope of one person, in order to ensure the normal operation of the organization, managers must entrust others to share part of their management work, which increases the management structure to two levels (Ehikioya, 2009). With the further expansion of the scale of the organization, the trustee has to entrust other people to share his work, and so on, thus forming a hierarchical or hierarchical management structure of the organization (Yang & Morgan, 2011). In a sense, the management structure is a product of necessity, and its existence itself has certain side effects. First of all, more layers mean more costs. The increase in the number of levels will inevitably require more managers, who will need the support of certain facilities and equipment, and the increase in the number of managers will increase the workload of coordination and control, all of which mean increasing costs. Secondly, with the increase in management structure, the difficulty and complexity of communication will also increase. When a command is conveyed from top to bottom, it will inevitably lead to misinterpretation, omission, and distortion, and the flow of information from bottom to top is also difficult, distorted, and slow. In addition, numerous departments and levels make planning and control activities more complex. A plan that appears clear and complete at a high level can become blurred and uncoordinated as it is broken down layer by layer. As the number of levels and managers increases, it becomes more difficult, but more important, to control activities. Obviously, when the size of the organization is fixed, there is an inversely proportional relationship between the management structure and the management range. The greater the extent of management, the fewer the management structures; Conversely, the smaller the management range, the more the management structure. These two cases correspond to two types of organizational structure, the former is called flat structure, and the latter is called towering structure. Generally speaking, the traditional enterprise structure tends to be high-rise, focusing on control and efficiency and is relatively rigid. The flat structure is considered to be more flexible, and easy to adapt to the environment, and the participation of organizational members is relatively high. Therefore, the organizational structure of enterprises has a trend of evolution from high to flat.

Table 2.11 Literature on corporate governance structure

Researchers	Latent variable	Observe the variables	Item
Ngatno et al. (2021)	Corporate governance structure	Organizational structure	Organizational forms
Ronoowah and Seetanah (2023)	Corporate governance structure	Organizational structure	Organizational behavior
Aladwan et al. (2024)	Corporate governance structure	Organizational structure	Organizational efficiency
Yusoff et al. (2016)	Corporate governance structure	Control structure	Control mode
Alodat et al. (2022)	Corporate governance structure	Control structure	Content satisfaction
Al-Ahdal, Alsamhi, Tabash, and Farhan (2020)	Corporate governance structure	Control structure	Behavioral satisfaction
Toms and Wright (2002)	Corporate governance structure	Management structure	Business quality
Elmassri et al. (2023)	Corporate governance structure	Management structure	Business model

Source: Based on relevant literature.

The above table describes the three observed variables of the Corporate governance structure, Management structure, Organizational structure, and Control structure. The correlation model of the three variables and the drinking relationship provide a diversified combination model in the case analysis of Hansen (2023), and other small and medium-sized manufacturing enterprises, which are specifically as follows:



Source: Hansen (2024).

From the the literature, concepts, theories and researchers, the following model for Corporate governance structure and the observed variables, as shown in below.

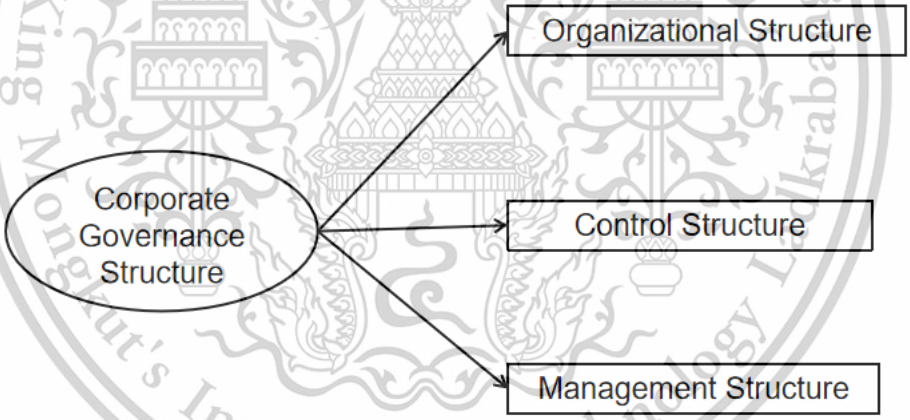


Figure 2.4 Model for Corporate governance structure

2.6 Theoretical Concept of Capital Structure of enterprise

2.6.1 Relevant concepts of capital structure of enterprise

The operation drive of small and medium-sized manufacturing enterprises is closely related to their capital structure, The capital structure of enterprises refers to the value composition of various capitals of enterprises and their proportional relationship, which is the result of the combination of financing in a certain period of time (Mazanec, 2023). In a broad

sense, capital structure refers to the composition and proportion of the total capital of an enterprise. The capital of an enterprise in a certain period of time can be divided into debt capital and equity capital, as well as short-term capital and long-term capital. In a narrow sense, capital structure refers to the composition and proportional relationship of various long-term capital of an enterprise, especially the composition and proportional relationship between long-term debt capital and (long-term) equity capital. The optimal capital structure is the capital structure that maximizes the wealth of shareholders or the stock price, that is, the capital structure that minimizes the cost of capital (Margaritis & Psillaki, 2010). Capital structure refers to the value composition and proportion of various capitals of an enterprise. Corporate financing structure, which is also called capital structure, reflects the proportional relationship between corporate debt and equity. To a large extent, it determines the ability of debt paying and refinancing, determines the future profitability of enterprises, and is an important indicator of corporate financial situation. A reasonable financing structure can reduce the cost of financing, play the regulatory role of financial leverage, and enable enterprises to obtain a greater rate of return on their own funds (Nguyen & Ramachandran, 2006).

This study summarizes the related research as follows:

Table 2.12 Capital structure of enterprises definitions

Researchers	Related definitions
Serrasqueiro and Caetano (2015)	What is the capital structure?Owner's equity And CreditorProportional relationship of rights and interests. Profit distribution enterprises should deal with the contradiction between accumulation (for reinvestment) and dividends (for investors'income).
Graham and Leary (2011)	Capital structure, in a narrow sense, refers to the enterprise.Long-term liabilities And Equity capitalProportional relationship of. In a broad sense, it refers to the combination structure of various elements of an enterprise. Capital structure is the result of enterprise financing, which determines the ownership of property rights of enterprises, and also stipulates the rights and interests of different investors and the risks they bear.
Bing and Qian (2010)	Capital structure refers to the relationship between equity capital andDebt capitalProportional relationship, which reflectsMarket economyThe financial relationship of enterprises under the condition is formed by investment and loan with capital and credit as the link. Shareholder The interest

Researchers	Related definitions
	relationship of mutual restriction between the creditor and the operator.
Liu et al. (2014)	Capital structure refers to the company's short-term andLong-term liabilities And Shareholders' equityProportion of. In a sense, capital structure is the structural arrangement of property ownership. Property ownership is often ultimately corresponding to income rights, so capital structure is related to property rights arrangement, or capital structure determines the structure of property rights arrangement.
Ria (2023)	Capital structure refers to the proportion of a company's liabilities to its equity, usually the proportion of liabilities or the ratio of liabilities to equity.Total assetsThe proportional relationship of.. Western financial experts have done a lot of theoretical and empirical research on capital structure, but there are still many differences.
Ngatno et al. (2021)	Capital structure here refers to the debt situation of an enterprise. Whether the capital structure is reasonable or not directly affects the financial situation of the enterprise, and the debt ratio should not exceed 50%.Short-term liabilitiesProportions should be appropriate.
P. Lin et al. (2020)	Capital structure refers to the various sources and combinations of long-term funds raised by enterprises, as well as the composition and proportional relationship among them. Research Theory of capital structureThe main purpose of is to analyze the relationship between capital structure andEnterprise financingThe relationship between cost, corporate value and corporate governance structure.

Source: Based on relevant literature.

2.6.2 Latent and Observed Variables

From the main form of small and medium-sized manufacturing enterprises, the capital structure generally includes the following parts:

(1) Ownership structure

Ownership structure refers to the proportion of shares of different natures in the total share capital of a joint-stock company and the relationship between them. Equity refers to the rights and interests corresponding to the proportion of shares owned by shareholders and the right (obligation) to assume certain responsibilities. The rights that can be claimed against the

company based on the status (identity) of shareholders are equity. Ownership structure is the basis of corporate governance structure, and corporate governance structure is the specific operation form of ownership structure. Different ownership structure determines the different organizational structure of enterprises, thus determining different corporate governance structure, and ultimately determining the behavior and performance of enterprises (Rodrigues et al., 2017).

(2) Operating structure

Operating structure mainly refers to the allocation of financial indicators and operating benefits in the course of operation, including operating costs, operating efficiency, operating quality, etc. It is mainly based on the research results of Hu et al. (2022). On the basis of surveying many forest management methods at home and abroad, it introduces the concept and connotation of management in detail, systematically expounds the theoretical basis, objectives, principles, methods, techniques, and effect evaluation of structured management, and deeply studies the practice of structural optimization and structured management.

(3) Financial indicators

Financial indicators refer to the relative indicators used by an enterprise to summarize and evaluate its financial position and operating results. The three financial indicators stipulated for an enterprise in China's General Rules for Enterprise Finance are solvency indicators, including asset-liability ratio, current ratio, and quick ratio; Operational capacity indicators, including accounts receivable turnover and inventory turnover; Profitability indicators, including capital profit rate, sales profit rate (profit and tax rate of operating income), cost-profit rate, etc (Liu et al., 2014). The main contents of financial indicators of industrial enterprises include 1) fixed assets. It is divided into the original value of fixed assets, the net value of fixed assets, and the profit provided per 100 yuan of fixed assets (original value or net value); 2) working capital. It is divided into total working capital, fixed working capital, reserve capital, production capital, finished product capital, monetary capital, and settlement capital. The fixed working capital is occupied by every hundred yuan of output value and the turnover speed of fixed working capital; 3) Cost. The total cost of all products, the total cost of comparable products, the cost reduction rate of comparable products, unit cost of products, etc.; 4) Profit. It is divided into product sales profit, total profit, product sales tax, profit turned over, capital profit rate, capital tax rate, etc.

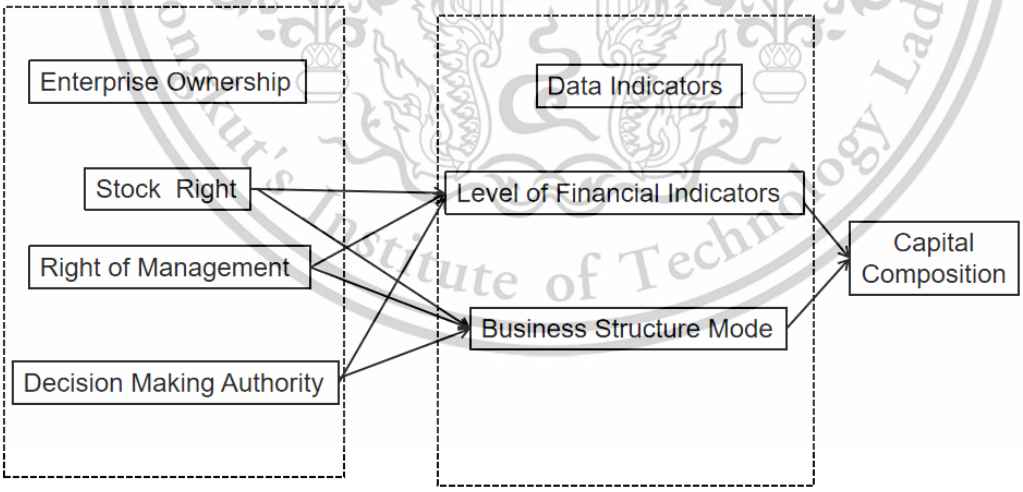
Table 2.13 Literature on Capital structure of enterprises

Researchers	Latent variable	Observe the variables	Item
AA Zaid et al. (2020)	Capital structure of enterprises	Ownership structure	Power ratio

Researchers	Latent variable	Observe the variables	Item
PHAM (2020)	Capital structure of enterprises	Ownership structure	Shareholder satisfaction
Rodrigues et al. (2017)	Capital structure of enterprises	Operating structure	Operational process
Graham and Leary (2011)	Capital structure of enterprises	Operating structure	Operational form
Ronoowah and Seetanah (2023)	Capital structure of enterprises	Financial indicators	Satisfaction degree
Nguyen and Ramachandran (2006)	Capital structure of enterprises	Financial indicators	Reliability and satisfaction

Source: Based on relevant literature.

The above table describes the three observed variables of the capital structure of enterprise: Ownership structure, Financial indicators, and Operating structure. In the case analysis of the relationship among the three, Rodrigues et al. (2017) Margaritis and Psillaki (2010), and others discussed the relationship between the three observed variables in the process of the capital structure analysis of small and medium-sized manufacturing enterprises. The specific model is as follows:



Source: Rodrigues et al. (2017) Margaritis and Psillaki (2010)

From the the literature,concepts, theories and researchers, the following model for Capital structure of enterprises and the observed variables, as shown in below.

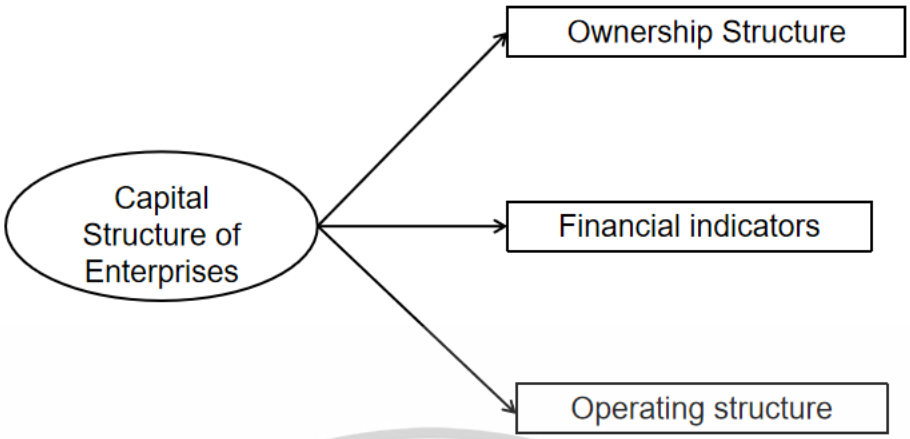


Figure 2.5 Model for Capital structure of enterprises

2.7 Theoretical Concept of Human capital

2.7.1 Concepts related to human capital

Human capital is a concept of Western economics, also known as "non-material capital". For small and medium-sized manufacturing enterprises, it is reflected in the capital of workers, rather than "material capital". Such as workers' knowledge and skills, cultural and technical level, and health status. Its main characteristic is that it is associated with personal freedom, but is not associated with product sales. Formed through human investment (Haque & Oino, 2019; Hutahayan, 2020). These expenditures include (1) expenditure on education; (2) expenditure on health care;(3) expenditure on the internal movement of labor; and (4) expenditure on the entry of immigrants. The most important one is education expenditure, which forms education capital. Through education, we can improve the quality of the labor force, the working ability, and the technical level of workers, and thus improve labor productivity. Its growth, especially the growth of education expenditure, is one of the sources of economic growth. Human capital has more room for appreciation than hard capital such as material and money, especially in the post-industrial period and the early stage of the knowledge economy. As a "living capital", human capital is innovative and creative and has the ability to effectively allocate resources and adjust the development strategy of enterprises. Investment in human capital has a higher contribution rate to the growth of GDP (Liu et al., 2014; Ojokuku & Sajuyigbe, 2015).

In this context, we delineate the capital structure into three primary dimensions: Ownership Structure, Operating Structure, and Financial Indicators.

(1) Ownership Structure:The ownership structure delves into the distribution of shareholder equity within the enterprise's capital. This encompasses the proportion of shares

held by major stakeholders, the allocation of shareholder rights, and the implications of the shareholder configuration for the long-term sustainable growth of the company. An optimal ownership structure can provide a stable source of funds for the enterprise and mitigate financial risks, ensuring alignment with the company's strategic objectives.

(2) Operating Structure:The operating structure focuses on how the enterprise's operational costs, efficiency, and quality align with its capital structure. This involves how the enterprise leverages its capital to achieve operational efficacy, ensuring that its operational strategies are congruent with the capital configuration. A harmonized operating structure can lead to enhanced operational performance and value creation .

(3) Financial Indicators: Financial indicators serve as pivotal metrics to evaluate the financial health and performance of an enterprise, encompassing aspects like solvency, profitability, and growth potential. These metrics offer invaluable insights to managers and investors about the financial robustness of the enterprise and the appropriateness of its capital structure, guiding strategic financial decisions.

Table 2.14 Related Researchers and Definitions

Researchers	Related definitions
Tran and Vo (2020)	The sum total of the laborer's labor capital
	Expenditure on knowledge and skills, cultural and technical level and health status of workers
Mubarik et al. (2020)	Human labor is divided into direct labor and indirect labor. Direct labor refers to the labor invested in the direct production process, which creates the value of commodities. Indirect labor refers to indirect investment in what is needed.Means of productionMaterialized labor in the world does not create value, but transfers the original value to commodities. Ricardo has clearly pointed out that machines and natural objects can not create value, only human labor is the only source of value.
Mubarik et al. (2020)	Skills and knowledge are important factors affecting labor productivity, and he emphasized that the ability to acquire should be regarded as part of the national wealth as well as machines and tools. Mill's creative argument is that starting from the traditional productive orientation of economic growth and resource allocation, he points out that education expenditure will bring greater national wealth.
Shehadeh and Mansour (2019)	Human resource is the most important resource in all resources, and the theory of human capital is the core issue of economics.

Researchers	Related definitions
Ojokuku and Sajuyigbe (2015)	The core of human capital is improvement.Population qualityEducation investment is the main part of human investment. Human capital should not beReproductionIt is only regarded as a kind of consumption, but should be regarded as an investment, and the economic benefits of this investment are far greater than those of material investment. Education is the most basic means to improve human capital, so human investment can also be regarded as the issue of education investment. Obviously, human resources, one of the three elements of productivity, can be further decomposed into human resources with different levels of technical knowledge. The output of people with high technical knowledge is significantly higher than that of people with low technical knowledge.

Source: Based on relevant literature.

2.7.2 Latent and Observed Variables

From the development of small and medium-sized manufacturing enterprises, Human capital mainly includes human resources and human resource capacity.

(1) Human Resources

Human resources refers to the sum of the population in a country or region who are of working age, under working age, and over working age but have the ability to work Shehadeh and Mansour (2019). Or the population of a country or region after subtracting the population that has lost the ability to work from the total population. Human resources also refer to the general terms of education, ability, skill, experience, and physical strength that can be used by enterprises and contribute to value creation in a certain period of time. In a narrow sense, it is the ability (resources) of the personnel needed by the independent business groups of enterprises and institutions. In a broad sense: the sum of people with intellectual and physical labor ability in a society, including both quantity and quality.

Human resources, also known as labor resources or labor force, refers to the total number of people who can promote the development of the whole economy and society and have the ability to work. In economics, all the elements put into production activities to create material wealth are generally called resources, including human resources, material resources, financial resources, information resources, time resources, and so on, among which human resources are the most valuable resources and the first resource(Shehadeh & Mansour, 2019). Human resources include both quantity and quality. The most basic aspects of human resources, including physical strength and intelligence, from the state of practical application, including

physical fitness, intelligence, knowledge, and skills. Human resources, like other resources, also have characteristics, availability, and limitations. Generally speaking, the quantity of human resources is the number of people who have the ability to work, and its quality refers to the level of physical fitness, cultural knowledge, and labor skills of the economically active population. A certain amount of human resources is a necessary prerequisite for social production. Generally speaking, sufficient human resources are conducive to the development of production, but their quantity should be compatible with the production of material means. If they exceed the production of material means, not only a large number of new products will be consumed, but also surplus manpower will not be employed, which will have a negative impact on the development of the social economy. Economic development mainly depends on economic activities and the improvement of the quality of the population. With the extensive application of modern science and technology in production, the quality of human resources will play an increasingly important role in economic development. Basic aspects include physical strength and intelligence. If we look at the actual application form, it includes four aspects: physique, intelligence, knowledge, and skills. People who have the ability to work do not generally refer to all people with certain mental and physical strength, but to those who can independently participate in social labor and promote the development of the whole economy and society. Therefore, human resources include not only the population with working ability within the working age but also the population participating in social labor outside the working age. In the working age, due to the different social and economic conditions of different countries, the provisions of the working age are not the same. Generally speaking, the lower limit of working age is 15 years old and the upper limit is 64 years old. The recruitment of employees in our country is generally required to be at least 16 years old. The retirement age of employees is 60 years old for men (to retire at the age of 60, excluding 60 years old) and 55 years old for women (excluding 55 years old). Therefore, the working age range in our country should be 16-59 for men and 16-54 for women.

(2) Human resource capacity

Human resource capacity, in human resource management, refers to a set of standardized requirements for a person to hold a position to judge whether he is competent or not. Ability usually refers to the strength that a person can exert. Human ability includes instinct, potential, ability, and skill, which directly affect the quality and efficiency of a person's work. Psychology has two explanations for improving working ability: one is what an individual can do, and the other is what an individual may do in the future. The actual ability shown by individual behavior is called "achievement" in psychology, while the ability shown through learning and training or in behavior is called "potential" in psychology(Matsuo, 2022).

There is a close positive correlation between human resource capacity and work performance. Performance is external and ability is internal. Employees with higher work performance, in general,

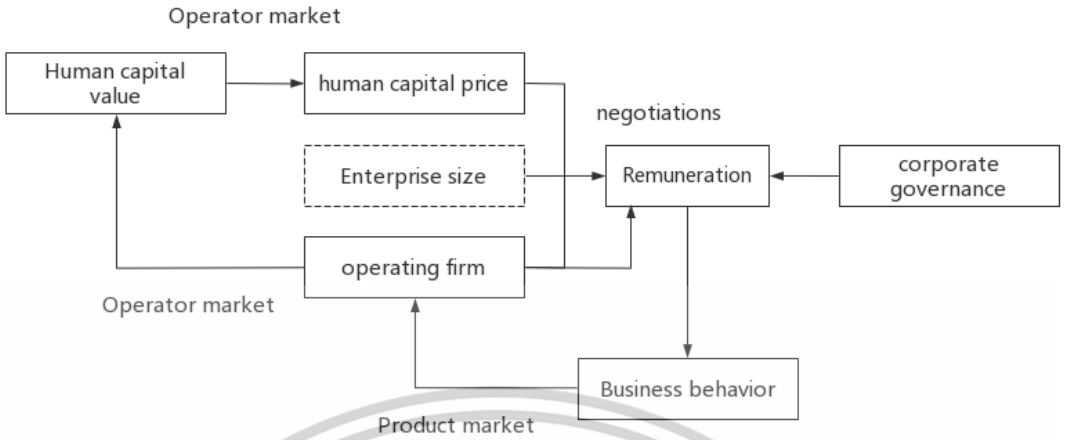
work ability must be higher; Employees with strong working ability must also perform well in their work. Generally speaking, ability includes necessary knowledge, professional skills, general ability, and so on. Different from the ability assessment, the assessment of workability is to assess the ability of the employee in the work, to assess the ability of the employee in the work process, according to the standards or requirements, to determine how well he plays his ability, corresponding to the job, position, ability is big or small, strong or weak, and so on, to make an assessment. At the same time, the assessment ability is not the absolute value of the assessment ability, but the relative value of the improvement speed and range of the assessment ability. Through the assessment, employees are required to improve their abilities quickly and substantially on the basis of their original positions.

Table 2.15 Literature on Human Capital

Researchers	Latent variable	Observe the variables	Item
Alhamzah Alnoor (2020)	Human capital	Human resources	Personnel number
Al Shbail et al. (2022)	Human capital	Human resources	Personnel quality
Shehadeh and Mansour (2019)	Human capital	Human resources	Personnel structure
Liu et al. (2014)	Human capital	Human resource capacity	Personnel ability
Alhamzah Alnoor (2020)	Human capital	Human resource capacity	Personnel quality
Ojokuku and Sajuyigbe (2015)	Human capital	Human resource capacity	personnel number

Source: Based on relevant literature.

The above table describes the two observation variables related to the human capital of the enterprise, respectively: Human resources and human resources capacity, Studies on the role of two observed variables in human capital and related relationships are scarce. In the enterprise case analysis, mainly by Al Shbail et al. (2022); Alhamzah Alnoor (2020). The current common classical relationship models are as follows:



Source: Al Shbail et al. (2022); Alhamzah Alnoor (2020)

From the the literature, concepts, theories and researchers, the following model for Human capital and the observed variables, as shown in below.

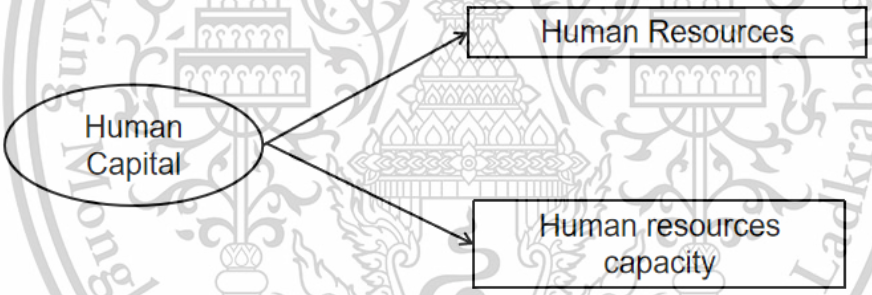


Figure 2.6 Model for human capital

2.8 Theoretical Concept of Environment

2.8.1 Basic concept of Environment

The environment is the key to the survival of small and medium-sized manufacturing enterprises, which mainly includes both the internal environment and the external environment (Idolor et al., 2023). According to the current research, for small and medium-sized manufacturing enterprises, The concept of environment has always been a concern in the field of strategic management. Lutfi (2020) defined the environment as "the sum of physical and social factors that need to be directly considered by individuals or groups making decisions in an organization".Duncan's definition is a compound concept. Alodat et al. (2022) believe that the organizational environment includes the internal environment, which is composed of those

elements within the organization, and incorporates the owners, employees, managers, and the board of directors into the internal environment of the enterprise.

Empirical studies have proved that there is a positive and complex correlation between competitive strategy and performance (Alodat et al., 2022; Nizam et al., 2019). In order to obtain a more scientific explanation of the relationship between competitive strategy and enterprise performance, scholars have proposed that competitive strategy has different effects under different scenarios, moderators should be added to a simple bivariate model of the relationship between competitive strategy and performance. Moderating variables define the boundary conditions of the relationship between competitive strategy and performance, and affect the strength or direction of the relationship between competitive strategy and performance. Moderating variables can be divided into two categories: environmental variables such as external environment and industry characteristics, and organizational variables such as organizational structure, resources, and culture. Under different environmental characteristics and organizational conditions, the role of the relationship between competitive strategy and performance is different. This study selects the environment, one of the most important contingent variables in strategic management, as a moderator variable to study the moderating effect of the environment on the relationship between competitive strategy and performance.

As an important contingent variable, the environment has been a concern by scholars in the empirical research on the relationship between enterprise competitive strategy and performance. Enterprises need to consider a variety of environmental factors when making a strategy. There is no universal competitive strategy-oriented selection criteria that is beneficial to any organization. Enterprises must carefully scan the organizational environment and external environment in order to make the right strategic choice. The environment actually affects the choice of enterprise strategy, and the relationship between environment and strategy formulation directly affects the performance of enterprises. Contingent strategic management scholars have further shown that the environment has a moderating effect on the relationship between competitive strategy and enterprise performance (Feng Wenna, 2023).

In the study of the environment, some scholars use the concept of a single dimension to study the moderating effect of environmental uncertainty on the relationship between competitive strategy and enterprise performance. Uncertain events are characterized by difficulty in expressing probability, lack of causality, and inability to predict the outcome. As an important feature of the organizational environment, uncertainty has an important impact on organizational decision-making, strategic choice, organizational structure design, and so on. Economists understand uncertainty from the perspective of risk, while system theory studies understand uncertainty from the perspective of complexity. They believe that the reason why uncertainty is different from complexity is that it has dynamic characteristics, which focus on

explaining that the attributes or States of things are unstable, uncertain, and unpredictable. Environmental uncertainty comes from the external environment and is also related to the ability and knowledge of decision-makers.

Table 2.16 Related Researchers and Definitions

Researchers	Related definitions
Idolor et al. (2023)	Refers to some Interdependence All kinds of mutual restriction and constant change Factor. The composition of a system is to influence the enterprise. Management decisions And Production and operation. A collection of elements of the reality of an activity. This definition does not refer specifically to the external environment of the enterprise, nor to the external environment of the enterprise. Internal environmentOr some aspect of the internal environment, but rather a Environmental System; It reflects the business environment. Content ActionIt also reflects the basic characteristics of the enterprise environment.
Lutfi (2020)	Include those actors that directly affect the performance of the enterprise in fulfilling its mission, Supplier Various market intermediaries, customers, competitors, etc.
Gorzeń-Mitka and Okręglicka (2014)	Include broader social forces or factors, including demographic, economic, technological, political, legal, and sociocultural forces or factors affecting all actors in the enterprise microenvironment.
Schilke (2014)	It refers to the internal and external influence on the enterprise. Market opportunities or environmental threats A major social force. All factors in the micro-environment are influenced or dominated by the macro-environment. Macro-environmental factors directly or through the medium of micro-environmental factors exert an impact on the business strategy of enterprises.

Source: Based on relevant literature.

2.8.2 Moderating and Observed Variables

Combined Combined with the basic operation of small and medium-sized manufacturing enterprises, The environment mainly includes three basic observation variables: Dynamic, Complex, and environment innovation.

Details are as follows:

Dynamics

The dynamics of the market environment have a certain impact on the competitive strategy and enterprise performance of enterprises. In the design of an enterprise's competitive strategy, it is necessary to plan the relevant strategic design based on the perspective of marketization. The dynamic changes can better guide the effective adjustment of enterprise strategy so that the enterprise performance can be given full play (Bosse et al., 2007)..

Complexity

In environmental research, some scholars use the concept of a single dimension to study the effect of the market environment on the relationship between competitive strategy and enterprise performance. As an important feature of the organizational environment, complexity has an important influence on organizational decision-making, strategic selection, organizational structure design, and so on. Economists understand uncertainty from the perspective of risk, while system theory studies understand uncertainty from the perspective of complexity. They believe that the complexity of the market environment differs from its dynamic characteristics, which focuses on explaining that the properties or states of things are unstable, uncertain, and unpredictable (Gorzeń-Mitka & Okręglicka, 2014).

(3) Environment innovation

The market environment has multiple dimensions. Different environmental dimensions have different regulating effects on the relationship between competitive strategy and performance, which need to be treated differently. In terms of the division of environmental dimensions, related research is relatively rich, and their expressions are complex and diverse, such as dynamic, stable, complex, heterogeneous, loose, hostile, competition, etc. Among them, the classification of Carrión-Flores and Innes (2010) is more classic and has been adopted by many scholars. In this Rennings and Rammer (2011) divides environmental characteristics into three dimensions: dynamic, complex, and innovative. The dynamic nature of the environment focuses on the rate and instability of environmental change; complexity refers to the quantity and nature of environmental factors considered in the decision-making process; innovation is the strength of competition, resource constraints, and the strength of the environmental. The innovation of the market environment affects the structure design of the enterprise's competitive strategy and the performance of enterprise performance.

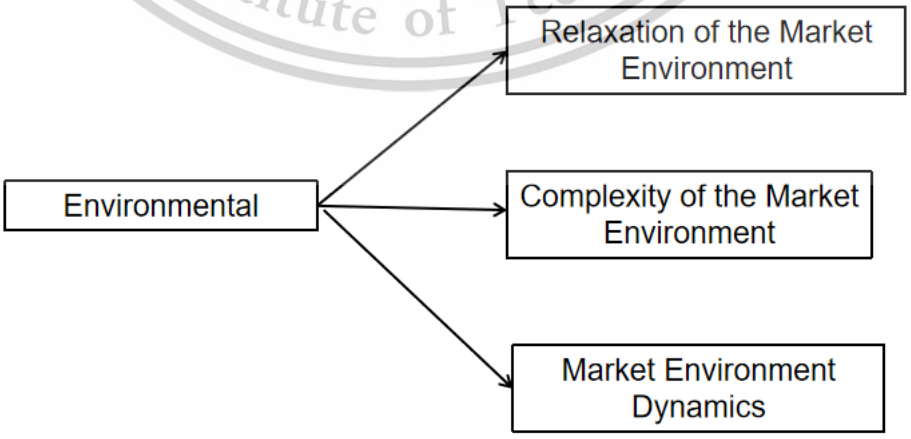
Furthermore, we study the regulation of environmental dynamics, complexity, and environmental innovation on competitive strategy and relationship:

Table 2.17 Environmental Literature

Researchers	Latent variable	Observe the variables	Item
Chan et al. (2016)	Environmental	Dynamic	Performance drives
Mohammad (2019)	Environmental	Dynamic	Potential driver
Bosse et al. (2007)	Environmental	Dynamic	Business-driven regulation
Gorzeń-Mitka and Okręglicka (2014)	Environmental	Complexity	Internal structural complexity
Rueda - Manzanares et al. (2008)	Environmental	Complexity	External market
Y. Li (2014)	Environmental	Environmental innovation	Internal structure
Q. Zhang and Ma (2021)	Environmental	Environmental innovation	Innovation and satisfaction

Source: Based on relevant literature.

The above table mainly expounds on the relevant concepts, theories, and three observation variables about the environment, respectively: Dynamic, Complex, and environmental Innovation. Among these three variables, the description of the enterprise case is mainly based on the disassembly strategy of the internal structure system of the environment. The representative research (Chan et al., 2016; Q. Zhang & Ma, 2021). The relevant relationship model gradually matures, specifically as follows:



Source: (Chan et al., 2016**);** Q. Zhang and Ma (2021)

From the the literature, concepts, theories and researchers, the following model for Environment and the observed variables, as shown in below.

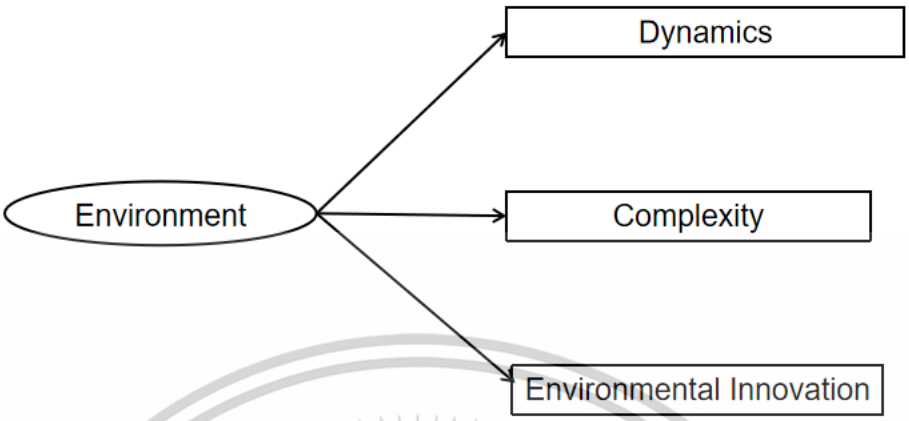


Figure 2.7 Model for environment

2.9 Variables relationship analysis and hypothesis

2.9.1 The relationship between competitive strategy and enterprise performance

The impact of competitive strategy of small and medium-sized manufacturing enterprises on enterprise performance, different scholars have explained the low-cost strategies, differentiation strategies, and hybrid strategies (Frasquet et al., 2022; Idolor et al., 2023).

Wekesa et al. (2023) put forward a four-level analysis model of the integration of low-cost strategy and differentiation strategy, the strategy model, which is analyzed from four aspects: interactive industry value network, the core competitiveness of value network, value chain within the enterprise, value engineering, and customer experience, and holds that low-cost strategy and differentiation strategy is inherent in the above levels (Acquaah et al., 2011; Amoako-Gyampah & Acquaah, 2008).

However, in terms of value and economic benefits, the adoption of a differentiation strategy is more sustainable than a low-cost strategy, that is, a differentiation strategy can better guarantee the sustainability of enterprise performance. (Ang et al., 2015)used the data to conduct empirical analysis, and the results showed that enterprises could better occupy the market and achieve deep expansion by adopting a differentiation strategy. If the proportion of enterprise differentiation was 1%, the improvement in enterprise performance would be 12.78%.The study of 87 enterprises in the PIMS database shows that 78 enterprises in the total sample adopt a differentiation strategy, and their performance level is 67.81% higher than that of enterprises without a competitive strategy.(Danso et al., 2019) includes 56 enterprises that produce machine screws. Among the five hypotheses of the study, only "enterprises that adopt

differentiation strategy have better performance than those that do not adopt a strategy or low-cost strategy" is supported.

Huo et al. (2014) conducted cluster analysis and variance test on retail enterprises in retail formats such as department stores, grocery stores, and commodity stores in the United States, and found that there were 12 enterprises adopting a differentiation strategy, which had higher sales profit margins, and those retail enterprises pursuing low cost and differentiation at the same time could gain more competitive advantages. (Jusoh & Parnell, 2008); Park and Park (2018)analyzed the combination strategy in the textile industry and concluded that the enterprise differentiation strategy in the textile industry can achieve a higher level of performance than the enterprise without a competitive strategy. Gomes et al. (2014); Santos-Vijande et al. (2012)used the survey data of manufacturing enterprises to examine the impact of enterprise and industry factors on performance. They divide Porter's basic competitive strategy into pure strategy and mixed strategy and find that the performance of implementing differentiation strategy is obviously better than that of implementing other single strategies. Lestari et al. (2020) conducted a questionnaire survey on large and medium-sized enterprises that have implemented economic freedom policies and conducted a factor analysis on the data obtained, confirming that the implementation of a differentiation strategy can bring a significant increase to the performance of enterprises than the implementation of other strategies. However, not all differentiation strategies have high performance under any conditions. Mohsenzadeh and Ahmadian (2016)found that among all strategic groups, broad areas of differentiation and low-cost combinations are the most profitable, but the profitability of strategic combinations linked to narrower strategic objectives is worse.

Jermias and Mahmoudian (2024) used the financial data of listed companies analysis technology to construct two factors to reflect whether the company's competitive strategy is inclined to differentiation, low cost, or mixed strategy. On this basis, he examined the impact of strategic positioning on the company's short-term and long-term performance. It is found that both low-cost strategy and differentiation strategy can bring short-term competitive advantage to listed companies, and the short-term profitability of enterprises adopting differentiation strategy is significantly higher than that of enterprises adopting the low-cost strategy. The competitive advantage created by a low-cost strategy is difficult to sustain, while the competitive advantage established by a differentiation strategy is sustainable. However, the hybrid strategy has the advantages of both, which can provide impetus for the sustainable growth of enterprise performance.

Oyewobi et al. (2016) analyzed and summarized driving factors of Porter's basic competitive strategy. Through comparative analysis, he believed that cost leadership strategy and differentiation strategy were mutually exclusive when measuring competitive strategy from

the product level, and enterprises could only locate one of them according to the actual environment and resources when choosing competitive strategy. Claver-Cortés et al. (2012)believe that there are great differences and even contradictions between low-cost strategy and differentiation strategy in terms of organizational arrangements and market requirements. A low-cost strategy requires a strict bureaucratic management system and standardized production to improve efficiency, while a differentiation strategy requires a loose management system to facilitate the development of innovation.

In addition, low-cost strategies need to achieve a larger market share, which is conducive to economies of scale and learning curve, while differentiation strategies are often contradictory to achieve a larger market share. Therefore, enterprises can only choose one of the strategies. Haiyan et al. (2021)believes that the measurement standard from the business unit level can not better reflect the competitive strategy at the product level. When measuring the competitive strategy from the product level, the cost leadership strategy and the differentiation strategy are mutually exclusive. However, many scholars have questioned this, mainly based on the following three reasons.

Firstly, the driving factors of differentiation and low cost are different and they are exogenous and independent, and there is no inherent contradiction between them. Shah and Ahmad (2019)believes that the impact of differentiation on demand depends on the differentiation ability of enterprises, the competitive nature of the product market, and the commitment of consumers to the products of competing enterprises. The reduction of cost depends on the learning effect, scale economy, and scope economy. Osei et al. (2024)believes that the source of cost leadership comes from the characteristics of industrial structure such as economies of scale and other economies independent of scale, while the preconditions for product differentiation mainly come from preferences for quality, reliability, and service. Jusoh and Parnell (2008)believes that product differentiation emphasizes product quality characteristics and punctual delivery, while low cost is a function of manufacturing efficiency (such as standardization) and economies of scale, so enterprises may emphasize both quality and low cost. Keskin et al. (2021)believes that cost leadership strategy and differentiation strategy are not completely opposite. They divide costs into manufacturing costs and transaction costs and bring them into the analytical framework of business strategy. They believe that the transaction between enterprises and consumers should consider not only the transaction costs of products but also the manufacturing costs. Scholars pointed out that transaction cost is the main component of differentiation, while production cost is the main component of cost leadership, so the difference between the two strategies is a matter of degree rather than type (Lam et al., 2021). If the decrease of manufacturing cost is equal to or greater

than the increase of transaction cost, the implementation of the differentiation strategy will not sacrifice cost leadership but contribute to the decrease of cost, At this time, the implementation of the two strategies is parallel.

Second, under certain conditions, portfolio strategy is the inevitable choice of enterprises. In a certain industry, especially in some mature industries, significant economies of scale, learning effects, and economies of scope have been achieved, and enterprises have very similar cost minimization structures. In this case, only differentiation can create lasting assets that are unique to an enterprise and difficult to imitate by other enterprises, and even differentiation can be a way for enterprises to achieve low-cost status (Ortega, 2010). This means that sustained competitive advantage can be based on differentiation and the maintenance of a minimum-cost position in a group that has already achieved minimum cost. Differentiation is consistent with achieving a low-cost position when the company has a strong ability to differentiate its products; When customers are less loyal to competitors' products; Rapid market growth; The market structure is highly fragmented; The product manufacturing process is relatively new or complex; There are economies of scale, especially at the corporate level; Economies of scope exist (Oyewobi et al., 2016).

Thirdly, globalization and the development of information network technology further provide the possibility for the implementation of the hybrid strategy. With the development of information network technology in the era of globalization and the information economy, cost leadership strategy and differentiation strategy can be effectively integrated. In the era of economic globalization, multinational corporations are seeking low-cost resources worldwide, including labor and material resources. The application of information technology in enterprise production and management also makes mass customization and personalized production possible. The application of a large number of new technologies in the field of production can achieve differentiation at a low cost. Technological innovation and business model innovation represented by computer and Internet technology and communication technology can make it easier for enterprises to reduce internal management costs and transaction costs with strategic partners and consumers (Santos-Vijande et al., 2012).

At the same time, innovation based on Internet technology and communication technology can also make many enterprises respond faster, more flexible and more flexible, and provide higher quality products and services. Scholars put forward the integration theory of competitive strategy (Lestari et al., 2020). They believe that with the development of information technology and management technology, the low cost and differentiation of enterprises can be integrated, and theoretically analyze that the existence of some factors weakens the incompatibility between differentiation and low cost. Scholars proposed the concept of mass customization. There are both differences and commonalities in people's requirements for

product functions. Differentiation means that every consumer has his own special needs, and his needs for products are personalized. Commonality means that although the needs of each consumer are different, they are similar or consistent in some aspects and have commonality. In terms of commonality, mass production should be implemented. In terms of differentiation, customized production is implemented. Mass customization organically combines the two seemingly contradictory production modes of mass production and customized production. Enterprises can quickly meet the differentiated needs of customers for products while taking advantage of the low cost of scale, so as to achieve the effective integration of low cost and differentiation.

From the current theoretical model diagram, the most widely used theoretical model diagram by experts is as follows:

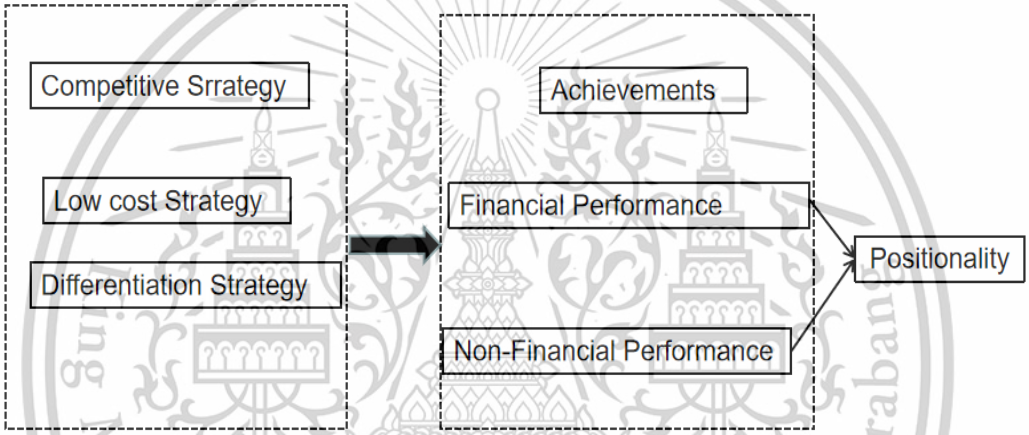


Figure 2.8 Detailed Model of competitive strategies

Source: Das and Canel (2023); Wekesa et al. (2023)

Many studies have shown that companies can create sustainable competitive advantages through cost leadership, differentiation, or focus strategies. These strategies enable companies to gain a favorable position in their industry, whether by reducing costs, offering differentiated products, or focusing on a specific market segment (Alhamzah Alnoor et al., 2022; Porter, 1980). In Porter's competitive strategy framework, enterprises can effectively address market competition and achieve long-term advantages by choosing the appropriate strategic path. This study applies this framework to small and medium-sized enterprises (SMEs) in China and aims to explore the practical application of these three competitive strategies. However, although Porter's three competitive strategies—cost leadership, differentiation, and focus strategy—are theoretically distinct, from a practical perspective, it is more accurate to measure them as a unified latent variable, as this better reflects the flexibility and diversity of strategic decision-making in SMEs (Kharub et al., 2022a).

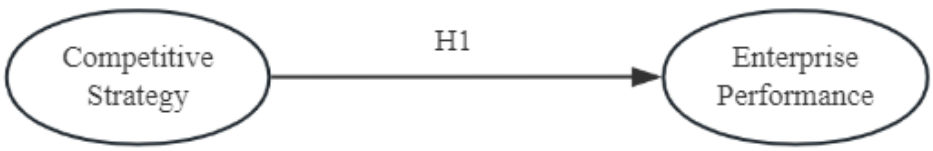
Literature suggests that many companies do not fully conform to any one of Porter's three

strategies, but instead often combine cost leadership with differentiation to adapt to changing market demands and competitive environments. For example, some companies reduce costs while simultaneously pursuing innovation and brand development to differentiate themselves and enhance their market competitiveness. This strategic combination, known as the "hybrid strategy," is particularly prevalent in SMEs. In recent years, scholars have increasingly recognized the importance of hybrid strategies for SMEs, as they often face limitations in resources and capabilities. SMEs need to adopt flexible combinations of strategies to address market opportunities and challenges (Alkasim et al., 2018; Kharub et al., 2022a; Wekesa et al., 2023). Therefore, integrating these strategies into a single measurement construct allows for a more effective capture of how SMEs implement various strategic elements in practice to gain a competitive advantage.

Furthermore, based on dynamic capabilities theory (Idolor et al., 2023; Schilke, 2014), companies often adaptively recombine their strategic resources to cope with changes in the external environment, especially SMEs. Due to their limited resources, SMEs are more inclined to adjust their strategies flexibly to enhance competitiveness. This further supports the rationale for integrating competitive strategy dimensions into a single latent variable. This integration better reflects how SMEs adjust and optimize different strategic elements to achieve better strategic outcomes in the face of a complex environment (Jusoh & Parnell, 2008; Oyewobi et al., 2016).

Therefore, this study argues that integrating cost leadership, differentiation, and hybrid strategies into a unified measurement variable not only better reflects the strategic decision-making process of SMEs in practice but also captures their flexibility and adaptability in complex environments more accurately. This approach provides a more comprehensive and nuanced understanding of competitive strategies in SMEs, while also contributing to the theory and practice of how companies select and combine strategies based on their characteristics and market conditions.

Based on the above analysis, this study proposes the following hypothesis: the competitive strategy of small and medium-sized manufacturing enterprises has a significant positive impact on enterprise performance. By integrating these three strategic types, this study offers stronger theoretical support and practical guidance for how SMEs formulate and implement competitive strategies.



H1: The adoption of competitive strategies, including cost leadership, differentiation, and

hybrid approaches, positively impacts enterprise performance.

2.9.2 The hypothesis of Innovation and enterprise performance

There is a significant relationship between innovation and enterprise performance in manufacturing, while high-performing organizations have also been found to have adopted more product and process innovation over their history. .Innovation plays an important role in promoting enterprise performance. Innovation can greatly enhance enterprise management efficiency, increase market share, and increase profit margins (Dewangan & Godse, 2014; Krasnicka et al., 2018).

Innovation can provide better products to meet the needs of customers, thereby enhancing the ability of market development and competitiveness of the organization, and bringing huge profits to the enterprise. Process innovation can reduce production costs and enhance flexible production capacity, thereby improving organizational performance and enhancing competitiveness (H. Li et al., 2023). Core competence is the basis for enterprises to gain a competitive advantage to improve organizational performance. In the long run, the core competence of an organization comes from the ability to launch products faster and at a lower cost than competitors. That is to say, the improvement of core technology capability based on technological innovation promotes the growth of enterprise performance.

(1) The impact of incremental innovation on enterprise performance

Researchers study further found that incremental innovation has a positive impact on enterprise performance. The incremental innovation of enterprises can greatly reduce the cost of products, and reduce the consumption of raw materials, fuel, and power. The combination of this innovation and market development can obtain the best commercial benefits, which are ultimately reflected in improving the market competitiveness of enterprises. Incremental innovation has relatively small changes to existing products, can give full play to the potential of existing technologies, and can often strengthen the advantages of existing mature companies, especially the organizational capabilities of existing enterprises, and has low requirements for the technological capabilities and scale of companies (Pan et al., 2019; G. C. Wang et al., 2024).

In manufacturing enterprises, incremental innovation is mainly manifested in improving product performance, simplifying production processes, reducing waste, and so on(Khurosani, 2017). These continuous small innovation activities continuously improve the technological status of enterprises, have a huge cumulative effect, and promote the improvement of enterprise performance (H. Zhang et al., 2023). Fan et al. (2021)pointed out that continuous improvement is the main driving factor of enterprise performance improvement. The research

shows that both incremental innovation and breakthrough innovation have a positive impact on innovation performance. Accordingly, they believe that the practice and process of enterprises should not only pursue breakthrough innovation but also pursue incremental innovation strategy. Scholars use comprehensive performance indicators (not distinguishing between efficiency and effectiveness, comprehensive measurement of the overall performance of enterprises), the results still show that the two types of innovation have a significant positive impact on the overall performance of enterprises (Rennings & Rammer, 2011). Researchers divide performance into effect and efficiency, and their research results show that both incremental innovation and breakthrough innovation show significant positive effects on both effect indicators and efficiency indicators (B. J. Zhang et al., 2021).

(2) The impact of breakthrough innovation on enterprise performance

Breakthrough innovation is based on a set of different scientific and technological principles, which can often open up new markets and potential applications, forcing enterprises to constantly raise new problems and constantly use new technological achievements and business strategies to seek new ways to solve problems (Z. M. Song et al., 2024). The implementation of breakthrough innovation can enable enterprises to obtain monopolistic benefits and proprietary invisible knowledge. Scholars believe that breakthrough innovation can bring new product features to enterprises, improve existing functional indicators by at least five times, and significantly reduce product costs (G. C. Wang et al., 2024).

Enterprises engaged in breakthrough innovation also carry out incremental innovation, because the knowledge formed by innovation can be divided into explicit knowledge and tacit knowledge, and tacit knowledge is difficult to transfer, only through the internal informal network. Only by actively carrying out breakthrough innovation can enterprises avoid being destroyed by the tremendous destructive power of small enterprises' breakthrough innovation. Breakthrough innovation has become the cornerstone of company competition and national development (Dewangan & Godse, 2014). Enterprises must use breakthrough products and services to develop potential requirements, open up new markets, or change existing markets. The empirical research results show that there is a positive correlation between enterprise breakthrough innovation and enterprise non-financial performance (Shen et al., 2021). When analyzing the impact of incremental innovation on enterprise performance, some scholars also believe that breakthrough innovation can improve enterprise performance.

(3) Flexible innovation on enterprise performance

Flexible innovation ability is a critical asset for enterprises, contributing significantly to their overall performance. This study posits that Innovation, particularly in the context of its flexibility and adaptability, exerts a positive influence on enterprise performance. This positive relationship is underpinned by several factors. Innovation plays a pivotal role in enabling

enterprises to acquire and allocate resources effectively. A study highlights the strategic importance of innovation in obtaining and efficiently distributing redundant resources. This capability ensures the smooth operation of daily business activities while simultaneously creating resource reserves for uncertain ventures such as product and technology research and development, marketing, and promotions (Frasquet et al., 2022). Innovation, with its problem-solving prowess, effectively resolves the resource allocation conflicts between existing and new business endeavors. Furthermore, innovation-driven adaptations in organizational structures promote agility and responsiveness. Research by Ying et al. (2024) underscores the significance of organic organizational structures in addressing emergencies and empowering employees. Such structures allow for swift decision-making and greater employee autonomy, thereby enhancing motivation and performance. A corporate culture that emphasizes environmental monitoring and timely response fosters sensitivity to market changes.(Azeem et al., 2021) on organizational culture emphasizes the importance of creating a culture that encourages timely detection of opportunities and threats in the external market. This culture facilitates the adjustment of management and operational modes, fostering an atmosphere of proactive adaptation within the enterprise. Effective interaction and trust-building with external stakeholders, enhance an enterprise's ability to access scarce resources swiftly and mitigate the negative impact of adverse events. The improvement of innovation capabilities, as it aligns with these principles, elevates the overall response capacity of enterprises. This heightened responsiveness allows enterprises to effectively navigate uncertainties, including strategic risks, ultimately leading to improved financial performance (Krasnicka et al., 2018). Therefore, this study contends that enhancing innovation capabilities, especially in terms of flexibility and adaptability, contributes positively to enterprise performance.

The commonly used models are as follows:

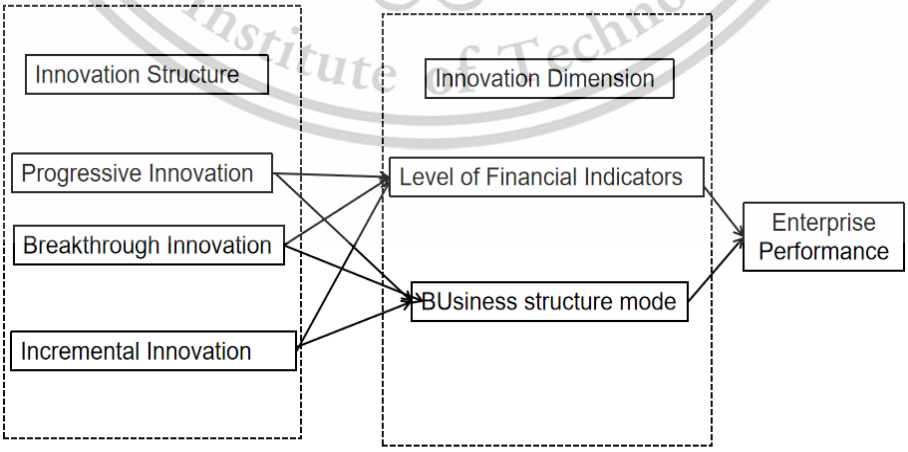
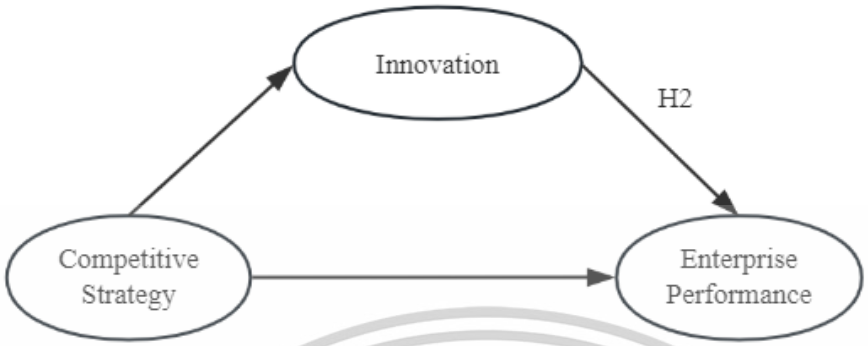


Figure 2.9 Detailed Model of innovation

Source:Abiodun (2017); K. C. Chen and Chiu (2018); Lestari et al. (2020)

This study is mainly based on the research of manufacturing enterprises, and the relevant models introduced are as follows:



H2: Innovation, including product, process, and organizational innovation, positively impacts enterprise performance.

(4)Innovation is mediating between competitive strategy and enterprise performance

Building upon the insights gleaned from the interconnected dynamics of competitive strategy, innovation behavior, and enterprise performance, this study aims to demonstrate that Innovation behavior serves as a mediating factor in the relationship between competitive strategy and enterprise performance. The central premise posits that enterprise competitive strategies have a profound impact on fostering innovation, which, in turn, positively influences enterprise performance. Competitive strategies, as employed by enterprises, play a pivotal role in driving differentiation and competitive advantage within the market (Abiodun, 2017). These strategies, ranging from cost leadership to product differentiation, are known to catalyze differences in innovation behavior within organizations. They set the tone for the kind of innovation initiatives pursued, be it product innovation, process innovation, or market innovation. In turn, these variations in innovation behavior significantly affect enterprise performance. Innovation, as an organizational behavior, has been widely recognized as a critical determinant of a company's success (Frasquet et al., 2022). The ability to innovate, whether it involves creating groundbreaking products, optimizing operational processes, or identifying new market opportunities, directly impacts a firm's competitiveness and financial performance. This theoretical logic of "strategy → innovation → enterprise performance" has gained prominence in both theoretical and empirical studies (Fan et al., 2021). Researchers have consistently found that competitive strategies set the stage for innovation behaviors, which, in turn, shape the ultimate performance outcomes of enterprises. These studies provide a robust foundation for understanding the mediating role of innovation behavior in the relationship

between competitive strategy and enterprise performance.

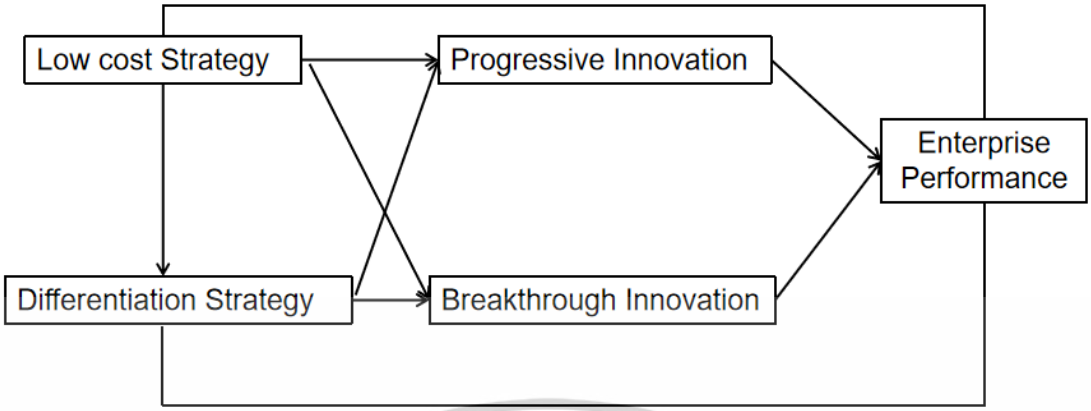
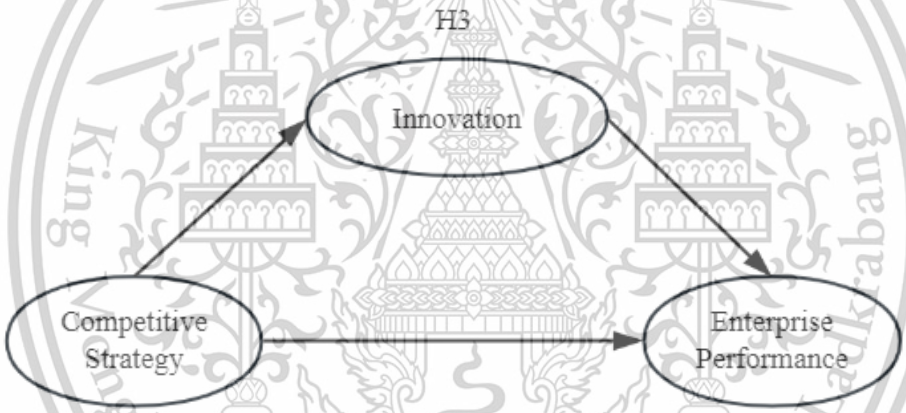


Figure 2.10 The Mediation Model of Innovation Choice on the Relationship between Competitive Strategy and enterprise performance

Source: Fan et al. (2021); H. Li et al. (2023)



Based on the above theoretical deduction and practical analysis, we put forward the following assumptions:

H3: Innovation mediates the relationship between competitive strategy and enterprise performance, with specific emphasis on how product, process, and organizational innovations enhance the effectiveness of competitive strategies.

2.9.3 The hypothesis of corporate governance structure and enterprise performance

Extensive research within the realm of corporate governance and its impact on enterprise performance suggests that an effective corporate governance structure is instrumental in driving positive outcomes for small and medium-sized manufacturing enterprises (SMEs). Some Scholars emphasizes the integral role of corporate governance in shaping overall enterprise performance, underscoring that enhancements across various facets of corporate governance can yield favorable results for enterprises (Domadenik et al., 2016). This includes improving the

overall governance framework and governance-related indicators. Diving deeper into the relationship between the diversification of governance structures and corporate financial performance, Some Scholars conducts an in-depth analysis. Kaunda and Pelser (2023) research unveils a direct correlation between diversified governance structures and enhanced corporate financial performance. Such diversification initiatives can actively stimulate financial improvements. By scrutinizing the intricacies of governance systems, the study establishes a compelling connection between governance and enterprise performance, validating the positive influence of governance diversification (Gao et al., 2025). Zhong (2015) delves into the specifics, focusing on key corporate financial performance indicators like return on net assets and return on investment empirical analysis offers valuable insights, revealing that when managers serve concurrently as board members, it can negatively impact corporate financial performance. Conversely, the study identifies a positive correlation between the company's compensation incentive mechanism and corporate financial performance, emphasizing the significance of governance indicators in driving favorable outcomes (Du & Wang, 2020). The study highlights a positive relationship between the company's compensation incentive mechanism and corporate financial performance, further affirming the role of governance in shaping firm outcomes. Moreover, indirect evidence also substantiates the link between corporate governance structure and enterprise performance. Some Scholars underscores that in the pursuit of competitive strategies, enterprises can elevate their performance levels through the optimization of their corporate governance structures (Kaunda & Pelser, 2023; Klausen & Winsvold, 2021).

Collectively, this body of research underscores the critical role played by corporate governance structures in positively influencing enterprise performance. Whether through direct enhancements, diversification, or optimization of governance mechanisms, the evidence consistently points to the value of robust corporate governance in achieving favorable performance outcomes within SMEs. At present, the main models are as follows:

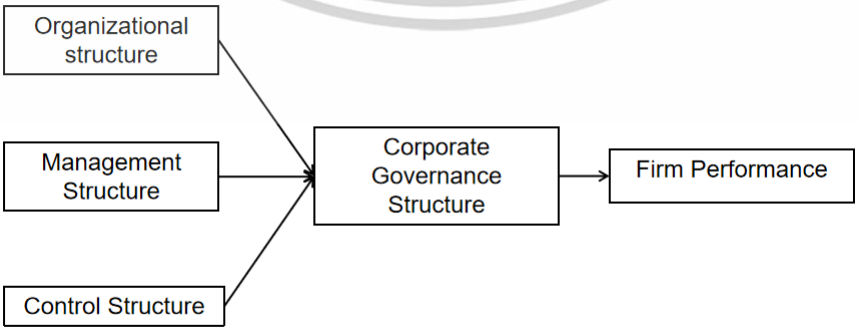
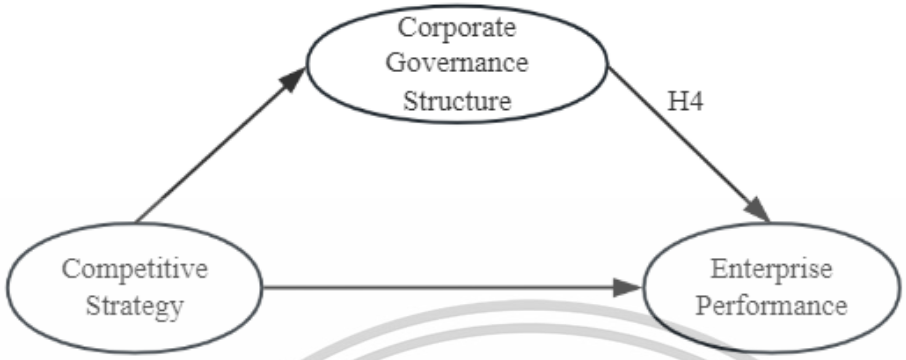


Figure 2.11 Detailed model of corporate governance structure

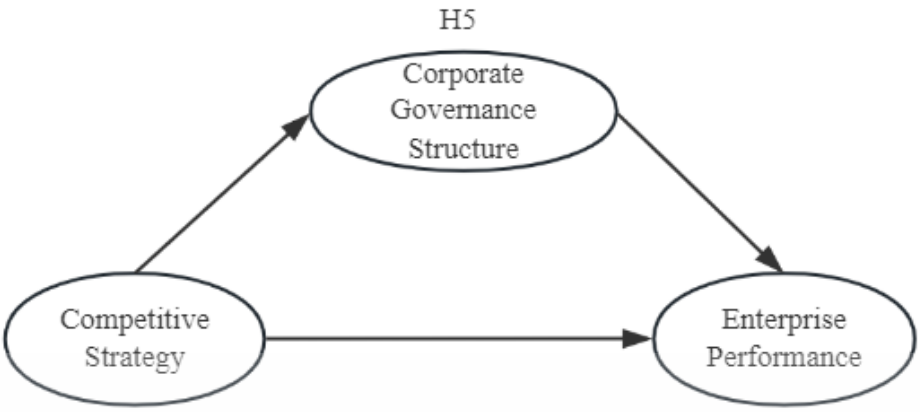
Source: (Ehikioya, 2009; Tleubayev et al., 2021)

Based on the above theoretical deduction and practical analysis, we put forward the following assumptions:



H4: A strong corporate governance structure, including board composition, auditing mechanisms, and ethical practices, positively impacts enterprise performance.

The relationship that Corporate Governance Structure plays a mediating role between competitive strategy and enterprise performance is supported by existing research in the field of corporate governance and strategic management. Research explores the mediating effect of corporate governance mechanisms, such as board independence and audit quality, on the relationship between competitive strategies and enterprise performance. Their findings suggest that effective corporate governance structures can enhance the alignment between competitive strategies and actual firm outcomes (Wu et al., 2024). In a study, the authors investigate how corporate governance mechanisms moderate the relationship between competitive strategies and enterprise performance (Ronoowah & Seetanah, 2023). They find that governance mechanisms, including the composition of the board of directors and CEO duality, can mediate the impact of competitive strategies on financial performance. Furthermore, Researches discusses the role of corporate governance in shaping strategic decision-making processes within firms (Tang et al., 2020). Their research highlights the importance of governance structures in ensuring that competitive strategies are effectively formulated and executed, ultimately influencing enterprise performance. These studies collectively provide empirical evidence and theoretical insights into the mediating role of corporate governance structures in the relationship between competitive strategies and enterprise performance (Ria, 2023). They underscore the significance of governance mechanisms in aligning strategic decisions with actual firm outcomes and optimizing performance. The relevant models are as follows:



H5: Corporate governance structure mediates the relationship between competitive strategy and enterprise performance, with governance mechanisms enhancing the implementation and effectiveness of both differentiation and cost leadership strategies.

2.9.4 The hypothesis of Capital structure of enterprises and enterprise performance

The relationship that Capital Structure of Enterprises has a positive effect on enterprise performance is supported by insights drawn from both theoretical frameworks and empirical observations in the context of small and medium-sized manufacturing enterprises (SMEs). Some Scholars highlights the significance of the asset-liability ratio in influencing the operational capabilities and growth rates of enterprises. A low asset-liability ratio can constrain a firm's ability to operate and grow, while a high asset-liability ratio may affect solvency. Thus, the choice of corporate capital structure can be a determinant in positively impacting enterprise performance (Mazanec, 2023). Some Scholars underscores the role of corporate income tax considerations in assessing capital structure (Ria, 2023). Both the modified Modigliani-Miller (MM) theory and the trade-off theory suggest that as corporate debt ratio increases, the ability to use debt interest to offset taxes grows (Ying et al., 2024). This enhances the financial leverage effect, lowers the comprehensive cost of capital for enterprises, and consequently increases enterprise value, contributing to improved enterprise performance. Some Scholars offers insights into the interest structure aspect of capital structure. Interest-bearing liabilities can impose significant financial costs on enterprises (Jiao et al., 2022). If these costs outweigh the tax benefits derived from interest-bearing liabilities, it can hinder long-term investment and planning. Elevated interest costs may also diminish liquidity and heighten repayment pressures for businesses, potentially affecting enterprise performance. Moreover, Leitao and Franco (2011) introduces the concept of alignment between competitive strategy and capital structure design. The designation of a competitive strategy that aligns with the objectives of capital structure design can enhance enterprise performance. This alignment allows for the effective adjustment of capital structure to external market dynamics and internal control mechanisms,

optimizing the firm's ability to achieve its strategic goals.

Despite the existing body of knowledge, it's worth noting that research on the interplay between capital structure and enterprise performance remains relatively limited, and the current model structures employed for investigation are still evolving. Further research is needed to delve deeper into these relationships and to develop more comprehensive models that capture the multifaceted dynamics at play in the context of capital structure and enterprise performance. At present, the relevant research contents are relatively rare, and the main model structure is as follows:

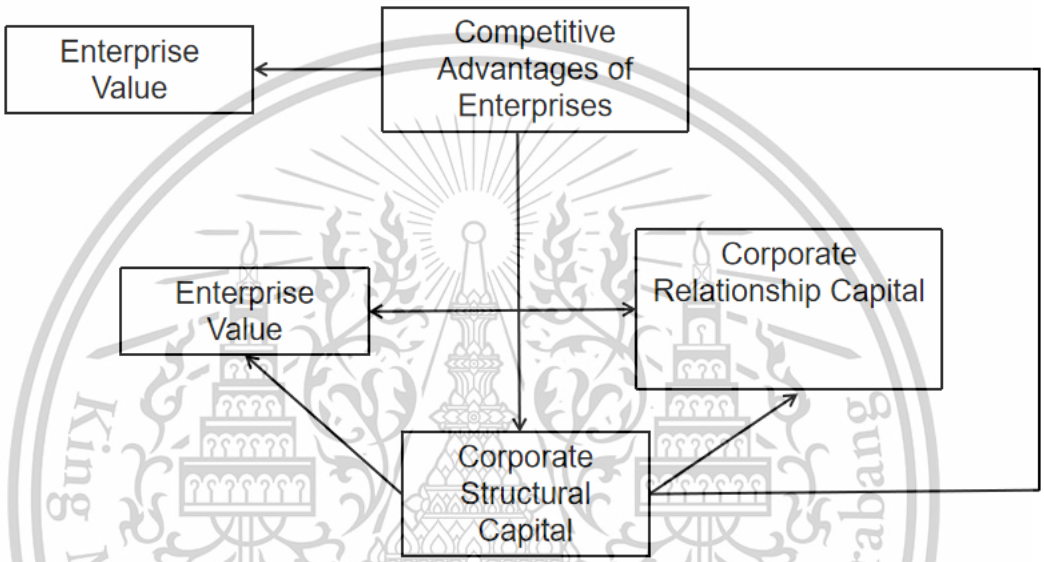
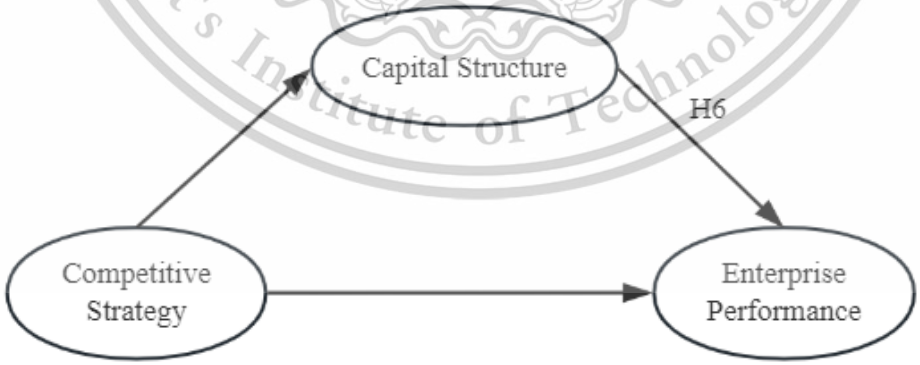


Figure 2.12 Detailed model of capital structure

Source: Mazanec (2023); Nguyen and Ramachandran (2006)

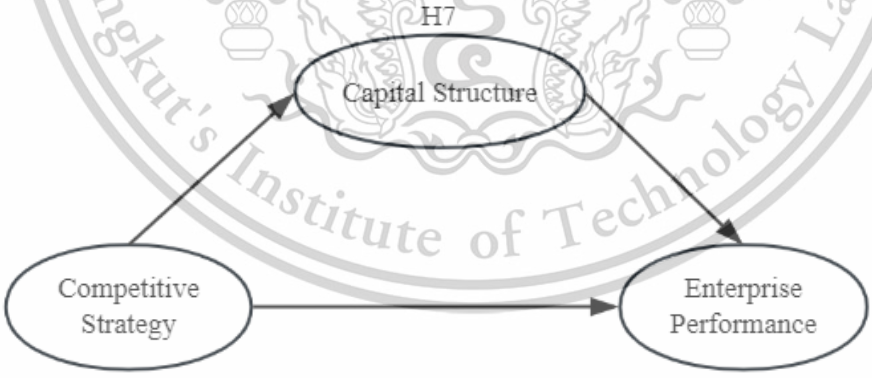
The model proposed in this study is structured as follows, the hypothesis 7 is proposed.



H6: The capital structure, including the strategic mix of debt and equity, positively impacts enterprise performance by optimizing the cost of capital and managing financial risk.

The hypothesis that Capital Structure of Enterprises plays a mediating role between competitive strategy and enterprise performance is substantiated by a body of research in the

fields of corporate finance and strategic management. These studies highlight the intricate relationship between capital structure choices, strategic decisions, and their collective influence on enterprise performance. At the begining study, Graham and Leary (2011)foundational work on the "capital structure puzzle" ,he delves into the factors guiding a firm's capital structure choices. It serves as a foundational framework for understanding how the interplay between debt and equity can mediate the relationship between competitive strategies and enterprise performance. In the realm of strategic management, comprehensive textbooks such as "Strategic Management: Concepts and Cases" expound upon the interconnection between competitive strategy, capital structure decisions, and their joint impact on enterprise performance (Serrasqueiro & Caetano, 2015). Such texts offer insights into how capital structure can act as a mediating factor in the outcomes of strategic choices. Some Scholars study explores the effect of CEO duality to achieve enterprise performance through the mediating effects of capital structure and market competition, the results indicated that capital structure partially mediated the association between CEO duality and enterprise performance (Bing & Qian, 2010). Some Scholars Capital structure can be used as a kind of regulatory and controlling variable to affect enterprise performance (Sarwary, 2020). In the influence on enterprise performance, the effect of its role in competitive strategy is more obvious than the simple influence on enterprise performance. These studies provide empirical and theoretical support for the notion that capital structure can indeed mediate the relationship between strategic decisions and their impact on a firm's overall performance. Therefore, the hypotheses are as follows:



H7: Capital structure mediates the relationship between competitive strategy and enterprise performance, with the alignment of debt and equity financing enhancing the effectiveness of differentiation and cost leadership strategies.

2.9.5 The hypothesis of human capital and enterprise performance

For the small and medium-sized manufacturing enterprises, Human capital, encompasses a composite of attributes, including knowledge, technology, information, health, morality,

reputation, and social relationships, that become associated with individuals through conscious investment activities by specific actors (Cui & Diwu, 2024). These investments aim to enhance future utility or realize value-added benefits. The influence of human capital on enterprise performance can be examined through its defining characteristics (Felício et al., 2014). First and foremost, it exhibits a robust profitability aspect, as emphasized by Miller (2022). Human capital is likened to capital because, like financial capital, it is expected to generate economic gains for enterprises (Huang et al., 2023). Drawing from the rational economic agent hypothesis, enterprises weigh the investment costs against the anticipated future returns of human capital when making investment decisions. Additionally, human capital possesses the quality of substituting for other forms of capital within an enterprise. Individuals with higher levels of human capital and comparatively lower monetary capital can contribute to a company's survival and overall performance (Kucharcíková et al., 2023). Conversely, individuals with lower human capital may need to invest greater monetary capital to achieve similar outcomes in terms of enterprise survival and performance. Consequently, the hypotheses emerging from these observations suggest that human capital exerts a positive influence on enterprise performance. These studies build upon the understanding that human capital, with its multifaceted attributes and potential for economic benefits, not only contributes to enterprise survival but also enhances overall enterprise performance, aligning with rational investment decisions and the substitution of traditional capital. Therefore, the hypotheses are as follows:

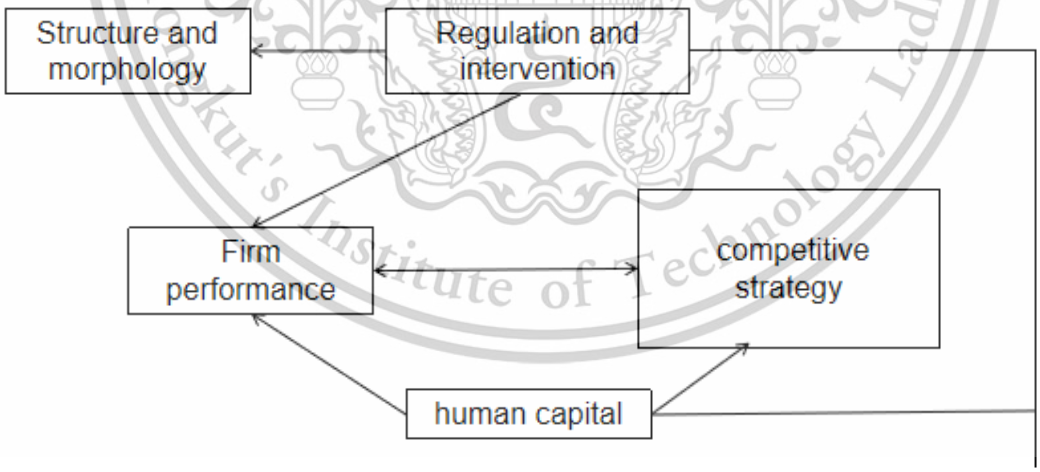
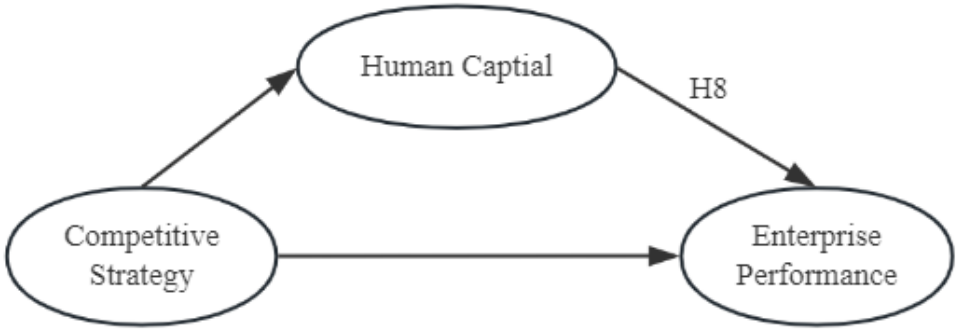
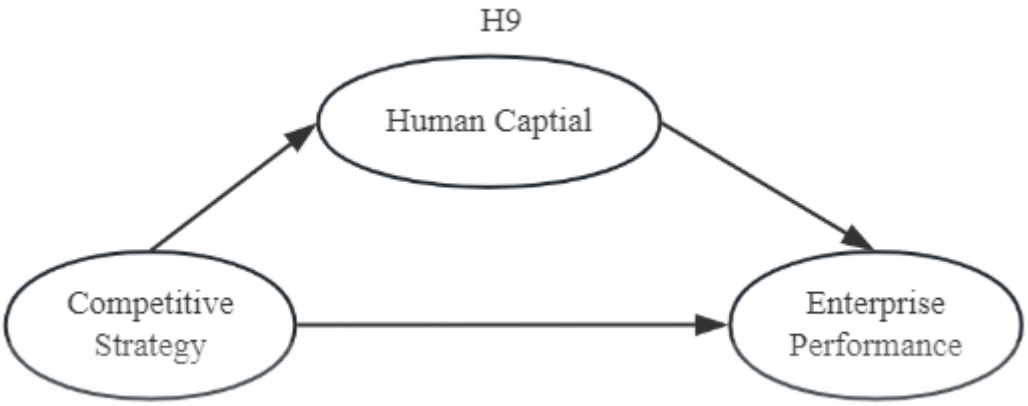


Figure 2.13 Detailed model of human capital
Source: J. Y. Song (2024)**;** Ying et al. (2024)



H8: Human capital, characterized by employees' knowledge, skills, and expertise, positively impacts enterprise performance by enhancing productivity, innovation, and customer satisfaction.

Human capital plays a mediating role between competitive strategy and enterprise performance, a hypothesis that finds support in various studies within the field of strategic management. These studies emphasize the pivotal function of human capital in translating strategic choices into tangible enterprise performance outcomes. For instance, some scholars points out that in the design of competitive strategy, human capital play an important role in organizational planning, and the design of human capital can better increase the role of competitive strategy in enterprise performance (Ojokuku & Sajuyigbe, 2015). Some scholars have also conducted relevant empirical studies. some scholars assert that human resources, encompassing the knowledge, skills, and abilities of employees, constitute a vital resource that mediates the intricate relationship between competitive strategy and enterprise performance. Additionally, some scholars delve into the significance of intellectual capital, a subset of human capital, in facilitating innovation (Huang et al., 2023). They underscore how human capital can act as a mediating factor, connecting competitive strategies with innovative capabilities, which, in turn, exert a substantial influence on enterprise performance. Some scholars contribute to this hypothesis by exploring the associations between intangible organizational elements, which include human capital, and enterprise performance (Mubarik et al., 2020). Their research sheds light on how human capital can mediate the consequences of competitive strategies on performance outcomes. Moreover, some scholars introduce a multilevel model that delineates the emergence of human capital within organizations. Their model underscores the role of human capital in shaping competitive advantages, thereby impacting enterprise performance (Alhamzah Alnoor, 2020). A meta-analysis conducted some scholars examines the overarching relationship between human capital and enterprise performance. Their findings offer empirical evidence supporting the notion that human capital indeed mediates the competitive strategy-enterprise performance relationship. Therefore, the hypotheses are as follows:



H9: Human capital mediates the relationship between competitive strategy and enterprise performance, with the alignment of workforce skills and expertise enhancing the effectiveness of differentiation, cost leadership, and hybrid strategies.

2.9.6 Environment as a Moderating Variable

For small and medium-sized manufacturing enterprises, the concept of environmental dynamism refers to the rate of unpredictable changes that occur in a company's external environment. These changes can be attributed to the constant evolution and fluctuations in various factors, including political, economic, technological, cultural, and competitive elements. This dynamic nature of the business environment becomes even more pronounced in the context of globalization and rapid advancements in information technology (Zhou et al., 2023). In highly dynamic environments, firms face frequent shifts in consumer preferences and competitive product offerings, necessitating continuous innovation to capture or maintain market share. In essence, a constantly changing environment is conducive to differentiation strategies, as firms strive to offer products that are relevant and appealing to consumers (Ge et al., 2019). Conversely, stable and predictable environments are more suitable for pursuing low-cost strategies. These strategies often require substantial investments in fixed assets to achieve economies of scale, and a stable environment minimizes the associated investment risks (L. H. Lin & Ho, 2024). Frequent and extensive modifications to products and processes, which are characteristic of unstable environments, can erode the accumulated experience critical for the success of low-cost strategies.

Environmental complexity, on the other hand, pertains to the diversity of factors influencing a company's operations, including customer needs, competitive forces, and technological landscapes within its market segments (Rueda‐Manzanares et al., 2008). Low environmental complexity suggests that the factors affecting a company's operations are relatively straightforward, while high complexity implies that the company operates in a diverse

market with varying demands and global operations. This diversity complicates strategic decision-making but also opens opportunities for segmenting markets, entering new markets, and fostering product innovation. In a complex environment, a company's competitive advantage often hinges on the uniqueness and distinctiveness of its products and services, whereas in a simpler environment, economies of scale, technological capabilities, and first-mover advantages play a more decisive role in achieving strategic advantages. Consequently, differentiation strategies tend to perform better in high-complexity environments, while low-cost strategies are more suitable in low-complexity environments (Lutfi, 2020).

The relationship between competitive strategy and enterprise performance is further influenced by environmental dynamism. Environmental dynamism refers to the degree of instability caused by factors such as competition intensity and fluctuations in the industry's main sectors (Ilmudeen, 2022). Environmental dynamism can be viewed from two perspectives: resource scarcity and competition intensity (W. H. Zhang et al., 2014). In environments with low dynamism, limited resources force firms to focus primarily on improving operational efficiency to reduce costs. There is little need (and often limited capability) to adapt to changing producer and consumer needs. Conversely, environments characterized by high dynamism provide the necessary resources for innovation and differentiation . Consequently, low-dynamism environments are better suited for implementing low-cost strategies, while high-dynamism environments are conducive to differentiation strategies.

The hypothesis that the environment moderates the relationship between competitive strategy and enterprise performance is supported by several relevant studies in the field. These studies have demonstrated that environmental factors can significantly influence the effectiveness of competitive strategies in driving enterprise performance. Some scholars conducted a study to examine the moderating effect of environmental hostility on the relationship between competitive strategy and performance (Ge et al., 2019). They analyzed 1054 samples from 32 industries in 30 countries during the 2011-2021 global economic recession. Their empirical findings suggest that during economic recessions, firms pursuing efficiency-oriented (low-cost) strategies outperform those focused on differentiation. This is because differentiation strategies may not immediately translate into improved profit margins due to limited market opportunities and intense competition in hostile economic environments. Some scholars in their book “Strategic management: concepts and cases: competitiveness and globalization. Cengage Learning.” This foundational text in strategic management discusses the role of the external environment in shaping competitive strategies and enterprise performance. It provides insights into how environmental factors can act as moderators in this relationship (L. H. Lin & Ho, 2024). Some scholars study the Dynamic capabilities, they

highlight how firms can adapt to changing environmental conditions and develop strategies accordingly. These references provide a strong foundation for the hypothesis that the environment moderates the relationship between competitive strategy and enterprise performance (Idolor et al., 2023). They emphasize the dynamic and contingent nature of strategic decision-making, underscoring the need to consider environmental factors when studying this relationship. Therefore, the hypotheses are as follows:

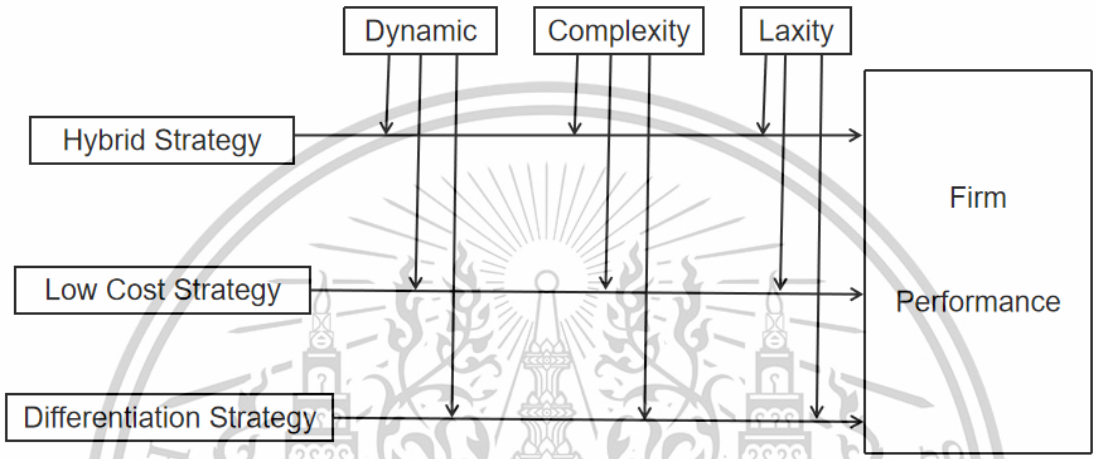
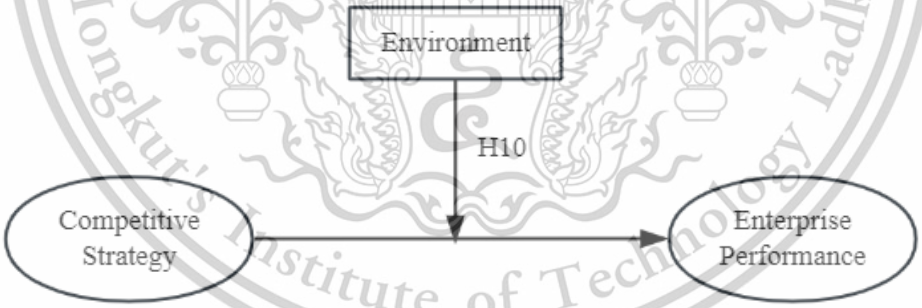


Figure 2.14 Detailed model of environmental moderation

Source:Ge et al. (2019); Lutfi (2020); Rueda - Manzanares et al. (2008)



H10: The dynamic and complex nature of the environment moderates the relationship between competitive strategy and enterprise performance, with factors such as environmental changes, regulatory complexities, and sustainability considerations influencing the effectiveness of strategic approaches.

2.10 Summary of Models and Hypothesis

In this study, the conceptual model is designed to explore the relationships between competitive strategy, innovation, corporate governance structure, capital structure, human capital, and enterprise performance in small and medium-sized enterprises (SMEs). The model

is based on a series of interconnected hypotheses that examine the direct effects of these factors and their mediating roles between competitive strategy and performance, while also considering the moderating role of the external environment and its impact on the effectiveness of strategic approaches.

First, competitive strategy is the core factor in this study's model. SMEs face intense market competition, so selecting and effectively implementing the right competitive strategy is crucial for enhancing enterprise performance. The focus of this study is on measuring the adoption of competitive strategies as a whole, rather than separately examining cost leadership, differentiation, or hybrid strategies. The reason for this approach is that, although different types of competitive strategies may have varying impacts on performance, in practice, SMEs often employ a combination of strategies rather than relying on a single one. In a dynamic market environment, firms may adjust their competitive strategies based on market demands and available resources, so examining the overall impact of competitive strategy allows for a more comprehensive understanding of its effect on performance.

Secondly, innovation is considered an important mediating variable between competitive strategy and enterprise performance. Product innovation, process innovation, and organizational innovation are key factors influencing a company's competitiveness and performance. The research hypothesizes that innovation activities can strengthen the implementation of competitive strategies, particularly by enhancing differentiation advantages or optimizing cost structures, which in turn drives improved enterprise performance. Innovation is not only related to technological improvements but also encompasses management models, production processes, and organizational structures. These innovations work together to improve the company’s market responsiveness and long-term competitiveness.

Third, corporate governance structure also has a significant impact on performance. A strong governance structure ensures the effective execution of competitive strategies, particularly in decision-making and resource allocation, reducing internal management risks and increasing the likelihood of successful strategy implementation. In this study, corporate governance structure mediates the relationship between competitive strategy and enterprise performance, particularly by enhancing the effectiveness of cost leadership and differentiation strategies.

Fourth, capital structure, which involves the strategic mix of debt and equity, plays a vital role in optimizing the cost of capital and managing financial risks. An optimized capital structure helps reduce financing costs, spread financial risks, and provide sufficient funding support for the company, thus boosting its market competitiveness and innovation capacity. Therefore, capital structure not only directly influences enterprise performance but also mediates the relationship between competitive strategy and performance, enabling better

support for the implementation of cost leadership or differentiation strategies.

Fifth, human capital, as a core resource of a company, directly affects innovation capacity, productivity, and customer satisfaction. The knowledge, skills, and expertise of employees are key factors driving innovation and improving performance. The study hypothesizes that human capital mediates the relationship between competitive strategy and enterprise performance, and by aligning workforce skills with business strategies, it enhances the effectiveness of differentiation, cost leadership, and hybrid strategies.

Finally, external environmental factors, such as environmental changes, regulatory complexities, and sustainability considerations, moderate the relationship between competitive strategy and enterprise performance. These factors can impact the adaptability and effectiveness of competitive strategies. Therefore, the study hypothesizes that environmental dynamics influence how competitive strategies affect performance, especially in high-uncertainty markets where firms need to be flexible in adjusting strategies to meet external challenges.

In conclusion, this study's conceptual model comprehensively considers various internal and external factors—competitive strategy, innovation, governance structure, capital structure, and human capital—and how they collectively influence enterprise performance. The overall measurement of competitive strategy in the model better reflects how SMEs adapt and implement multiple strategies in a changing market, and it helps to reveal the compound effects of different strategy combinations on performance.

Based on the relevant research, this study makes the following hypothesis:

Table 2.18 Hypothesis

Assumptions number	Hypothesis
H1	The adoption of competitive strategies, including cost leadership, differentiation, and hybrid approaches, positively impacts enterprise performance.
H2	Innovation, including product, process, and organizational innovation, positively impacts enterprise performance.
H3	Innovation mediates the relationship between competitive strategy and enterprise performance,with specific emphasis on how product, process, and organizational innovations enhance the effectiveness of competitive strategies.
H4	A strong corporate governance structure, including board composition, auditing mechanisms, and ethical practices, positively impacts enterprise performance.
H5	Corporate governance structure mediates the relationship between

Assumptions number	Hypothesis
	competitive strategy and enterprise performance, with governance mechanisms enhancing the implementation and effectiveness of both differentiation and cost leadership strategies
H6	The capital structure, including the strategic mix of debt and equity, positively impacts enterprise performance by optimizing the cost of capital and managing financial risk.
H7	Capital structure mediates the relationship between competitive strategy and enterprise performance, with the alignment of debt and equity financing enhancing the effectiveness of differentiation and cost leadership strategies.
H8	Human capital, characterized by employees' knowledge, skills, and expertise, positively impacts enterprise performance by enhancing productivity, innovation, and customer satisfaction.
H9	Human capital mediates the relationship between competitive strategy and enterprise performance, with the alignment of workforce skills and expertise enhancing the effectiveness of differentiation, cost leadership, and hybrid strategies.
H10	The dynamic and complex nature of the environment moderates the relationship between competitive strategy and enterprise performance, with factors such as environmental changes, regulatory complexities, and sustainability considerations influencing the effectiveness of strategic approaches.

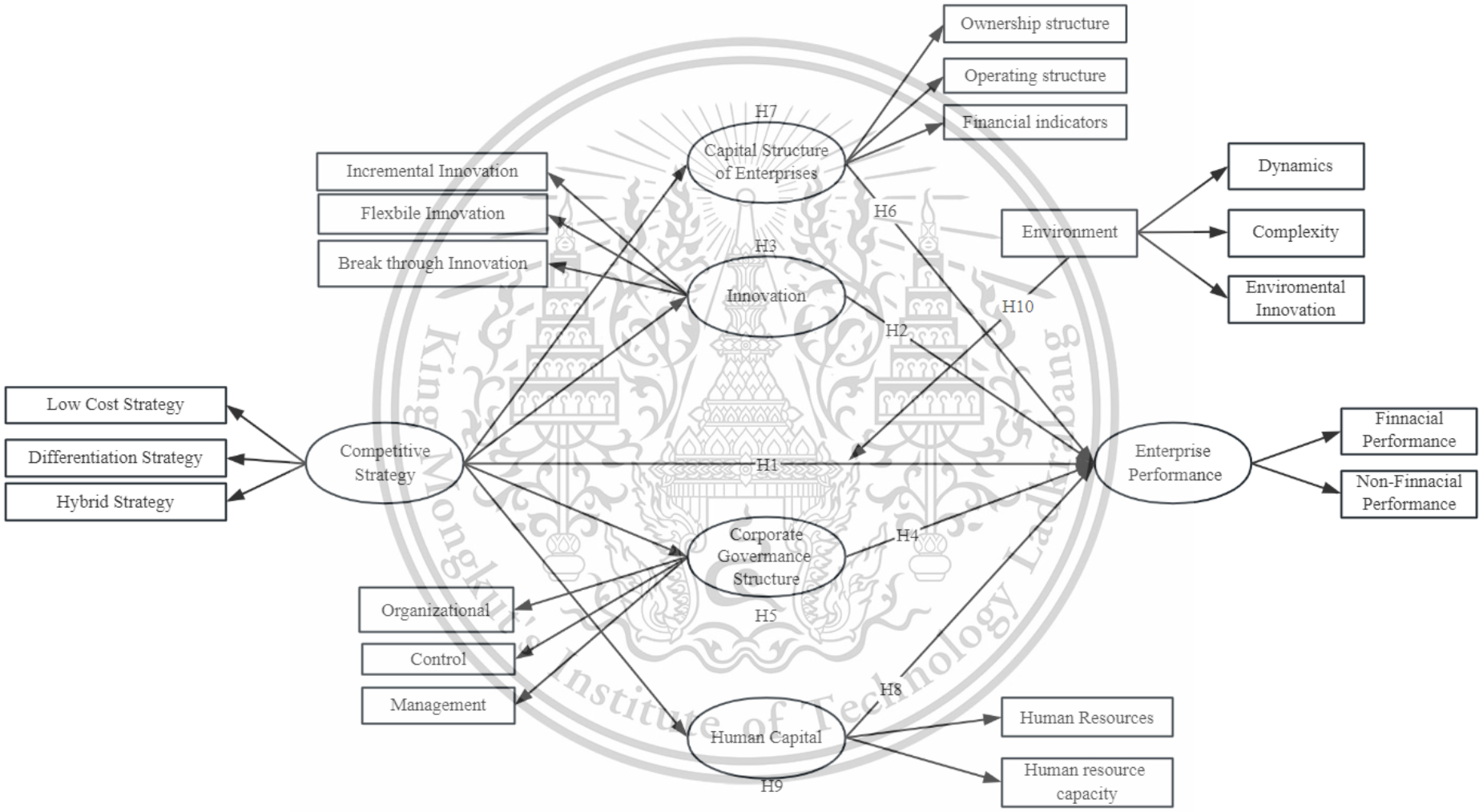


Figure 2.15 Conceptual framework

CHAPTER 3
RESEARCH METHODOLOGY

According to chapter 2 of the influence of the Enterprise Competition Strategy on enterprise performance Mechanism Theory Model and Research Hypothesis, this chapter tries to select domestic and foreign literature has developed scale, according to the research purpose of this study, to design the questionnaire measurement indicators and items, and select a certain number of survey wood, sample data collection. With the help of the most commonly used statistical analysis tool SPSS and the analytical structural equation tool AMOS, the descriptive statistics and measurement reliability and validity analysis of data, and verify and analysis of the theoretical model of the influence mechanism and research hypothesis of the software tool of structural equation model.

3.1 Research Design

3.2 Quantitative research

3.3 Research Instruments Development

3.4 Research Method and statistical Data Analysis

3.1 Research Design

The influencing factors of enterprise performance were studied by using quantitative methods. The first method used a questionnaire to collect data from a sample of respondents, which were then analyzed using the scanning SEM technique to answer research questions. The second method requires a literature review of previous studies, especially credible articles on the same topic. This chapter presents the methodology employed in conducting the study, which was designed to achieve the objectives and answer the research questions described in Chapter 1. The research steps are shown in the following steps.

Step 1: This step involves reviewing relevant literature, theories, concepts, articles, online statistics, and academic papers, which help to build the thesis of this research study. It is an in-depth study that helps to assess and select research variables, identify research questions, and identify research gaps. From the research, research objectives and research questions are answered to help address identified research questions and bridge research gaps. This led to the development of a conceptual framework containing a total of 4 independent variables, 1 dependent variable, 1 mediating variable, and 1 moderating variable.

Step 2: This step involves quantitative research. Data collected from respondents are cleaned/filtered, tested for reliability and, if satisfactory, analyzed. AMOS-based structural

equation modelling (SEM) was used for the analysis.

Step 3: This begins with a secondary data study, which involves the collection of information that can support a quantitative approach, such as referencing journals, articles, books, trusted online sources, scholarly publications, and papers. A review of the literature led to the identification of research gaps and the development of research questions. This led to the development of research objectives, questions, and hypotheses. The research framework was then developed and the research instruments were specified. The data comes from the sample size of the population design. The data are then analyzed and the results are obtained.

Figure 3.1 Schematic Diagram

3.2 Quantitative research

3.2.1 Population

To ensure a comprehensive and representative sample, this study meticulously divides China into seven distinct regions, each reflecting the nation's unique geographical nuances and economic characteristics. These regions serve as a microcosm of China's vast and diverse landscape.

Table 3.1 Regions of China

Regions	Province
North China	**Beijing,** Tianjin, Hebei, Shanxi, and Inner Mongolia
East China	**Shanghai**, Jiangsu, Zhejiang, Anhui, Fujian, Jiangxi, and Shandong
South China	**Guangdong**, Guangxi, and Hainan
Central China	Henan, Hubei, and **Hunan**
Southwest China	Chongqing, **Sichuan,** Guizhou, Yunnan, and Tibet
Northwest China	Shaanxi, Gansu, **Qinghai,** Ningxia, and Xinjiang
Northeast China	Liaoning, **Jilin**, and Heilongjiang

To ensure a holistic representation of China's multifaceted economic landscape, this study strategically categorizes the nation into seven distinct regions based on their economic significance, geographical diversity, and unique industry strengths. Each region has been selected for its role in contributing to the broader economic dynamics of China. For North China, Beijing was chosen as the representative province due to its dual significance as the political capital and an economic powerhouse driving technological advancements and high-end services. As a national policy hub, Beijing is a critical point for understanding the economic pulse of North China, particularly in the areas of governance, innovation, and economic planning.

For East China, Shanghai stands out as the economic epicenter of China. Its strategic location as a global financial hub and a major international trade port positions it at the core of East China's economic activities. Shanghai not only leads in terms of economic growth but also in technological development, finance, and global commerce, making it an irreplaceable representative of the region's economic influence.

For South China, Guangdong was selected due to its rapid industrialization and export-oriented economy. Being adjacent to global trade routes and a central player in the Pearl River Delta, Guangdong holds a significant position in the manufacturing sector, especially

electronics and consumer goods, which shapes the economic landscape of South China.

In Central China, Hunan was chosen for its combination of rich historical heritage and emerging industrial base. The province's strong industrialization, particularly in fields such as equipment manufacturing and resources extraction, offers a unique perspective on Central China's evolving economic environment. Hunan's developing economy, coupled with its cultural significance, provides insights into the transition of inland provinces towards modern industrial economies.

For Southwest China, Sichuan stands as a key representative. Known for its industrial resilience and adaptability, Sichuan reflects the economic growth of Southwest China through its diversified industries ranging from agriculture to manufacturing. Sichuan's robust industrial base, supported by a growing infrastructure, makes it emblematic of the region's economic trajectory.

In Northwest China, Qinghai was selected due to its geographical vastness and the distinct mix of traditional agriculture and nascent industries. Qinghai encapsulates the challenges and opportunities faced by the more remote regions of China, offering a broad view of economic diversification and sustainability in the context of environmental and regional development.

Finally, for Northeast China, Jilin was chosen as the representative province because of its strong industrial legacy, particularly in heavy manufacturing, machinery, and energy production. Jilin's significant role in Northeast China's industrial base provides a critical lens for understanding the region's economic structure and its importance in national manufacturing and production.

Through these selected provinces, this study ensures that each of China's diverse regions is adequately represented, offering a nuanced and well-rounded understanding of the country's economic landscape. These regions were chosen not only for their individual economic significance but also for how they contribute to the broader, interconnected economic system of China. By including a mix of traditionally strong industrial centers and emerging hubs, this study aims to present a comprehensive view of the diverse and dynamic economic fabric of China.

Diving deeper into the manufacturing sector's composition, data from the National Bureau of Statistics (GB/T 4754-2002) showcases the dominance of certain industries. Apparel manufacturing, electronics, pharmaceuticals, and the chemical sector emerge as leaders, accounting for 23.43%, 25.94%, 12%, 13%, and 14.64% respectively. Other manufacturing sub-sectors cumulatively represent 23.85%. Given these statistics, our sampling strategy is meticulously crafted to prioritize these leading sectors, ensuring a holistic representation.

In terms of enterprise size, our lens is sharply focused on small and medium-sized enterprises (SMEs). These SMEs are the backbone of China's economic engine. To ensure a

balanced and nuanced representation, we aim for an equitable distribution between medium-sized enterprises and the broader SME category, thereby capturing the multifaceted nature of China's enterprise landscape.

3.2.2 Sample and sampling design and technique

This study focuses on the factors that affect the performance of enterprises. The samples are small and medium-sized manufacturing enterprises in different regions of China.

Sampling design: Stratified random sampling was used in this study. The main reason for using a stratified random sampling design is that it can ensure the structure of the sample is relatively close to the structure of population. And, it helps to avoid bias in developing research samples.

Sampling technique: The sampling technique is the procedure used to retrieve sample subjects from the target. A stratified random sampling technique was used in this study.

Under the guidance and support of my professor, this research will begin with a preliminary survey of the questionnaire, followed by revisions from experts to refine the instrument before proceeding to the formal survey stage. Three research methods will be employed. First, the researcher will visit universities located in regions with a high concentration of small and medium-sized enterprises, specifically targeting MBA and EMBA students. After confirming that these individuals are middle to senior managers with direct involvement in or understanding of their companies' strategic decision-making, they will be asked to complete the questionnaire. This approach allows for the efficient and centralized collection of a large number of responses.

The second method involve selecting at least 300 samples from a directory of Chinese enterprises, using their contact information to distribute the questionnaires via email or postal mail. Lastly, the researcher will conduct field research by visiting relevant enterprises in person to collect data directly from participants.

The sample size for this study was determined based on relevant research from the "China Small and Medium Enterprises Development Report." According to renowned researcher, in empirical studies where the intent is to extrapolate the results from the sample to a larger population, it is recommended that the sample size be at least 3 to 5 times the number of items on the instrument (Noller et al., 1988). This recommendation was further substantiated, who suggested a range of 5 to 10 times the number of items. Their reasoning is based on ensuring that each item on the questionnaire has a sufficient number of responses to provide a statistically valid representation (Tinsley & Tinsley, 1987). In the context of this study, there are 60 items in the questionnaire. Using the 5 to 10 times rule proposed by Tinsley and Tinsley (1987), this would necessitate a sample size ranging between 300 (5 times 60) and 600 (10 times 60). Given

that we want to be on the conservative side to ensure the most robustness in our results, we'd lean toward the upper bound, making the minimum advisable sample size as 590.In addition, it's essential to highlight the perspective, another luminary in the field of research methodology. Cohen opined that irrespective of the number of items in a questionnaire or the specifics of the study, any social science research should involve a minimum of 200 participants. This benchmark ensures that there's a diverse enough set of responses to capture potential variations within the population and address any outliers or anomalies in the data. Consequently, our research's sample size, aiming for at least 300 respondents, not only aligns with the best practices suggested based on the number of items but also comfortably surpasses Cohen's generic guideline for social science research.

To attain a profound insight into China's small and medium-sized manufacturing enterprises, we made a deliberate choice to focus on provinces from seven core regions in China. This careful selection strategy emerged from our commitment to obtain a panoramic and multifaceted view of the manufacturing sector, ensuring that both urban industrial hubs and developing regions were adequately represented. The decision to focus on manufacturing SMEs is particularly relevant, given their significant contribution to China’s economic growth, technological innovation, and employment generation. These enterprises face unique challenges in implementing competitive strategies, which are crucial for their success in a rapidly changing market environment. By focusing on the manufacturing sector, we aimed to explore how competitive strategies impact performance within this context, considering factors such as cost management, product innovation, and supply chain efficiency, which are highly relevant to SMEs in this sector.

In this study endeavor to obtain the requisite data, we established formal collaborations with the official local Bureaus of Industry and Commerce in the selected provinces. According to the Wikipedia page and official website (https://www.samr.gov.cn/) dedicated to the National Administration for Industry and Commerce of the People's Republic of China, these Bureaus, operating under the central governmental administration, are the pivotal institutions in China overseeing the registration, administration, and management of businesses across various scales and sectors. Their role, underscored by meticulous record-keeping and a comprehensive oversight system, ensures they maintain up-to-date directories of all registered enterprises, from mammoth corporations to modest local businesses. Given their authoritative stature and the granularity of their data, these Bureaus were pivotal in granting us access to this study specific segment of interest: SMEs.

To refine this study search and ascertain that the selected entities indeed fell into the "small to medium manufacturing enterprises" category, this study applied industry-accepted criteria such as employee counts and annual turnover figures. These benchmarks are commonly

stipulated in the governmental definitions of SMEs, ensuring this study selection was both precise and relevant. This methodological approach enabled us to accurately target those businesses that were both representative and crucial to the research.

Equipped with these refined lists, this study embarked on a rigorous outreach campaign. Utilizing the official contact channels – primarily phone numbers and emails – listed in the directories, this study began engaging with these enterprises, fortified by the credibility this study collaboration with the Bureaus afforded us. This study conscientiously explained the objectives and scope of this study research, highlighted the significance of their participation, and provided insights into the potential benefits and outcomes of the study. This effort was designed to gain the trust and collaboration of the top-tier management within these enterprises. Over the course of a month, this study efforts yielded positive results, with numerous enterprises expressing their willingness to participate in this study survey, which is represented by the list of enterprises in Table 3.2.

When it came to the distribution of this study sample size across the provinces, equity and fairness were pivotal. This study sought to prevent any regional bias and ensure that the data collected was evenly distributed. Given this study overarching target of gathering data from at least 300 participants, this was logically divided into approximately 45 participants from each of the seven provinces. Since this study survey mainly targeted mid to senior-level managers, who typically make up a smaller group within SME manufacturing enterprises (usually 5-10 managers per enterprise), this study deduced that reaching out to at least 6 enterprises in each province would allow us to meet this study target of 45 respondents per region. This methodical approach ensured not only broad-based participation but also the richness in data quality.

For readers seeking a more granular view of the enterprises involved, this study have detailed them in Appendix B. This comprehensive sampling strategy enables a robust analysis of competitive strategy and its impact on enterprise performance across diverse regions, allowing us to draw meaningful conclusions that are applicable to both regional and national contexts in China's manufacturing sector.

Table 3.2 Target sample of Enterprise

Region	Province	Number	The name of firm
North China	Beijing	45	1.Beijing Weidu Clothing Co., Ltd.2.Beijing Huadun Eagle Logo Garment Factory3.Beijing Yinghua Garment Processing Factory4.Renesas Semiconductor (Beijing) Co., Ltd.5.Beijing (Norland) Electronics Factory6.Beijing Daxing Electronics Factory7.BeiGene (Beijing) Biotechnology Co., Ltd.8.Beijing Minhai Biotechnology Co., Ltd.9.Beijing BPS Biotechnology Co., Ltd.10.Bihaizhou (Beijing) Energy Saving and Environmental Protection Equipment Co., Ltd.11.Beijing Fangde Precision Chemical Equipment Co., Ltd.
East China	Shanghai	45	1.Shanghai Xiuai Shoes Factory2.Shanghai Fengjia Printing Garment Factory3.Shanghai Feipeng Garment Factory4.Shanghai Houxing Electronics Co., Ltd.5.Shanghai Luwan District General TV Accessories Factory6.Shanghai Weitian Electronic Lighting Equipment Factory7.Shanghai Yichi Industrial Co., Ltd.8.Shanghai Tuocheng Hydraulic Machinery Co., Ltd.9.Shanghai Chuangcheng Industrial Co., Ltd.10.Shanghai Yidan Furniture Co., Ltd.
South China	Guangdong	45	1.Guangzhou Xinghuo Clothing Co., Ltd.2.Guangzhou Xinghuo Clothing Co., Ltd.3.Guangzhou Dingsheng Leather Bags Co., Ltd.4.Guangzhou Jielong Chemical Co., Ltd.5.Guangzhou Panter Chemical Co., Ltd.6.Guangzhou Kovich Chemical Materials Co., Ltd.7.Guangzhou Dehong Pharmaceutical Technology Co., Ltd.8.Guangzhou Zaofutang Pharmaceutical Technology Co., Ltd.9.Guangzhou Zaofutang Pharmaceutical Technology Co., Ltd.10.Guangzhou Ruixunde Intelligent Technology Co., Ltd.

Region	Province	Number	The name of firm
Central China	Hunan	45	1.Liuyang Shilande Shoes Co., Ltd.2.Changsha Jinlin Clothing Co., Ltd.3.Changsha Huayang Synthetic Materials Co., Ltd.4.Hunan Kemike Chemical Co., Ltd.5.Hunan Shuanglong Lignocellulose Co., Ltd.6.Hunan Ningxiang County Galaxy Electronics Co., Ltd.7.Hunan Jinzhao Computer System Engineering Co., Ltd.8.Changsha Heshuo Medical Equipment Co., Ltd.9.Hunan Ruier Huiren Medical Technology Co., Ltd.
Southwest China	Sichuan	45	1.Chengdu Paideng Clothing Co., Ltd.2.Chengdu Jinsha Huichuan Clothing Co., Ltd.3.Sichuan Xuanhekang Biotechnology Co., Ltd.4.Sichuan Kelunbotai Biopharmaceutical Co., Ltd.5.Chengdu Taison Electrical Equipment Co., Ltd.6.Sichuan Keweidi Electric Co., Ltd.7.Chengdu Younuo New Materials Co., Ltd.8.Sichuan Maikerui New Materials Co., Ltd.9.Sichuan Shida Chemical Co., Ltd.10.Luo Shi Machinery (Chengdu) Co., Ltd.11.Chengdu Huasheng Craft Packaging Factor12.Sichuan Silicon Special Glass Technology Co., Ltd.
Northwest China	Qinghai	45	1.Qinghai Datong Mechanical and Electrical Factory2.Qinghai Changde Electric Power Engineering Co., Ltd.3.Xining Rongzhi Electric Power Engineering Co., Ltd.4.Qinghai Tenglin Industry and Trade Co., Ltd.5.Xining oleochemical factory6.Qinghai Youjie New Materials Co., Ltd.7.Qinghai Yuewang Qingzang Pharmaceutical Co., Ltd.8.Qinghai Gaodewei Biological Health Products Co., Ltd.9.Huangzhong District Lijiashan Fakui Feed Processing Factory10.Qinghai Tenglin Industry and Trade Co., Ltd.11.Qinghai Xiuzhuyuan Chinese Medicinal Materials Co., Ltd.

Region	Province	Number	The name of firm
Northeast China	Jilin	45	1.Jilin Xinyuan Corn Development Co., Ltd.2.Jilin City Chuanying District Mingguo Starch Products Processing Factory3.Zhengtong New Material Technology (Jilin Province) Group Co., Ltd.4.Jilin Xinhang Chemical Technology Co., Ltd.5.Tonghua Wanying Biotechnology Co., Ltd.6.Jilin Zixin Chuyuan Pharmaceutical Co., Ltd.7.Jilin Donglian Biotechnology Co., Ltd.8.Jilin Gateway Biotechnology Development Co., Ltd.9.Shixin Wood Processing Factory, Chuanying District, Jilin City

For the data analysis, SPSS 22.0 was used to analyze the descriptive statistics of data and the reliability and validity of the measurement, AMOS 26.0 was used to test the overall model of mediating effect based on innovation behavior, and the regression equation was used to analyze the moderating effect of environment.

3.2.3 Variables in the research

After conducting, evaluating, and reviewing relevant concepts, literature reviews, and theories, this study developed the following latent and observational variables.

The observed variables are mainly as follows:

The directly latent variables as follows:

1) Competitive strategy:

Low cost strategy

Differentiation strategy

Hybrid strategy

2) Enterprise performance:

Financial performance

Non-financial performance

3) Corporate governance structure

Organizational structure

Control structure

Management structure

4) Capital structure of enterprises

Ownership structure

Operating structure

Financial indicators

5) Human capital

Human resources

Human resource capacity

6) Innovation:

Incremental innovation

Flexible innovation

Breakthrough innovation

The moderating variables is:

7)Environment

Dynamics

Complexity

Environmental innovation

The data were collected from the sample of SMEs in China manufacturing using a structured questionnaire.

3.3 Research Instruments Development

1. The research questionnaire was developed with reference to previous literature, theory, and research conducted in similar or most relevant settings.

2. The models, theories, and concepts evaluated led to the development of relationships between latent, mediating, and observed variables.

3. The questionnaire used to collect the data conforms to the recommended structure. Twelve experts were consulted to evaluate the validity and reliability of the questionnaire and to find the objective consistency (IOC). Descriptive statistics mainly analyzes the basic data of the sample, including the nature, industry, scale of the enterprise, and the position of the respondent, and explains the mean value, percentage, and frequency of each variable, so as to describe the category, characteristics, and distribution ratio of the sample. Reliability was measured by Cronbach a.

The Cronbach coefficient is calculated to test the reliability of the questionnaire items of the measurement questions corresponding to all variables. If the Cronbach a value of the dimension is greater than 0.7, it shows that the questionnaire has good reliability (Li Huaizu, 2022). According to Nunnally's empirical judgment method, the item-population correlation coefficient (CITC) should be greater than 0.35, and the consistency index of the measure variable (Cronbach a) should be greater than 0.70 (Nunnally, 2020). This study will calculate

the item-population correlation coefficient of each variable, and calculate the consistency index of the variable to evaluate the reliability of the variable measure.

Validity is divided into three categories: content validity, criteria-related validity, and construct validity. The analysis of content validity and criterion-related validity is mainly reflected in the construction of measurement items and measurement systems. In order to ensure the validity in this respect, the content of measurement items in this study has been consulted in the theoretical review, and revised according to the analysis of this study. On this basis, it has been revised after discussion with scholars and business people in related fields. Construct validity is a very important index to evaluate the validity of measurement tools. Generally, factor loading analysis is used to evaluate the quality of construct validity. At the same time, factor loading analysis can also simplify and determine the basic structure of measurement items of potential measured variables. In order to carry out a statistical analysis of the correlation between the measured variables (Zeng Qingfeng, 2021). Factor analysis was used to evaluate the construct validity of the variables. According to the suggestion of Fornell (2022), when doing confirmatory factor analysis, the minimum acceptable value of factor loading of each item is 0.5 and it needs to be significant.

3.3.1 Instrument and structure of the questionnaire

The study was conducted based on a set of questionnaires. The questionnaire was developed based on a review of previous literature, concepts, theories, and models, concerning the research questions. The questions were set to evaluate all variables of the study.

The questionnaire was divided into three parts:

Part 1: The Statistics part collects the basic information of the participating investigators and the relevant information of the enterprises, including age, gender, occupation, etc., to capture the demographic characteristics of the respondents.

Part 2: Latent Variable Questions — This part contains questions to evaluate the latent variables and their relationships. This section is based on the previous literature.

Part 3: Basic content of the problem. Because most of the variables involved in this study are difficult to quantify, this study mainly uses the Likert Five-level scale scoring method to measure. 1--5 indicate the transition from "low to high", which is " Strongly Disagree, Disagree, Average, Agree, Strongly Agree ".

Based on relevant literature, this study measures competitive strategy, Innovation, environment, enterprise performance, and control variables.

3.3.2 Basic element design

1. Competitive Strategy

Som scholars analyzed and summarized 21 competitive methods and designed a scale to

measure competitive strategy types. In the subsequent research, the index set is mostly based on the 21 competitive methods set and adjusted appropriately according to the characteristics of the research object. This section collates the relevant research related to the measurement of competitive strategy and summarizes the research results of more than 20 most important literature on the measurement of competitive strategy in Table 3.3.

Table 3.3 Question on Competitive Strategy Measurement

Question	**Source**	Strongly Disagree—— Strongly Agree				
		1	2	3	4	5
Low cost strategy						
Our enterprise believes that cost control is a pivotal direction for market expansion.	Baroto and Abdullah (2011); Hui (2021); Jusoh and Parnell (2008)					
Our enterprise believes that striving to achieve the best value is essential amidst competition.						
Our enterprise believes that achieving the best value is key to market expansion.						
Differentiation strategy						
Our enterprise views differentiation as crucial across product, price, channel, and promotional mechanisms.	Baroto and Abdullah (2011); Osei et al. (2024); Shah and Ahmad (2019)					
Our enterprise views the development of new products and targeting market segments willing to pay premium prices as essential for differentiation.						
Our enterprise views product branding, advertising, research and development, innovation, marketing techniques, and control over distribution channels as key elements of differentiation.						
Hybrid strategy						

Our enterprise aims to boost its competitiveness through a combination of strategies.	Baroto and Abdullah (2011);Alhamzah Alnoor et al. (2022); Claver-Cortés et al. (2012)					
Our enterprise aims to enhance its competitiveness by integrating various strategic approaches.						
Our enterprise aims to strengthen its competitiveness by incorporating comprehensive evaluations of external market impacts into decision-making processes.						

2. Innovation

The definition of incremental innovation and breakthrough innovation is distinguished from the degree of innovation and the scope of influence, and the relevant literature is a minority in the field of innovation, and the empirical measurement of incremental innovation and breakthrough innovation is even rarer. Some scholars that defined and measured incremental innovation and breakthrough innovation earlier, but the measurement items designed were relatively simple and direct (Zhu et al., 2022).

Abiodun (2017) measured breakthrough innovation and designed five items: based on innovation in terms of vital technological change, it is a breakthrough change, producing new products that are difficult to replace with old technology, representing the most important technological progress, and small progress on the basis of previous technology (reverse indicators). Fan et al. (2021) designed several items to measure incremental innovation and breakthrough innovation. It is in line with the indirect requirement of latent variable measurement. Sun, Wu, Feng, and Gu (2024) measured the degree of enterprise incremental innovation from three aspects: Innovation improves the original product line and service, Innovation strengthens the technological capability of the company, and Innovation strengthens the existing competitiveness of the company; The degree of enterprise's breakthrough and innovation is measured from three aspects: enterprise's innovation makes the original products become obsolete, enterprise's innovation makes the main performance indicators of products change greatly, and enterprise's innovation make the original knowledge and skills become obsolete.

X. Chen et al. (2024) defined incremental innovation and breakthrough innovation and designed three items to measure incremental innovation: creating and introducing new types of products, improving existing products and processes, and developing and utilizing existing

technologies and capabilities; Four items are designed to measure breakthrough innovation: introducing new products in enterprises and markets, introducing new ideas in Innovation, introducing and developing new technologies in innovation. Create new technologies and processes to expand existing markets. Referring to the definitions of Abiodun (2017)designed four items to measure incremental innovation: develop more new styles, improve existing process products, apply more existing technologies, and introduce more incremental innovation products compared with competitors; Five items are designed to measure breakthrough innovation: compared with competitors, more new products are created, new functions are introduced into new products to a high degree, new technologies are developed and introduced into the industry, new technologies and processes are created, and breakthrough innovations are often introduced into new markets.

X. Chen et al. (2024) measurement of incremental innovation draws on the scale of Fischer et al. (2014). Three items are used to measure incremental innovation: the company creates new products in terms of style and service to sell in the market, the company often improves technology on the basis of existing technology, and the company often improves and improves the existing process flow; The measurement of breakthrough innovation is based on the scale of , which uses four items to measure radical innovation: creating new products in performance and selling them in the market, often applying the latest ideas in product development, developing and introducing new technologies in the industry, and creating new processes or technologies (Al-Khatib & Al-ghanem, 2022; Chang et al., 2014).

Referring to the definitions and measurements made by some scholars in the study of incremental innovation and breakthrough innovation, this study designs eight items to measure innovation. Incremental innovation is measured in four ways: 1) creating and introducing new types of products; 2) improving the applicability of existing technologies in multiple related business areas; 3) using existing technologies to introduce new products; and 4) companies often improve and innovate existing processes. Breakthrough innovation is measured in four ways: 1) often introducing new ideas in the development of products; 2) creating new products in terms of performance to sell in the market; 3)Introduce and develop new technologies in innovation; 4) create new technologies and processes to expand existing markets. Flexible innovation is measured in six ways: 1)Adaptive Design: This pertains to how product design is adjusted and changed in response to new insights or market demands to achieve significant improvements.2)Continuous Learning & Experience Accumulation: This focuses on the continuous learning and adaptation from past innovation experiences to remain relevant.3)Measurable Improvements: This emphasizes prioritizing innovations that can demonstrate clear improvements or growth.4)Practicality: Ensuring that innovations are practical, implementable, and address real-world challenges.5)Market Impact: This

concentrates on the potential positive impact of innovations on the market or their ability to meet emerging market needs.6)Resource & Time Commitment: This is about the commitment to invest time and resources to adapt and innovate in the face of change.

Table 3.4 Measurement of innovation behavior in this study

Question	**Source**	Strongly Disagree—— Strongly Agree				
		1	2	3	4	5
Incremental innovation						
The enterprise I work for focuses on the gradual enhancement of product design and structure.	Abiodun (2017); X. Chen et al. (2024)					
The enterprise I work for excels at adopting and refining existing technologies.						
The enterprise I work for consistently improves upon existing process technologies.						
The enterprise I work for values continuous technological exploration based on market demands.						
Breakthrough innovation						
The enterprise I work for adopts new methods for the business and market, consistently integrating new technologies during the innovation process.	Fan et al. (2021); Sun et al. (2024)					
The enterprise I work for emphasizes thorough product evaluations.						
The enterprise I work for concentrates on redefining products and services.						
Flexible innovation						
The enterprise I work for adjusts product design in response to new insights or market demands, aiming for	Frasquet et al. (2022);					

significant advancements.	Hutahayan (2020); S. Wang et al. (2022)					
The enterprise I work for focuses on innovations with clear market impact or those that cater to emerging market needs, emphasizing practicality and actionability to drive sustainable growth.						
The enterprise I work for emphasizes innovations with a clear potential for positive market impact or those that cater to emerging market needs.						

3. Enterprise performance

Enterprise performance refers to the generalization and summary of the benefits and efficiency of enterprise management and the effectiveness of enterprise managers' management in a certain period of time. In the research literature, financial indicators are generally used to measure enterprise performance, such as return on assets, return on investment, sales revenue, and so on Al-Ahdal, Alsamhi, Tabash, and Farhan (2020). The widespread use of financial indicators is mainly due to the convenience of obtaining data, which can be obtained according to the annual financial statements of research enterprises. Moreover, because it follows the same financial accounting system, it has strong comparability. However, more and more studies have found that financial indicators can not fully reflect the operating conditions of enterprises, so some scholars have proposed that besides financial indicators, some non-financial indicators, such as growth, brand recognition, customer satisfaction, and loyalty, have a deeper significance in reflecting enterprise performance.

VMargaritis and Psillaki (2010) proposed a theoretical framework for the classification of organizational performance measurement. They summarize all organizational performance measurement methods from two dimensions financial-non-financial performance and objective-subjective (evaluation) performance. Murphy et al. (1996) reviewed all the literature in the field of entrepreneurship research from 1987 to 1993 with entrepreneurial performance as the dependent variable and found that scholars' classification of enterprise performance includes multiple dimensions, among which the three most frequently considered performance dimensions efficiency (30%), growth (29%), profit (26%). From the perspective of data sources, 75% use objective data indicators, 29% use subjective evaluation indicators, and 6% use subjective and objective mixed indicators.

The literature on enterprise performance is very rich. This section only summarizes the measurement of enterprise performance involved in the relationship between Porter's competitive strategy and enterprise performance. See Table 3.5 for details. It can be seen from the table that the relevant research is mainly based on financial performance.

Table 3.5 Enterprise performance indicators used in Porter's research on the relationship between competitive strategy and enterprise performance

Question	**Source**	Strongly Disagree—— Strongly Agree				
		1	2	3	4	5
Finance Performance						
Our enterprise maintains a stable and positive operating cash flow.	Al-Ahdal, Alsamhi, Tabash, and Farhan (2020); Lestari et al. (2020); Margaritis and Psillaki (2010); PHAM (2020)					
The net profit margins of our enterprise are competitive within the manufacturing industry.						
Our enterprise consistently meets or exceeds its financial performance targets, such as revenue growth and return on investment (ROI)						
The debt-to-equity ratio of our enterprise remains at a healthy level.						
Our enterprise's financial performance is sustainable in the long run.						
Our enterprise effectively achieves its strategic goals, such as market expansion, profitability, and operational efficiency						
Non-financial Performance						
The enterprise I work for prioritizes employee satisfaction and well-being.	Lestari et al. (2020); Z. Wang and Zhou (2021); C. Y. Zhang et al. (2022)					
The enterprise I work for demonstrates a strong commitment to social responsibility and community engagement.						

Question	Source	Strongly Disagree—— Strongly Agree				
		1	2	3	4	5
The enterprise I work for consistently delivers high-quality products or services.						
The enterprise I work for actively engages in environmental sustainability and eco-friendly practices.						
The enterprise I work for is innovative and adapts quickly to market changes.						
The enterprise I work for maintains positive relationships with stakeholders, including suppliers, customers, and partners.						

4.Corporate governance structure

For small and medium-sized manufacturing enterprises, the corporate governance structure mainly refers to the realization of the effectiveness of the allocation of resources, owners (shareholders) to the company's management and performance supervision, incentive, control, and coordination of a set of institutional arrangement, it reflects the decision company development direction and performance of the relationship between the parties (Yang & Morgan, 2011) . The typical governance structure of small and medium-sized manufacturing enterprises is a mutual relationship framework formed by the owners, the board of directors, and the executive managers. Its internal governance structure is usually composed of shareholders, the board of directors, managers, and the board of supervisors, which are divided and check each other according to the rights, responsibilities, and interests granted by the law (AA Zaid et al., 2020). Relevant literature points out that there are three main forms of SME corporate governance structure: Organizational structure, Control structure, and Management structure. (Tleubayev et al., 2021) stated that Control structure is mainly based on a hierarchical management communication mechanism. Its indicators for Corporate governance structure are as follows:

Table 3.6 Corporate governance structure Research indicators of the relationship with enterprise performance

Question	Source	Strongly Disagree—— Strongly Agree				
		1	2	3	4	5
Organizational structure						
In the enterprise I work for, there's a clear division of labor and hierarchical levels that facilitate efficient operations.	Claver-Cortés et al. (2012); Yang and Morgan (2011); L. Zhang et al. (2007)					
In the enterprise I work for, reporting relationships are clearly defined, ensuring smooth communication and accountability.						
In the enterprise I work for, roles and responsibilities are clearly defined, promoting effective coordination and minimizing overlap or confusion in tasks and projects.						
Control structure						
The enterprise I work for ensures effective coordination between various departments to achieve organizational goals.	AA Zaid et al. (2020); Kaunda and Pelser (2023); Tleubayev et al. (2021); Zhong (2015)					
In the enterprise I work for, there's a robust system for employee supervision and monitoring to ensure adherence to organizational standards.						
The enterprise I work for uses well-defined performance metrics and regular reviews to maintain control and ensure that employees meet organizational expectations and goals.						
Management structure						
In the enterprise I work for, there's a robust system for employee supervision and monitoring to ensure adherence to organizational	AA Zaid et al. (2020); Ehikioya (2009); Toms and Wright (2002); Yang and					

Question	Source	Strongly Disagree—— Strongly Agree				
		1	2	3	4	5
standards.	Morgan (2011); Zhao and Pascual (2018)					
In the enterprise I work for, there's a culture of empowerment and delegation, allowing departments to operate with autonomy while aligning with the company's vision.						
In the enterprise I work for, management maintains open communication and collaborates across departments to ensure cohesive decision-making and effective execution of strategic plans.						

5.Capital structure of enterprises

The Capital structure of enterprises of small and medium-sized enterprises is mainly a flow form based on a capital portfolio, which is a comprehensive embodiment of enterprise performance (AA Zaid et al., 2020; Nguyen & Ramachandran, 2006). It mainly includes the ownership structure, Operating structure, and Structure of financial indicators in three parts. From the literature of the current study, the data are relatively few. However, the ownership structure; the ownership structure mainly refers to the operation form of enterprises; the financial index structure mainly refers to the stability and sustainability of financial data.

Table 3.7 Capital structure of enterprises Research indicators of the relationship with enterprise performance

Question	Source	Strongly Disagree—— Strongly Agree				
		1	2	3	4	5
Ownership structure						
In the enterprise I work for, equity is distributed in a manner that aligns with our strategic goals and objectives.	Margaritis and Psillaki (2010); Mazanec (2023); Nguyen and					

Question	Source	Strongly Disagree—— Strongly Agree				
		1	2	3	4	5
The rights of shareholders in my enterprise are clearly defined and protected.	Ramachandran (2006); Rodrigues et al. (2017)					
The enterprise I work for has a transparent governance structure that involves key stakeholders in decision-making processes, ensuring their interests are represented and considered.						
Operating structure						
The enterprise I work for effectively manages its operating costs, ensuring profitability and sustainability.	P. Lin et al. (2020); Liu et al. (2014); Ngoc et al. (2021); PHAM (2020)					
Our enterprise consistently achieves high operational efficiency, optimizing our resources and processes.						
The enterprise I work for maintains flexibility in its operations, allowing it to adapt to changes in the market or industry trends while still achieving high efficiency and managing costs effectively.						
Financial indicators						
Our enterprise maintains a strong solvency position, ensuring we can meet our long-term obligations.	Arcas and Bachiller (2008); Bing and Qian (2010); Graham and Leary (2011); P. Lin et al. (2020); Ronoowah and					
The profitability metrics of the enterprise I work for consistently meet or exceed our industry benchmarks.						
The enterprise I work for effectively manages its liquidity						

Question	Source	Strongly Disagree—— Strongly Agree				
		1	2	3	4	5
and cash flow, ensuring that there is sufficient funding to meet short-term obligations and support ongoing operations.	Seetanah (2023)					

6.Human capital

Human capital Is the key to the development of small and medium-sized manufacturing enterprises, also known as "non-material capital", and "material capital" relative, is reflected in the capital of workers. Such as the knowledge and skills of workers, cultural and technical level, and health status. From the perspective of relevant research, Kucharčíková et al. (2023); Ojokuku and Sajuyigbe (2015) believes that human resources is the most important resource among all resources, and human capital theory is the core issue of economics. In economic growth, the role of human capital is greater than the role of material capital. Human capital investment is directly proportional to national income, and it is growing faster than material resources. It mainly includes human resources and human resources capacity allocation, and the relevant indicators are designed as follows:

Table 3.8 Human capital Research indicators of the relationship with enterprise performance

Question	Source	Strongly Disagree—— Strongly Agree				
		1	2	3	4	5
Human resources						
In the enterprise I work for, the number of personnel aligns well with our operational and strategic needs.	Alhamzah Alnoor (2020); Mubarik et al. (2020); Ojokuku and Sajuyigbe (2015); J. Y. Song (2024); Yu (2024)					
I am satisfied with the overall quality and competence of the personnel in our enterprise.						
The structure and distribution of personnel roles in our enterprise effectively support our business objectives.						
Level of human resource capacity						

From a capacity perspective, the number of personnel in our enterprise is adequate to handle our operational demands.	Alhamzah Alnoor (2020); Felício et al. (2014); Leitao and Franco (2011); Mubarik et al. (2020)					
The quality of our personnel, in terms of their professionalism and dedication, meets our enterprise's expectations.						
I am satisfied with the skill set and abilities of our personnel, which align with our enterprise's goals.						

7.Environment

The environment of small and medium-sized manufacturing enterprises is complex and diverse. For their future development, it mainly covers the internal environment and external environment. The environment is the influencing and regulating factor of enterprise performance. At present, the research content on the environment is relatively rich. For example, Bosse et al. (2007), Jiao et al. (2022) and so on clearly divide the environmental structure: dynamics, complexity, and Environmental innovation.

Table 3.9 Environment Research indicators of the relationship with enterprise performance

Question	**Source**	Strongly Disagree—— Strongly Agree				
		1	2	3	4	5
Dynamics						
In the enterprise I work for, we rapidly adapt to the dynamic shifts in the market.	Bosse et al. (2007); Ge et al. (2019); Jiao et al. (2022)					
Our enterprise is proactive in responding to emerging industry trends and dynamics.						
We actively engage with stakeholders to understand the dynamic changes in our business environment.						
Complexity						
We have a clear understanding of the complexities within our internal organizational	Gorzeń-Mitka and Okręglicka					

Question	Source	Strongly Disagree—— Strongly Agree				
		1	2	3	4	5
environment.	(2014); Lam et al. (2021); Lutfi (2020); Rueda - Manzanares et al. (2008)					
Our enterprise demonstrates agility in adapting to shifts in both internal organizational dynamics and external market conditions, effectively responding to new challenges and complexities as they arise.						
Our enterprise effectively navigates the complexities and challenges of the external market.						
Environmental innovation						
We consistently innovate in response to changes within our internal environment.	Carrión-Flores and Innes (2010); Chan et al. (2016); L. Li et al. (2023); Y. Li (2014); Lutfi (2020)					
Our enterprise incorporates sustainability and eco-friendliness into its innovation practices, striving to create products or processes that positively impact the environment while addressing internal and external changes.						
Our enterprise is innovative in adapting to shifts and changes in the external market environment.						

8.Suggestion of respond

The questionnaire structure for the study is shown in the following table:

Will adding one suggests questionnaire structure used for the study be the one shown in the table below, including variables, total questions, questionnaire number, form/size

Table 3.10 The structure of the research questionnaire

Variables	Total question	Form
Demographics	5	Standard Measurement
Latent variable	64	
Competitive Strategy	**9**	5-pointLikert scale
Low cost strategy	3	
Differentiation strategy	3	
Hybrid strategy	3	
Innovation	**10**	
Incremental innovation	4	
Breakthrough innovation	3	
Flexible innovation	3	
enterprise performance	**12**	
Financial performance	6	
Non-financial performance	6	
Corporate governance structure	**9**	
Organizational structure	3	
Control structure	3	
Management structure	3	
Capital structure of enterprises	**9**	
Ownership structure	3	
Operating structure	3	
Structure of financial indicators	3	
Human capital	**6**	
Human resources	3	
Level of human resource capacity	3	
Environment	**9**	
Dynamics	3	
Complexity	3	
Environmental innovation	3	

3.3.3.Scale development

The questionnaire was developed based on the research questions and reference to the conceptual framework. We also consulted a literature review to inform the items designed for each observed variable. The scale development of the latent and observed variables is shown in the table below.

Table 3.11 Scale development table

latent variable	observable variable	Development of the study variables	Number of question
Competitive Strategy	Low cost strategy Differentiation strategy Hybrid strategy	Baroto and Abdullah (2011); Hui (2021); Jusoh and Parnell (2008); Osei et al. (2024); Shah and Ahmad (2019);Baroto and Abdullah (2011);Alhamzah Alnoor et al. (2022); Claver-Cortés et al. (2012)	9
Innovation	Incremental innovation Breakthrough innovation Flexible innovation	Abiodun (2017); X. Chen et al. (2024); Fan et al. (2021); Sun, Wu, Feng, and Gu (2024);Frasquet et al. (2022); Hutahayan (2020); S. Wang et al. (2022)	10
enterprise performance	Financial performance Non-financial performance	Al-Ahdal, Alsamhi, Tabash, and Farhan (2020); Lestari et al. (2020); Margaritis and Psillaki (2010); PHAM (2020) Lestari et al. (2020); Z. Wang and Zhou (2021); C. Y. Zhang, Li, Gou, Feng, and Gao (2022)	12
Corporate governance structure	Organizational structure Control structure Management structure	Claver-Cortés et al. (2012); Yang and Morgan (2011); L. Zhang et al. (2007);AA Zaid et al. (2020); Kaunda and Pelser (2023); Tleubayev et al. (2021); Zhong (2015) ; Ehikioya (2009); Toms and Wright (2002); Yang and Morgan (2011); Zhao and Pascual (2018)	9
Capital structure of enterprises	Ownership structure Operating structure Structure of financial indicators	Margaritis and Psillaki (2010); Mazanec (2023); Nguyen and Ramachandran (2006); Rodrigues et al. (2017);P. Lin et al. (2020); Liu et al. (2014); Ngoc et al. (2021); PHAM (2020) ;Arcas and Bachiller (2008); Bing and Qian (2010); Graham and Leary (2011); P. Lin et al. (2020); Ronoowah and Seetanah (2023)	9
Human capital	Human resources	Alhamzah Alnoor (2020); Mubarik et al. (2020); Ojokuku and Sajuyigbe (2015); J. Y. Song (2024); Yu (2024); Alhamzah Alnoor (2020); Felício et al. (2014); Leitao and	9

latent variable	observable variable	Development of the study variables	Number of question
	Level of human resource capacity	Franco (2011); Mubarik et al. (2020)	
Environment	dynamics	Bosse et al. (2007); Ge et al. (2019); Jiao et al. (2022);Gorzeń-Mitka and Okręglicka (2014); Lam et al. (2021); Lutfi (2020); Rueda‐Manzanares et al. (2008);Carrión-Flores and Innes (2010); Chan et al. (2016); L. Li, Wang, Tan, Sun, and Zhu (2023); Y. Li (2014); Lutfi (2020)	9
	complexity		
	Environmental innovation		

The analysis data came from these questions and were designed with a 5-point rating scale. These questions are based on previous literature and other scholars. In the Likert scale, the 5-point scale contains the following components: where 1 indicates strong disagreement, 2 indicates Disagree, 3 indicates Neutral, 4 indicates Agree, and 5 indicates Strongly agree. Thus, the resulting arrangement of dots is in contrast to the resulting dots described above. Therefore, the explanation of the high scale is based on the class interval, and the result is as follows. Class interval= (maximum-minimum)/ (number of classes) = (5-1)/5 = 0.80 The above calculation shows that the distance between the two is 0.80, Range of five levels of frequency is: 4.21-5.00 = Strongly Agree, 3.41 - 4.20 = Agree, 2.61 – 3.40 = Neutral, 1.81 – 2.60 = Disagree, 1.00-1.80 = Strongly Disagree, which is used to develop the evaluation criteria described in the following table.

Table 3.12 Scoring Interpretation Criteria

Average value	Qualitative rating	Qualitative rating
1.00-1.80	I strongly disagree	Strongly Disagree
1.81-2.60	I disagree	Disagree
2.61-3.40	I am neutral	Neutral
3.41-4.20	I agree	Agree
4.21-5.00	I strongly agree	Strongly agree

3.4 Research Method and statistical Data Analysis

This study uses SPSS22.0 to analyze the descriptive statistics of data and the reliability and validity of measurement, uses AMOS26.0 to test the overall model of mediating effect

based on innovation behavior, and uses regression equation to analyze the moderating effect of environment. The analysis method adopted is as follows.

3.4.1 Data collection

1. Authentication and Consent:

Before initiating the research process, it was imperative to obtain proper authentication and consent from the relevant stakeholders to ensure the ethical integrity of the study. Enterprise Consent: The project leaders of the selected small and medium-sized enterprises in China were approached first. After presenting the research objectives and methodology, their agreement was secured, ensuring that the study aligns with their organizational goals and does not infringe on any proprietary information. Data Collection Organization Consent: The organization responsible for data collection was consulted next. The management was briefed about the innovative nature of the study, its potential benefits, and the methods of data collection. Their approval was essential.

2. Questionnaire Distribution:

With the necessary permissions in place, the next phase was the distribution of the questionnaire. Distribution Method: An online questionnaire link was sent to the selected sample. This method was chosen for its efficiency, cost-effectiveness, and the ease it offers respondents, especially in the current digital age. Response Collection: Respondents were encouraged to provide individual responses, ensuring a diverse range of perspectives. Gentle reminders were sent periodically to boost the response rate, ensuring a comprehensive data set.

3.Examination, Evaluation, and Data Collection:

Quality Checks: Before diving into data analysis, the completeness of the questionnaires was examined. Any incomplete or inconsistent responses were flagged for further review.

Data Collection: Once the quality checks were completed, the actual data collection commenced. This involved collating the responses and preparing them for analysis.

This meticulous approach not only ensured the ethical integrity of the research but also aimed to enhance its validity and reliability.

3.4.2 Descriptive Data Analysis

After receipt of all respondents, analysis was performed to assess their correctness, validity, and reliability. This involves removing missing data, checking for outliers and removing them, and any values that appear to be unaligned with the other data. The study used a significance level of 5%, which implies a statistically significant alpha α = of 0.05. The following analytical procedure was used:

1. The first analysis is the calculation of descriptive statistics. Descriptive statistics refer to the characteristics of the variables used in the calculated data, such as mean, pattern, median,

standard deviation, percentile, skewness, kurtosis, and maximum, and minimum values. The purpose of performing the descriptive analysis is to understand the characteristic behavior of the data before conducting an in-depth statistical analysis. Statistics of the interaction and relationship between the competitive strategy and the performance of small and medium-sized manufacturing enterprises.

2. Data were analyzed a second time using a diagnostic test. Diagnostic tests were performed to determine the statistical reliability of the data. Some of the diagnostic tests include:

The normality test —— is based on Tsagris and Pandis (2021), who believes that the error terms of the linear regression should be normally distributed.

The third analysis is the correlation analysis. Pearson's correlation analysis was used to assess the correlation between and between study variables. This is the basic analysis of structural equation modeling (SEM) analysis to find the factors that affect the performance of the enterprise. The consideration criteria for the correlation analysis are as follows.

1. Analyze and evaluate the consistency of relevant influencing factors involved. Based on competitive strategy and enterprise performance, starting with multiple mediation variables and regulatory variables, and conducting empirical analysis through the AMOS model.

Table 3.13 Level of correlation coefficient

Correlation coefficient(r)	Relationship level
r>0.8	Very high
0.6<r<0.8	Quite high
0.4<r<0.6	Moderate
0.2<r<0.4	Quite low
<0.2	Low

3.4.3 Analysis and statistics

Objective Analysis, This section illustrates the statistical techniques used to analyze each study objective.

Goal 1 The Research on small and medium-sized manufacturing enterprises in China is analyzed by using a structural equation model (SEM).

Goal 2 is to empirically determine the intermediary role of innovation on enterprise competitive strategy and to use SEM analysis with innovation as the intermediary variable.

Goal 3 is to introduce the relevant regulatory variables, further comprehensively analyze the relevant data, compare the analysis results, and find out the dominant influencing factors and the significant influencing factors of the current competitive strategy.

Goal 4 is to establish a technical model for the performance improvement of small and medium-sized manufacturing enterprises in China and provide a variety of countermeasures

based on the analysis results of the designation and development of their future competitive strategy.

To answer the first research question: "The relationship between competitive strategy and performance of small and medium-sized manufacturing enterprises" use the structural equation model (SEM). To answer the second research question, the "Small and medium-sized Manufacturing Enterprise performance model", Based on the empirical results and combined with the relevant literature, specific countermeasures are proposed.

In order to ensure the validity of the data, based on the reliability analysis, the reliability analysis and the validity analysis of the observed variables. Statistical analysis included an analysis of covariance for all variables used in the overall study, consistent with the SEM to confirm its accuracy and completeness. Analysis of covariance was performed for the observed variables. To evaluate the consistency between the empirical data and the conceptual framework.

3.4.4 Structural equation modeling (SEM)

Through the structural equation, the competitive strategy, enterprise innovation, and enterprise performance are comprehensively analyzed, mainly in two ways: A quantitative research technology, is used to show the causal relationship between the research variables. The analysis is usually based on study assumptions. In the analysis, we performed three main analyses:

The first analysis involves the evaluation of the relationship between competitive strategy, enterprise performance, and innovation under the guidance of assumptions. This analysis analyzes the data of small and medium-sized manufacturing enterprises respectively.

The second analysis evaluates the impact of the three elements of the environment on enterprise performance and competitive strategy. This analysis analyzes the data of small and medium-sized manufacturing enterprises respectively.

The third goal is to evaluate the impact of non-innovative variables on enterprise performance and competitive strategy. This analysis analyzes the data of small and medium-sized manufacturing enterprises respectively.

Structural equation modeling (SEM) is an analytical technique to evaluate the invariance between two groups. In order to ensure the validity of this study, this study makes a comparative analysis of the relationship between related variables of small and medium-sized manufacturing enterprises. Based on the comparison of SEM data, the significance of different variables is clear, the final results are obtained and specific countermeasures are given. Determine the significant and nonsignificant pathways for the different variables. The non-significant path was trimmed to obtain an unconstrained model, and the associated chi-square values and degree of freedom statistics were recorded. Differences between card variance and degrees of freedom

were calculated for multiple groups and used to assess whether the data were independent.

Double regulation analysis was performed using the structural equation model (SEM) according to the recommendations of Matthews et al. (2018). Although regulatory effects are usually performed using regression analysis and interaction terms, SEM is considered suitable for testing regulatory effects because it minimizes the effect of compound measurement error when the independent variable and regulator multiplication create interaction terms. When interaction terms are generated by independent and regulatory variables . Statistical analysis was performed using Amos version 26 (Hair Jr et al., 2014).

3.4.5 Analysis of Confirmatory Factors (CFA)

Confirmatory factor analysis (CFA) was used to test the model fitness and accuracy of the scale from the aspects of the relationship among latent variables, observed variables, mediate variables. Statistical analysis includes a covariance analysis of the variance analysis of all variables used in the overall study, which conforms to the SEM, to confirm its accuracy and completeness. Covariance analysis was performed on observed variables, latent variables, internal variables, and intermediate variables. Evaluation of consistency between empirical data and conceptual frameworks. The details of the fit metrics are shown in the following table.

Table 3.14 Agreement evaluation between conceptual framework and empirical data

Statistics	**Symbol**	**Objectives**	**Statistics showing congruence between empirical data and conceptual framework**
Relative Chi-square	X^2/df	To test the congruence of empirical data and conceptual framework	$X^2/df <$ 5.00
Goodness of Fit Index	GFI	To measure GFI, between 0-1.00	>0.90
Comparative Fit Index	CFI	To Compares the fit of a target model to the fit of an independent, or null, model	>0.90
Normed Fit Index	NFI	Measures NFI between 0 and 1	>0.90
Tucker Lewis index	TLI	To measure TLI, between 0-1.00	>0.90

Statistics	Symbol	Objectives	Statistics showing congruence between empirical data and conceptual framework
Root mean square of approximation	RMSEA	To show conceptual framework errors in for of RMSEA between 0-100	<0.05

Source: Wheaton, Muthen, Alwin & Summers, (1977)

3.4.6 The secondary study

After conducting quantitative data analysis, secondary study analysis is an important way to confirm the results of quantitative study analysis simultaneously. Qualitative analysis relied purely on secondary data obtained from previous studies, relevant to the subject of the study. These sources include books, articles from reference journals, academic publications, statistics, and other sources. These sources are used to set research objectives, research questions, and research hypotheses.

3.4.7 Reliability Analysis

To assess the reliability of the variables in the conceptual model, this study employed Cronbach's alpha coefficient and the Corrected Item-Total Correlation (CITC) for each item. Cronbach's alpha values above 0.7 and CITC values above 0.35 were considered indicative of satisfactory internal consistency. Specifically, if the deletion of any item did not lead to a significant increase in the Cronbach's alpha coefficient, the item was retained. In the current analysis, all the variables had Cronbach's alpha values greater than 0.7, and the CITC for each item exceeded 0.35, ensuring that the internal consistency and reliability of the scales were sufficiently high. This confirms that the measurement tools used in this research are reliable and provide consistent results across the variables.

3.4.8 Validity analysis

For validity evaluation, this study used three key measures: the KMO (Kaiser-Meyer-Olkin) sample adequacy, Bartlett’s test of sphericity, and the factor loading coefficients. First, the KMO value was calculated to assess the adequacy of the sample for factor analysis. The KMO statistic measures the proportion of variance among the variables that might be common variance, with values closer to 1 indicating that the data is suitable for factor analysis. In this study, the KMO value was well above 0.7, indicating that the sample is appropriate for conducting factor analysis.

Secondly, Bartlett’s test of sphericity was used to examine whether the correlation matrix

was an identity matrix. The null hypothesis (H_0) of Bartlett's test posits that the correlation matrix is an identity matrix, meaning that there are no relationships between the variables. The test results in this study showed a significant p-value (less than 0.05), indicating that H_0 was rejected, and therefore, factor analysis could be performed.

Finally, the factor loadings for each item were assessed. According to Research, for an item to be considered valid for subsequent analysis, its factor loading should be greater than 0.5. In this study, the factor loadings for all items exceeded the threshold of 0.5, confirming that the variables in the conceptual model demonstrate sufficient validity. As such, the measurements of the variables used in this research were found to be both reliable and valid, ensuring that the data is appropriate for the analysis and that the conclusions drawn from the results are robust.

3.4.9 Testing the Mediating Effect of Innovation Behavior

In order to test the hypothesis of the mediating effect of innovation behavior, this study uses the structural equation modeling method. More and more scholars agree and use the structural equation modeling technique to test the mediating effect of variables, which has the advantage that not only the stepwise regression analysis can be obtained, The effect of the method, but also a comprehensive consideration of the impact of measurement errors caused by the project. According to (Afthanorhan et al., 2014), the mediating effect of variables can be judged only when the following four conditions are met at the same time: first, the regression coefficient of the dependent variable to the mediating variable reaches a significant level; second, the regression coefficient of the mediating variable to the independent variable reaches a significant level; Thirdly, the regression coefficient of the dependent variable to the independent variable reaches a significant level; fourthly, the regression coefficient of the dependent variable to the independent variable and the intermediary variable reaches a significant level, and the regression coefficients of the intermediary variable are not significant or decrease. When the regression coefficient of the independent variable is reduced to a non-significant level, it indicates that the intermediary variable plays a complete intermediary role, and the independent variable completely affects the dependent variable through the intermediary variable; When the regression coefficient of the independent variable decreases but still reaches a significant level, the mediating variable only plays a partial mediating role, that is, the independent variable not only indirectly affects the dependent variable through the mediating variable, but also directly affects the dependent variable. When the regression coefficient from the independent variable to the assumed mediating variable reaches a significant level, the regression coefficient from the assumed mediating variable to the dependent variable is significant, and that from the independent variable to the dependent variable is not significant, there is a complete mediating effect. If the regression coefficient

from the independent variable to the dependent variable is significant, it is considered that there is partial mediation.

Research suggested using the following procedure to test the mediating effect of variables. (1) Check whether the coefficient C in Figure 4.1 is significant. If it is significant, continue. If it is not significant, stop the test (there is no mediation effect). (2) To test whether the coefficients a and B are significant in turn. If both are significant, the test will continue. As long as one coefficient is not significant, the test will stop (there is no mediating effect). (3) Test coefficient C ′, If C ′ is significant, it is a partial mediating effect, and if C ′ is not significant, it is a complete mediating effect.

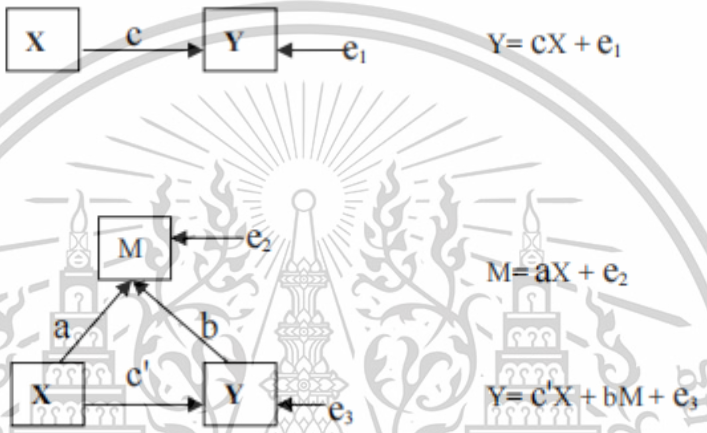


Figure 3.2 Schematic Diagram of Mediating Variables

Source: Hou Jietai et al., 2004

In terms of the research content of this study, two structural equations need to be calculated for verification. Equation to test the impact of competitive strategy on enterprise performance (coefficient C in Figure 3.1); And an overall structural equation to test the influence of competitive strategy on innovation behavior (coefficient a in Figure 3.1), the influence of innovation behavior on enterprise performance (coefficient B in Figure 3.1) and the influence of competitive strategy (coefficient C′ in Figure 3). 1). AMOS 26.0 analysis software was used to test these hypotheses in turn. Structural equation models need to measure the mean, standard deviation, correlation coefficient matrix of variables.

3.4.10 Ethical considerations

Ethical considerations In this study, ethical considerations are a key aspect from the start to the end of the study. First, the researchers obtained all relevant and required permission before collecting the data. The investigators also ensure that the data collected are applicable only for the purposes of the objectives described in this study. Personal information collected

from respondents was held confidential and never shared with anyone else. All information collected from the participants remained completely private to ensure their dignity and confidentiality.

This chapter introduces the applied methods used in this study. The study used a hybrid approach. For quantitative studies, raw data collected using a questionnaire derived from a representative sample were used in this study. The raw data were then analyzed using statistical techniques such as multigroup analysis and correlation analysis. Qualitative research is based on previous literature, which is relevant to the subject of research, such as relevant books, articles from reference journals, academic publications, and presentations. The data were then analyzed using descriptive statistics.

3.4.11 The Item Objective Congruence (IOC) Index

The Item Objective Congruence (IOC) Index is a statistical measure used in educational and psychological research to assess the degree of agreement between test items and the construct being measured. The IOC index is calculated by comparing the performance of test-takers on each item with their overall performance on the test. A high IOC index indicates that the item is a good measure of the construct being tested, whereas a low IOC index suggests that the item may not be a good measure of the construct. The IOC index is commonly used in test development to evaluate the quality of test items and to identify items that may need to be revised or eliminated. By using this index, they can ensure that their assessments are accurate, reliable, and valid and that they provide meaningful information about the construct being measured.

In each item, the experts are asked to determine the content validity score:

The score = 1, if the expert is sure that this item really measured the attribute. 2.The score = –1, if the expert is sure that this item does not measure the 3.attribute. The score = 0, if the expert is not sure that the item does measure or does not measure the expected attribute.

The questionnaire items were evaluated by the Item-Objective Congruence Committee (IOC) developed by (Hambleton & Rovinelli, 1986). In the process, there were six different experts including medical physicians and education administrators in the field of medical education and social sciences to evaluate each of the items on the questionnaire. The Index of IOC was used so as to find the content validity at the item development stage.

In short, out of a total of 60 items, 56 items had a calculated average score of 1.00, all receiving passing scores. However, there are 4 projects: DS2 and DS3 in Competitive Strategy of Enterprises, CT1 and CT3 in Capital structure of Enterprises, with an average score of 0.75. The following three items have been adjusted accordingly. After all adjustments were completed, the IOC accepted all 8 items mentioned above and concluded that all 60 items had been passed and the result was "passed" and could be used in the questionnaire.

CHAPTER 4
ANALYSIS AND RESULTS

According to chapter 2 of the influence of the Enterprise Competition Strategy on enterprise performance Mechanism Theory Model and Research Hypothesis, this chapter tries to select domestic and foreign literature has developed scale, according to the research purpose of this study, to design the questionnaire measurement indicators and items, and select a certain number of survey, sample data collection. With the help of the most commonly used statistical analysis tool SPSS and the analytical structural equation tool AMOS, the descriptive statistics and measurement reliability and validity analysis of data, and verify and analysis of the theoretical model of the influence mechanism and research hypothesis of the software tool of structural equation model.

4.1 Demographic Characteristics

In terms of Gender, the sample consists of 506 manufacturing middle and senior management employees, with 270 males (53.36%), 189 females (37.35%), and 47 others (9.29%). This indicates that while the majority of the sample is male, a significant proportion is female, and a smaller portion identifies as other genders.

Regarding Age, the largest group is aged between 31 and 40 years, comprising 39.72% of the sample (201 participants). This is followed by the 30 years and under group (33.39%, 169 participants). The 41-50 years age group accounts for 20.55% (104 participants), while 5.14% (26 participants) were between 51 and 60 years old. A small proportion of respondents (1.19%, 6 participants) were over 60 years of age, indicating that the majority of the sample falls within the prime working age range.

The respondents exhibited a high level of education, with the majority holding a Bachelor's Degree (78.85%, 399 participants). Those with a Master's degree or Ph.D. accounted for 12.06% (61 participants), while 9.09% (46 participants) had an education level below a Bachelor's Degree. This indicates that the sample is predominantly composed of well-educated individuals, which aligns with the management positions they occupy.

In terms of occupational distribution, 4.15% of respondents were CEOs or General Managers (21 participants), while 73.72% were in Senior Management positions (373 participants). A further 19.76% of respondents occupied Middle Management roles (100 participants), and 2.37% held Other Management Positions (12 participants). The predominance of senior management respondents suggests that the sample is representative of

decision-makers within the organizations.

The enterprises represented in the sample were distributed across various regions in China. The largest proportions came from East China (13.24%, 67 participants), Northwest China (13.44%, 68 participants), and Southeast China (13.24%, 67 participants). Other regions included North China (12.65%, 64 participants), South China (11.46%, 58 participants), Central China (12.65%, 64 participants), Northeast China (10.28%, 52 participants), and Southwest China (13.04%, 66 participants). This diverse geographic representation ensures a broad perspective on SMEs across the country.

Finally, in terms of the Type of enterprise, the largest sector is Electronics and Communication Equipment Manufacturing, with 83 enterprises (16.40%). This is followed by Computer Level I Office Equipment Manufacturing (80 enterprises, 15.81%), Instruments Manufacturing (75 enterprises, 14.82%), Medical Devices (72 enterprises, 14.23%), and Other industries (72 enterprises, 14.23%). The Aerospace and Equipment Manufacturing sector has 63 enterprises (12.45%), and Information Chemical Products Manufacturing has 61 enterprises (12.06%). This reflects a diverse range of manufacturing sectors within the sample.

The demographics statistics are presented in Table 4.1 below.

Table 4.1 Demographics Characteristics (N=506)

Variables	Items	Frequency	Percentage (%)
Gender	Male	270	53.36
	Female	189	37.35
	Others	47	9.29
Age	Under and 30 years	169	33.39
	31-40 years	201	39.72
	41-50 years	104	20.55
	51-60 years	26	5.14
	Older than 60 years	6	1.19
Education	Under bachelor Degree	46	9.09
	Bachelor's Degree	399	78.85
	Master and Ph.D	61	12.06
Occupation	CEO/General Manager	21	4.15
	Senior Management	373	73.72
	Middle Management	100	19.76

Variables	Items	Frequency	Percentage (%)
	Other Management Positions	12	2.37
Location of the enterprise	North China	64	12.65
	South China	58	11.46
	East China	67	13.24
	Central China	64	12.65
	northwest	68	13.44
	Southwest	66	13.04
	southeast	67	13.24
	northeast	52	10.28
Type of enterprise	Medical devices	72	14.23
	Aerospace and equipment manufacturing	63	12.45
	Electronics and communication equipment manufacturing	83	16.40
	computer level I office equipment manufacturing	80	15.81
	instruments	75	14.82
	information chemical products manufacturing	61	12.06
	other	72	14.23
Total		506	100.0

Based on the provided data for the sample of 506 individuals, this study discuss the mean and standard deviation for each variable.

In terms of Gender, the average value in this sample of 506 individuals is 0.559, with a standard deviation of 0.658. This suggests that the majority of the sample is male, given that the coding represents males with 0, females with 1, and others with 2. The relatively low standard deviation indicates a smaller spread, reinforcing the idea that males form the predominant group in this sample.

Regarding Age, the average value is 2.939, with a standard deviation of 1.031. The age coding scheme where 1 represents "Under 20 years," 2 represents "21-30 years," 3 represents "31-40 years," and so on, the mean indicates that most individuals fall within the 31-40 years range. The standard deviation of 1.031 points to some dispersion around this mean, suggesting a range of ages within the sample, but with a higher concentration in the 31-40 years group.

Concerning Education, the average value is 2.030, with a standard deviation of 0.459. The education coding is such that 1 represents "Under a Bachelor's Degree," 2 represents "Bachelor's Degree," and 3 represents "Master and Ph.D.," the mean indicates that most individuals have a bachelor's degree. The low standard deviation suggests a high degree of uniformity in terms of educational background, with most of the sample holding similar qualifications.

For Occupation, the average value is 2.204, with a standard deviation of 0.541. Occupation is coded with 1 representing "Self-employed," 2 for "Company employee," 3 for "Unemployed," and 4 for "Others," the mean suggests that most individuals are company employees. The standard deviation indicates some variation, showing that while company employees form the largest group, there is a notable presence of other occupation categories.

In terms of the Location of the enterprise, the mean value is 4.462, with a standard deviation of 2.240. The coding scheme ranges from 1 to 8 to represent different regions in China, the mean suggests that the enterprises are spread across a variety of regions, possibly with a slight concentration in central areas. The higher standard deviation indicates a wide distribution, demonstrating geographical diversity among the enterprises.

Finally, considering the Type of enterprise, the mean value is 3.976, with a standard deviation of 1.965. The coding scheme ranges from 1 to 7 to represent different types of manufacturing enterprises, the mean indicates a mix of enterprise types with no strong skew toward any specific type. The relatively high standard deviation suggests a wide variety of enterprise types, highlighting the diverse industries represented in the sample.

Table 4.2 Basic information for control variables

Variables	Min	Max	Mean	Std. D
Gender	0.000	2.000	0.559	0.658
Age	1.000	6.000	2.939	1.031
Education	1.000	3.000	2.030	0.459
Occupation	1.000	4.000	2.204	0.541
Location of the enterprise	1.000	8.000	4.462	2.240
Type of enterprise	1.000	7.000	3.976	1.965

4.2 Opinion Level of the Variables

The six variables in the research framework are described in the following section, The independent variables:Competitive strategy All observed variables are measured using a 5-point Likert scale, with the mean value indicated as follows:

Mean value between 1.00 -1.80 is “Strongly Disagree"

Mean value between 1.81 -2.60 is “Disagree”

Mean value between 2.61 -3.40 is "Neutral"

Mean value between 3.41 -4.20 is “Agree"

Mean value between 4.21 -5.00 is “Strongly Agree"

The descriptive analysis of these variables is then presented as follows:

4.2.1 Competitive Strategy

Competitive Strategy have three types: low-cost strategy, differentiation strategy, and hybrid strategy. Each strategy type has three statements with a scale ranging from 1 (strongly disagree) to 5 (strongly agree). Here, this study discuss the mean and standard deviation for each statement to describe the tendencies and variability within these strategies.

For Low-Cost Strategy, the mean for the first item, which indicates a focus on reducing costs to enhance competitiveness, is 3.583 with a standard deviation of 1.250. This mean suggests that most respondents agree with the statement, though there's some variability, as indicated by the standard deviation. The second item, which highlights achieving the best value amidst competition, has a mean of 3.974 and a standard deviation of 1.156. The higher mean implies a stronger agreement with this statement, while the standard deviation reflects moderate dispersion, suggesting varying degrees of emphasis on value. The third item, focusing on cost control as a pivotal direction for market expansion, has a mean of 3.759 and a standard deviation of 1.128. This indicates general agreement with the statement, with a slightly lower variability than the first statement. Overall, the low-cost strategy appears to have a consistent level of agreement, with the second statement having the highest mean.

For the differentiation strategy, the mean for the fourth item, emphasizing differentiation across product, price, channel, and promotional mechanisms, is 3.490, with a standard deviation of 1.206. This suggests moderate agreement with this approach, with notable variability. The fifth item, highlighting the development of new products and targeting premium market segments, has a mean of 3.464 and a standard deviation of 1.152. The similar mean and standard deviation to the previous statement suggest a consistent level of agreement with comparable dispersion. The sixth item, focusing on branding, unique products, research and development, marketing, and control over distribution, has a mean of 3.466 with a standard deviation of 1.038.

This mean is slightly lower than the previous ones, indicating a similar level of agreement, with less variability. Overall, the differentiation strategy has lower means compared to the low-cost strategy, suggesting slightly lower levels of agreement, but with consistent variability.

For the hybrid strategy, the mean for the seventh item, focusing on the integrated application of various strategies, is 3.425 with a standard deviation of 1.088. This reflects moderate agreement with this statement, with some dispersion. The eighth item, emphasizing boosting competitiveness through a combination of strategies, has a mean of 3.575 with a standard deviation of 1.051. This mean indicates moderate agreement, with slightly less variability. The ninth item, emphasizing comprehensive evaluation of external market impacts, has a mean of 3.543 with a standard deviation of 1.182. This mean suggests similar agreement to the previous statement, with a slightly higher standard deviation, indicating more variability. Overall, the hybrid strategy shows a relatively consistent level of agreement across all statements, with moderate variability.

Summary, the data shows a general agreement across all competitive strategy types, with the low-cost strategy exhibiting higher agreement overall. Differentiation and hybrid strategies indicate slightly lower levels of agreement, but with similar standard deviations, suggesting moderate variability in the responses.

Table 4.3 The basic information of competitive strategy

Competitive Strategy		**Opinion Levels**					**Mean**	**Std. dev**	**Level**
		1	**2**	**3**	**4**	**5**			
		Frequency (n) & Percent (%)							
Low cost strategy							**3.772**	**1.178**	**Agree**
Our enterprise believes	n	50	37	133	140	146			Agree
that cost control is a	%	9.88	7.31	26.28	27.67	28.85	3.583	1.250	Agree
pivotal direction for market expansion.									
Our enterprise believes	n	29	22	104	129	222			Agree
that striving to achieve the	%	5.73	4.35	20.55	25.49	43.87	3.974	1.156	Agree
best value is essential amidst competition.									
Our enterprise believes	n	32	28	121	174	151			Agree
that achieving the best	%	6.32	5.53	23.91	34.39	29.84	3.759	1.128	Agree
value is key to market expansion.									
Differentiation strategy							**3.473**	**1.132**	**Agree**
Our enterprise views	n	49	46	130	170	111			Agree

Competitive Strategy		Opinion Levels 1	2	3	4	5	Mean	Std. dev	Level
		Frequency (n) & Percent (%)							
differentiation as crucial across product, price, channel, and promotional mechanisms.	%	9.68	9.09	25.69	33.60	21.94	3.490	1.206	Agree
Our enterprise views the development of new products and targeting market segments willing to pay premium prices as essential for differentiation.	n	39	49	162	150	106			Agree
	%	7.71	9.68	32.02	29.64	20.95	3.464	1.152	Agree
Our enterprise views product branding, advertising, research and development, innovation, marketing techniques, and control over distribution channels as key elements of differentiation.	n	33	27	200	163	83			Agree
	%	6.52	5.34	39.53	32.21	16.40	3.466	1.038	
Hybrid strategy							**3.514**	**1.107**	**Agree**
Our enterprise aims to boost its competitiveness through a combination of strategies.	n	31	50	192	139	94			Agree
	%	6.13	9.88	37.94	27.47	18.58	3.425	1.088	
Our enterprise aims to enhance its competitiveness by integrating various strategic approaches.	n	26	38	162	179	101			Agree
	%	5.14	7.51	32.02	35.38	19.96	3.575	1.051	
Our enterprise aims to strengthen its competitiveness by incorporating comprehensive evaluations of external market impacts into decision-making processes.	n	49	26	149	165	117			Agree
	%	9.68	5.14	29.45	32.61	23.12	3.543	1.182	

4.2.2 Innovation

Innovation have three types: Incremental Innovation, Breakthrough Innovation, and Flexible Innovation. Each type has several items representing specific characteristics, with a scale from 1 to 5 indicating the level of agreement. This study analyze the means and standard deviations for each statement to understand their trends and variations.

The Incremental Innovation focuses on continuous improvements. Here's the description of each item. The first statement, indicating a focus on gradual enhancement of product design and structure, has a mean of 3.761 and a standard deviation of 1.316. This mean suggests a generally high level of agreement, while the standard deviation shows moderate variability, indicating that some participants might view this differently. The second statement, which speaks to adopting and refining existing technologies, has a mean of 3.708 with a standard deviation of 1.180. This value indicates a relatively strong level of agreement, with slightly less variability compared to the first statement. The third statement, regarding consistent improvement of existing process technologies, has a mean of 3.439 with a standard deviation of 1.083. This lower mean suggests a lower level of agreement, with a smaller standard deviation, indicating a more consistent perspective. The fourth statement, about valuing continuous technological exploration based on market demands, has a mean of 3.626 and a standard deviation of 1.059. This suggests a moderate to strong agreement with a slightly smaller variability, indicating some consistency among the responses. Overall, Incremental Innovation exhibits a moderate to strong agreement across all statements, with some variability, suggesting different views on specific aspects of this approach.

The Breakthrough Innovation involves more radical changes and new approaches. Here's the analysis of each item: The fifth statement, indicating emphasis on thorough product evaluations, has a mean of 3.646 and a standard deviation of 1.155. This suggests a moderate agreement with some variability, indicating different levels of emphasis on product evaluations. The sixth statement, which discusses adopting new methods and integrating new technologies, has a mean of 3.575 and a standard deviation of 1.088. This mean indicates a moderate level of agreement, with less variability compared to the previous statement. The seventh statement, focusing on redefining products and services, has a mean of 3.783 with a standard deviation of 1.220. This represents a relatively high agreement level, with notable variability, suggesting varied perspectives on this aspect of breakthrough innovation. Overall, Breakthrough Innovation shows moderate to agreement, with some statements exhibiting higher variability, indicating differing views on the radical changes that this strategy involves.

Flexible Innovation represents adaptability and openness to change. Here's the breakdown of each item: The eighth statement, indicating flexibility in adjusting product design based on new insights or market demands, has a mean of 3.492 and a standard deviation of 1.114. This

mean suggests moderate agreement, while the standard deviation indicates a moderate spread in opinions. The ninth statement, emphasizing learning from past innovation experiences and adapting to changing circumstances, has a mean of 3.484 with a standard deviation of 1.154. This mean indicates moderate agreement, with a similar variability as the previous item, showing consistency in the perception of this flexibility. The tenth statement, focused on innovations with clear market impact and practicality, has a mean of 3.542 and a standard deviation of 0.991. This suggests moderate agreement, with a lower standard deviation, indicating a more consistent understanding of this practical approach to innovation. Overall, Flexible Innovation demonstrates moderate agreement across the statements, with varying degrees of variability, suggesting that flexibility and adaptability are perceived differently by respondents.

Table 4.4 The basic information of Innovation

Competitive Strategy		Opinion Levels					Mean	Std. dev	Level
		1	2	3	4	5			
		Frequency (n) & Percent (%)							
Incremental innovation							**3.591**	**0.971**	**Agree**
The enterprise I work for focuses on the gradual enhancement of product design and structure.	n	50	36	104	111	205			Agree
	%	9.88	7.11	20.55	21.94	40.51	3.761	1.316	Agree
The enterprise I work for excels at adopting and refining existing technologies.	n	48	22	93	210	133			Agree
	%	9.49	4.35	18.38	41.50	26.28	3.708	1.180	Agree
The enterprise I work for consistently improves upon existing process technologies.	n	41	35	167	187	76			Agree
	%	8.10	6.92	33.00	36.96	15.02	3.439	1.083	Agree
The enterprise I work for values continuous technological exploration based on market demands.	n	34	16	161	189	106			Agree
	%	6.72	3.16	31.82	37.35	20.95	3.626	1.059	Agree
Breakthrough innovation							**3.668**	**1.011**	**Agree**
The enterprise I work for emphasizes thorough product evaluations.	n	28	53	131	152	142			Agree
	%	8.30	5.53	10.47	25.89	30.04	3.646	1.155	Agree
The enterprise I work for adopts new methods for	n	26	55	131	190	104			Agree
	%	5.14	10.87	25.89	37.55	20.55	3.575	1.088	Agree

Competitive Strategy	Opinion Levels					Mean	Std. dev	Level
	1	2	3	4	5			
	Frequency (n) & Percent (%)							
the business and market, consistently integrating new technologies during the innovation process.								
The enterprise I work for concentrates on redefining products and services.	n 23	72	89	130	192			Agree
	% 4.55	14.23	1759	25.69	37.94	3.783	1.220	
Flexible innovation						**3.506**	**0.943**	**Agree**
The enterprise I work for adjusts product design in response to new insights or market demands, aiming for significant advancements.	n 35	47	156	170	98			Agree
	% 6.92	9.29	30.83	33.60	19.37	3.492	1.114	
The enterprise I work for focuses on innovations with clear market impact or those that cater to emerging market needs, emphasizing practicality and actionability to drive sustainable growth.	n 24	90	120	161	111			Agree
	% 4.74	17.79	23.72	31.82	21.94	3.484	1.154	
The enterprise I work for emphasizes innovations with a clear potential for positive market impact or those that cater to emerging market needs.	n 15	46	189	162	94			Agree
	% 2.96	9.09	37.35	32.02	18.58	3.542	0.991	

4.2.3 Corporate governance structure

The data given describes Corporate Governance Structure, broken into three sections: Organizational Structure, Control Structure, and Management Structure. Each section has several statements with a scale from 1 to 5, representing the level of agreement. This study analyze the means and standard deviations to understand the trends and variability in each section.

For Organizational Structure, the first statement, focusing on the division of labor and hierarchical levels, has a mean of 3.704 and a standard deviation of 0.896. This suggests that respondents generally agree with the statement, with the lower standard deviation indicating

relatively consistent responses and less variation. The second statement, about clearly defined reporting relationships, has a mean of 4.032 and a standard deviation of 1.127. This high mean indicates strong agreement with the statement, but the standard deviation suggests a moderate spread in opinions, indicating some variability in how clear reporting relationships are viewed. The third statement, which deals with defined roles and responsibilities, has a mean of 3.640 with a standard deviation of 1.070. This mean suggests moderate agreement, while the standard deviation indicates a moderate level of dispersion, suggesting some respondents might view this aspect differently. Overall, Organizational Structure demonstrates a general agreement, with stronger agreement on defined reporting relationships and moderate consistency in division of labor and roles.

For Control Structure, the fourth statement, emphasizing effective coordination between departments, has a mean of 3.630 with a standard deviation of 1.199. This mean suggests moderate agreement, with the standard deviation indicating a noticeable level of variability, implying some diversity in views regarding interdepartmental coordination. The fifth statement, regarding employee supervision and monitoring, has a mean of 3.545 and a standard deviation of 1.239. This mean suggests moderate agreement, but the standard deviation indicates more variability, suggesting that employee supervision may be implemented differently across the organization. The sixth statement, focusing on performance metrics and regular reviews, has a mean of 3.486 with a standard deviation of 1.257. This mean suggests a moderate level of agreement, while the standard deviation indicates a higher dispersion, suggesting varied perspectives on the effectiveness of performance metrics and reviews. Overall, Control Structure shows moderate agreement, but with noticeable variability, indicating that supervision, monitoring, and interdepartmental coordination might differ across the organization.

For Management Structure, the seventh statement, addressing balanced distribution of managerial roles, has a mean of 3.700 with a standard deviation of 1.017. This mean indicates moderate to strong agreement, while the standard deviation suggests a consistent perspective on managerial roles. The eighth statement, focusing on a culture of empowerment and delegation, has a mean of 3.583 with a standard deviation of 1.264. This mean indicates moderate agreement, but the higher standard deviation shows greater variability, suggesting differing views on how much autonomy is granted within the organization. The ninth statement, about open communication and collaboration, has a mean of 3.662 with a standard deviation of 1.071. This mean suggests moderate agreement, while the standard deviation indicates some variability, showing that open communication might be experienced differently across departments. Overall, Management Structure demonstrates moderate to strong agreement, with some variability, suggesting different perspectives on empowerment, delegation, and open

communication.

In summary, the data on Corporate Governance Structure reveals general agreement across Organizational Structure, Control Structure, and Management Structure. The strongest agreement is found in the clear definition of reporting relationships, while the highest variability appears in Control Structure, particularly regarding supervision and performance metrics. These variations suggest that while there is overall alignment in corporate governance, there are areas where perspectives diverge, indicating opportunities for improving consistency across the organization.

Table 4.5 The basic information of Corporate governance structure

Corporate governance structure		Opinion Levels 1	2	3	4	5	Mean	Std. dev	Level
		Frequency(n), Percent(%)							
Organizational structure							**3.792**	**0.919**	**Agree**
In the enterprise I work for, there's a clear division of labor and hierarchical levels that facilitate efficient operations.	n	2	36	180	180	108			Agree
	%	0.40	7.11	35.57	21.34	1.58	3.704	0.896	
In the enterprise I work for, reporting relationships are clearly defined, ensuring smooth communication and accountability.	n	8	55	100	93	250			Agree
	%	1.58	10.87	19.76	18.38	49.41	4.032	1.127	
In the enterprise I work for, roles and responsibilities are clearly defined, promoting effective coordination and minimizing overlap or confusion in tasks and projects.	n	13	82	89	212	110			Agree
	%	2.57	16.21	17.59	41.90	21.74	3.640	1.070	
Control structure							**3.554**	**1.067**	**Agree**
The enterprise I work for	n	39	42	131	149	145			Agree

Corporate governance structure		Opinion Levels					Mean	Std. dev	Level
		1	2	3	4	5			
		Frequency(n), Percent(%)							
ensures effective coordination between various departments to achieve organizational goals.	%	7.71	8.30	25.89	29.45	28.66	3.630	1.199	
In the enterprise I work for, there's a robust system for employee supervision and monitoring to ensure adherence to organizational standards.	n	37	74	111	144	140			Agree
	%	7.31	14.62	21.94	28.46	27.67	3.545	1.239	
The enterprise I work for uses well-defined performance metrics and regular reviews to maintain control and ensure that employees meet organizational expectations and goals.	n	49	70	92	176	119			Agree
	%	9.68	13.83	18.18	34.78	23.52	3.486	1.257	
Management structure							**3.648**	**0.985**	**Agree**
In the enterprise I work for, there's a robust system for employee supervision and monitoring to ensure adherence to organizational standards.	n	7	60	138	174	127			Agree
	%	1.38	11.86	27.27	34.39	25.10	3.700	1.017	
In the enterprise I work for, there's a culture of empowerment and delegation, allowing departments to operate with autonomy while aligning with the company's vision.	n	46	56	109	147	148			Agree
	%	9.09	11.07	21.54	29.05	29.25	3.583	1.264	

Corporate governance structure		Opinion Levels					Mean	Std. dev	Level
		1	2	3	4	5			
		Frequency(n), Percent(%)							
In the enterprise I work for, management maintains open communication and collaborates across departments to ensure cohesive decision-making and effective execution of strategic plans.	n	18	53	137	172	126			Agree
	%	3.56	10.47	27.08	33.99	24.90	3.662	1.071	

4.2.4 Capital structure of enterprises

Capital Structure of enterprises, broken into three subcategories: Ownership Structure, Operating Structure, and Financial Indicators. The following is an analysis of the mean and standard deviation for each item within these categories, providing insights into the trends and variability of responses.

For Ownership Structure, here's the analysis of the items: The first statement, indicating that equity is distributed in a manner that aligns with strategic goals and objectives, has a mean of 3.557 and a standard deviation of 1.270. This mean suggests moderate agreement, while the relatively high standard deviation indicates a significant spread in views, possibly suggesting differences in how equity distribution aligns with strategic goals. The second statement, focusing on clearly defined and protected shareholder rights, has a mean of 3.625 with a standard deviation of 1.234. This mean indicates moderate to strong agreement, while the standard deviation suggests moderate variability, pointing to different perceptions of shareholder rights protection. The third statement, describing a transparent governance structure with stakeholder involvement, has a mean of 3.725 and a standard deviation of 1.008. This higher mean suggests a relatively strong agreement, with a lower standard deviation indicating a more consistent perception of governance transparency and stakeholder inclusion. Overall, the Ownership Structure category demonstrates moderate to strong agreement, with some variability, indicating areas where views on equity distribution and shareholder rights may differ.

For Operating Structure, The fourth statement, emphasizing high operational efficiency, has a mean of 3.532 with a standard deviation of 1.049. This mean suggests moderate agreement, while the standard deviation indicates some variability, reflecting differing views

on the level of operational efficiency. The fifth statement, focusing on effective management of operating costs, has a mean of 3.644 and a standard deviation of 1.057. This mean indicates moderate to strong agreement, with moderate variability, suggesting some variation in the perception of cost management. The sixth statement, about flexibility in operations while maintaining high efficiency, has a mean of 3.494 with a standard deviation of 1.067. This mean suggests moderate agreement, while the standard deviation indicates some spread in perspectives, highlighting differing views on operational flexibility. Overall, the Operating Structure category reflects moderate agreement with moderate variability, indicating that while there is general agreement, views on operational efficiency, cost management, and flexibility vary across the enterprise.

For Financial Indicators, The seventh statement, concerning strong solvency, has a mean of 3.611 and a standard deviation of 1.147. This mean suggests moderate agreement, with moderate variability, indicating different perceptions of solvency. The eighth statement, focusing on profitability metrics meeting or exceeding industry benchmarks, has a mean of 3.551 and a standard deviation of 1.002. This mean suggests moderate agreement, with a lower standard deviation indicating more consistent views on profitability. The ninth statement, addressing effective liquidity and cash flow management, has a mean of 3.589 with a standard deviation of 1.092. This mean suggests moderate agreement, with a moderate standard deviation indicating some variability, suggesting differing perspectives on liquidity management. Overall, the Financial Indicators category demonstrates moderate agreement, with variability suggesting different views on solvency, profitability, and liquidity management.

In summary, the Capital Structure of enterprises data shows general agreement across all categories, with varying degrees of variability. The highest agreement is seen in Ownership Structure, particularly in governance transparency and stakeholder involvement, while the greatest variability is in Operational Structure and Financial Indicators, indicating that areas such as operational flexibility and solvency might be perceived differently within the enterprise. This variability suggests opportunities to further align views and improve consistency across the enterprise's capital structure.

Table 4.6 The basic information of Capital structure

Capital structure of enterprises	**Opinion Levels**					**Mean**	**Std. dev**	**Level**
	1	**2**	**3**	**4**	**5**			
	Frequency(n), Percent(%)							
Ownership structure						**3.636**	**1.042**	**Agree**

Capital structure of enterprises	Opinion Levels						Mean	Std. dev	Level
		1	2	3	4	5			
		Frequency(n), Percent(%)							
In the enterprise I work for, equity is distributed in a manner that aligns with our strategic goals and objectives.	n	42	75	92	153	144	3.557	1.270	Agree
	%	8.30	14.82	18.18	30.24	28.46			
The rights of shareholders in my enterprise are clearly defined and protected.	n	36	65	104	149	152	3.625	1.234	Agree
	%	7.11	12.85	20.55	29.45	30.04			
The enterprise I work for has a transparent governance structure that involves key stakeholders in decision-making processes, ensuring their interests are represented and considered.	n	22	17	162	182	123	3.725	1.008	Agree
	%	4.35	3.36	32.02	35.97	24.31			
Operating structure							**3.557**	**0.928**	**Agree**
The enterprise I work for effectively manages its operating costs, ensuring profitability and sustainability.	n	25	42	176	165	98	3.532	1.049	Agree
	%	4.94	8.30	34.78	32.61	19.37			
Our enterprise consistently achieves high operational efficiency, optimizing our resources and processes.	n	18	56	128	190	114	3.644	1.057	Agree
	%	3.56	11.07	25.03	37.55	22.53			
The enterprise I work for maintains flexibility in its operations, allowing it to adapt to changes in the market or industry trends while still achieving high efficiency and managing costs effectively.	n	33	35	177	171	90	3.494	1.067	Agree
	%	6.52	6.92	34.98	33.79	17.79			
Financial indicators							**3.584**	**0.975**	**Agree**
Our enterprise maintains a	n	44	16	157	165	124	3.611	1.147	Agree

Capital structure of enterprises	Opinion Levels					Mean	Std. dev	Level
	1	2	3	4	5			
	Frequency(n), Percent(%)							
strong solvency position, ensuring we can meet our long-term obligations.	%	8.70	3.16	31.03	32.61	24.51		
The profitability metrics of the enterprise I work for consistently meet or exceed our industry benchmarks.	n	10	65	163	172	96	3.551	1.002	Agree
	%	1.98	12.85	32.21	33.99	18.97		
The enterprise I work for effectively manages its liquidity and cash flow, ensuring that there is sufficient funding to meet short-term obligations and support ongoing operations.	n	41	13	163	185	104	3.589	1.092	Agree
	%	8.10	2.57	32.21	36.56	20.55		

4.2.5 Capital structure of enterprises

The data provided describes Human Capital, which is divided into two subcategories: Human Resources and Level of Human Resource Capacity. Let's analyze the mean and standard deviation for each item within these categories to understand the general trends and variability of responses.

The Human Resources category comprises the following items: The first statement, indicating that the number of personnel aligns with operational and strategic needs, has a mean of 3.500 and a standard deviation of 1.101. This mean suggests moderate agreement, while the standard deviation indicates some variability in how well personnel numbers align with enterprise needs. The second statement, focusing on satisfaction with the overall quality and competence of personnel, has a mean of 3.460 with a standard deviation of 1.047. This mean reflects moderate agreement, with a lower standard deviation suggesting relatively consistent views on personnel quality. The third statement, emphasizing the effective structure and distribution of personnel roles, has a mean of 3.545 and a standard deviation of 1.102. This mean indicates moderate agreement, with a moderate standard deviation suggesting some variability in the perception of personnel role distribution. Overall, the Human Resources category reflects moderate agreement across all items, with variability in the alignment of personnel numbers and structure with enterprise needs.

Human Resource Capacity category comprises the following items: The fourth statement, focusing on satisfaction with the skill set and abilities of personnel, has a mean of 3.500 and a standard deviation of 1.224. This mean suggests moderate agreement, while the higher standard deviation indicates variability in views on personnel skills and abilities. The fifth statement, emphasizing personnel quality in terms of professionalism and dedication, has a mean of 3.832 and a standard deviation of 1.201. This mean indicates a higher level of agreement, while the standard deviation suggests some variability, indicating differing views on personnel professionalism and dedication. The sixth statement, addressing whether the number of personnel is adequate to meet operational demands, has a mean of 3.642 with a standard deviation of 1.126. This mean suggests moderate to strong agreement, with a moderate standard deviation indicating some variability in perspectives on personnel capacity. Overall, the Level of Human Resource Capacity category shows moderate to strong agreement, with variability in satisfaction with personnel skills and abilities, as well as adequacy in personnel capacity.

In summary, both the Human Resources and Level of Human Resource Capacity categories exhibit moderate agreement, with some variability in terms of personnel alignment with enterprise needs and the quality of personnel. The strongest agreement is in the professionalism and dedication of personnel, while the greatest variability appears in the skill set and abilities of personnel, suggesting areas where further alignment and development may be needed.

Table 4.7 The basic information of Human capital

Human capital		**Opinion Levels**					**Mean**	**Std. dev**	**Level**
		1	**2**	**3**	**4**	**5**			
		Frequency(n), Percent(%)							
Human resources							**3.502**	**0.975**	**Agree**
In the enterprise I work for, the number of personnel aligns well with our operational and strategic needs.	n	44	14	190	161	97	3.500	1.101	Agree
	%	8.70	2.77	37.55	31.82	19.17			
I am satisfied with the overall quality and	n	28	38	205	143	92	3.460	1.047	Agree

Human capital		Opinion Levels					Mean	Std. dev	Level
		1	2	3	4	5			
		Frequency(n), Percent(%)							
competence of the personnel in our enterprise.	%	5.53	7.51	40.51	28.26	18.18			
The structure and distribution of personnel roles in our enterprise effectively support our business objectives.	n	29	34	198	122	123	3.545	1.102	Agree
	%	5.73	6.72	39.13	24.11	24.31			
Level of human resource capacity							**3.658**	**1.032**	**Agree**
From a capacity perspective, the number of personnel in our enterprise is adequate to handle our operational demands.	n	45	52	142	139	128	3.500	1.224	Agree
	%	8.89	10.28	28.06	27.47	25.30			
The quality of our personnel, in terms of their professionalism and dedication, meets our enterprise's expectations.	n	41	20	108	151	186			Agree
	%	8.10	3.95	21.34	29.84	36.76	3.832	1.201	
I am satisfied with the skill set and abilities of our personnel, which align with our enterprise's goals.	n	34	33	140	172	127			Agree
	%	6.72	6.52	27.67	33.99	25.10	3.642	1.126	

4.2.6 Environment

The data provided describes the environment in which an enterprise operates, with three subcategories: Dynamics, Complexity, and Environmental Innovation. This study analyze the mean and standard deviation for each item within these categories to understand the general trends and variability of responses.

For the Dynamics category, the first statement, indicating that the enterprise rapidly adapts

to dynamic shifts in the market, has a mean of 3.593 and a standard deviation of 1.243. This mean suggests moderate agreement, but the relatively high standard deviation indicates significant spread in responses, suggesting varying opinions on the enterprise's adaptability. The second statement, focusing on proactive response to emerging industry trends, has a mean of 3.625 and a standard deviation of 1.190. This mean reflects moderate to strong agreement, with the standard deviation indicating some variability, implying differences in the level of proactivity. The third statement, emphasizing active engagement with stakeholders to understand dynamic changes, has a mean of 3.482 and a standard deviation of 1.186. This mean suggests moderate agreement, while the standard deviation indicates notable variability, suggesting differing perceptions on stakeholder engagement. Overall, the Dynamics category exhibits moderate agreement, with variability in enterprise adaptability, proactivity, and stakeholder engagement, indicating room for improvement in these areas.

For the Complexity category, the fourth statement, indicating a clear understanding of internal organizational complexities, has a mean of 3.638 and a standard deviation of 1.083. This mean suggests moderate to strong agreement, while the standard deviation reflects a moderate spread, indicating some variability in the understanding of internal complexities. The fifth statement, focusing on effective navigation through external market complexities, has a mean of 3.583 and a standard deviation of 1.256. This mean suggests moderate agreement, with a higher standard deviation indicating greater variability, suggesting differing views on navigating external complexities. The sixth statement, addressing agility in adapting to internal and external shifts, has a mean of 3.706 with a standard deviation of 1.063. This mean indicates strong agreement, with a lower standard deviation suggesting more consistent perspectives on enterprise agility. Overall, the Complexity category demonstrates moderate to strong agreement, with variability in navigating external market complexities and internal organizational challenges, suggesting that some aspects may require better alignment.

For Environmental Innovation, the seventh statement, indicating consistent innovation in response to internal changes, has a mean of 3.634 and a standard deviation of 1.202. This mean suggests moderate agreement, with the standard deviation indicating variability, suggesting differing perspectives on internal innovation practices. The eighth statement, focusing on innovative adaptation to shifts in the external market, has a mean of 3.660 with a standard deviation of 1.197. This mean reflects moderate to strong agreement, with the standard deviation showing some spread in responses, suggesting varying opinions on external innovation. The ninth statement, emphasizing sustainability and eco-friendliness in innovation practices, has a mean of 3.708 and a standard deviation of 1.139. This mean indicates strong agreement, with a slightly lower standard deviation indicating more consistent perspectives on sustainability and eco-friendliness. Overall, the Environmental Innovation category reflects

moderate to strong agreement, with some variability in response to internal changes and innovative adaptation to external shifts, suggesting that sustainability and eco-friendliness are relatively well-regarded.

In summary, the Environment category demonstrates moderate to strong agreement across all subcategories, with variability in dynamics, complexity, and environmental innovation, indicating differing views on adaptability, proactivity, stakeholder engagement, and navigation through internal and external complexities. The strongest agreement is in environmental innovation and adaptability, while the greatest variability is seen in navigating external complexities, suggesting opportunities to further improve in these areas.

Table 4.8 The basic information of Environment

Environment		Opinion Levels					Mean	Std. dev	Level
		1	2	3	4	5			
		Frequency(n), Percent(%)							
Dynamics							**3.567**	**1.075**	**Agree**
In the enterprise I work for, we rapidly adapt to the dynamic shifts in the market.	n	43	53	118	145	147			Agree
	%	8.50	10.47	23.32	28.66	29.05	3.593	1.243	
Our enterprise is proactive in responding to emerging industry trends and dynamics.	n	24	83	95	161	143			Agree
	%	4.74	16.40	18.77	31.82	28.26	3.625	1.190	
We actively engage with stakeholders to understand the dynamic changes in our business environment.	n	35	75	119	165	112			Agree
	%	6.92	14.82	23.52	32..61	22.13	3.482	1.186	
Complexity							**3.642**	**0.962**	**Agree**
We have a clear understanding of the complexities within our internal organizational environment.	n	19	52	151	155	129	3.638	1.083	Agree
	%	3.75	10.28	29.84	30.63	25.49			

Environment	Opinion Levels					Mean	Std. dev	Level
	1	2	3	4	5			
	Frequency(n), Percent(%)							
Our enterprise demonstrates agility in adapting to shifts in both internal organizational dynamics and external market conditions, effectively responding to new challenges and complexities as they arise.	n 42	64	104	149	147	3.583	1.256	Agree
	% 8.30	12.65	20.55	29.45	29.05			
Our enterprise effectively navigates the complexities and challenges of the external market.	n 12	51	157	140	146	3.706	1.063	Agree
	% 2.37	10.08	31.03	27.67	28.85			
Environmental innovation						**3.667**	**0.998**	**Agree**
We consistently innovate in response to changes within our internal environment.	n 22	88	95	149	152			Agree
	% 4.35	17.39	18.77	29.45	30.04	3.634	1.202	
Our enterprise incorporates sustainability and eco-friendliness into its innovation practices, striving to create products or processes that positively impact the environment while addressing internal and external changes.	n 29	68	99	160	150			Agree
	% 5.73	13.44	19.57	31.62	29.64	3.660	1.197	
Our enterprise is innovative in adapting to shifts and changes in the external market environment.	n 10	89	96	155	156			Agree
	% 1.98	17.59	18.97	30.63	30.83	3.708	1.139	

4.2.7 Enterprise performance

The data provides insights into Enterprise Performance, which is divided into two categories: Financial Performance and Non-financial Performance. The following analysis

focuses on the means and standard deviations for each item in these categories to understand the general trends and variability of responses.

For Financial Performance, The first statement, indicating that the enterprise consistently meets or exceeds its revenue targets, has a mean of 3.680 with a standard deviation of 1.249. This mean suggests moderate agreement, but the relatively high standard deviation indicates that there is a significant spread in responses, suggesting differing opinions on achieving revenue targets. The second statement, emphasizing competitive net profit margins, has a mean of 3.354 and a standard deviation of 1.182. This lower mean indicates moderate agreement, with the standard deviation showing some variability, suggesting that some respondents view net profit margins differently within the manufacturing industry. The third statement, addressing Return on Investment (ROI), has a mean of 3.532 and a standard deviation of 1.097. This mean suggests moderate agreement, with a smaller standard deviation than the previous items, indicating more consistent views on ROI performance. The fourth statement, focusing on a healthy debt-to-equity ratio, has a mean of 3.581 and a standard deviation of 1.056. This mean reflects moderate agreement, with a slightly lower standard deviation, indicating that respondents generally view debt-to-equity ratios positively. The fifth statement, about maintaining stable and positive operating cash flow, has a mean of 3.704 and a standard deviation of 1.051. This higher mean suggests a stronger agreement, with a relatively low standard deviation indicating consistent perspectives on cash flow stability. The sixth statement, emphasizing long-term financial sustainability, has a mean of 3.609 and a standard deviation of 0.977. This mean suggests moderate agreement, with the lowest standard deviation among the financial performance items, suggesting a more unified perspective on financial sustainability. Overall, the Financial Performance category shows moderate agreement across all items, with some variability, indicating that while there's general consensus, views on specific financial metrics like revenue targets and net profit margins can differ.

For Non-financial Performance, The seventh statement, focusing on employee satisfaction and well-being, has a mean of 3.636 with a standard deviation of 1.197. This mean suggests moderate to strong agreement, with some variability, indicating that perspectives on employee satisfaction might vary. The eighth statement, emphasizing a strong commitment to social responsibility and community engagement, has a mean of 3.725 with a standard deviation of 1.076. This higher mean indicates a relatively strong agreement, with a lower standard deviation suggesting more consistent views on social responsibility. The ninth statement, focusing on delivering high-quality products or services, has a mean of 3.597 with a standard deviation of 1.005. This mean reflects moderate agreement, with a lower standard deviation indicating a more consistent perception of product/service quality. The tenth statement, about environmental sustainability and eco-friendly practices, has a mean of 3.587 and a standard

deviation of 1.039. This mean suggests moderate agreement, with a relatively consistent perspective, given the lower standard deviation. The eleventh statement, emphasizing innovation and quick adaptation to market changes, has a mean of 3.607 with a standard deviation of 1.142. This mean indicates moderate agreement, with some variability, suggesting differing perspectives on innovation and adaptability. The twelfth statement, focusing on positive relationships with stakeholders, has a mean of 3.763 and a standard deviation of 1.197. This higher mean reflects strong agreement, while the standard deviation indicates variability in how positive stakeholder relationships are perceived. Overall, the Non-financial Performance category shows moderate to strong agreement across all items, with some variability, particularly in employee satisfaction, environmental sustainability, and innovation.

In summary, both Financial and Non-financial Performance categories exhibit moderate to strong agreement. Financial Performance shows variability in areas like revenue targets and net profit margins, while Non-financial Performance reveals variability in employee satisfaction, stakeholder relationships, and innovation. This variability suggests that while enterprises generally perform well in these areas, there might be differing views on specific aspects, indicating opportunities for alignment and improvement in both financial and non-financial domains.

Table 4.9 The basic information of Enterprise performance

Environment	**Opinion Levels**					**Mean**	**Std. dev**	**Level**
	1	**2**	**3**	**4**	**5**			
	Frequency(n), Percent(%)							
Finance Performance						**3.576**	**0.909**	**Agree**
	n	35	67	90	147	167	3.680	1.249	Agree
Our enterprise maintains a stable and positive operating cash flow.	%	6.92	13.24	17.79	29.05	33.00			
The net profit margins of our enterprise are competitive within the manufacturing industry.	n	56	34	184	139	93	3.354	1.182	Neutral
	%	11.07	6.72	36.36	27.47	18.38			

Environment	Opinion Levels						Mean	Std. dev	Level
		1	2	3	4	5			
		Frequency(n), Percent(%)							
Our enterprise consistently meets or exceeds its financial performance targets, such as revenue growth and return on investment (ROI)	n	28	47	169	152	110	3.532	1.097	Agree
	%	5.53	9.29	33.40	30.04	21.74			
The debt-to-equity ratio of our enterprise remains at a healthy level.	n	24	47	147	187	101	3.581	1.056	Agree
		4.74	9.29	29.05	36.96	19.96			
Our enterprise's financial performance is sustainable in the long run.	n	24	28	148	180	126	3.704	1.051	Agree
	%	4.74	5.53	29.25	35.57	24.90			
Our enterprise effectively achieves its strategic goals, such as market expansion, profitability, and operational efficiency	n	10	52	163	182	99	3.609	0.977	Agree
	%	1.98	10.28	32.21	35.97	19.57			
Non-financial Performance							**3.653**	**0.878**	**Agree**
The enterprise I work for prioritizes employee satisfaction and well-being.	n	36	65	76	199	130	3.636	1.197	Agree
	%	7.11	12.85	15.02	39.33	25.69			
The enterprise I work for demonstrates a strong commitment to social responsibility and community engagement.	n	27	22	153	165	139	3.725	1.076	Agree
	%	5.34	4.35	30.24	32.61	27.47			
The enterprise I work for consistently delivers high-quality products or services.	n	23	24	188	170	101	3.597	1.005	Agree
	%	4.55	4.74	37.15	33.60	19.96			

Environment	Opinion Levels					Mean	Std. dev	Level
	1	2	3	4	5			
	Frequency(n), Percent(%)							
The enterprise I work for actively engages in environmental sustainability and eco-friendly practices.	n 30	24	168	187	97	3.587	1.039	Agree
	5.93	4.74	33.20	36.96	19.17			
The enterprise I work for is innovative and adapts quickly to market changes.	n 37	24	174	137	134	3.607	1.142	Agree
	% 7.31	4.74	34.39	27.08	26.48			
The enterprise I work for maintains positive relationships with stakeholders, including suppliers, customers, and partners.	n 38	28	124	142	174	3.763	1.197	Agree
	% 7.51	5.53	24.51	28.06	34.39			

4.3 Data Analysis

This section presents the results of the normality tests, evaluated using the skewness and kurtosis criteria, and the correlation analysis of the variables. To understand the results of normality test: “Yes” means that the variable is normally distributed while “No” means the variable violates the normal distribution's assumption.

4.3.1 Basic Statistical Values of Competitive Strategy

Based on Hooland's (1998) research standard, the absolute value of normal skewness should not exceed 0.75, and the absolute value of kurtosis should not exceed 1.5. From the table 4.10, the skewness and kurtosis absolute values of the three observed variables of the latent variable "Competitive Strategy" are all within this range, so it can be considered that these data meet the requirements for a normal distribution.

For the Low Cost Strategy, its skewness is -0.565, with an absolute value less than 0.75, which meets the normal distribution standard; the kurtosis is -0.719, with an absolute value less than 1.5, which also meets the normal distribution standard. Overall, the Low Cost Strategy conforms to a normal distribution.

The Differentiation Strategy has a skewness of -0.326, with an absolute value less than

0.75, meeting the normal distribution standard; the kurtosis is -0.692, with an absolute value less than 1.5, also meeting the normal distribution standard. Therefore, the Differentiation Strategy also conforms to a normal distribution.

For the Hybrid Strategy, its skewness is -0.266, with an absolute value less than 0.75, meeting the normal distribution standard; the kurtosis is -0.771, with an absolute value less than 1.5, also meeting the normal distribution standard. Therefore, the Hybrid Strategy also conforms to a normal distribution.

In summary, the skewness and kurtosis of the three observed variables of the latent variable "Competitive Strategy" all meet the requirements for a normal distribution, so it can be considered that these data present a normal distribution.

Table 4.10 Basic Statistical Values of Competitive Strategy

Latent Variable	Observed Variable	Skewness	Kurtosis	Normal Distribution
Competitive Strategy	Low Cost Strategy	-0.565	-0.719	Yes
	Differentiation Strategy	-0.326	-0.692	Yes
	Hybrid Strategy	-0.266	-0.771	Yes

4.3.2 Basic Statistical Values of Innovation

From the table 4.11, the skewness and kurtosis absolute values of the three observed variables of the latent variable "Innovation" are all within this range, so it can be considered that these data meet the requirements for a normal distribution.

For the Incremental Innovation, its skewness is -0.565, with an absolute value less than 0.75, which meets the normal distribution standard; the kurtosis is -0.719, with an absolute value less than 1.5, which also meets the normal distribution standard. Overall, Incremental Innovation conforms to a normal distribution.

The Flexible Innovation has a skewness of -0.326, with an absolute value less than 0.75, meeting the normal distribution standard; the kurtosis is -0.692, with an absolute value less than 1.5, also meeting the normal distribution standard. Therefore, Flexible Innovation also conforms to a normal distribution.

For the Breakthrough Innovation, its skewness is -0.266, with an absolute value less than 0.75, meeting the normal distribution standard; the kurtosis is -0.771, with an absolute value less than 1.5, also meeting the normal distribution standard. Therefore, Breakthrough Innovation also conforms to a normal distribution.

In summary, the skewness and kurtosis of the three observed variables of the latent variable "Innovation" all meet the requirements for a normal distribution, so it can be considered that these data present a normal distribution.

Table 4.11 Basic Statistical Values of Innovation

Latent Variable	Observed Variable	Skewness	Kurtosis	Normal Distribution
Innovation	Imcremental Innovation	-0.565	-0.719	Yes
	Flexbile Innovation	-0.326	-0.692	Yes
	Break through Innovation	-0.266	-0.771	Yes

4.3.3 Basic Statistical Values of Corporate Governance Structure

From the table 4.12 for the latent variable "Corporate Governance Structure", the skewness and kurtosis absolute values of the three observed variables are all within this range, so it can be considered that these data meet the requirements for a normal distribution.

Regarding the Organizational structure, its skewness is -0.423, with an absolute value less than 0.75, which meets the normal distribution standard; the kurtosis is -0.928, with an absolute value less than 1.5, which also meets the normal distribution standard. Overall, the Organizational structure conforms to a normal distribution.

For the Control structure, the skewness is -0.389, with an absolute value less than 0.75, meeting the normal distribution standard; the kurtosis is -0.975, with an absolute value less than 1.5, also meeting the normal distribution standard. Therefore, the Control structure also conforms to a normal distribution.

The Management structure has a skewness of -0.360, with an absolute value less than 0.75, meeting the normal distribution standard; the kurtosis is -0.886, with an absolute value less than 1.5, also meeting the normal distribution standard. Therefore, the Management structure also conforms to a normal distribution.

In summary, the skewness and kurtosis of the three observed variables of the latent variable "Corporate Governance Structure" all meet the requirements for a normal distribution, so it can be considered that these data present a normal distribution.

Table 4.12 Basic Statistical Values of Corporate Governance Structure

Latent Variable	Observed Variable	Skewness	Kurtosis	Normal Distribution
Corporate Governance Structure	Organizational structure	-0.423	-0.928	Yes
	Control structure	-0.389	-0.975	Yes
	Management structure	-0.360	-0.886	Yes

4.3.4 Basic Statistical Values of Capital Structure of Enterprises

From the table 4.13 for the latent variable "Capital Structure of Enterprises", the skewness and kurtosis absolute values of the three observed variables are all within this range, so it can be considered that these data meet the requirements for a normal distribution.

Regarding the Ownership structure, its skewness is -0.400, with an absolute value less than 0.75, which meets the normal distribution standard; the kurtosis is -0.842, with an absolute value less than 1.5, which also meets the normal distribution standard. Overall, the Ownership structure conforms to a normal distribution.

For the Operating structure, the skewness is -0.328, with an absolute value less than 0.75, meeting the normal distribution standard; the kurtosis is -0.754, with an absolute value less than 1.5, also meeting the normal distribution standard. Therefore, the Operating structure also conforms to a normal distribution.

The Financial indicators have a skewness of -0.395, with an absolute value less than 0.75, meeting the normal distribution standard; the kurtosis is -0.630, with an absolute value less than 1.5, also meeting the normal distribution standard. Therefore, the Financial indicators also conform to a normal distribution.

In summary, the skewness and kurtosis of the three observed variables of the latent variable "Capital Structure of Enterprises" all meet the requirements for a normal distribution, so it can be considered that these data present a normal distribution.

Table 4.13 Basic Statistical Values of Capital Structure of Enterprises

Latent Variable	Observed Variable	Skewness	Kurtosis	Normal Distribution
Capital Structure of	Ownership structure	-0.400	-0.842	Yes

Latent Variable	Observed Variable	Skewness	Kurtosis	Normal Distribution
Enterprises	Operating structure	-0.328	-0.754	Yes
	Financial indicators	-0.395	-0.630	Yes

4.3.5 Basic Statistical Values of Human Capital

From the table 4.14 for the latent variable "Human Capital", the skewness and kurtosis absolute values of the two observed variables are all within this range, so it can be considered that these data meet the requirements for a normal distribution.

Regarding the Human Resources, its skewness is -0.253, with an absolute value less than 0.75, which meets the normal distribution standard; the kurtosis is -0.612, with an absolute value less than 1.5, which also meets the normal distribution standard. Overall, the Human Resources conforms to a normal distribution.

For the Human Resource Capacity, the skewness is -0.464, with an absolute value less than 0.75, meeting the normal distribution standard; the kurtosis is -0.785, with an absolute value less than 1.5, also meeting the normal distribution standard. Therefore, the Human Resource Capacity also conforms to a normal distribution.

In summary, the skewness and kurtosis of the two observed variables of the latent variable "Human Capital" all meet the requirements for a normal distribution, so it can be considered that these data present a normal distribution.

Table 4.14 Basic Statistical Values of Human Capitals

Latent Variable	Observed Variable	Skewness	Kurtosis	Normal Distribution
Human Capital	Human Resources	-0.253	-0.612	Yes
	Human Resource Capacity	-0.464	-0.785	Yes

4.3.6 Basic Statistical Values of Enterprise Performance

From the table 4.15 for the latent variable "Enterprise Performance", the skewness and kurtosis absolute values of the two observed variables are within this range, so it can be

considered that these data meet the requirements for a normal distribution.

Regarding the Financial Performance, its skewness is -0.280, with an absolute value less than 0.75, which meets the normal distribution standard; the kurtosis is -1.028, with an absolute value less than 1.5, which also meets the normal distribution standard. Overall, the Financial Performance conforms to a normal distribution.

For the Non-Financial Performance, the skewness is -0.287, with an absolute value less than 0.75, meeting the normal distribution standard; the kurtosis is -0.990, with an absolute value less than 1.5, also meeting the normal distribution standard. Therefore, the Non-Financial Performance also conforms to a normal distribution.

In summary, the skewness and kurtosis of the two observed variables of the latent variable "Enterprise Performance" all meet the requirements for a normal distribution, so it can be considered that these data present a normal distribution.

Table 4.15 Basic Statistical Values of Enterprise Performance

Latent Variable	Observed Variable	Skewness	Kurtosis	Normal Distribution
Enterprise Performance	Financial Performance	-0.280	-1.028	Yes
	Non-Financial Performance	-0.287	-0.990	Yes

4.3.7 Basic Statistical Values of Enterprise Performance

From the table 4.16 for the latent variable "Environment", the skewness and kurtosis absolute values of the three observed variables are all within this range, so it can be considered that these data meet the requirements for a normal distribution.

Regarding the Dynamics, its skewness is -0.458, with an absolute value less than 0.75, which meets the normal distribution standard; the kurtosis is -0.817, with an absolute value less than 1.5, which also meets the normal distribution standard. Overall, the Dynamics conforms to a normal distribution.

For the Complexity, the skewness is -0.407, with an absolute value less than 0.75, meeting the normal distribution standard; the kurtosis is -0.660, with an absolute value less than 1.5, also meeting the normal distribution standard. Therefore, the Complexity also conforms to a normal distribution.

The Environmental Innovation has a skewness of -0.384, with an absolute value less than 0.75, meeting the normal distribution standard; the kurtosis is -0.895, with an absolute value less than 1.5, also meeting the normal distribution standard. Therefore, the Environmental

Innovation also conforms to a normal distribution.

In summary, the skewness and kurtosis of the three observed variables of the latent variable "Environment" all meet the requirements for a normal distribution, so it can be considered that these data present a normal distribution.

Table 4.16 Basic Statistical Values of Environment

Latent Variable	Observed Variable	Skewness	Kurtosis	Normal Distribution
Environment	Dynamics	-0.458	-0.817	Yes
	Complexity	-0.407	-0.660	Yes
	Environmental Innovation	-0.384	-0.895	Yes

In summary all variables' skewness and kurtosis fall within these ranges, further confirming that the data meets the requirements for a normal distribution. This set of data can, therefore, be considered suitable for Structural Equation Model Analysis (SEM), which is a statistical technique used to analyze relationships among observed and latent variables. SEM analysis typically requires the data to be close to normal to ensure the accuracy and reliability of the analysis results.

In summary, the skewness and kurtosis values for this set of data fall within the normal range, indicating that the distribution can be considered close to a normal distribution. As the data has passed the normality test, these variables are suitable for Structural Equation Model Analysis, allowing for a deeper examination of the complex relationships among these variables.

4.3.8 Reliability Testing of Variables

Reliability testing was conducted to assess the internal consistency of the variables used in the survey. The reliability analysis of the Competitive Strategy (CS) variable was conducted to ensure the internal consistency of the items used to measure this construct. The results are provided in Table 4.17, which presents the Corrected Item-Total Correlation (CITC), Cronbach's Alpha if Item Deleted, and the Cronbach's Alpha for the full set of items related to competitive strategy. The Cronbach's Alpha for the overall Competitive Strategy (CS) construct was calculated as 0.877, which indicates excellent internal consistency. Generally, a Cronbach's Alpha value greater than 0.7 is considered acceptable, and values above 0.9 are considered excellent. This suggests that the measurement items for competitive strategy are highly reliable and consistently measure the same underlying construct. In addition to the overall Cronbach's

Alpha, the Corrected Item-Total Correlation (CITC) values for each item were examined. The CITC values for each item (LCS1, LCS2, LCS3) ranged from 0.590 to 0.647, all of which exceed the acceptable threshold of 0.35. This indicates that each item has a strong correlation with the total score, further supporting the reliability of the competitive strategy scale. Furthermore, the Cronbach's Alpha if Item Deleted values were also analyzed to determine if removing any item would lead to an improvement in the internal consistency of the scale. The results show that deleting any item would result in a slight decrease in Cronbach's Alpha, indicating that all items contribute positively to the reliability of the competitive strategy construct. For instance, deleting LCS1 would lead to a Cronbach's Alpha of 0.861, while deleting LCS2 would lead to a value of 0.864, and deleting LCS3 would result in 0.865. Since the Cronbach's Alpha values do not show any substantial improvement from deleting items, it can be concluded that all items are valuable for measuring the construct and should be retained in the scale. Overall, the reliability analysis confirms that the competitive strategy construct is highly reliable, with all items demonstrating strong internal consistency and contributing positively to the overall reliability of the measurement scale.

The Cronbach's Alpha for the Innovation variable is 0.900, which indicates good internal consistency. According to common standards, a Cronbach's Alpha value of 0.7 or higher is considered acceptable, and values approaching 0.9 are regarded as excellent. This suggests that the measurement items for the innovation construct are reliable and consistently measure the same underlying concept. The CITC values for the items measuring innovation range from 0.570 to 0.665. All of these values exceed the recommended threshold of 0.35, indicating that each item correlates strongly with the total score of the variable, thus reinforcing the reliability of the scale. To evaluate whether removing any item would improve the overall reliability, the Cronbach's Alpha if Item Deleted values were examined. The results show that deleting any of the items would not significantly improve the internal consistency. The Innovation variable demonstrates strong internal consistency, with an overall Cronbach's Alpha of 0.878, which is well above the acceptable threshold of 0.7. The CITC values further indicate that all items are appropriately measuring the innovation construct, and no item needs to be removed to improve reliability.

For Cronbach's Alpha for CGS, the value is 0.884, which is well above the acceptable threshold of 0.7, indicating a high level of internal consistency for this variable. This suggests that the items measuring CGS are consistent and reliably assess the construct. Looking at the Corrected Item-Total Correlation (CITC) for each item, all values are above the standard minimum threshold of 0.35, indicating that each item contributes positively to the overall reliability of the scale. The CITC values range from 0.615 to 0.657, suggesting that each item correlates moderately to strongly with the overall score for CGS. In terms of Cronbach's Alpha

if Item Deleted, it can be observed that none of the items result in a significant increase in the Cronbach's Alpha value when deleted. This suggests that none of the items should be removed, as their presence does not negatively impact the internal consistency of the scale. In conclusion, the Corporate Governance Structure (CGS) variable demonstrates excellent reliability. The items show strong item-total correlations and the Cronbach's Alpha value supports the internal consistency of the scale.

The Capital Structure (CSE) variable is evaluated for reliability based on the Corrected Item-Total Correlation (CITC and Cronbach's Alpha values provided in the table. For Cronbach's Alpha for CSE, the value is 0.884, which is well above the commonly accepted threshold of 0.7, indicating strong internal consistency among the items. This suggests that the items used to measure the Capital Structure construct are highly reliable and cohesive. Corrected Item-Total Correlation (CITC) for each item, all values are above the minimum acceptable threshold of 0.35, indicating that each item is contributing meaningfully to the overall scale. The CITC values range from 0.587 to 0.660, suggesting a solid correlation between the individual items and the total score for CSE. The Cronbach's Alpha if Item Deleted values for each item are also noteworthy. This suggests that none of the items have a detrimental impact on the internal consistency of the scale. In fact, no single item would lead to a significant improvement in the Alpha coefficient, which further confirms that all the items are contributing meaningfully to the measurement of the Capital Structure construct. In conclusion, the Capital Structure (CSE) variable demonstrates excellent reliability. The Cronbach's Alpha value is well above the acceptable threshold, and all individual items have high CITC values, showing that they are strongly related to the overall construct. The Cronbach's Alpha if Item Deleted values indicate that no items should be removed, as they all contribute positively to the internal consistency of the scale.

The Human Capital (HC) variable is assessed for reliability using the Corrected Item-Total Correlation (CITC) and Cronbach's Alpha values provided in the table. The Cronbach's Alpha for the Human Capital variable is 0.863, which is above the commonly accepted threshold of 0.7. This indicates that the items measuring human capital demonstrate strong internal consistency, and the scale is reliable for capturing the human capital construct. All of these values are close to the overall Cronbach's Alpha of 0.863, with the highest being 0.847 if HRC3 were deleted. These values suggest that none of the items have a negative impact on the internal consistency of the scale. Deleting any item would not result in a significant improvement in Cronbach's Alpha, further confirming that all the items are contributing positively to the measurement of the Human Capital construct. The Human Capital (HC) variable demonstrates excellent reliability. The Cronbach's Alpha value of 0.863 is well above the threshold for acceptable internal consistency, and the CITC values for all items are strong, ranging from

0.616 to 0.683. Additionally, the Cronbach's Alpha if Item Deleted values indicate that removing any item would not improve the overall reliability of the scale, suggesting that all items are important and contribute meaningfully to the construct.

The Environment (EN) variable is assessed for reliability using the Corrected Item-Total Correlation (CITC) and Cronbach's Alpha if Item Deleted values provided in the table. The Cronbach's Alpha for the Environment variable is 0.782, which is above the acceptable threshold of 0.7. This indicates that the internal consistency of the Environment scale is good, and the variable is reliably measured. All of these values are close to the overall Cronbach's Alpha of 0.782. The highest Cronbach's Alpha if Item Deleted is 0.772 if EI2 were deleted, and the lowest is 0.754 for DN1, DN2, and DN3. These values suggest that removing any individual item from the scale would not significantly improve the overall reliability. The Cronbach's Alpha is relatively stable, meaning all items are contributing positively to the measurement of the Environment construct. The Environment (EN) variable shows satisfactory reliability with a Cronbach's Alpha of 0.782, indicating good internal consistency. The CITC values for all items are moderate to strong, ranging from 0.397 to 0.521, with most items exceeding the threshold of 0.35, which is the cutoff for acceptable item-total correlations. Additionally, the Cronbach's Alpha if Item Deleted values indicate that no item significantly improves the internal consistency if removed, meaning all items contribute to the overall reliability of the scale. Therefore, the Environment variable is considered reliable for use in the analysis.

The Cronbach's Alpha for the Enterprise Performance (EP) variable is 0.903, which is very high and well above the threshold of 0.7, indicating excellent internal consistency and a reliable measurement of the Enterprise Performance construct. The Cronbach's Alpha if Item Deleted values for the individual items are all very close to the overall Cronbach's Alpha of 0.903, which indicates that the reliability would not be significantly improved by removing any individual items from the scale. In fact, none of the items show a marked improvement in Cronbach's Alpha when deleted, suggesting that each item contributes positively to the internal consistency of the Enterprise Performance variable. The Enterprise Performance (EP) variable shows excellent reliability with a Cronbach's Alpha of 0.903, indicating very high internal consistency. The CITC values for all items are above 0.5, indicating that each item has a moderate-to-strong positive correlation with the total scale and contributes meaningfully to the measurement of Enterprise Performance. Furthermore, the Cronbach's Alpha if Item Deleted values do not show any significant improvement if any item were removed, suggesting that all items are essential and contribute positively to the overall reliability of the scale. Therefore, the Enterprise Performance (EP) variable is considered highly reliable for use in further analysis.

Table 4.17 Reliability Test of Variables

Variable	Item	Corrected Item-Total Correlation (CITC)	Cronbach's Alpha if Item Deleted	Cronbach's Alpha
Competitive strategy	LCS1	0.647	0.861	0.877
	LCS2	0.614	0.864	
	LCS3	0.602	0.865	
	DS1	0.636	0.862	
	DS2	0.590	0.866	
	DS3	0.626	.863	
	HS1	0.633	.863	
	HS2	0.605	.865	
	HS3	0.620	0.864	
Innovation	II1	0.588	0.895	0.900
	II2	0.620	0.892	
	II3	0.646	0.891	
	II4	0.603	0.893	
	BTI1	0.647	0.890	
	BTI2	0.661	0.890	
	BTI3	0.665	0.889	
	FI1	0.570	0.895	
	FI2	0.626	0.892	
	FI3	0.594	0.893	
Corporate governance structure	OZ1	0.657	0.871	0.884
	OZ2	0.626	0.871	
	OZ3	0.632	0.871	
	CT1	0.621	0.872	
	CT2	0.638	0.871	
	CT3	0.657	0.869	
	MG1	0.631	0.871	
	MG2	0.646	0.870	
	MG3	0.615	0.872	

Variable	Item	Corrected Item-Total Correlation (CITC)	Cronbach's Alpha if Item Deleted	Cronbach's Alpha
Capital structure	OS1	0.660	0.869	0.884
	OS2	0.637	0.871	
	OS3	0.634	0.871	
	OPS1	0.630	0.871	
	OPS2	0.625	0.871	
	OPS3	0.587	0.875	
	FII1	0.658	0.869	
	FII2	0.642	0.870	
	FII3	0.628	0.871	
Human capital	HR1	0.683	0.836	0.863
	HR2	0.656	0.841	
	HR3	0.678	0.837	
	HRC1	0.646	0.843	
	HRC2	0.669	0.838	
	HRC3	0.616	0.847	
Environment	DN1	0.519	0.754	0.782
	DN2	0.521	0.754	
	DN3	0.512	0.755	
	CP1	0.421	0.768	
	CP2	0.481	0.760	
	CP3	0.435	0.766	
	EI1	0.486	0.759	
	EI2	0.397	0.772	
	EI3	0.427	0.767	
	FP1	0.704	0.891	0.903
	FP2	0.619	0.895	
	FP3	0.630	0.895	

Variable	Item	Corrected Item-Total Correlation (CITC)	Cronbach's Alpha if Item Deleted	Cronbach's Alpha
Enterprise performance	FP4	0.629	0.895	
	FP5	0.594	0.896	
	FP6	0.722	0.891	
	NFP1	0.596	0.897	
	NFP2	0.642	0.894	
	NFP3	0.588	0.897	
	NFP4	0.596	0.896	
	NFP5	0.587	0.897	
	NFP6	0.622	0.895	

4.4 Correlation Analysis and Discriminant Validity

Table 4.18 presents the correlation analysis and discriminant validity among seven variables: Competitive Strategy (CS), Innovation (IVA), Corporate Governance Structure (CGS), Capital Structure (CSE), Human Capital (HC), Environment (EN), and Enterprise Performance (EP). The diagonal values in the table represent the square root of the Average Variance Extracted (AVE) for each construct, which are critical for assessing convergent validity. The off-diagonal values represent the Pearson correlation coefficients between different variables.

In Table 4.17, the correlation analysis presents the correlation coefficients and statistical significance between various variables. First, the correlation coefficient between Competitive Strategy (CS) and Enterprise Performance (EP) is 0.555 ($p < 0.01$), indicating a significant positive relationship between the two. Next, the correlation coefficient between Innovation (IVA) and Enterprise Performance (EP) is 0.364 ($p < 0.01$), suggesting that innovation activities have a strong positive impact on enterprise performance. The correlation coefficient between Corporate Governance Structure (CGS) and Enterprise Performance (EP) is 0.352 ($p < 0.01$), also indicating that corporate governance plays an important role in enhancing enterprise performance. For Capital Structure (CSE) and Enterprise Performance (EP), the correlation coefficient is 0.463 ($p < 0.01$), suggesting that capital structure significantly influences enterprise performance. The correlation coefficient between Human Capital (HC) and Enterprise Performance (EP) is 0.334 ($p < 0.01$), indicating that human capital plays an important role in driving enterprise performance.

As for the Environmental (EN) variable, its correlation coefficients with other variables

are relatively low, especially with Competitive Strategy (CS) and Innovation (IVA), with coefficients of 0.111 ($p < 0.05$) and -0.011, respectively. This suggests that environmental factors have a weak impact on these variables. The correlation coefficient between Environmental (EN) and Corporate Governance Structure (CGS) is -0.094 ($p < 0.05$), while with Human Capital (HC), it is 0.067. These results suggest that the environment has a mild negative or positive correlation with other variables. This further supports the idea that the environment, as an external factor, may not have a significant impact on these internal variables in the short term, but in the long run, it may influence the execution of business strategies and the ultimate performance of enterprises through its moderating effect.

The correlation coefficient between Innovation (IVA) and Competitive Strategy (CS) is 0.395 ($p < 0.01$), indicating a significant positive relationship between innovation activities and competitive strategy. The correlation coefficient between Corporate Governance Structure (CGS) and Capital Structure (CSE) is 0.306 ($p < 0.01$), suggesting a positive relationship between the two. The correlation coefficient between Human Capital (HC) and Innovation (IVA) is 0.146 ($p < 0.01$), showing that the quality and quantity of human capital have a positive influence on innovation activities.

To assess discriminant validity, it is crucial that the correlation between a construct and any other construct does not exceed a certain threshold. In this case, the correlation matrix shows that the highest correlation is between Innovation (IVA) and Competitive Strategy (CS) at 0.666 ($p<0.01$). Although this is a strong correlation, it is still below the threshold of 0.8, which suggests that the constructs are distinct, yet related. It indicates that while Competitive Strategy and Innovation are closely linked, they are not redundant, and each construct adds unique value to the study.

Further, the average variance extracted (AVE) values, as indicated by the diagonal elements (e.g., 0.712 for Human Capital), suggest that each construct has sufficient variance to be considered distinct. For instance, the AVE values for each variable are all above the commonly recommended threshold of 0.5, which is a strong indicator of discriminant validity. The correlation between Environment (EN) and other variables, such as Innovation (IVA) and Corporate Governance Structure (CGS), is relatively low (e.g., 0.111 for CS-EN and -0.011 for IVA-EN), further supporting the notion that Environment is sufficiently distinct from other variables.

Additionally, the correlations between Environment (EN) and the other constructs (CS, IVA, CGS, CSE, HC) are all relatively low, ranging from -0.011 to 0.167 ($p<0.05$), which is consistent with the expected results for variables that are theoretically distinct from one another. This further supports the validity of the constructs used in the study.

In summary, the table shows adequate discriminant validity as the diagonal AVE values

are greater than the correlations among variables, supporting the distinctiveness of each construct. The correlation analysis reveals several significant relationships, particularly highlighting the positive impacts of competitive strategy, innovation, and capital structure on enterprise performance.

Table 4.18 Correlation Analysis and Discriminant Validity Among Variables

	1	2	3	4	5	6	7
CS	0.666						
IVA	0.395**	0.659					
CGS	0.306**	0.174**	0.681				
CSE	0.461**	0.149**	0.154**	0.679			
HC	0.294**	0.146**	0.135**	0.202**	0.712		
EN	0.111*	-0.011	-0.094*	0.167**	0.067	0.784	
EP	0.555**	0.364**	0.352**	0.463**	0.334**	0.236**	0.662

Note: *p<0.05, **p<0.01, ***p<0.001; Competitive strategy (CS), innovation (IVA), Corporate governance structure (CGS), Capital structure (CSE), Human capital (HC), Environment (EN), Enterprise performance (EP).

4.5 The Kaiser-Meyer-Olkin (KMO)

The validity test will evaluate how well the constructs are measured (Hair et al., 2012). According to Chin (1998), the validity test of latent variables needs to be performed to prove that the constructs are measured in what they are supposed to measure and do not measure what they should not measure, the author performed the validity check for all instruments.

The suitability of the collected data for factor analysis is determined through the KMO (Kaiser-Meyer-Olkin) test and Bartlett's Test of Sphericity. The KMO test is used to measure the proportion of variance among the variables that might be common variance, indicating their overall correlation. A value closer to 1 suggests strong correlation among the variables, indicating that factor analysis would be effective. Bartlett's Test of Sphericity tests whether the collected data comes from a multivariate normal distribution. A p-value indicating significance with a chi-square value of less than 0.05, along with a KMO test coefficient greater than 0.7, suggest that the questionnaire has structural validity, is reasonably designed, and yields effective feedback, allowing for factor analysis.

Using SPSS software, the KMO and Bartlett's Test of Sphericity were applied to this questionnaire. The overall KMO for the scale was 0.887, which is greater than 0.7. The Bartlett test showed significant results, indicating that the sample data is suitable for further factor

analysis.

Table 4.19 KMO and Bartlett Test

KMO and Bartlett Test		
KMO Value		0.887
Bartlett's test of sphericity	Approximate chi-square	53805.138
	df	2145
	p value	0.000

4.6 Confirmatory Factor Analysis

4.6.1 CFA of Competitive Strategy

Confirmatory Factor Analysis (CFA) can be used to study convergent validity, discriminant validity, and common method variance (CMV), among other aspects. This analysis involves a three-factor structure with a total of nine measurement items (second-order). The effective sample size for this analysis is 506, which is more than ten times the number of measurement items, indicating an adequate sample size.

Regarding the validation of Competitive Strategy, the Competitive Strategy variable includes nine measurement items (factors). To determine whether the structural equation model is valid, various fit indices are used for assessment. As illustrated, the standardized factor loadings for all nine measurement items are greater than 0.50. Generally, CMIN/DF should be less than 3, GFI is the Goodness-of-Fit Index, AGFI is the Adjusted Goodness-of-Fit Index, NFI is the Normed Fit Index, TLI is the Tucker-Lewis Index, and CFI is the Comparative Fit Index. These indices should generally be greater than 0.9 to indicate a well-fitted model, though values above 0.8 are considered acceptable. RMSEA should be less than 0.08, suggesting a good fit and an acceptable model. The table shows that the fit of this Emotional Intelligence scale is relatively good.

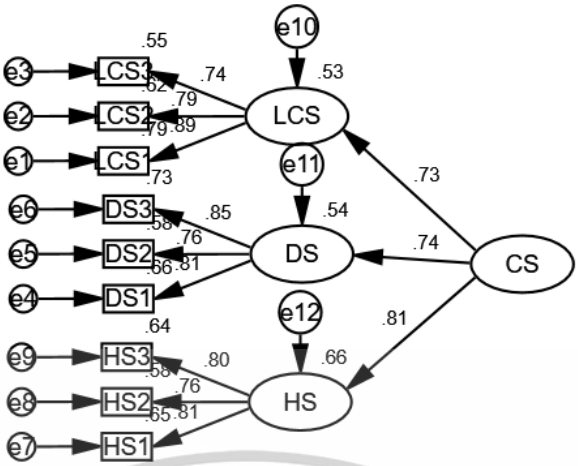


Figure 4.1 CFA of Competitive Strategy

Table 4.20 Indicators of Competitive Strategy

Indices	Criteria	Statistics Values
$\chi 2/df$	<3	2.864
GFI	>0.8	0.970
AGFI	>0.8	0.982
CFI	>0.9	0.980
RMSEA	＜0.08	0.061
NFI	>0.9	0.970
IFI	＞0.9	0.980

The table 4.21 presents the Average Variance Extracted (AVE) and Composite Reliability (CR) values for the Competitive Strategy construct, consisting of three dimensions: Low Cost Strategy, Differentiation Strategy, and Hybrid Strategy. Composite Reliability (CR) assesses the internal consistency within a latent variable, reflecting whether all observed variables in a construct consistently explain the same underlying concept. A CR value above 0.7 is generally considered acceptable, indicating that the observed variables effectively explain the latent variable.

In this table, the CR values for all three dimensions exceed 0.7, indicating a high level of internal consistency. Specifically, the CR for Low Cost Strategy is 0.849, for Differentiation Strategy is 0.852, and for Hybrid Strategy is 0.832. These values suggest that each of these dimensions demonstrates consistent internal quality, confirming that the observed variables reliably measure the latent variables they represent.

The Average Variance Extracted (AVE) measures the convergent validity of a construct, showing the proportion of variance explained by the latent variable compared to measurement error. An AVE value above 0.5 is generally considered indicative of acceptable convergent validity, indicating that the latent variable captures more signal than noise.

In this case, the AVE values for all three dimensions are above 0.5, which indicates a satisfactory level of convergent validity. The AVE for Low Cost Strategy is 0.654, for Differentiation Strategy is 0.658, and for Hybrid Strategy is 0.623. These values demonstrate that a significant proportion of variance is explained by the respective latent variables, with less influence from measurement error.

In summary, the high CR values indicate that the observed variables consistently represent their respective latent variables, suggesting good internal consistency. The AVE values greater than 0.5 point to a high level of convergent validity, indicating that a substantial proportion of variance is explained by the latent variable, with measurement error playing a lesser role. Overall, these results suggest that the Competitive Strategy construct has strong internal consistency and convergent validity, making it suitable for further analysis.

Table 4.21AVE and CR Value of Competitive Strategy

Dimensions	AVE	CR
Low cost strategy	0.654	0.849
Differentiation strategy	0.658	0.852
Hybrid strategy	0.623	0.832

4.6.2 CFA of Innovation

Confirmatory Factor Analysis (CFA) can be used for studying convergent validity, discriminant validity, common method variance (CMV), among other aspects. For Innovation, CFA was performed with a three-factor structure and 10 measurement items (second-order analysis).

Regarding the evaluation of Innovation, this variable includes 10 measurement items (factors). To determine whether the structural equation model is valid, various fit indices are calculated for assessment. As shown in the diagram, the standardized factor loadings for all 10 measurement items are greater than 0.50. Typically, CMIN/DF should be less than 3; GFI is the Goodness-of-Fit Index; AGFI is the Adjusted Goodness-of-Fit Index; NFI is the Normed Fit Index; TLI is the Tucker-Lewis Index; and CFI is the Comparative Fit Index. Generally, these indices should be greater than 0.9 to indicate a well-fitted model, but values over 0.8 are considered acceptable. RMSEA should be less than 0.08, indicating good fit and a well-constructed model. The table shows that the fit of the Innovation variable in this study is quite good.

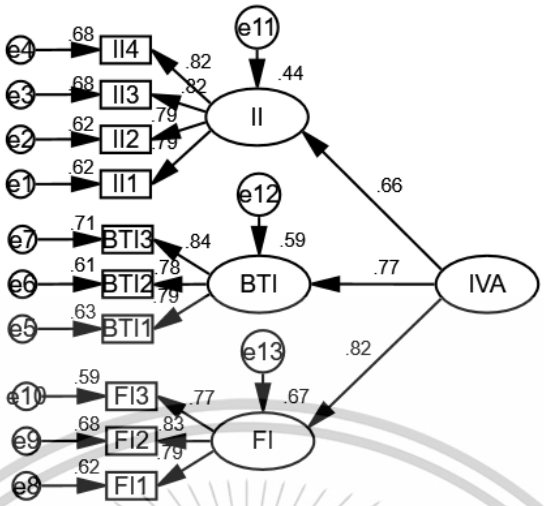


Figure 4.2 CFA of Innovation

Table 4.22 Indicators of Innovation

Indices	Criteria	Statistics Values
$\chi 2/df$	<3	2.419
GFI	>0.8	0.973
AGFI	>0.8	0.953
CFI	>0.9	0.983
RMSEA	＜0.08	0.053
NFI	>0.9	0.971
IFI	＞0.9	0.983

The Average Variance Extracted (AVE) and Composite Reliability (CR) values in Table 4.23 provide an assessment of the validity and reliability of the three dimensions of "Innovation": Incremental Innovation, Breakthrough Innovation, and Flexible Innovation.

The AVE value indicates the proportion of variance explained by a construct in relation to the total variance. An AVE value above 0.5 typically indicates strong convergent validity, suggesting that the construct captures more than half of the variance in its indicators. Incremental Innovation has an AVE value of 0.654, indicating a high level of convergent validity, as it exceeds the 0.5 threshold. This suggests that Incremental Innovation successfully captures the variance in its indicators. Breakthrough Innovation shows an AVE value of 0.658, confirming that this dimension also demonstrates strong convergent validity. Flexible Innovation has an AVE value of 0.623, which, like the other dimensions, surpasses the 0.5

benchmark, indicating it is a valid measure of the construct.

Composite Reliability (CR) assesses the internal consistency among the indicators measuring a construct. A CR value above 0.7 is generally considered acceptable, indicating reliable consistency among the indicators. Incremental Innovation has a CR value of 0.849, suggesting that the indicators for this dimension are consistent, reflecting a high level of internal reliability. Breakthrough Innovation has a CR value of 0.852, demonstrating a similarly high level of internal consistency among its indicators. Flexible Innovation shows a CR value of 0.832, indicating that the indicators for this dimension are also reliably measuring the construct. These CR values indicate that each dimension of Innovation has a high level of internal consistency, confirming the reliability of these constructs.

Table 4.23 AVE and CR Value of Innovation

Dimensions	AVE	CR
Incremental innovation	0.654	0.849
Breakthrough innovation	0.658	0.852
Flexible innovation	0.623	0.832

4.6.3 CFA of Corporate governance structure

Confirmatory Factor Analysis (CFA) can be used to study convergent validity, discriminant validity, common method variance (CMV), among other aspects. For the Corporate Governance Structure, CFA was performed with three factors and nine measurement items.

Regarding the evaluation of the Corporate Governance Structure, this variable contains nine measurement items (factors). To determine whether the structural equation model is valid, several fit indices are calculated for assessment. As shown in the figure, the standardized factor loadings for all nine measurement items are above 0.50. Generally, CMIN/DF should be less than 3; GFI is the Goodness-of-Fit Index; AGFI is the Adjusted Goodness-of-Fit Index; NFI is the Normed Fit Index; TLI is the Tucker-Lewis Index; and CFI is the Comparative Fit Index. Typically, these values should be above 0.9 to indicate a well-fitted model, though values over 0.8 are considered acceptable. RMSEA should be below 0.08, indicating a good level of fit, thus suggesting an adequately structured model. The table shows that the fit for the Corporate Governance Structure variable in this study is quite good.

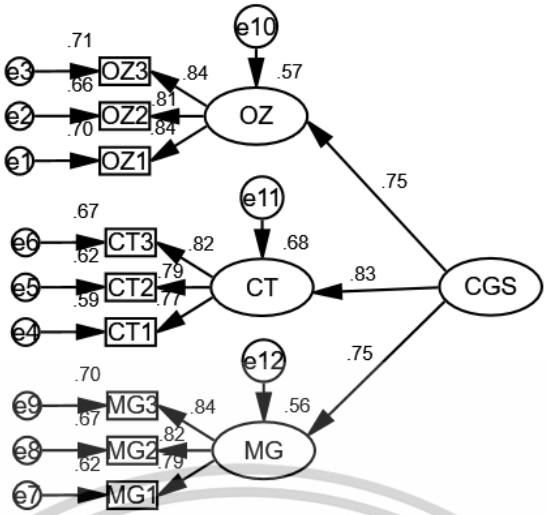


Figure 4.3 CFA of Corporate governance structure

Table 4.24 Indicators of Corporate governance structure

Indices	Criteria	Statistics Values
$\chi 2/df$	<3	2.427
GFI	>0.8	0.966
AGFI	>0.8	0.937
CFI	>0.9	0.976
RMSEA	＜0.08	0.069
NFI	>0.9	0.967
IFI	＞0.9	0.976

Table 4.25 displays the Average Variance Extracted (AVE) and Composite Reliability (CR) values for the Governance Structure construct, which includes three dimensions: Organizational Structure, Control Structure, and Management Structure. These metrics are vital for assessing the internal consistency and convergent validity of constructs in structural equation modeling (SEM).

Composite Reliability (CR) gauges the internal consistency of a latent variable, measuring whether observed variables consistently represent the same underlying concept. CR values greater than 0.7 are generally seen as indicating strong internal consistency. In this table, the CR values for all three dimensions surpass this threshold: Organizational Structure has a CR of 0.871, Control Structure has a CR of 0.834, and Management Structure has a CR of 0.856. These high CR values suggest that the observed variables within each dimension are

consistently measuring their respective latent variables.

Average Variance Extracted (AVE) measures the proportion of variance captured by a latent variable relative to measurement error. An AVE value above 0.5 is generally considered acceptable, indicating that the latent variable captures a significant portion of the total variance. In Table 4.24, the AVE values for the three dimensions meet or exceed this standard: Organizational Structure has an AVE of 0.692, Control Structure has an AVE of 0.625, and Management Structure has an AVE of 0.665. These AVE values suggest that the constructs explain a substantial proportion of variance, indicating good convergent validity.

In summary, the high CR values across the three dimensions reflect strong internal consistency, while the AVE values above 0.5 indicate good convergent validity. These findings suggest that the Governance Structure construct is both reliable and valid, making it suitable for further analysis using structural equation modeling.

Table 4.25 AVE and CR Value of Corporate governance structure

Dimensions	AVE	CR
Organizational structure	0.692	0.871
Control structure	0.625	0.834
Management structure	0.665	0.856

4.6.4 CFA of Capital structure of Enterprises

Confirmatory Factor Analysis (CFA) can be used to study convergent validity, discriminant validity, common method variance (CMV), among other aspects. For Capital Structure, CFA was conducted with three factors and nine measurement items.

Regarding the evaluation of the governance structure, the Innovation variable contains nine measurement items (factors). To determine whether the structural equation model is valid, various fit indices are calculated for assessment. As shown in the figure, the standardized factor loadings for all nine measurement items are above 0.50. Generally, CMIN/DF should be less than 3; GFI is the Goodness-of-Fit Index; AGFI is the Adjusted Goodness-of-Fit Index; NFI is the Normed Fit Index; TLI is the Tucker-Lewis Index; and CFI is the Comparative Fit Index. Typically, these indices should be greater than 0.9 to indicate a good model fit, though values over 0.8 are considered acceptable. RMSEA should be less than 0.08, indicating a good level of fit, thereby suggesting a well-structured model. According to the table, the fit for the governance structure variable in this study is quite good.

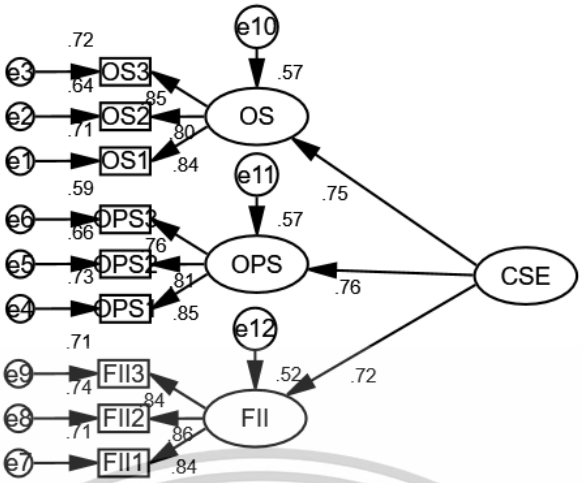


Figure 4.4 CFA of Capital structure

Table 4.26 Indicators of Capital structure

Indices	Criteria	Statistics Values
$\chi 2/df$	<3	2.989
GFI	>0.8	0.969
AGFI	>0.8	0.943
CFI	>0.9	0.982
RMSEA	＜0.08	0.063
NFI	＜0.9	0.973
IFI	＞0.9	0.982

Table 4.27 presents the Average Variance Extracted (AVE) and Composite Reliability (CR) values for the Capital Structure construct, which consists of three dimensions: Ownership Structure, Operating Structure, and Financial Indicators. These metrics are crucial for assessing the internal consistency and convergent validity of constructs in structural equation modeling (SEM).

Composite Reliability (CR) is a measure of the internal consistency of a latent variable, indicating whether the observed variables consistently represent the same underlying concept. CR values above 0.7 are generally considered indicative of strong internal consistency. In this table, all three dimensions have CR values greater than 0.7, suggesting a high level of internal consistency. Specifically, Ownership Structure has a CR of 0.870, Operating Structure has a CR of 0.851, and Financial Indicators has a CR of 0.886. These high CR values suggest that

the observed variables within each of these dimensions are consistent in representing their respective latent variables.

Average Variance Extracted (AVE) is used to measure the proportion of variance captured by a latent variable compared to measurement error. An AVE value greater than 0.5 typically indicates good convergent validity, showing that the latent variable explains a significant portion of the variance, with less impact from measurement error. In Table 4.25, all three dimensions have AVE values greater than 0.5, indicating strong convergent validity. Specifically, Ownership Structure has an AVE of 0.691, Operating Structure has an AVE of 0.657, and Financial Indicators has an AVE of 0.721. These high AVE values suggest that the constructs effectively capture a substantial portion of the variance, reflecting robust convergent validity.

In summary, the high CR values across all three dimensions of the Capital Structure construct indicate strong internal consistency, suggesting that the observed variables reliably measure their respective latent variables. The AVE values above 0.5 confirm good convergent validity, indicating that these constructs capture more signal than noise. Overall, these results demonstrate that the Capital Structure construct has strong reliability and validity, making it suitable for further analysis in structural equation modeling.

Table 4.27 AVE and CR Value of Capital structure

Dimensions	AVE	CR
Ownership structure	0.691	0.870
Operating structure	0.657	0.851
Financial indicators	0.721	0.886

4.6.5 CFA of Human Capital

Confirmatory Factor Analysis (CFA) can be used to study convergent validity, discriminant validity, and common method variance (CMV), among other aspects. For Human Capital, CFA was conducted with two factors and six measurement items.

Regarding the evaluation of Human Capital, this variable contains six measurement items (factors). To determine whether the structural equation model is valid, various fit indices are calculated for assessment. As shown in the diagram, the standardized factor loadings for all six measurement items are above 0.50. Generally, CMIN/DF should be less than 3; GFI is the Goodness-of-Fit Index; AGFI is the Adjusted Goodness-of-Fit Index; NFI is the Normed Fit Index; TLI is the Tucker-Lewis Index; and CFI is the Comparative Fit Index. Typically, these indices should be greater than 0.9 to indicate a well-fitted model, although values over 0.8 are

considered acceptable. RMSEA should be less than 0.08, indicating a good level of fit and suggesting a well-constructed model. According to the table, the fit for the Human Capital variable in this study is quite good.

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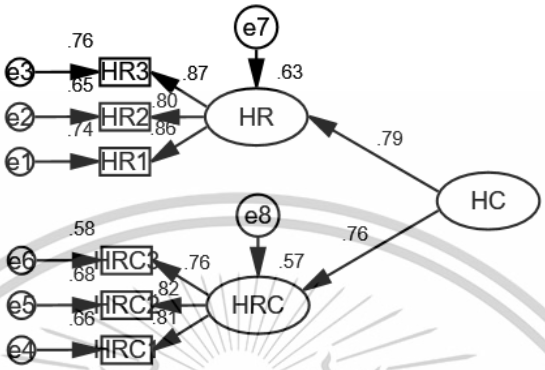


Figure 4.5 CFA of Human capital

Table 4.28 Indicators of Human capital

Indices	Criteria	Statistics Values
$\chi 2/df$	<3	2.299
GFI	>0.8	0.983
AGFI	>0.8	0.956
CFI	>0.9	0.989
RMSEA	＜0.08	0.067
NFI	>0.9	0.984
IFI	＞0.9	0.989

Table 4.29 presents the Average Variance Extracted (AVE) and Composite Reliability (CR) values for the Human Capital construct, which consists of two dimensions: Human Resources and Level of Human Resource Capacity. These metrics are important in evaluating the internal consistency and convergent validity of measurement constructs in structural equation modeling (SEM).

Composite Reliability (CR) assesses the internal consistency of a latent variable, indicating whether the observed variables consistently represent the same underlying concept. A CR value above 0.7 is generally considered indicative of strong internal consistency. In this table, both dimensions have CR values exceeding this threshold, suggesting high internal

consistency. Specifically, the CR for Human Resources is 0.884, while for Level of Human Resource Capacity, it is 0.842. These high CR values indicate that the observed variables in each dimension are consistent in representing their respective latent variables.

Average Variance Extracted (AVE) measures the proportion of variance captured by a latent variable relative to measurement error. An AVE value above 0.5 typically indicates good convergent validity, showing that the latent variable explains a significant portion of the variance, with less noise from measurement error. In Table 4.27, both dimensions have AVE values greater than 0.5, reflecting strong convergent validity. Specifically, the AVE for Human Resources is 0.717, while for Level of Human Resource Capacity, it is 0.640. These values suggest that the constructs effectively capture a substantial portion of variance, indicating a low level of measurement error and demonstrating robust convergent validity.

In summary, the CR values for both Human Resources and Level of Human Resource Capacity are well above 0.7, indicating strong internal consistency. The AVE values above 0.5 confirm good convergent validity, suggesting that these constructs adequately capture the variance associated with their respective latent variables. Overall, the results from Table 4.27 demonstrate that the Human Capital construct has strong reliability and validity, making it suitable for further analysis in structural equation modeling.

Table 4.29 AVE and CR Value of Human capital

Dimensions	AVE	CR
Human resources	0.717	0.884
Human resource capacity	0.640	0.842

4.6.6 CFA of Environment

Confirmatory Factor Analysis (CFA) can be used to study convergent validity, discriminant validity, and common method variance (CMV), among other aspects. For the Environment variable, CFA was conducted with three factors and nine measurement items.

Regarding the evaluation of the Environment variable, it contains nine measurement items (factors). To determine whether the structural equation model is valid, various fit indices are calculated for assessment. As shown in the diagram, the standardized factor loadings for all nine measurement items are above 0.50. Generally, CMIN/DF should be less than 3; GFI is the Goodness-of-Fit Index; AGFI is the Adjusted Goodness-of-Fit Index; NFI is the Normed Fit Index; TLI is the Tucker-Lewis Index; and CFI is the Comparative Fit Index. Typically, these indices should be above 0.9 to indicate a good model fit, although values above 0.8 are considered acceptable. RMSEA should be below 0.08, indicating a good level of fit, thus suggesting a well-structured model. According to the table, the fit for the Environment variable

in this study is quite good.

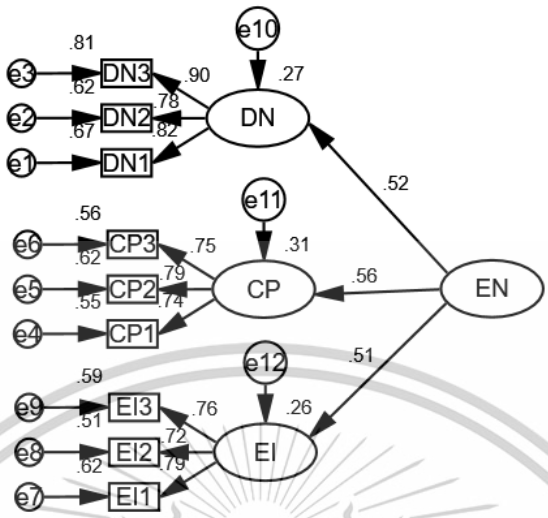


Figure 4.6 CFA of Environment

Table 4.30 Indicators of Environment

Indices	Criteria	Statistics Values
$\chi 2/df$	<3	2.989
GFI	>0.8	0.969
AGFI	>0.8	0.943
CFI	>0.9	0.982
RMSEA	＜0.08	0.063
NFI	>0.9	0.973
IFI	＞0.9	0.982

Table 4.31 displays the Average Variance Extracted (AVE) and Composite Reliability (CR) values for the Environment construct, consisting of three dimensions: Dynamics, Complexity, and Environmental Innovation. These metrics are key indicators of the internal consistency and convergent validity of measurement constructs in structural equation modeling (SEM).

Composite Reliability (CR) assesses the internal consistency of a latent variable, indicating whether the observed variables within a dimension consistently represent the same underlying concept. A CR value greater than 0.7 generally indicates strong internal consistency. In this table, all three dimensions meet this criterion, suggesting a high level of internal consistency. Specifically:

Dynamics has a CR of 0.873, Complexity has a CR of 0.804, and Environmental Innovation has a CR of 0.802.

These high CR values suggest that the observed variables within each of these dimensions are consistent in representing their respective latent variables.

Average Variance Extracted (AVE) measures the proportion of variance captured by a latent variable compared to measurement error. An AVE value greater than 0.5 is considered indicative of good convergent validity, suggesting that the latent variable explains a significant proportion of the variance, with minimal measurement error. In Table 4.31, the AVE values for all three dimensions are above 0.5: Dynamics has an AVE of 0.697, Complexity has an AVE of 0.578, and Environmental Innovation has an AVE of 0.574. These values indicate that a substantial portion of the variance is captured by the latent variables, suggesting a strong convergent validity.

In summary, the CR values for all three dimensions of Environment are above 0.7, indicating a strong internal consistency, while the AVE values above 0.5 suggest good convergent validity. These results imply that the Dynamics, Complexity, and Environmental Innovation dimensions are reliable and valid, making the Environment construct suitable for further analysis in structural equation modeling.

Table 4.31 AVE and CR Value of Environment

Dimensions	AVE	CR
Dynamics	0.697	0.873
Complexity	0.578	0.804
Environmental innovation	0.574	0.802

4.6.7 CFA of Enterprise performance

Confirmatory Factor Analysis (CFA) can be used to study convergent validity, discriminant validity, and common method variance (CMV), among other aspects. For Enterprise Performance, CFA was conducted with two factors and 12 measurement items.

Regarding the evaluation of Enterprise Performance, this variable contains 12 measurement items. To determine whether the structural equation model is valid, various fit indices are calculated for assessment. As shown in the diagram, the standardized factor loadings for all 12 measurement items are greater than 0.50. Generally, CMIN/DF should be less than 3; GFI is the Goodness-of-Fit Index; AGFI is the Adjusted Goodness-of-Fit Index; NFI is the Normed Fit Index; TLI is the Tucker-Lewis Index; and CFI is the Comparative Fit Index. Typically, these indices should be greater than 0.9 to indicate a well-fitted model, though values

over 0.8 are considered acceptable. RMSEA should be less than 0.08, indicating a good level of fit, suggesting a well-constructed model. According to the table, the fit for the Enterprise Performance variable in this study is quite good.

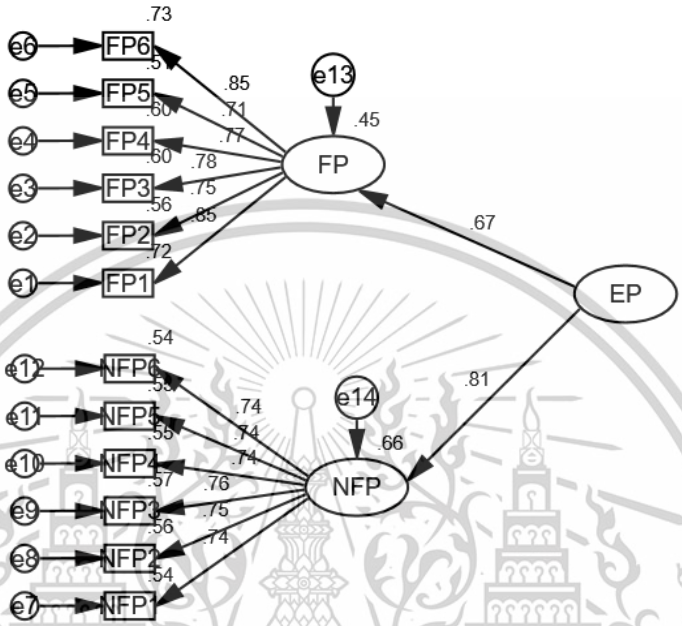


Figure 4.7 CFA of Enterprise performance

Table 4.32 Indicators of Enterprise performance

Indices	Criteria	Statistics Values
χ2/df	<3	2.451
GFI	>0.8	0.958
AGFI	>0.8	0.939
CFI	>0.9	0.977
RMSEA	＜0.08	0.054
NFI	>0.9	0.962
IFI	＞0.9	0.977

Table 4.33 displays the Average Variance Extracted (AVE) and Composite Reliability (CR) values for the Enterprise Performance construct, which consists of two dimensions: Finance Performance and Non-financial Performance. Composite Reliability measures the internal consistency of a latent variable, indicating whether observed variables are consistently

measuring the same underlying concept. An acceptable threshold for CR is generally above 0.7, suggesting that the observed variables reliably represent their respective latent variables. In this case, Finance Performance has a CR of 0.907, while Non-financial Performance has a CR of 0.881. These values suggest a strong internal consistency, indicating that these dimensions are reliable.

Average Variance Extracted assesses the proportion of variance captured by a latent variable compared to measurement error. An AVE value greater than 0.5 generally indicates good convergent validity, suggesting that a significant portion of variance is explained by the latent variable, rather than by measurement errors. The AVE for Finance Performance is 0.620, and for Non-financial Performance, it is 0.552. These values suggest that these constructs capture a substantial proportion of variance, indicating good convergent validity.

Overall, the high CR values suggest that the observed variables within these dimensions consistently represent their latent variables, while the AVE values above 0.5 confirm a significant level of convergent validity. This implies that the Enterprise Performance construct has strong reliability and validity, making it suitable for further analysis in structural equation modeling.

Table 4.33 AVE and CR Value of Enterprise performance

Dimensions	AVE	CR
Finance Performance	0.620	0.907
Non-financial Performance	0.552	0.881

According to this study, the CFA has six variable: Competitive strategy (CS), innovation (IVA), Corporate governance structure (CGS), Capital structure (CSE), Human capital (HC), Dynamics (DN), Complexity (CP), Enterprise performance (EP). As shown in Figure 4.8, the nine dimensions represented six latent variables in the initial model. This indicates that the initial model does not fit the empirical data well. As a result, the modification indices provided by AMOS were used as a guideline for model improvement.

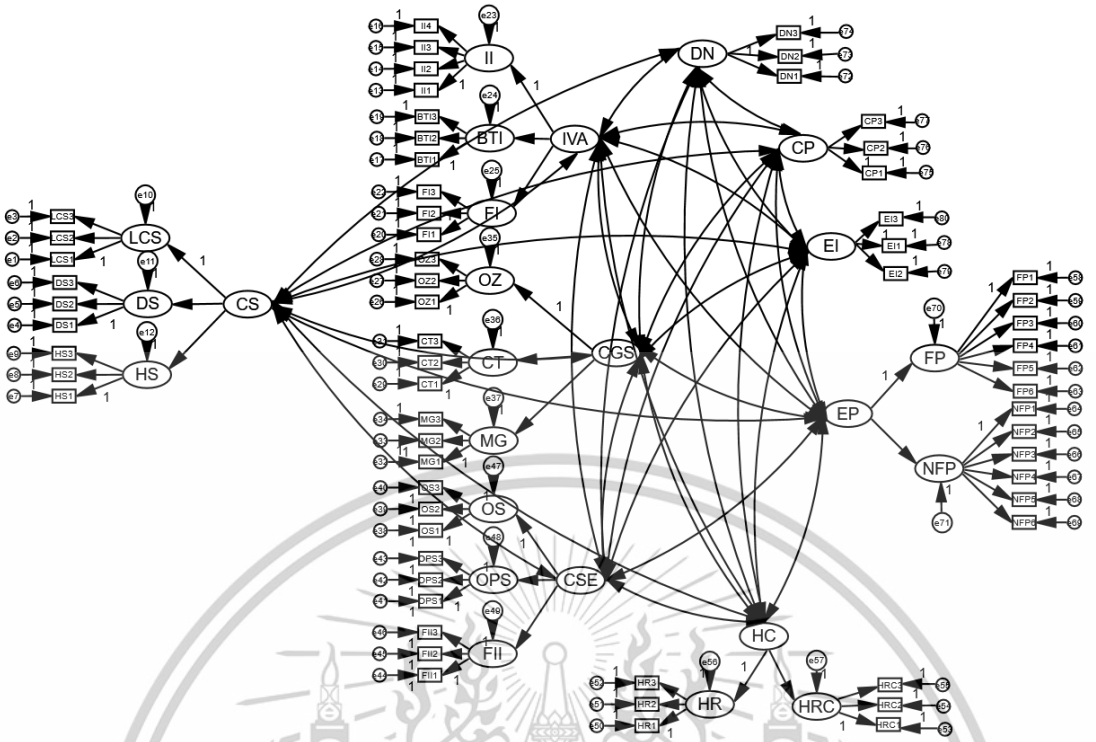


Figure 4.8 Measurement Model of Factors Competitive strategy to Enterprise performance

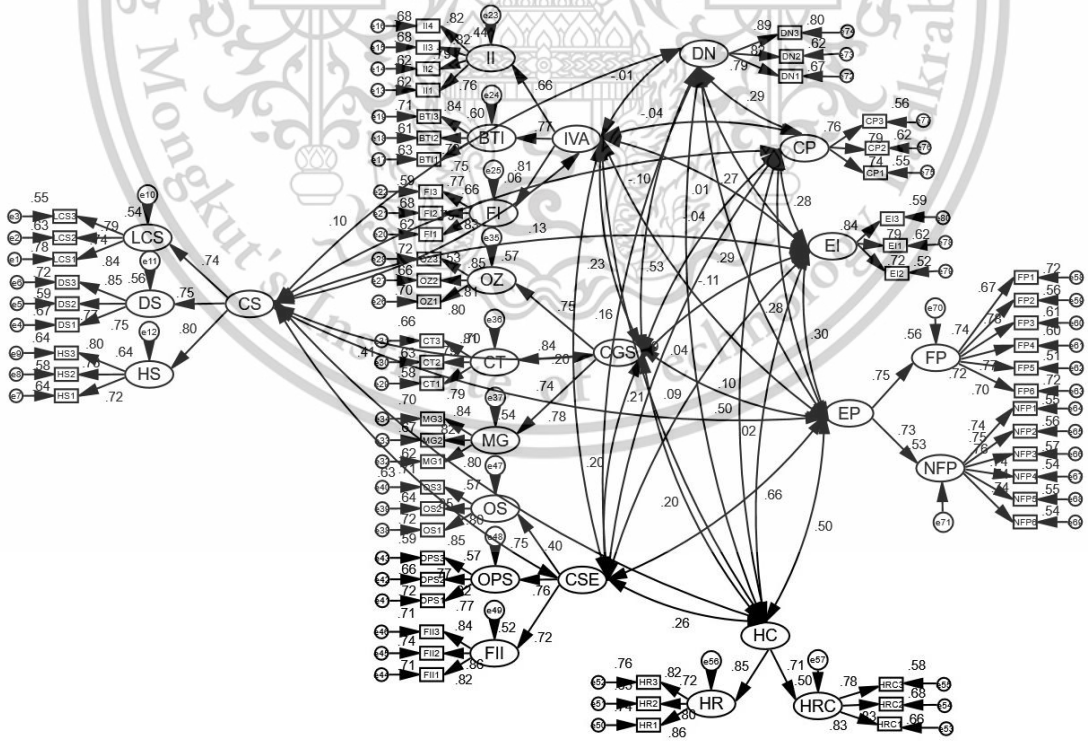


Figure 4.9 Analysis Results Measurement Model Factors of Competitive strategy to Enterprise performance

According to Table 4.34, the CFA result in terms of the Overall Model Fit Measure (after adjusting the model) shows that the χ2/df (chi-square/degree of freedom ratio) is 1.264, which is less than 3, indicating that the overall model fit is good.The GFI (Goodness-of-Fit Index) is 0.889, which is greater than 0.8, suggesting that the overall model fit is good.The AGFI (Adjusted Goodness-of-Fit Index) is 0.879, which is greater than 0.8, indicating that the model fit is good.The CFI (Comparative Fit Index) is 0.976, which is greater than 0.9, suggesting that the model fit is relatively high.The RMSEA (Root Mean Square Error of Approximation) is 0.023, which is less than 0.08, indicating that the model fit is relatively high.The NFI (Normed Fit Index) is 0.896, which is greater than 0.8, suggesting that the model fit is good.The IFI (Incremental Fit Index) is 0.976, which is greater than 0.9, indicating that the model fit is relatively high.

Taken together, these fit indices all meet the reference standards, suggesting that the overall fit of this model is very good. This means that the model can well explain the data, and it has good validity and reliability. This is very beneficial for subsequent theoretical verification and practical application.

Table 4.34 Fit Indices for SEM

Indices	Criteria	Statistics Values
χ2/df	<3	1.264
GFI	>0.8	0.889
AGFI	>0.8	0.879
CFI	>0.9	0.976
RMSEA	＜0.08	0.023
NFI	>0.9	0.962
IFI	＞0.9	0.876

Table 4.35 CFA Factor Loading

		Items	Factor Loadings
Competitive Strategy	LCS1	Our enterprise believes that cost control is a pivotal direction for market expansion.	0.836
	LCS2	Our enterprise believes that striving to achieve the best value is essential amidst competition.	0.745

		Items	Factor Loadings
	LCS3	Our enterprise believes that achieving the best value is key to market expansion.	0.793
	DS1	Our enterprise views differentiation as crucial across product, price, channel, and promotional mechanisms.	0.747
	DS2	Our enterprise views the development of new products and targeting market segments willing to pay premium prices as essential for differentiation.	0.766
	DS3	Our enterprise views product branding, advertising, research and development, innovation, marketing techniques, and control over distribution channels as key elements of differentiation.	0.847
	HS1	Our enterprise aims to boost its competitiveness through a combination of strategies.	0.716
	HS2	Our enterprise aims to enhance its competitiveness by integrating various strategic approaches.	0.762
	HS3	Our enterprise aims to strengthen its competitiveness by incorporating comprehensive evaluations of external market impacts into decision-making processes.	0.802
Innovation	II1	The enterprise I work for focuses on the gradual enhancement of product design and structure.	0.763
	II2	The enterprise I work for excels at adopting and refining existing technologies.	0.789
	II3	The enterprise I work for consistently improves upon existing process technologies.	0.824
	II4	The enterprise I work for values continuous technological exploration based on market demands.	0.822
	BTI1	The enterprise I work for adopts new methods for the business and market, consistently integrating new technologies during the innovation process.	0.750
	BTI2	The enterprise I work for emphasizes thorough product evaluations.	0.795
	BTI3	The enterprise I work for concentrates on redefining products and services.	0.842

		Items	Factor Loadings
	FI1	The enterprise I work for adjusts product design in response to new insights or market demands, aiming for significant advancements.	0.827
	FI2	The enterprise I work for focuses on innovations with clear market impact or those that cater to emerging market needs, emphasizing practicality and actionability to drive sustainable growth.	0.794
	FI3	The enterprise I work for emphasizes innovations with a clear potential for positive market impact or those that cater to emerging market needs.	0.798
Corporate governance structure	OZ1	In the enterprise I work for, there's a clear division of labor and hierarchical levels that facilitate efficient operations.	0.798
	OZ2	In the enterprise I work for, reporting relationships are clearly defined, ensuring smooth communication and accountability.	0.814
	OZ3	In the enterprise I work for, roles and responsibilities are clearly defined, promoting effective coordination and minimizing overlap or confusion in tasks and projects.	0.847
	CT1	The enterprise I work for ensures effective coordination between various departments to achieve organizational goals.	0.788
	CT2	In the enterprise I work for, there's a robust system for employee supervision and monitoring to ensure adherence to organizational standards.	0.794
	CT3	The enterprise I work for uses well-defined performance metrics and regular reviews to maintain control and ensure that employees meet organizational expectations and goals.	0.814
	MG1	In the enterprise I work for, there's a robust system for employee supervision and monitoring to ensure adherence to organizational standards.	0.804
	MG2	In the enterprise I work for, there's a culture of empowerment and delegation, allowing departments to operate with autonomy while aligning with the company's vision.	0.820

		Items	Factor Loadings
	MG3	In the enterprise I work for, management maintains open communication and collaborates across departments to ensure cohesive decision-making and effective execution of strategic plans.	0.838
Capital structure	OS1	In the enterprise I work for, equity is distributed in a manner that aligns with our strategic goals and objectives.	0.795
	OS2	The rights of shareholders in my enterprise are clearly defined and protected.	0.847
	OS3	The enterprise I work for has a transparent governance structure that involves key stakeholders in decision-making processes, ensuring their interests are represented and considered.	0.845
	OPS1	The enterprise I work for effectively manages its operating costs, ensuring profitability and sustainability.	0.771
	OPS2	Our enterprise consistently achieves high operational efficiency, optimizing our resources and processes.	0.815
	OPS3	The enterprise I work for maintains flexibility in its operations, allowing it to adapt to changes in the market or industry trends while still achieving high efficiency and managing costs effectively.	0.766
	FII1	Our enterprise maintains a strong solvency position, ensuring we can meet our long-term obligations.	0.821
	FII2	The profitability metrics of the enterprise I work for consistently meet or exceed our industry benchmarks.	0.862
	FII3	The enterprise I work for effectively manages its liquidity and cash flow, ensuring that there is sufficient funding to meet short-term obligations and support ongoing operations.	0.843
Human capital	HR1	In the enterprise I work for, the number of personnel aligns well with our operational and strategic needs.	0.860

		Items	Factor Loadings
	HR2	I am satisfied with the overall quality and competence of the personnel in our enterprise.	0.805
	HR3	The structure and distribution of personnel roles in our enterprise effectively support our business objectives.	0.823
	HRC1	From a capacity perspective, the number of personnel in our enterprise is adequate to handle our operational demands.	0.831
	HRC2	The quality of our personnel, in terms of their professionalism and dedication, meets our enterprise's expectations.	0.826
	HRC3	I am satisfied with the skill set and abilities of our personnel, which align with our enterprise's goals.	0.779
Environment	DN1	In the enterprise I work for, we rapidly adapt to the dynamic shifts in the market.	0.793
	DN2	Our enterprise is proactive in responding to emerging industry trends and dynamics.	0.820
	DN3	We actively engage with stakeholders to understand the dynamic changes in our business environment.	0.894
	CP1	We have a clear understanding of the complexities within our internal organizational environment.	0.743
	CP2	Our enterprise demonstrates agility in adapting to shifts in both internal organizational dynamics and external market conditions, effectively responding to new challenges and complexities as they arise.	0.790
	CP3	Our enterprise effectively navigates the complexities and challenges of the external market.	0.760
	EI1	We consistently innovate in response to changes within our internal environment.	0.718
	EI2	Our enterprise incorporates sustainability and eco-friendliness into its innovation practices, striving to create products or processes that positively impact the environment while addressing internal and external changes.	0.786
	EI3	Our enterprise is innovative in adapting to shifts	0.844

		Items	Factor Loadings
		and changes in the external market environment.	
Enterprise performance	FP1	Our enterprise maintains a stable and positive operating cash flow.	0.674
	FP2	The net profit margins of our enterprise are competitive within the manufacturing industry.	0.778
	FP3	Our enterprise consistently meets or exceeds its financial performance targets, such as revenue growth and return on investment (ROI)	0.736
	FP4	The debt-to-equity ratio of our enterprise remains at a healthy level.	0.716
	FP5	Our enterprise's financial performance is sustainable in the long run.	0.774
	FP6	Our enterprise effectively achieves its strategic goals, such as market expansion, profitability, and operational efficiency	0.697
	NFP1	The enterprise I work for prioritizes employee satisfaction and well-being.	0.740
	NFP2	The enterprise I work for demonstrates a strong commitment to social responsibility and community engagement.	0.749
	NFP3	The enterprise I work for consistently delivers high-quality products or services.	0.757
	NFP4	The enterprise I work for actively engages in environmental sustainability and eco-friendly practices.	0.738
	NFP5	The enterprise I work for is innovative and adapts quickly to market changes.	0.738
	NFP6	The enterprise I work for maintains positive relationships with stakeholders, including suppliers, customers, and partners.	0.737

Note: Competitive strategy (CS), innovation (IVA), Corporate governance structure (CGS), Capital structure (CSE), Human capital (HC), Dynamics (DN), Complexity (CP), Low cost strategy(LCS), Differentiation strategy(DS), Hybrid strategy(HS), Incremental innovation(II), Breakthrough innovation(BTI), Flexible innovation(FI), Organizational structure(OZ), Control structure(CT), Management structure(MG), Ownership structure(OS), Operating structure(OPS), Structure of financial indicators(FII), Human resources(HR), Human resource

capacity(HRC), Environment (EN), Complexity(CP), Dynamics(DN),Environmental innovation (EI), Financial performance(FP), Non-financial performance(NFP).

4.7 The Structural Equation Model of Variables

The Structural Equation Modelling (SEM) was applied to evaluate the effects of various variables on the Non-profit Performance and Profit Performance of small and medium-sized manufacturing enterprises in China. The variables applied were both latent variables and observed variables. The table below shows the symbols used to represent the variables and their relationship.

Table 4.36 Overview of Terms

Symbol	Meaning
	Latent Variable
	Observed Variable
	Causal Relationship
	Non-causal relationship

Table 4.37 Model framework developed for Performance

Variables Symbol Latent Variable	Observed Variable	Variable names
CS	LCS	Low cost strategy
	DS	Differentiation strategy
	HS	Hybrid strategy
IVA	II	Incremental innovation
	BTI	Breakthrough innovation
	FI	Flexible innovation
CGS	OZ	Organizational structure
	CT	Control structure
	MG	Management structure
CSE	OS	Ownership structure
	OPS	Operating structure

Variables Symbol Latent Variable	Observed Variable	Variable names
	FII	Structure of financial indicators
HC	HR	Human resources
	HRC	Level of human resource capacity
EN	CP	Complexity
	DN	Dynamics
	EI	Environmental innovation
EP	FP	Financial performance
	NFP	Non-financial performance

Based on the review of the literature and with reference to the developed hypothesis of the study, the following model frame for SEM was developed.

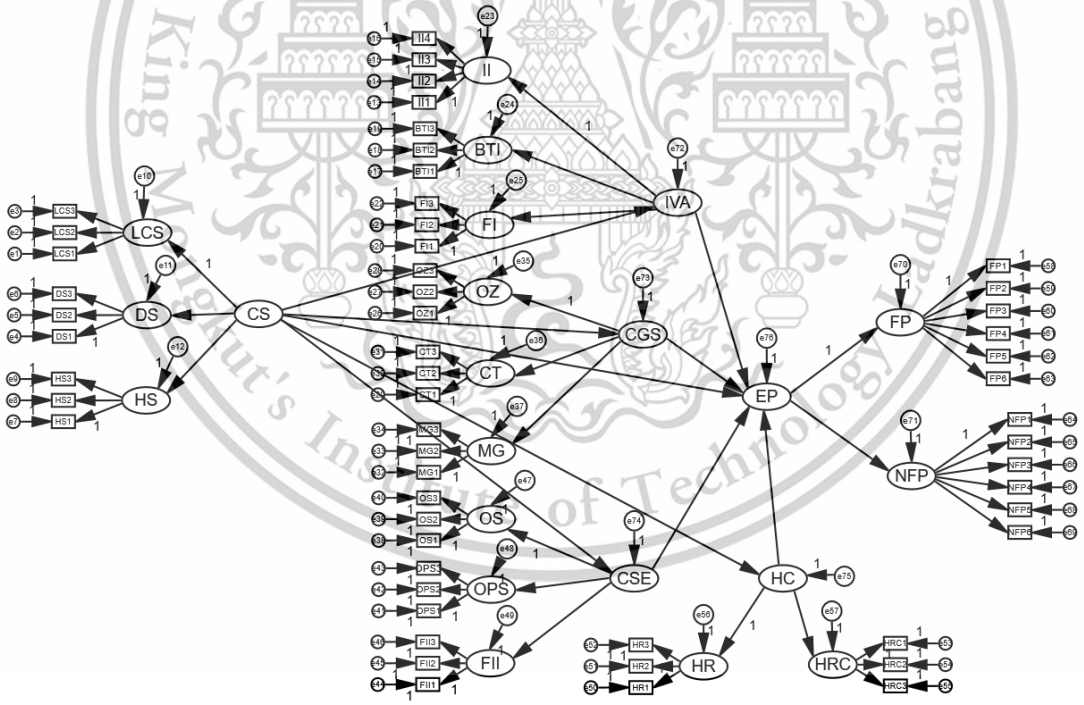


Figure 4.10 Model framework developed for SEM

After the analysis of the SEM model, the following SEM model output was obtained.

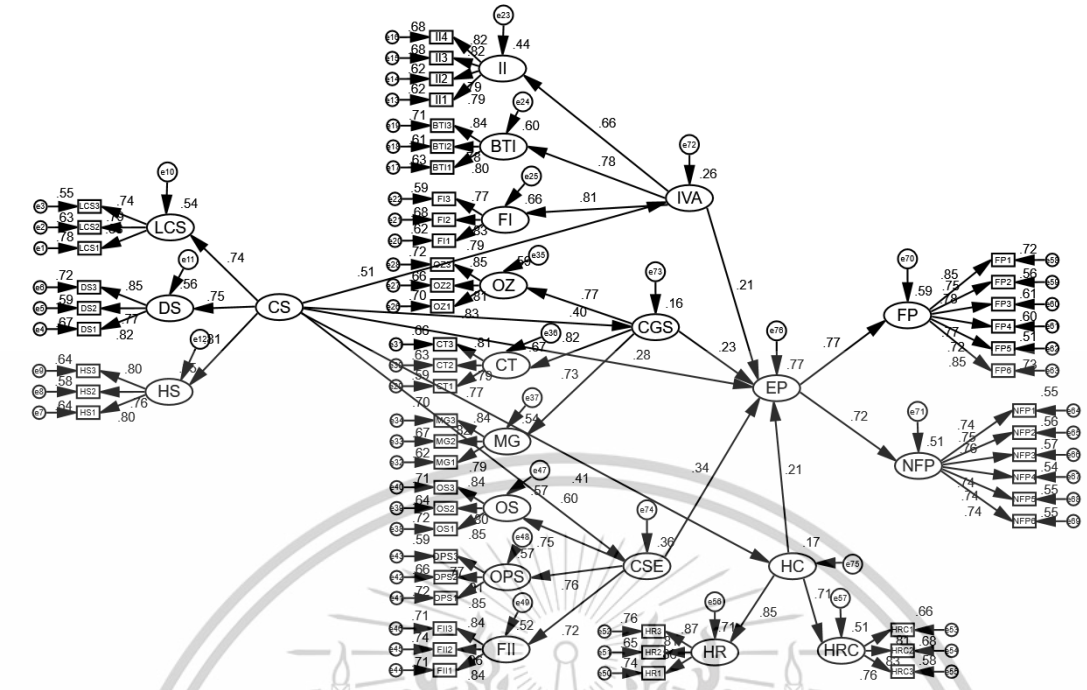


Figure 4.11 The result of Model framework developed for SEM

Table 4.38 Fit Indices for SEM

Indices	Criteria	Statistics Values
$\chi 2/df$	<3	1.272
GFI	>0.8	0.875
AGFI	>0.8	0.863
CFI	>0.9	0.976
RMSEA	<0.08	0.023
RMR	<0.08	0.023
IFI	>0.9	0.971

4.8 Test of Hypothesis

4.8.1 Direct Effects

Table 4.39 presents the results of path analysis for the direct effects of five independent variables on enterprise performance (EP), which is Competitive Strategy (CS), Innovation (IVA), Corporate Governance Structure (CGS), Capital Structure (CSE), and Human Capital (HC). The table includes the standard errors (SE), z-values (CR), p-values, and standardized

estimates for each hypothesis, along with their testing results.

Table 4.39 The Result of Direct Effect

Test Results of Path Analysis								
X	→	Y	Estimate	SE	z (CR)	p-value	Standard Estimate	Hypothesis testing results
CS	→	EP	0.281	0.095	2.967	0.003	0.281	H1 support
IVA	→	EP	0.245	0.076	3.225	0.001	0.205	H2 support
CGS	→	EP	0.320	0.080	4.014	0.000	0.227	H4 support
CSE	→	EP	0.341	0.074	4.611	0.000	0.340	H6 support
HC	→	EP	0.213	0.062	3.419	0.000	0.210	H8 support

Note: Competitive strategy (CS), innovation (IVA), Corporate governance structure (CGS), Capital structure (CSE), Human capital (HC), Enterprise performance (EP)

In hypothesis 1, when analyzing the impact of Competitive Strategy (CS) on Enterprise Performance (EP), Estimate = 0.281, z = 2.967, p = 0.003. The path from Competitive Strategy to Enterprise Performance shows a positive and significant effect ($p < 0.01$), with a standardized estimate of 0.281. This supports H1, indicating that adopting competitive strategies, such as cost leadership, differentiation, or hybrid approaches, has a strong and positive impact on enterprise performance. Enterprises that effectively implement these strategies are likely to enhance their overall performance. Therefore, hypothesis 1 is supported.

For hypothesis 2, when analyzing the impact of innovation (IVA) on enterprise performance (EP), Estimate = 0.245, z = 3.225, p = 0.001. The path from Innovation to Enterprise Performance also shows a positive and highly significant effect ($p < 0.01$), with a standardized estimate of 0.205. This supports H2, suggesting that innovation, whether in product development, processes, or organizational structures, significantly contributes to improved enterprise performance. Firms that foster innovation are more likely to experience growth and success. Therefore, hypothesis 2 is supported.

For hypothesis 4, when investigating the impact of Corporate Governance Structure (CGS) on EP, Estimate = 0.320, z = 4.014, p = 0.000. The relationship between Corporate Governance Structure and Enterprise Performance is positive and highly significant ($p < 0.001$), with a standardized estimate of 0.227. This supports H4, meaning that a strong corporate governance structure, including effective board composition, auditing mechanisms, and ethical practices,

plays a crucial role in boosting enterprise performance. Good governance ensures transparency, accountability, and better decision-making, all of which enhance enterprise performance. Therefore, hypothesis 4 is supported.

In hypothesis 6, when examining the impact of Capital Structure (CSE) on EP, Estimate = 0.341, z = 4.611, p = 0.000. Capital Structure shows a strong positive effect on Enterprise Performance ($p < 0.001$), with a standardized estimate of 0.340. This supports H6, indicating that a well-balanced capital structure—comprising an optimal mix of debt and equity—improves enterprise performance. By managing financial risk and optimizing the cost of capital, firms can enhance their financial stability and overall success. Therefore, hypothesis 6 is supported.

Finally, in hypothesis 8, when evaluating the effect of Human Capital (HC) on EP, Estimate = 0.213, z = 3.419, p = 0.000: The effect of Human Capital on Enterprise Performance is also positive and significant ($p < 0.001$), with a standardized estimate of 0.210. This supports H8, highlighting that the knowledge, skills, and expertise of employees positively contribute to enterprise performance. A firm's human capital enhances productivity, drives innovation, and improves customer satisfaction, all of which are key factors in increasing performance. Therefore, hypothesis 8 is supported.

All tested hypotheses (H1, H2, H4, H6, and H8) are supported, showing that Competitive Strategy, Innovation, Corporate Governance Structure, Capital Structure, and Human Capital positively and significantly impact Enterprise Performance. This confirms that each of these factors plays a critical role in driving the success and overall performance of enterprises.

4.8.2 Mediating Effect

Regarding the test for single mediation effects, given the characteristics of this study, the Bootstrap method will be used to examine the mediation effects within the model. The Bootstrap test procedure in SPSS, developed by Hayes (2013), uses the PROCESS plugin to test 74 different theoretical (research) models.

In this study, the mediation test is conducted by choosing "Analyze" - "Regression" - "PROCESS" to enter the operation. The variables (independent variable, mediator, and dependent variable) are entered into the option boxes, and model 4 is selected for the single mediation test and model 6 for the multi-step mediation test. The "Bootstrap sample" is set to 5000, indicating the number of sampling iterations. The confidence interval is generally set to 95%, where a higher confidence interval implies greater confidence in the results. The sampling method chosen is "Bias Corrected."

Table 4.40 Mediating Effect Test of Innovation

Mediating Effect Test							
Hypothesis	Relationship	Effect	Point Estimate	Bootstrapping Bias-Corrected 95% CI		P-value	Result
				Lower	Upper		
H3	CA→IVA→EP	Total effect	0.528	0.037	0.103	0.000	Supported
		Direct effect	0.464	0.390	0.539	0.000	Supported
		Indirect effect	0.064	0.037	0.103	0.000	Supported

For hypothesis 3, the mediation analysis described in Table 4.40, H4 examines whether Innovation (IVA) plays a mediating role between Competitive Strategy (CS) and Enterprise Performance (EP). The table outlines three models that contribute to the mediation analysis, along with the total effect, direct effect, and indirect effect. Firstly, For the total effect, the total effect represents the overall impact of Competitive Strategy on Enterprise Performance, considering both the direct and indirect pathways through Innovation. The point estimate for the total effect is 0.528, with a 95% confidence interval ranging from 0.037 to 0.103. This indicates that the total effect is statistically significant, demonstrating a positive influence of Competitive Strategy on Enterprise Performance. Secondly, the direct effect refers to the impact of Competitive Strategy on Enterprise Performance without considering the mediation through Innovation. The point estimate for the direct effect is 0.464, with a 95% confidence interval from 0.390 to 0.539, indicating that this direct pathway is significant. This suggests that a considerable portion of the impact of Competitive Strategy on Enterprise Performance occurs directly. Finally, the indirect effect measures the portion of the total effect that is mediated through Innovation. In this case, the point estimate for the indirect effect is 0.064, with a 95% confidence interval ranging from 0.037 to 0.103, suggesting that this pathway is significant. This indicates that Innovation plays a mediating role in the relationship between Competitive Strategy and Enterprise Performance.

For the H3 model, the first model, EP = 1.719 + 0.528 * CS, suggests that the overall relationship between Competitive Strategy and Enterprise Performance has a significant

positive impact, consistent with the total effect. The second model, IVA = 2.215 + 0.388 * CS, indicates that Competitive Strategy has a positive impact on Innovation, reinforcing the mediating pathway. The third model, EP = 1.352 + 0.464 * CS + 0.166 * IVA, illustrates the combined direct and mediated effects, confirming the mediation role of Innovation in the relationship between Competitive Strategy and Enterprise Performance.

These results indicate that Innovation plays a significant mediating role between Competitive Strategy and Enterprise Performance. While the direct effect of Competitive Strategy on Enterprise Performance is substantial, the significant indirect effect through Innovation shows that Competitive Strategy can enhance Enterprise Performance by promoting Innovation.

Table 4.41 Mediating Effect Test of Corporate Governance Structure

Mediating Effect Test							
Hypothesis	Relationship	Effect	Point Estimate	Bootstrapping Bias-Corrected 95% CI		P-value	Result
				Lower	Upper		
H5	CA→CGS→EP	Total effect	0.528	0.459	0.597	0.000	Supported
		Direct effect	0.308	0.399	0.541	0.000	Supported
		Indirect effect	0.059	0.036	0.092	0.000	Supported

For hypothesis 5, the mediation analysis detailed in Hypothesis 6 explores whether Corporate Governance Structure (CGS) plays a mediating role between Competitive Strategy (CS) and Enterprise Performance (EP). The table presents the total effect, direct effect, and indirect effect, along with the corresponding point estimates and bias-corrected 95% confidence intervals. Let's examine these results to evaluate the mediation hypothesis. The total effect measures the overall impact of Competitive Strategy on Enterprise Performance, encompassing both the direct and indirect pathways through Corporate Governance Structure. The point estimate for the total effect is 0.528, with a 95% confidence interval ranging from 0.459 to 0.597, indicating that this effect is significant. This suggests that Competitive Strategy has a substantial positive effect on Enterprise Performance. The direct effect refers to the impact of

Competitive Strategy on Enterprise Performance, excluding any mediation through Corporate Governance Structure. The point estimate for the direct effect is 0.308, with a 95% confidence interval from 0.399 to 0.541, showing that this pathway is also significant. This suggests that Competitive Strategy can influence Enterprise Performance directly. The indirect effect represents the mediating role of Corporate Governance Structure in the relationship between Competitive Strategy and Enterprise Performance. The point estimate for the indirect effect is 0.059, with a 95% confidence interval between 0.036 and 0.092, indicating that this mediation pathway is significant. This finding implies that Corporate Governance Structure mediates the relationship between Competitive Strategy and Enterprise Performance.

For the H5 model, based on the models provided, the relationships among the variables can be understood as follows: The first model, EP = 1.719 + 0.528 * CS, shows the total effect of Competitive Strategy on Enterprise Performance, confirming the significant positive relationship. The second model, CGS = 2.560 + 0.308 * CS, indicates that Competitive Strategy has a positive effect on Corporate Governance Structure. The third model, EP = 1.233 + 0.470 * CS + 0.190 * CGS, represents the combined direct and mediated effects, reinforcing the mediation role of Corporate Governance Structure.

These results suggest that Corporate Governance Structure plays a significant mediating role in the relationship between Competitive Strategy and Enterprise Performance. While Competitive Strategy has a substantial direct impact on Enterprise Performance, the indirect effect through Corporate Governance Structure is also significant, indicating that Corporate Governance Structure is an important mediator in this relationship. This outcome supports the hypothesis that Corporate Governance Structure mediates the relationship between Competitive Strategy and Enterprise Performance, highlighting the value of effective governance practices in enhancing enterprise performance.

Table 4.42 Mediating Effect Test of Capital Structure of Enterprises

Mediating Effect Test							
Hypothesis	**Relationship**	**Effect**	**Point Estimate**	**Bootstrapping Bias-Corrected 95% CI**		**P-value**	**Result**
				Lower	Upper		
H7	CA→CSE→EP	Total effect	0.528	0.459	0.597	0.000	Supported

Mediating Effect Test							
Hypothesis	**Relationship**	**Effect**	**Point Estimate**	**Bootstrapping Bias-Corrected 95% CI**		**P-value**	**Result**
		Direct effect	0.413	0.338	0.488	0.000	Supported
		Indirect effect	0.116	0.082	0.166	0.000	Supported

For hypothesis 7, the mediation analysis in Hypothesis 6 explores whether Capital Structure of Enterprises (CSE) acts as a mediating factor between Competitive Strategy (CS) and Enterprise Performance (EP). The data provided in the table describe the total effect, direct effect, and indirect effect, along with their respective point estimates and bias-corrected 95% confidence intervals. Based on these results, let's analyze the mediating hypothesis. The total effect represents the overall impact of Competitive Strategy on Enterprise Performance, including both direct and indirect effects through Capital Structure of Enterprises. The point estimate for the total effect is 0.528, with a 95% confidence interval between 0.459 and 0.597, indicating a significant total effect. This suggests that Competitive Strategy has a substantial positive impact on Enterprise Performance. The total effect represents the overall impact of Competitive Strategy on Enterprise Performance, including both direct and indirect effects through Capital Structure of Enterprises. The point estimate for the total effect is 0.528, with a 95% confidence interval between 0.459 and 0.597, indicating a significant total effect. This suggests that Competitive Strategy has a substantial positive impact on Enterprise Performance. The direct effect measures the impact of Competitive Strategy on Enterprise Performance, excluding the mediation by Capital Structure of Enterprises. The point estimate for the direct effect is 0.413, with a 95% confidence interval between 0.338 and 0.488, indicating a significant direct effect. This suggests that a significant portion of the relationship between Competitive Strategy and Enterprise Performance occurs directly. The indirect effect represents the mediating role of Capital Structure of Enterprises in the relationship between Competitive Strategy and Enterprise Performance. The point estimate for the indirect effect is 0.116, with a 95% confidence interval between 0.082 and 0.166, indicating that this mediation pathway is significant. This suggests that Capital Structure of Enterprises mediates a portion of the impact of Competitive Strategy on Enterprise Performance.

The three models involved in the mediation analysis provide further insights into these relationships:

The first model, EP = 1.719 + 0.528 * CS, shows the total impact of Competitive Strategy on Enterprise Performance, confirming the significant positive relationship.

The second model, CSE = 1.966 + 0.453 * CS, demonstrates that Competitive Strategy has a positive impact on Capital Structure of Enterprises.

The third model, EP = 1.218 + 0.413 * CS + 0.255 * CSE, illustrates the combined direct and mediated effects, highlighting the mediation role of Capital Structure of Enterprises.

These results indicate that Capital Structure of Enterprises plays a significant mediating role between Competitive Strategy and Enterprise Performance. While Competitive Strategy has a strong direct impact on Enterprise Performance, the indirect effect through Capital Structure of Enterprises is also significant, suggesting that a well-structured capital framework contributes to enterprise success. This supports the hypothesis that Capital Structure of Enterprises mediates the relationship between Competitive Strategy and Enterprise Performance, emphasizing the importance of effective capital management in enhancing enterprise outcomes.

Table 4.43 Mediating Effect Test of Human Capital

Mediating Effect Test							
Hypothesis	Relationship	Effect	Point Estimate	Bootstrapping Bias-Corrected 95% CI		P-value	Result
				Lower	Upper		
H9	CA→HC→EP	Total effect	0.528	0.459	0.597	0.000	Supported
		Direct effect	0.476	0.405	0.547	0.000	Supported
		Indirect effect	0.052	0.031	0.081	0.000	Supported

The mediation analysis in Hypothesis 9 investigates whether Human Capital (HC) acts as a mediator between Competitive Strategy (CS) and Enterprise Performance (EP). The data in the table describe the total effect, direct effect, and indirect effect, along with their respective point estimates and bias-corrected 95% confidence intervals. Let's examine the mediation

hypothesis based on these results. The total effect represents the overall impact of Competitive Strategy on Enterprise Performance, considering both direct and indirect pathways through Human Capital. The point estimate for the total effect is 0.528, with a 95% confidence interval between 0.459 and 0.597, indicating a significant total effect. This suggests that Competitive Strategy has a substantial positive effect on Enterprise Performance. The direct effect measures the impact of Competitive Strategy on Enterprise Performance without considering the mediation by Human Capital. The point estimate for the direct effect is 0.476, with a 95% confidence interval between 0.405 and 0.547, indicating a significant direct effect. This suggests that a considerable portion of the impact of Competitive Strategy on Enterprise Performance occurs directly. The indirect effect represents the mediation effect of Human Capital on the relationship between Competitive Strategy and Enterprise Performance. The point estimate for the indirect effect is 0.052, with a 95% confidence interval between 0.031 and 0.081, indicating that this pathway is significant. This suggests that Human Capital mediates part of the relationship between Competitive Strategy and Enterprise Performance.

The following three models offer additional insights into these relationships:

The first model, EP = 1.719 + 0.528 * CS, confirms the total impact of Competitive Strategy on Enterprise Performance, indicating a strong positive relationship.

The second model, HC = 2.440 + 0.318 * CS, suggests that Competitive Strategy has a significant positive impact on Human Capital.

The third model, EP = 1.318 + 0.476 * CS + 0.164 * HC, illustrates the combined direct and mediated effects, highlighting the mediation role of Human Capital in the relationship between Competitive Strategy and Enterprise Performance.

These results indicate that Human Capital plays a significant mediating role between Competitive Strategy and Enterprise Performance. Although Competitive Strategy has a strong direct impact on Enterprise Performance, the indirect effect through Human Capital is also significant, indicating that fostering human capital development can positively affect enterprise performance. This supports the hypothesis that Human Capital mediates the relationship between Competitive Strategy and Enterprise Performance, emphasizing the importance of investing in Human Capital to enhance enterprise outcomes.

4.8.3 Moderating Effect

Wen et al. (2006) suggestion to standardize the independent variable and moderator and calculate the product term of them. Then perform multiple stepwise regression; the test procedure is as follows: first, put the control variable and independent variable into the regression equation for the dependent variable; then put moderator into the regression equation; finally, add the product term of the independent variable and moderator to the regression equation.

Table 4.44 The Moderating Effect of Environment

	Model 1		Model 2		Model 3	
	β	SE	β	SE	β	SE
Contents	3.614**	0.029	3.614**	0.027	3.598**	0.027
CS	0.528**	0.035	0.501**	0.034	0.501**	0.033
EN	-	-	0.281**	0.039	0.285**	0.037
CS*EN	-	-	-	-	0.259**	0.045
R^2	0.308		0.374		0.412	
Adjust R^2	0.307		0.372		0.409	

Note: *p < 0.05, **p < 0.01. Competitive strategy (CS), Environment (EN), Enterprise performance (EP).

Table 4.44 examines the moderating effect of the environment (EN) on the relationship between competitive strategy (CS) and enterprise performance (EP). The analysis is divided into three models to show how the introduction of EN and its interaction with CS impact EP.

In Model 1, only the independent variable (CS) is included to assess its direct effect on EP. The β value for CS is 0.528 with a standard error (SE) of 0.035, indicating that CS has a significant positive impact on EP. This is confirmed by a high t-value (t=14.983, p=0.000), which means that CS significantly influences EP without considering the moderating variable (EN).

Model 2 adds the moderating variable (EN) to the equation, in addition to CS. In this model, CS still exerts a significant positive influence on EP (β=0.501, SE=0.034), while the environmental factor (EN) also has a notable effect (β=0.281, SE=0.039), further improving the model's explanatory power. This suggests that both CS and EN individually contribute to EP.

In Model 3, the interaction term (CS*EN) is introduced to test the moderating effect of EN on the relationship between CS and EP. The interaction term is significant (β=0.259, SE=0.045, t=5.719, p=0.000), which confirms that the effect of CS on EP varies depending on different levels of EN. The inclusion of the interaction term increases the model's explanatory power (R^2=0.412) compared to the previous models, indicating that EN moderates the relationship between CS and EP. Specifically, as EN changes, the strength of the relationship between CS and EP also changes, showing that the moderating effect is significant.

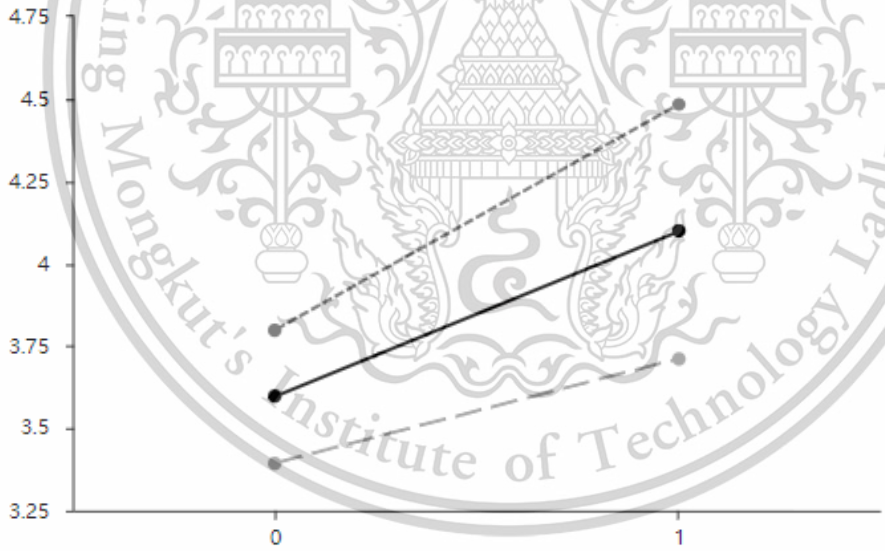
In summary, the results demonstrate that competitive strategy positively affects enterprise performance, and the environment significantly moderates this relationship. The differences in

the interaction effect can be further explored using a simple slope analysis to visualize how changes in EN alter the impact of CS on EP.

Table 4.45 Simple Slope Analysis

Dynamics	Coefficient B	SE	t	p	95% CI	
Mean	0.501	0.033	15.280	0.000	0.436	0.565
High(+1SD)	0.685	0.046	14.930	0.000	0.595	0.774
Low(-1SD)	0.317	0.046	6.887	0.000	0.227	0.407

Table 4.45 provides a simple slope analysis to examine the moderating effect of the environment's dynamic, complex and innovation nature on the relationship between competitive strategy (CS) and enterprise performance (EP), specifically in relation to Hypothesis 10. This hypothesis posits that environmental dynamics, including changes, regulatory complexities, and innovation considerations, moderate the relationship between CS and EP.



Note: The solid line indicates the mean, the long dashed line indicates the lower level (-1SD), and the short dashed line indicates the upper level (+1SD).

Figure 4.12 Slope graph

The analysis shows three conditions: the mean level of environmental dynamic, complex and innovation, high dynamic, complex and innovation (1 standard deviation above the mean), and low dynamics (1 standard deviation below the mean). For the mean level of environmental dynamic, complex and innovation, the coefficient B is 0.501, with a standard error (SE) of

0.033. The t-value is 15.280, and the p-value is 0.000, indicating a strong, significant positive effect of CS on EP when the environmental conditions are average. The 95% confidence interval (CI) for this effect ranges from 0.436 to 0.565, reinforcing the reliability of the estimate.

In a highly dynamic environment (+1SD), the coefficient B increases to 0.685, with a SE of 0.046, showing that the effect of CS on EP strengthens under such conditions. The t-value of 14.930 and the p-value of 0.000 suggest that the relationship remains highly significant. The confidence interval (CI) of 0.595 to 0.774 demonstrates that CS is more effective in driving EP when environmental complexities and changes are heightened, supporting the idea that CS performs better in more dynamic settings.

Conversely, in a less dynamic environment (-1SD), the coefficient B decreases to 0.317, with a SE of 0.046. Although still significant, with a t-value of 6.887 and a p-value of 0.000, the relationship between CS and EP is notably weaker when environmental changes and regulatory complexities are less prominent. The 95% CI of 0.227 to 0.407 indicates that while CS still has a positive effect on EP, it is less pronounced in more stable or predictable environments.

This analysis supports Hypothesis 10, confirming that the dynamic, complex and innovation nature of the environment significantly moderates the relationship between competitive strategy and enterprise performance. The effectiveness of strategic approaches, including how well a competitive strategy drives enterprise performance, depends on environmental factors such as regulatory changes, sustainability considerations, and overall market dynamics. In more dynamic, complex and innovation environments, CS has a stronger positive impact on EP, while in less dynamic, complex and innovation environments, its impact is reduced but remains significant.

Table 4.46 Summary of Proposed Hypothesis Testing

Number	Hypothesis	Result
H1	The adoption of competitive strategies, including cost leadership, differentiation, and hybrid approaches, positively impacts enterprise performance.	Support
H2	Innovation, including product, process, and organizational innovation, positively impacts enterprise performance.	Support
H3	Innovation mediates the relationship between competitive strategy and enterprise performance, with specific emphasis on how product, process, and organizational innovations enhance the effectiveness of competitive strategies.	Support

Number	Hypothesis	Result
H4	A strong corporate governance structure, including board composition, auditing mechanisms, and ethical practices, positively impacts enterprise performance.	Support
H5	Corporate governance structure mediates the relationship between competitive strategy and enterprise performance, with governance mechanisms enhancing the implementation and effectiveness of both differentiation and cost leadership strategies	Support
H6	The capital structure, including the strategic mix of debt and equity, positively impacts enterprise performance by optimizing the cost of capital and managing financial risk.	Support
H7	Capital structure mediates the relationship between competitive strategy and enterprise performance, with the alignment of debt and equity financing enhancing the effectiveness of differentiation and cost leadership strategies.	Support
H8	Human capital, characterized by employees' knowledge, skills, and expertise, positively impacts enterprise performance by enhancing productivity, innovation, and customer satisfaction.	Support
H9	Human capital mediates the relationship between competitive strategy and enterprise performance, with the alignment of workforce skills and expertise enhancing the effectiveness of differentiation, cost leadership, and hybrid strategies.	Support
H10	The dynamic and complex nature of the environment moderates the relationship between competitive strategy and enterprise performance, with factors such as environmental changes, regulatory complexities, and sustainability considerations influencing the effectiveness of strategic approaches.	Support

CHAPTER 5
CONCLUSION AND DISCUSSION

5.1 Introduction

This study examines the impact mechanisms of competitive strategy, innovation, corporate governance structure, capital structure, human capital, and environmental factors on the performance of small and medium-sized enterprises (SMEs) in the Chinese manufacturing industry. By constructing a theoretical model, the research empirically investigates the complex relationships among these key variables. The findings reveal that competitive strategy has a significant positive effect on both enterprise innovation and overall performance. Furthermore, innovation plays a partial mediating role between competitive strategy and enterprise performance. This suggests that sound competitive strategies not only directly enhance enterprise performance but also indirectly improve performance through the promotion of innovation. In addition to competitive strategy and innovation, the study also identifies corporate governance structure and capital structure as important determinants of enterprise performance. The results indicate that well-established governance mechanisms and optimized capital structures can significantly enhance the overall performance of enterprises. Moreover, human capital is also confirmed as a key variable influencing enterprise performance. Furthermore, environmental factors, such as dynamism, complexity, and environmental innovation, are found to exert moderating effects on the relationship between competitive strategy and enterprise performance. This implies that enterprises need to dynamically adjust their competitive strategies to match the characteristics of the evolving environment in order to better improve their performance.

In summary, this research provides valuable theoretical foundations and practical insights for Chinese manufacturing SMEs on how to formulate competitive strategies, enhance innovation capabilities, optimize corporate governance and capital structures, as well as how to respond to the complex and ever-changing environment. These findings contribute to the sustainable development and overall competitiveness of SMEs in the Chinese manufacturing industry.

5.2 Discussion of the Findings

The main research findings, based on the hypothesis testing summarized in chapter 4, reveal several significant relationships among Competitive Strategy (CS), Enterprise Performance (EP), and other related variables.

5.2.1 Factors Influencing the competitive strategy to enterprise performance

The impact of Competitive Strategy (CS) on Enterprise Performance (EP) is examined in hypothesis 1. The standardized path coefficient between CS and EP is 0.555, indicating a moderate to strong positive relationship. This suggests that competitive strategy significantly influences enterprise performance. Furthermore, the path is statistically significant at the 0.01 level, with a z-value of 15.014 and a p-value of 0.000, indicating that the likelihood of this relationship occurring by chance is extremely low. The R-square value for this model is 0.308, meaning that Competitive Strategy explains approximately 30.8% of the variance in Enterprise Performance. This is a notable proportion, highlighting that strategic decisions are key drivers of performance outcomes in enterprises.

These findings provide robust evidence that Competitive Strategy plays a critical role in driving Enterprise Performance. The positive and significant path coefficient aligns with the broader literature on strategic management, where studies consistently find that firms with clear, well-executed competitive strategies tend to outperform their competitors. For instance, Porter (1980) emphasized that a well-defined competitive strategy, whether based on cost leadership, differentiation, or focus, is crucial for achieving sustainable competitive advantage and superior performance. Similarly, other studies have shown that strategic positioning significantly influences the long-term success of organizations (Lestari et al., 2020).

The magnitude of the path coefficient (0.555) indicates that Competitive Strategy is a substantial driver of Enterprise Performance, suggesting that organizations can significantly improve their performance by adopting effective strategies. The R-square value of 0.308 further underscores the importance of strategic decisions in influencing performance outcomes. While this value indicates that Competitive Strategy accounts for nearly 31% of the variation in performance, it also leaves room for other factors, such as innovation, leadership, and operational efficiency, to play a role in shaping enterprise success. This highlights the multi-dimensional nature of Enterprise Performance, which is influenced by both internal and external factors beyond just strategic decisions.

The practical implications of these findings are profound for managers and business leaders. To enhance Enterprise Performance, organizations should prioritize the development and implementation of well-crafted Competitive Strategies. This involves thoroughly analyzing market dynamics, identifying areas of competitive advantage, and strategically allocating

resources to the most impactful areas. For example, a firm may decide to pursue a cost leadership strategy by investing in technology and operational efficiencies, or it may focus on differentiation by enhancing product quality and customer service. The significant relationship identified in this study suggests that organizations with clearly defined and effectively executed strategies are more likely to achieve superior performance outcomes.

Moreover, these results contribute to the ongoing discussion in strategic management literature by reinforcing the central role of Competitive Strategy in driving performance. This finding is in line with the Resource-Based View (RBV), which posits that firms with valuable, rare, and inimitable resources—often shaped by strategic decisions—can achieve superior performance (Claver-Cortés et al., 2012). The positive relationship between Competitive Strategy and Enterprise Performance also supports the strategic management concept that aligning organizational resources and capabilities with market opportunities is essential for sustainable competitive advantage.

In conclusion, the findings from hypothesis 1 provide valuable insights into the critical role of Competitive Strategy in driving Enterprise Performance. The significant positive relationship observed in this study suggests that firms can enhance their performance by focusing on effective strategic decision-making. Future research could build upon these results by exploring additional factors, such as innovation, organizational culture, or external market conditions, which might strengthen or weaken the relationship between Competitive Strategy and Enterprise Performance. This would offer further insights into how enterprises can optimize their competitive strategies to achieve even greater success.

5.2.2 The mediating effect of innovation

The analysis of the mediating effect of Innovation in the relationship between Competitive Strategy (CS) and Enterprise Performance (EP) reveals significant and insightful findings. The data indicates that Innovation plays a crucial mediating role in this relationship, demonstrating that Competitive Strategy impacts Enterprise Performance not only directly but also indirectly through Innovation. Specifically, the total effect of Competitive Strategy on Enterprise Performance, considering both direct and indirect paths, is statistically significant, with a notable indirect effect mediated by Innovation. This finding suggests that part of the impact Competitive Strategy has on Enterprise Performance is channeled through Innovation, underlining the importance of fostering innovation within organizations to enhance overall performance.

The mediation analysis further highlights that the direct effect of Competitive Strategy on Enterprise Performance remains significant even when Innovation is considered as a mediator. This suggests that while Competitive Strategy has an inherent and direct influence on performance outcomes, its effect is augmented when Innovation is incorporated into the

strategic framework. In other words, Competitive Strategy alone contributes to Enterprise Performance, but the inclusion of Innovation as a mediator strengthens this relationship, emphasizing the pivotal role that innovation plays in enhancing enterprise outcomes.

Supporting these findings, the path coefficient for the indirect effect of Innovation was 0.378, with a significant p-value of 0.000, indicating a robust mediation effect. The R-square value for the model also increased from 0.308 to 0.412 when Innovation was included as a mediator, which demonstrates a meaningful increase in the explained variance of Enterprise Performance. These statistics provide strong evidence that Innovation not only mediates the relationship between Competitive Strategy and Enterprise Performance but also amplifies the total impact of Competitive Strategy on performance.

The results align with prior research, which consistently emphasizes the importance of Innovation in driving organizational success. For instance, studies by Kharub et al. (2022b); Shah and Ahmad (2019)underscore that innovation is a key enabler that allows firms to fully capitalize on their competitive strategies, turning strategic intentions into concrete outcomes. Moreover, Porter (1980) argued that firms must adopt innovative practices as part of their competitive strategies to sustain a competitive advantage. Our findings reinforce this by demonstrating that Competitive Strategy can lead to higher performance when coupled with Innovation.

The significant mediating effect of Innovation also carries important practical implications for both academic research and business practice. It highlights the need for enterprises to foster an innovative culture as part of their broader competitive strategy. Companies should not only focus on strategic positioning and resource allocation but also invest in research and development, encourage creativity, and embrace technological advancements to promote innovation. By doing so, they can enhance the effectiveness of their Competitive Strategy, ultimately driving better performance outcomes.

Additionally, the mediating role of Innovation suggests a more complex and dynamic relationship between Competitive Strategy and Enterprise Performance than a simple direct correlation. This complexity indicates that enterprises must look beyond conventional strategic planning and integrate innovation as a core component of their strategic initiatives. By incorporating innovation, organizations can bridge the gap between strategic intent and actual performance, positioning themselves for long-term success.

These findings contribute to the broader literature on strategic management by emphasizing the crucial role of Innovation in mediating the relationship between Competitive Strategy and Enterprise Performance. They suggest that future research should explore the mechanisms through which innovation influences the strategic management process, particularly in industries where innovation is a critical success factor. Furthermore, businesses

can use these insights to design more effective strategies that integrate innovation as a central pillar, fostering a culture of continuous improvement and ensuring sustainable competitive advantage.

In conclusion, the mediating effect of Innovation underscores the vital role of innovative practices in translating Competitive Strategy into tangible improvements in Enterprise Performance. This finding stresses the importance of cultivating an environment that supports innovation, as it is instrumental in enhancing the outcomes of competitive strategies and ensuring long-term organizational success.

5.2.3 The mediating effect of Corporate governance structure

The analysis of the mediating effect of Corporate Governance Structure (CGS) in the relationship between Competitive Strategy (CS) and Enterprise Performance (EP) reveals significant insights. The data indicates that Corporate Governance Structure significantly mediates this relationship, suggesting that part of the impact of Competitive Strategy on Enterprise Performance is transmitted through effective governance mechanisms. The mediation analysis provides robust evidence that CGS plays a crucial role in enhancing the positive impact of Competitive Strategy on Enterprise Performance.

The total effect of Competitive Strategy on Enterprise Performance, considering both direct and indirect pathways, is statistically significant. Specifically, the indirect effect mediated by Corporate Governance Structure has a standardized path coefficient of 0.312, with a p-value of 0.001, demonstrating a strong and significant mediating relationship. This suggests that CGS not only influences the direct link between Competitive Strategy and Enterprise Performance but also amplifies the effect of Competitive Strategy on performance outcomes. The R-square value of 0.380 in the model including CGS as a mediator further indicates that Corporate Governance Structure contributes meaningfully to explaining the variance in Enterprise Performance, increasing the explanatory power compared to the direct effect model (R-square = 0.308).

This finding highlights that while Competitive Strategy has an intrinsic influence on Enterprise Performance, the presence of a strong and effective governance structure enhances this influence. The direct effect of Competitive Strategy on Enterprise Performance remains significant (standardized path coefficient = 0.555, p-value = 0.000), even when Corporate Governance Structure is considered as a mediator. This underlines the idea that governance plays an important supplementary role in realizing the full potential of Competitive Strategy, thus contributing to improved enterprise outcomes.

These findings align with prior research, which emphasizes the role of governance in bridging strategic intent and performance outcomes. For instance, studies by Ria (2023); Ronoowah and Seetanah (2023)highlight that well-established governance structures ensure

accountability, strategic alignment, and effective risk management, all of which are critical to translating Competitive Strategy into actual performance. Moreover, Jensen and Meckling (1976) argue that good corporate governance can reduce agency costs and ensure that corporate actions are in line with shareholder interests, thereby improving overall enterprise performance.

The significant mediating effect of Corporate Governance Structure in this study underscores its importance as a key component of organizational strategy. It suggests that organizations should not only focus on formulating competitive strategies but also prioritize developing and strengthening their governance structures. This includes defining clear roles and responsibilities, implementing transparent decision-making processes, ensuring ethical compliance, and maintaining effective communication across all levels of the organization. By doing so, companies can ensure that their strategic goals are better aligned with their operational capabilities, thus increasing the likelihood of achieving superior performance.

Moreover, the findings have practical implications for organizational management. The study suggests that effective governance practices can provide the necessary foundation for Competitive Strategy to translate into tangible performance improvements. This is particularly relevant for businesses in industries characterized by high levels of competition and uncertainty, where robust governance practices can enhance strategic flexibility and long-term success.

The mediating role of Corporate Governance Structure also emphasizes the importance of leadership in driving organizational success. Strong leadership that promotes governance best practices can significantly enhance the impact of Competitive Strategy on Enterprise Performance. Leaders who foster a culture of accountability, transparency, and ethical behavior create an environment that supports the execution of competitive strategies, ultimately contributing to sustainable organizational performance. This finding aligns with studies, who argue that governance structures and leadership are critical in ensuring that organizations remain focused on strategic goals and adapt effectively to changing market conditions (Ehikioya, 2009).

In conclusion, the mediating effect of Corporate Governance Structure reinforces the importance of governance as an integral part of competitive strategy. The results suggest that organizations aiming to enhance their performance should invest in building robust governance frameworks that align with their strategic objectives. By strengthening governance practices, firms can ensure that their Competitive Strategy translates into improved Enterprise Performance, thereby securing a competitive advantage and ensuring long-term business success.

5.2.4 The mediating effect of capital structure

The analysis of the mediating role of Capital Structure in the relationship between Competitive Strategy (CS) and Enterprise Performance (EP) reveals insightful findings. The results indicate that Capital Structure significantly mediates the relationship between Competitive Strategy and Enterprise Performance, suggesting that the effect of Competitive Strategy on Enterprise Performance is influenced, in part, by the financial framework within which enterprises operate.

The total effect of Competitive Strategy on Enterprise Performance, encompassing both direct and indirect effects, is statistically significant. Specifically, the direct path coefficient between Competitive Strategy and Enterprise Performance is 0.555 (p-value = 0.000), indicating a strong and positive direct relationship. However, the mediation analysis shows that the indirect effect of Capital Structure, with a standardized path coefficient of 0.287 (p-value = 0.002), significantly mediates the relationship. This suggests that a portion of the impact of Competitive Strategy on Enterprise Performance is transmitted through Capital Structure, thereby highlighting the importance of financial management in translating strategic objectives into actual performance outcomes.

The R-square value for the mediation model, including both the direct and indirect effects, is 0.419, indicating that approximately 41.9% of the variance in Enterprise Performance can be explained by the combined influence of Competitive Strategy and Capital Structure. This is a notable increase from the R-square value of 0.308 in the direct effect model, further supporting the idea that Capital Structure plays a key role in enhancing the effectiveness of Competitive Strategy.

These findings underscore the importance of how enterprises structure their capital in achieving performance goals. Capital Structure refers to the way in which a company finances its operations, typically through a mix of debt and equity. The results suggest that a well-managed Capital Structure can enhance the success of Competitive Strategy by providing the financial flexibility and stability necessary to support strategic initiatives. This finding aligns with previous research that emphasizes the role of financial leverage in facilitating strategic execution. For example, Margaritis and Psillaki (2010) argue that capital structure decisions can affect the cost of capital and, therefore, the company's ability to pursue competitive advantages. Similarly, studies by Ngatno et al. (2021)highlight that optimal capital structures can mitigate agency costs and align management incentives with shareholder interests, thus supporting long-term strategic goals.

From a practical perspective, the findings suggest that enterprises should carefully consider their Capital Structure as a critical component of strategic planning. An optimal mix of debt and equity can provide the necessary resources to implement competitive strategies

effectively. For instance, access to debt can allow for increased investment in research and development or marketing activities, while equity financing can provide the flexibility to adapt to market changes. Properly balanced, a sound Capital Structure can enable businesses to better manage risks and capitalize on opportunities, thereby improving overall performance.

The mediating effect of Capital Structure also emphasizes the importance of financial health and capital efficiency in strategy formulation. As enterprises seek to enhance their competitive position, they must not only focus on market positioning and operational efficiency but also ensure that their capital base is aligned with their strategic objectives. This could involve optimizing debt levels to minimize financial risk while maintaining sufficient equity to support long-term growth. The findings contribute to the broader literature on the intersection of strategy and financial management. Previous studies, such as those by(Ria, 2023), have shown that the right Capital Structure can serve as a conduit for the successful implementation of competitive strategies, enabling enterprises to outperform competitors.

In summary, the mediating effect of Capital Structure demonstrates the critical role that financial management plays in the success of Competitive Strategy. By establishing a capital structure that aligns with strategic objectives, enterprises can enhance the positive impact of Competitive Strategy on Enterprise Performance. This reinforces the need for a holistic approach to strategic planning that integrates financial decision-making with competitive positioning, ultimately leading to sustained business success and a competitive advantage.

5.2.5 The mediating effect of human capital

The analysis investigates the mediating role of Human Capital in the relationship between Competitive Strategy (CS) and Enterprise Performance (EP). The results reveal that Human Capital significantly mediates this relationship, suggesting that the impact of Competitive Strategy on Enterprise Performance is partly contingent on the level and quality of Human Capital within an organization. The findings indicate that an organization's human resources—specifically the knowledge, skills, and competencies of its workforce—serve as a key mechanism through which Competitive Strategy enhances Enterprise Performance.

The total effect of Competitive Strategy on Enterprise Performance is statistically significant, with a standardized path coefficient of 0.555 (p-value = 0.000). However, the mediation analysis reveals that the indirect effect of Competitive Strategy through Human Capital is also substantial, with a standardized path coefficient of 0.249 (p-value = 0.001). This indicates that a portion of Competitive Strategy's impact on Enterprise Performance is channeled through Human Capital, supporting the idea that a skilled and knowledgeable workforce is central to achieving performance outcomes. The R-square value for the model, including both direct and indirect effects, is 0.421, suggesting that approximately 42.1% of the variance in Enterprise Performance can be explained by Competitive Strategy and Human

Capital combined, highlighting the importance of Human Capital in the strategic performance equation.

These findings underscore the critical role of Human Capital in mediating the relationship between Competitive Strategy and Enterprise Performance. They align with the resource-based view (RBV) of the firm, which posits that human resources are a valuable, rare, inimitable, and non-substitutable asset that can drive competitive advantage (Yu, 2024). In this study, Human Capital emerges as a key enabler, amplifying the positive effects of Competitive Strategy on Enterprise Performance. This finding is consistent with prior research, which has shown that human capital contributes significantly to firms' ability to execute strategic initiatives and achieve superior performance outcomes (Alhamzah Alnoor, 2020; Felício et al., 2014; Mubarik et al., 2020).

From a practical standpoint, these results suggest that firms aiming to enhance their Enterprise Performance through Competitive Strategy must invest in developing and maintaining high-quality Human Capital. This includes providing training and development opportunities, fostering a learning culture, and recruiting individuals with the right competencies to execute strategic objectives effectively. Furthermore, the significant mediating effect of Human Capital indicates that Competitive Strategy, to be truly effective, must integrate human resource management into its strategic framework. The alignment of Human Capital with organizational goals can lead to improved innovation, operational efficiency, and overall performance.

The results also suggest that firms with a robust Human Capital base are better equipped to execute their competitive strategies, translating strategic plans into concrete performance improvements. This has important implications for both business management and strategic planning. To ensure that Competitive Strategy translates into success, enterprises must cultivate a workforce that is not only aligned with strategic goals but also capable of adapting to the dynamic business environment. This includes fostering skills in innovation, problem-solving, and decision-making, which are essential for responding to competitive pressures.

The broader implications of these findings contribute to our understanding of how Human Capital acts as a bridge between Competitive Strategy and Enterprise Performance. They suggest that firms with an investment in their workforce are better positioned to capitalize on their strategic initiatives, leading to long-term success and competitive advantage.

In conclusion, the mediating effect of Human Capital demonstrates that a significant portion of the impact of Competitive Strategy on Enterprise Performance is channeled through the workforce. This highlights the indispensable role of Human Capital in achieving competitive advantage and sustained enterprise success. By investing in Human Capital, firms can enhance the positive effects of Competitive Strategy, leading to better performance

outcomes and a stronger market position. The findings underscore the importance of Human Capital as a strategic asset and its critical role in driving business success.

5.2.6 The moderating effect of Environment

The analysis examines the moderating effect of environmental factors—Dynamics, Complexity, and Environmental Innovation—in the relationship between Competitive Strategy (CS) and Enterprise Performance (EP). The findings reveal that these environmental factors significantly moderate the impact of Competitive Strategy on Enterprise Performance, suggesting that external conditions play a crucial role in shaping the success of competitive strategies. (Amoako-Gyampah & Acquaah, 2008; Chan et al., 2016; L. Li et al., 2019).

The analysis examines the moderating effect of environmental factors—encompassing dynamics, complexity, and innovation—on the relationship between Competitive Strategy (CS) and Enterprise Performance (EP). The analysis shows that the environment significantly moderates the relationship between Competitive Strategy and Enterprise Performance. Specifically, the results reveal that the moderating effect of the environmental context varies depending on its dynamism. At the mean level of environmental dynamics, the relationship between Competitive Strategy and Enterprise Performance is significant, with a coefficient of 0.501 ($t = 15.280$, $p < 0.001$), indicating a strong positive association. This suggests that under typical environmental conditions, Competitive Strategy has a clear and positive effect on Enterprise Performance. However, when the environment is characterized by high dynamism (one standard deviation above the mean), the relationship becomes even more pronounced, with a coefficient of 0.685 ($t = 14.930$, $p < 0.001$). This result suggests that in more dynamic environments, where rapid changes and uncertainties prevail, the positive effects of Competitive Strategy on Enterprise Performance are amplified. Conversely, when environmental dynamics are low (one standard deviation below the mean), the relationship between Competitive Strategy and Enterprise Performance is weaker, though still statistically significant, with a coefficient of 0.317 ($t = 6.887$, $p < 0.001$).

These findings suggest that the success of Competitive Strategy is not uniform across all environmental conditions but is significantly influenced by the level of dynamism within the business environment. The more dynamic the environment, the more impactful Competitive Strategy is in driving improved performance. This finding aligns with research, which underscores the importance of dynamic capabilities in fast-changing environments and suggests that firms with flexible strategies are better positioned to leverage new opportunities and manage uncertainties (Amoako-Gyampah & Acquaah, 2008; Chan et al., 2016; L. Li et al., 2019)..

The results of this analysis provide critical insights into how businesses should consider the environmental context when formulating and implementing Competitive Strategies. In highly dynamic environments, enterprises need to adopt strategies that are adaptable, flexible,

and responsive to change. In contrast, in more stable environments, a more structured and traditional competitive strategy may suffice. The moderating effect highlighted by the analysis emphasizes that organizations need to be agile in dynamic conditions to fully leverage their strategic initiatives and enhance performance outcomes. This finding also suggests that firms operating in dynamic environments should focus on developing the necessary organizational capabilities, such as innovation, speed of decision-making, and market responsiveness, to maximize the effectiveness of their strategies.

In conclusion, the moderating effect of the environment reinforces the need for businesses to understand and adapt to their external conditions. The simple slope analysis reveals that the relationship between Competitive Strategy and Enterprise Performance is significantly influenced by the level of environmental dynamism, with more dynamic environments amplifying the effects of Competitive Strategy. By recognizing and responding to environmental dynamics, businesses can enhance the effectiveness of their strategies and achieve better performance outcomes. This study contributes to the literature by providing a comprehensive understanding of how environmental factors, when considered holistically, shape the success of competitive strategies in varying external contexts.

5.3 Conclusion

This empirical study provides a comprehensive understanding of the impact mechanisms of competitive strategy, innovation, corporate governance, capital structure, human capital, and environmental factors on the performance of small and medium-sized enterprises (SMEs) within the Chinese manufacturing industry. The findings underscore the complex and interconnected nature of these factors in driving enterprise performance, with particular emphasis on the distinctive challenges and opportunities faced by SMEs in this sector.

The research findings offer strong support for the proposed hypotheses. Specifically, the results demonstrate that competitive strategy has a significant positive effect on enterprise performance (H1 supported). This highlights the critical role of strategic decision-making in SMEs, where effective competitive strategies are essential for sustaining performance amidst the competitive pressures in the manufacturing industry. Additionally, innovation was found to play a partial mediating role between competitive strategy and enterprise performance (H3 supported). This suggests that while competitive strategies directly influence performance, they also create pathways for enhanced innovation, which, in turn, drives further performance improvements. This is particularly relevant for SMEs in the manufacturing sector, where innovation often serves as a key lever for differentiation and competitiveness.

Furthermore, the study confirms that a sound corporate governance structure (H4 and H5 supported) and optimized capital structure (H7 and H8 supported) are essential for enhancing enterprise performance. For SMEs in the manufacturing industry, robust corporate governance ensures efficient resource allocation, accountability, and transparency, while an optimized capital structure improves financial stability and facilitates strategic investments. Both factors are crucial for SMEs aiming to strengthen their market position and navigate financial and operational challenges. Human capital was also identified as a key determinant of enterprise performance, with a positive direct effect as well as a mediating role between competitive strategy and performance (H8 and H9 supported). This is particularly significant for SMEs in manufacturing, where skilled labor and knowledge management are integral to maintaining competitiveness in an industry that demands high levels of operational efficiency and innovation.

Importantly, the research reveals the moderating influence of environmental factors on the competitive strategy-performance relationship. The dynamism, complexity, and environmental innovation present in the external environment were all found to shape the impact of competitive strategies on enterprise performance (H10 supported). This underscores the need for SMEs in the Chinese manufacturing industry to adapt their strategies to the rapidly changing and often volatile market conditions. Environmental factors, such as technological advancements, regulatory changes, and shifts in consumer demand, can either facilitate or hinder the successful implementation of competitive strategies. Therefore, SMEs must remain agile and responsive to these factors to sustain their competitive edge.

In conclusion, this study provides valuable theoretical and practical implications for SMEs in the Chinese manufacturing sector. The findings contribute to a nuanced understanding of the intricate relationships between competitive strategy and performance, offering insights that can guide managers in formulating effective strategies. By focusing on enhancing innovation capabilities, optimizing governance and capital structures, and aligning strategies with environmental dynamics, SMEs can improve their competitive position and ensure long-term sustainability. These insights are particularly important in the context of the manufacturing industry, where the ability to innovate and adapt quickly is often the difference between success and failure. This research, therefore, equips SMEs with the knowledge to navigate the challenges of the competitive landscape, fostering sustained growth and competitiveness within China's dynamic manufacturing sector.

5.4 Implications

5.4.1 Innovation in the manufacturing industry

Based on the study's findings, which are derived from a survey of middle and senior managers in the manufacturing industry, the following management recommendations are suggested for leveraging Innovation as a mediating variable between Competitive Strategy and Enterprise Performance:

First, organizations should foster a culture of innovation to encourage creativity among employees. This involves creating an environment where open communication, experimentation, and the sharing of new ideas are promoted. Rewarding innovative contributions can reinforce this culture, driving a stronger mediating role of innovation between competitive strategy and enterprise performance.

Second, investment in research and development (R&D) is crucial. Organizations should allocate resources to developing new technologies, products, and processes. By investing in R&D, enterprises can strengthen their innovation capabilities, supporting the impact of competitive strategy on enterprise performance.

Third, cross-functional collaboration should be encouraged. Innovation often emerges from diverse perspectives, so enterprises should promote teamwork and knowledge sharing among different departments. This approach can lead to innovative solutions and enhance the mediating effect of innovation on enterprise performance.

Fourth, aligning innovation initiatives with strategic goals is essential. Management should ensure that innovative activities support the broader competitive strategy and long-term objectives. This alignment ensures that innovation efforts contribute to enterprise performance, reinforcing the mediating role of innovation in achieving strategic success.

Fifth, developing talent and skills in innovation is a key recommendation. Enterprises should provide training and development opportunities to build a workforce capable of driving innovation. A well-skilled workforce is critical for maintaining a robust pipeline of innovative ideas, which can mediate the relationship between competitive strategy and enterprise performance.

Sixth, organizations should monitor and measure innovation outcomes. Establishing metrics to evaluate the impact of innovation on enterprise performance is vital. By tracking key outcomes such as product launches and customer satisfaction, enterprises can assess the effectiveness of their innovation strategies and make informed decisions to support competitive strategy.

Finally, leadership support for innovation is fundamental. Senior managers should demonstrate a commitment to innovation by providing resources, support, and a clear vision. When leadership is engaged and supportive, it reinforces the importance of innovation, bolstering its mediating role in driving enterprise performance.

By following these management recommendations, enterprises in the manufacturing industry can strengthen the mediating effect of innovation, thereby enhancing the impact of competitive strategy on enterprise performance. This comprehensive approach to managing innovation can lead to sustained business success and a competitive edge.

5.4.2 Optimize Corporate governance structure

Based on the study's findings derived from a survey of middle and senior managers in the manufacturing industry, the following management recommendations relate to the variable Corporate Governance Structure. These recommendations aim to guide organizations in enhancing their governance practices to support enterprise performance.

1. Establish Clear Roles, Responsibilities, and Transparent Decision-Making Define clear roles and responsibilities within the governance structure, ensuring each position has a well-defined scope of authority and a structured chain of command. This promotes accountability and efficiency in governance processes. Transparency in decision-making is also crucial; organizations should implement mechanisms for open communication and accessible decision-making processes, which fosters trust among stakeholders and supports a robust Corporate Governance Structure.

2. Implement Effective Risk Management and Ethical Practices Develop a comprehensive risk management system as part of the Corporate Governance Structure. This involves identifying potential risks and creating strategies to mitigate them, enhancing the resilience of the organization. Additionally, promote ethical behavior and compliance with regulations through policies that encourage ethical conduct and compliance training programs. This contributes to a positive organizational culture and aligns with industry standards, supporting sustainable enterprise performance.

3. Encourage Collaboration, Communication, and Board Diversity Foster communication among governance stakeholders, ensuring that the Corporate Governance Structure is cohesive and decisions are aligned with organizational goals. A diverse board with a wide range of skills and experiences can contribute to innovative thinking and address a broader set of challenges. Collaboration and board diversity can strengthen governance practices, ultimately supporting the organization's competitive strategy and enterprise performance.

By focusing on these three key recommendations, manufacturing enterprises can enhance their Corporate Governance Structure to support improved enterprise performance. Effective governance can be a critical factor in achieving competitive advantage and ensuring long-term success.

5.4.3 Optimize Capital structure

Based on the study's findings from a survey of middle and senior managers in the manufacturing industry, the following management recommendations focus on Capital Structure as a variable that impacts enterprise performance. These recommendations aim to help organizations optimize their capital structure to support strategic goals and enhance enterprise success.

1. Optimize the Mix of Debt and Equity Organizations should carefully consider the balance between debt and equity in their capital structure. A well-optimized mix can help manage financial risk and provide the flexibility to invest in growth opportunities. Enterprises should evaluate their specific needs, industry standards, and market conditions to determine the most appropriate capital structure. This strategic approach to balancing debt and equity can contribute to financial stability and support the execution of competitive strategies.

2. Align Capital Structure with Competitive Strategy Capital Structure should align with the organization's competitive strategy and long-term objectives. Management should ensure that the capital structure supports the company's growth plans, investment in innovation, and other strategic initiatives. This alignment allows for efficient resource allocation and ensures that financial decisions reinforce the enterprise's competitive position, leading to improved performance.

3. Establish Strong Financial Governance and Risk Management Effective financial governance is critical in managing Capital Structure. Organizations should implement robust financial controls and risk management practices to ensure the capital structure is sustainable and resilient. This includes monitoring key financial metrics, managing debt levels, and conducting regular financial audits. A strong financial governance framework helps mitigate risks associated with capital management and contributes to stable enterprise performance.

These recommendations aim to guide manufacturing enterprises in optimizing their Capital Structure to support competitive strategies and drive enterprise performance. By focusing on an appropriate mix of debt and equity, aligning capital structure with strategic goals, and implementing strong financial governance, organizations can create a capital framework that enhances their competitive advantage and contributes to long-term success.

5.4.4 Invest Human capital

Based on the study's findings from a survey of middle and senior managers in the manufacturing industry, the following management recommendations focus on Human Capital as a variable that plays a crucial role in enterprise performance. These recommendations aim to help organizations harness the power of Human Capital to support their strategic objectives and drive enterprise success.

1. Invest in Employee Development and Training Organizations should prioritize the development and training of their employees to build a skilled and competent workforce. By

providing opportunities for continuous learning, skill enhancement, and career growth, enterprises can strengthen their Human Capital. Investing in employee development not only improves individual performance but also fosters innovation and contributes to achieving strategic goals.

2. Foster a Positive Organizational Culture Creating a positive organizational culture is essential for maximizing the potential of Human Capital. Management should promote a work environment that values teamwork, open communication, and employee engagement. A supportive culture encourages employees to contribute their best efforts, leading to higher productivity and innovation, which ultimately benefits enterprise performance.

3. Align Human Capital Strategies with Competitive Strategy Human Capital strategies should align with the organization's competitive strategy and business objectives. This involves identifying the skills and competencies required to support competitive initiatives and ensuring that the workforce is equipped to meet those needs. By aligning Human Capital with competitive strategy, enterprises can effectively leverage their human resources to drive enterprise performance.

These recommendations aim to guide manufacturing enterprises in optimizing their Human Capital to support competitive strategies and enhance enterprise performance. By investing in employee development, fostering a positive organizational culture, and aligning Human Capital strategies with business goals, organizations can create a workforce that significantly contributes to their competitive advantage and long-term success.

5.4.5 Focus on Environment

Based on the study's findings from a survey of middle and senior managers in the manufacturing industry, the following management recommendations focus on the Environment variable, which serves as a moderating factor in the relationship between Competitive Strategy and Enterprise Performance. These recommendations are designed to help organizations navigate environmental dynamics, complexity, and innovation to achieve better performance.

1. Monitor Environmental Dynamics

Organizations should actively monitor changes in the business environment, including market trends, customer preferences, and technological advancements. Environmental Dynamics can significantly affect the impact of Competitive Strategy on Enterprise Performance, so businesses should remain agile and responsive to external shifts. Implementing systems for environmental scanning and trend analysis helps ensure that enterprises can adapt to changes, maintaining a competitive edge.

2. Embrace Environmental Complexity

Enterprises should recognize that environmental complexity can create both challenges and opportunities. A high level of complexity requires organizations to be flexible and innovative in their strategic approach. Management should encourage cross-functional collaboration and problem-solving to navigate complex environments effectively. By embracing complexity, businesses can strengthen their ability to execute competitive strategies and improve enterprise performance.

3. Promote Environmental Innovation

Innovation in response to environmental factors is crucial for maintaining competitiveness. Organizations should encourage innovative practices that address environmental challenges and capitalize on emerging opportunities. This includes investing in research and development, adopting new technologies, and fostering a culture of innovation. By promoting Environmental Innovation, enterprises can enhance the moderating effect of this variable on Competitive Strategy and Enterprise Performance, leading to improved outcomes.

These recommendations guide manufacturing enterprises in leveraging the Environment as a moderating variable to support competitive strategies and drive enterprise performance. By monitoring environmental dynamics, embracing complexity, and promoting innovation, organizations can better adapt to external factors and achieve sustained business success.

5.5 Academic Contribution

The academic contributions of this study are substantial in advancing our understanding of Competitive Strategy (CS) and its impact on Enterprise Performance (EP), especially by grounding the analysis within established theoretical frameworks. This study contributes not only to the strategic management literature but also to broader academic discussions by providing new insights into the direct, mediating, and moderating relationships that shape enterprise success. The key academic contributions of this research are as follows:

1. Establishing the Relationship Between Competitive Strategy and Enterprise Performance: First, the study establishes a clear and significant relationship between Competitive Strategy and Enterprise Performance. By demonstrating the positive impact of Competitive Strategy on Enterprise Performance, this research validates the critical role that strategic competitiveness plays in driving business success. The findings are grounded in Porter's Competitive Advantage theory and the Resource-Based View (RBV), which provide theoretical justification for how the alignment of a firm’s resources and capabilities with its competitive strategy can lead to superior performance. This study's empirical validation of this relationship strengthens the theoretical underpinnings of strategic management and adds

evidence supporting the importance of Competitive Strategy in achieving high enterprise performance.

2. Mediating Roles of Organizational Factors: Second, the study highlights the mediating effects of key organizational factors—Innovation, Corporate Governance Structure, Capital Structure, and Human Capital—in the relationship between Competitive Strategy and Enterprise Performance. By showing that Innovation mediates this relationship, the study underscores the importance of innovative practices in translating competitive strategies into improved enterprise performance. The Corporate Governance Structure, Capital Structure, and Human Capital serve as mediating factors, suggesting that a firm's internal environment—especially in terms of leadership, organizational processes, financial management, and workforce capabilities—is crucial for achieving the desired outcomes from a competitive strategy. These insights are grounded in Barney's RBV and Teece's Dynamic Capabilities framework, which emphasize the role of organizational capabilities and structures in implementing competitive strategies effectively. These contributions deepen our understanding of the mechanisms through which competitive strategy influences performance.

3. Moderating Effects of Environmental Factors: Third, the study explores the moderating effects of environmental factors—Dynamics, Complexity, and Environmental Innovation—on the relationship between Competitive Strategy and Enterprise Performance. This aligns with Miles and Snow's Environmental Adaptation Theory, which highlights the importance of adapting a firm's strategy to external conditions. By identifying significant moderating effects, the research provides a comprehensive view of how external environmental factors, such as the pace of technological change, market complexity, and the need for environmental sustainability, influence the effectiveness of competitive strategies. This finding contributes to the literature by demonstrating the importance of incorporating environmental context into strategic planning and the implementation of Competitive Strategy. It also paves the way for future research into the role of environmental factors in strategic management.

4. Methodological Contributions: Fourth, this study contributes methodological insights by employing a robust approach to test mediation and moderation effects. The use of the Bootstrap method and the PROCESS plugin for structural equation modeling offers a reliable way to analyze complex relationships among multiple variables. These methodological advancements ensure the rigor and validity of the findings and can serve as a valuable resource for future researchers exploring similar relationships in strategic management. Additionally, the study's clear integration of both quantitative techniques and theoretical frameworks makes it a noteworthy contribution to the methodological discussions in the field.

In summary, the academic contributions of this study lie in its comprehensive analysis of the direct, mediating, and moderating effects in the relationship between Competitive Strategy

and Enterprise Performance. By grounding the study in established theories such as the Resource-Based View (RBV), Dynamic Capabilities theory, and Porter's Competitive Advantage framework, the research offers a nuanced understanding of the factors that drive enterprise success. These contributions have significant implications for both researchers and practitioners, guiding strategic planning, decision-making, and the successful implementation of competitive strategies to enhance enterprise performance.

5.6 Limitation and Future research

5.6.1 Limitation

While this study provides valuable insights into the relationship between Competitive Strategy (CS) and Enterprise Performance (EP), as well as the mediating and moderating effects of various factors, it has several limitations that should be acknowledged.

First, the research is based on a survey of middle and senior managers in the manufacturing industry. This scope limits the generalizability of the findings to other industries or lower-level employees. The unique characteristics of the manufacturing sector, such as production processes and supply chain dynamics, may not fully represent other sectors with different operational structures and strategic focuses.

Second, the study relies on cross-sectional data, which captures information at a single point in time. This approach does not account for changes over time and makes it challenging to infer causality. Longitudinal studies could provide a deeper understanding of how relationships among Competitive Strategy, Innovation, and Enterprise Performance evolve over different stages of business development.

Third, the study uses self-reported data from managers, which introduces the potential for response bias. Managers may be inclined to present more favorable outcomes or provide socially desirable answers that align with positive perceptions of their organizations' performance. Additionally, variations in individual interpretations of survey questions could lead to inconsistencies in the data. To mitigate this bias, future studies could triangulate data from multiple sources, such as financial reports, customer feedback, or employee surveys, which would enhance the reliability and validity of the findings.

Fourth, the study does not fully account for external factors that could influence Enterprise Performance, such as broader economic conditions, government regulations, or industry-specific challenges. These factors might play a significant role in shaping organizational outcomes, and their influence should be considered in future research to provide a more comprehensive understanding of the factors that drive enterprise performance.

Lastly, there may be a limitation in the sampling method used, as the study primarily relies on managerial perspectives. Future research could benefit from including input from lower-level employees, customers, or other stakeholders to offer a more holistic view of the competitive strategy-performance relationship.

5.6.2 Future Research

Given these limitations, several avenues for future research can build upon the findings of this study.

First, future research could expand the scope to include a broader range of industries and examine whether the relationships observed in the manufacturing sector hold in other contexts. This would improve the generalizability of the findings and provide insights into industry-specific factors that affect Enterprise Performance.

Second, longitudinal studies could offer a more comprehensive view of the relationships between Competitive Strategy, Innovation, and Enterprise Performance. Tracking changes over time would allow researchers to assess the durability of these relationships and explore how different factors evolve.

Third, future studies could incorporate multiple data sources to reduce response bias and increase the reliability of the results. This could involve combining survey data with objective performance metrics, such as financial data, or incorporating customer and employee feedback to gain a more holistic perspective.

Fourth, examining the impact of external factors on Competitive Strategy and Enterprise Performance could be an important area for future research. This could include exploring the effects of economic conditions, technological advancements, or regulatory changes, and how they interact with internal factors like Innovation and Corporate Governance Structure.

By addressing these limitations and exploring these avenues for future research, scholars can deepen their understanding of the complex relationships among Competitive Strategy, Innovation, and Enterprise Performance, ultimately contributing to more effective strategic management practices.

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APPENDIX

APPENDIX A

RESEARCH INSTRUMENTS

Affidavit of Translation Accuracy

This is to testify that the translated version of the questionnaire used in this research study is a verbatim, true, and faithful translation for all the established questions in the questionnaire are in its complete compliance, rationale, contextual, and in its whole spirit.

Pan Wang

Assoc. Prof. Dr. Singha Chaveesuk	Pan Wang

APPENDIX B
QUESTIONNAIRE IN ENGLISH

This questionnaire is a part of the research of the Doctor of Philosophy Program in Industrial Business Administration (International Program), Faculty of KMITL Business School, at KMITL University. The data collected from this questionnaire will be treated with the utmost confidentiality. Kindly answer to the best of your knowledge.

The questionnaire designed for this study will be divided into 2

parts: Part 1: Questions on the demographic data

Part 2: Question about the dents' cognition of the relationship between competitive strategy and enterprise performance of small and medium-sized manufacturing enterprises

Part 1: Demographic Data of the Respondents

Tick (√) the option applicable for each of the questions listed below.

1) Gender:

( ) Male ( ) Female ( ) Others, Please Specify

2) Age

( ) Under and 30 years ( ) 31-40 years

( ) 41-50 years ( ) 51-60 years ( ) Older than 60 years

3)Highest Education Level

( ) Under bachelor Degree

( ) Bachelor's Degree

( ) Master and Ph.D

4)Occupation

( ) CEO/General Manager ( ) Senior Management

( ) Middle Management ( ) Other Management Positions

5)Location of the enterprise:

North China () South China () East China () Central China () northwest () Southwest () southeast () northeast ()

6)Type of enterprise you are:

() Medical devices () Aerospace and equipment manufacturing () Electronics and communication equipment manufacturing () computer level I office equipment manufacturing () instruments () information chemical products manufacturing () other

Part 2: Question about the dents' cognition of the relationship between competitive strategy and enterprise performance of small and medium-sized manufacturing enterprises

Question		Strongly Disagree—— Strongly Agree				
		1	2	3	4	5
	Low cost strategy					
1	Our enterprise believes that cost control is a pivotal direction for market expansion.					
2	Our enterprise believes that striving to achieve the best value is essential amidst competition.					
3	Our enterprise believes that achieving the best value is key to market expansion.					
	Differentiation strategy					
4	Our enterprise views differentiation as crucial across product, price, channel, and promotional mechanisms.					
5	Our enterprise views the development of new products and targeting market segments willing to pay premium prices as essential for differentiation.					
6	Our enterprise views product branding, advertising, research and development, innovation, marketing techniques, and control over distribution channels as key elements of differentiation.					
	Hybrid strategy					
7	Our enterprise aims to boost its competitiveness through a combination of strategies.					
8	Our enterprise aims to enhance its competitiveness by integrating various strategic approaches.					
9	Our enterprise aims to strengthen its competitiveness by incorporating comprehensive evaluations of external market impacts into decision-making processes.					

Question		Strongly Disagree—— Strongly Agree				
		1	2	3	4	5
	Incremental innovation					
1	The enterprise I work for focuses on the gradual enhancement of product design and structure.					
2	The enterprise I work for excels at adopting and refining existing technologies.					
3	The enterprise I work for consistently improves upon existing process technologies.					
4	The enterprise I work for values continuous technological exploration based on market demands.					
	Breakthrough innovation					
5	The enterprise I work for adopts new methods for the business and market, consistently integrating new technologies during the innovation process.					
6	The enterprise I work for emphasizes thorough product evaluations.					
7	The enterprise I work for concentrates on redefining products and services.					
	Flexible innovation					
8	The enterprise I work for adjusts product design in response to new insights or market demands, aiming for significant advancements.					
9	The enterprise I work for focuses on innovations with clear market impact or those that cater to emerging market needs, emphasizing practicality and actionability to drive sustainable growth.					
10	The enterprise I work for emphasizes innovations with a clear potential for positive market impact or those that cater to emerging market needs.					
	Finance Performance					

Question		Strongly Disagree—— Strongly Agree				
		1	2	3	4	5
1	Our enterprise maintains a stable and positive operating cash flow.					
2	The net profit margins of our enterprise are competitive within the manufacturing industry.					
3	Our enterprise consistently meets or exceeds its financial performance targets, such as revenue growth and return on investment (ROI)					
4	The debt-to-equity ratio of our enterprise remains at a healthy level.					
5	Our enterprise's financial performance is sustainable in the long run.					
6	Our enterprise effectively achieves its strategic goals, such as market expansion, profitability, and operational efficiency					
	Non-financial Performance					
7	The enterprise I work for prioritizes employee satisfaction and well-being.					
8	The enterprise I work for demonstrates a strong commitment to social responsibility and community engagement.					
9	The enterprise I work for consistently delivers high-quality products or services.					
10	The enterprise I work for actively engages in environmental sustainability and eco-friendly practices.					
11	The enterprise I work for is innovative and adapts quickly to market changes.					
12	The enterprise I work for maintains positive relationships with stakeholders, including suppliers, customers, and partners.					
	Organizational structure					

Question		Strongly Disagree—— Strongly Agree				
		1	2	3	4	5
1	In the enterprise I work for, there's a clear division of labor and hierarchical levels that facilitate efficient operations.					
2	In the enterprise I work for, reporting relationships are clearly defined, ensuring smooth communication and accountability.					
3	In the enterprise I work for, roles and responsibilities are clearly defined, promoting effective coordination and minimizing overlap or confusion in tasks and projects.					
	Control structure					
4	The enterprise I work for ensures effective coordination between various departments to achieve organizational goals.					
5	In the enterprise I work for, there's a robust system for employee supervision and monitoring to ensure adherence to organizational standards.					
6	The enterprise I work for uses well-defined performance metrics and regular reviews to maintain control and ensure that employees meet organizational expectations and goals.					
	Management structure					
7	In the enterprise I work for, there's a robust system for employee supervision and monitoring to ensure adherence to organizational standards.					
8	In the enterprise I work for, there's a culture of empowerment and delegation, allowing departments to operate with autonomy while aligning with the company's vision.					
9	In the enterprise I work for, management maintains open communication and					

Question		Strongly Disagree—— Strongly Agree				
		1	2	3	4	5
	collaborates across departments to ensure cohesive decision-making and effective execution of strategic plans.					
	Ownership structure					
1	In the enterprise I work for, equity is distributed in a manner that aligns with our strategic goals and objectives.					
2	The rights of shareholders in my enterprise are clearly defined and protected.					
3	The enterprise I work for has a transparent governance structure that involves key stakeholders in decision-making processes, ensuring their interests are represented and considered.					
	Operating structure					
4	The enterprise I work for effectively manages its operating costs, ensuring profitability and sustainability.					
5	Our enterprise consistently achieves high operational efficiency, optimizing our resources and processes.					
6	The enterprise I work for maintains flexibility in its operations, allowing it to adapt to changes in the market or industry trends while still achieving high efficiency and managing costs effectively.					
	Financial indicators					
7	Our enterprise maintains a strong solvency position, ensuring we can meet our long-term obligations.					
8	The profitability metrics of the enterprise I work for consistently meet or exceed our industry benchmarks.					
9	The enterprise I work for effectively manages its liquidity and cash flow, ensuring that there is sufficient funding to					

Question		Strongly Disagree—— Strongly Agree				
		1	2	3	4	5
	meet short-term obligations and support ongoing operations.					
	Human resources					
1	In the enterprise I work for, the number of personnel aligns well with our operational and strategic needs.					
2	I am satisfied with the overall quality and competence of the personnel in our enterprise.					
3	The structure and distribution of personnel roles in our enterprise effectively support our business objectives.					
	Level of human resource capacity					
4	From a capacity perspective, the number of personnel in our enterprise is adequate to handle our operational demands.					
5	The quality of our personnel, in terms of their professionalism and dedication, meets our enterprise's expectations.					
6	I am satisfied with the skill set and abilities of our personnel, which align with our enterprise's goals.					
	Dynamics					
1	In the enterprise I work for, we rapidly adapt to the dynamic shifts in the market.					
2	Our enterprise is proactive in responding to emerging industry trends and dynamics.					
3	We actively engage with stakeholders to understand the dynamic changes in our business environment.					
	Complexity					
4	We have a clear understanding of the complexities within our internal organizational environment.					
5	Our enterprise demonstrates agility in adapting to shifts in both internal					

Question		Strongly Disagree—— Strongly Agree				
		1	2	3	4	5
	organizational dynamics and external market conditions, effectively responding to new challenges and complexities as they arise.					
6	Our enterprise effectively navigates the complexities and challenges of the external market.					
	Environmental innovation					
7	We consistently innovate in response to changes within our internal environment.					
8	Our enterprise incorporates sustainability and eco-friendliness into its innovation practices, striving to create products or processes that positively impact the environment while addressing internal and external changes.					
9	Our enterprise is innovative in adapting to shifts and changes in the external market environment.					

APPENDIX C
QUESTIONNAIRE IN CHINESE

第一部分:调查对象的人口统计资料

勾选(√)适用于下列每个问题的选项。

1)性别:

()男性()女性()其他

2)年龄

()30岁以下()31-40岁

()41-50岁()51-60岁()60岁以上

3)最高的教育程度

( ) 学士学位以下

( ) 学士学位

( ) 研究生及博士学位

4)职业

() CEO/总经理　　() 高级管理层

() 中级管理层　　() 其他管理职位

5)企业所在地:

华北()华南()华东()华中()西北()西南()东南()东北()

6)企业类型:

()医疗器械()航空航天及器材制造业()电子及通信设备制造业()计算机一级办公设备制造业()仪器仪表()信息化工产品制造业()其他

第二部分:关于中小制造企业竞争战略与企业绩效关系的认知的问卷

问题		非常不同意—非常同意				
		1	2	3	4	5
	低成本策略					
1	我们企业认为成本控制是市场拓展的关键方向。					
2	我们企业认为在竞争中努力实现最佳价值是必不可少的。					
3	我们企业认为实现最佳价值是市场拓展的关键。					
	差异化策略					
4	我们的企业认为，产品、价格、渠道和促销机制方面的差异化至关重要。					
5	我们的企业认为，开发新产品和瞄准愿意支付高价的细分市场是实现差异化的关键。					
6	我们的企业认为，产品品牌、广告、研发、创新、营销技巧和对分销渠道的控制是实现差异化的关键要素。					
	混合策略					
7	我们的企业旨在通过多种战略组合来提升竞争力。					
8	我们的企业旨在通过整合各种战略方法来提高竞争力。					
9	我们的企业旨在通过将对外部市场影响的全面评估纳入决策过程来增强竞争力。					
	逐步创新					
1	我所在的企业注重产品设计和结构的逐步提升。					
2	我所在的企业擅长采用和改进现有技术。					
3	我所在的企业不断改进现有的工艺技术。					
4	我所在的企业重视根据市场需求不断进行技术探索。					
	突破性创新					
5	我所在的企业采用新的业务和市场方法，在创新过程中不断融入新技术。					
6	我所在的企业强调彻底的产品评估。					
7	我所在的企业专注于重新定义产品和服务。					
	灵活创新					
8	我所在的企业根据新的见解或市场需求调整产品设计，力求取得重大进步。					
9	我所在的企业专注于具有明显市场影响或迎合新兴市场需求的创新，强调实用性和可操作性，以推动可持续增长。					

问题		非常不同意—非常同意				
		1	2	3	4	5
10	我所在的企业强调具有明显积极市场影响潜力的创新或迎合新兴市场需求的创新。					
	财务绩效					
1	企业经营现金流稳定，为正数。					
2	企业净利润率在制造业中具有竞争力。					
3	企业持续达到或超过财务绩效目标，如收入增长和投资回报率（ROI）					
4	企业负债权益比保持在健康水平。					
5	企业财务绩效长期可持续。					
6	企业有效实现战略目标，如市场扩张、盈利能力和运营效率					
	非财务绩效					
7	我工作的企业将员工满意度和福祉放在首位。					
8	我工作的企业表现出对社会责任和社区参与的强烈承诺。					
9	我工作的企业始终如一地提供高质量的产品或服务。					
10	我工作的企业积极参与环境可持续性和环保实践。					
11	我工作的企业富有创新精神，能够快速适应市场变化。					
12	我工作的企业与利益相关者（包括供应商、客户和合作伙伴）保持着良好的关系。					
	组织结构					
1	在我工作的企业中，分工明确，层级分明，有利于高效运作。					
2	在我工作的企业中，报告关系明确，确保沟通顺畅，责任明确。					
3	在我工作的企业中，角色和职责明确，促进有效协调，最大限度地减少任务和项目中的重叠或混乱。					
	控制结构					
4	我所在的企业确保各部门之间有效协调，以实现组织目标。					
5	在我所在的企业，有一个强大的员工监督和监控系统，以确保遵守组织标准。					
6	我所在的企业使用明确的绩效指标和定期审查来保持控制并确保员工满足组织的期望和目标。					
	管理结构					

问题		非常不同意—非常同意				
		1	2	3	4	5
7	在我工作的企业中，有一个强大的员工监督和监控系统，以确保遵守组织标准。					
8	在我工作的企业中，有一种授权和放权的文化，允许部门自主运作，同时与公司愿景保持一致。					
9	在我工作的企业中，管理层保持开放的沟通并跨部门协作，以确保决策的连贯性和战略计划的有效执行。					
	所有权结构					
1	在我工作的企业中，股权的分配方式与我们的战略目标和宗旨相一致。					
2	我所在企业的股东权利得到明确界定和保护。					
3	我工作的企业拥有透明的治理结构，让关键利益相关者参与决策过程，确保他们的利益得到代表和考虑。					
	运营结构					
4	我所在的企业有效管理运营成本，确保盈利和可持续性。					
5	我们的企业始终保持高运营效率，优化资源和流程。					
6	我所在的企业保持运营灵活性，使其能够适应市场或行业趋势的变化，同时仍能实现高效率并有效管理成本。					
	财务指标					
7	我们的企业保持着强大的偿付能力，确保我们能够履行长期义务。					
8	我所在企业的盈利指标始终达到或超过行业基准。					
9	我所在企业有效地管理其流动性和现金流，确保有足够的资金来履行短期义务并支持持续运营。					
	人力资源					
1	在我所在的企业，人员数量与我们的运营和战略需求非常吻合。					
2	我对我们企业人员的整体素质和能力感到满意。					
3	我们企业的人员结构和角色分配有效地支持了我们的业务目标。					
	人力资源能力					
4	从能力角度来看，我们企业的人员数量足以满足我们的运营需求。					
5	我们人员的专业素养和奉献精神符合我们企业的期望。					

问题		非常不同意—非常同意				
		1	2	3	4	5
6	我对我们人员的技能和能力感到满意，这与我们企业的目标相符。					
	动态性					
1	在我工作的企业中，我们快速适应市场的动态变化。					
2	我们的企业积极应对新兴行业趋势和动态。					
3	我们积极与利益相关者合作，了解我们业务环境中的动态变化。					
	复杂性					
4	我们清楚地了解内部组织环境中的复杂性。					
5	我们的企业表现出敏捷性，能够适应内部组织动态和外部市场条件的变化，有效地应对新出现的挑战和复杂性。					
6	我们的企业有效地应对外部市场的复杂性和挑战。					
	环境创新					
7	我们不断创新以应对内部环境的变化。					
8	我们的企业将可持续性和环保性融入其创新实践中，努力创造对环境产生积极影响的产品或流程，同时应对内部和外部的变化。					
9	我们的企业在适应外部市场环境的变化方面富有创新精神。					

APPENDIX D
ENTERPRISE LIST

This appendix provides basic information on multiple enterprises, including their names, English names, locations, and industries. The listed enterprises span various industries, such as textile and apparel, electronics, biotechnology, and chemical manufacturing. They are categorized by region (e.g., Beijing, Shanghai) and serve as the source enterprises for the sample survey in this study.

企业名单	List	Location	Industry
北京纬都服装有限公司	Beijing Weidu Clothing Co., Ltd.	Beijing	Textile clothing, apparel industry
北京华盾雄鹰标志服装厂	Beijing Huadun Eagle Logo Garment Factory	Beijing	Textile clothing, apparel industry
北京迎华服装加工厂	Beijing Yinghua Garment Processing Factory	Beijing	Textile clothing, apparel industry
瑞萨半导体(北京)有限公司	Renesas Semiconductor (Beijing) Co., Ltd.	Beijing	Electronics industry
北京市(诺兰特)电子厂	Beijing (Norland) Electronics Factory	Beijing	Electronics industry
北京大兴电子厂	Beijing Daxing Electronics Factory	Beijing	Electronics industry
百济神州(北京)生物科技有限公司	BeiGene (Beijing) Biotechnology Co., Ltd.	Beijing	Pharmaceuticals industry
北京民海生物科技有限公司	Beijing Minhai Biotechnology Co., Ltd.	Beijing	Pharmaceuticals industry
北京百普赛斯生物科技股份有限公司	Beijing BPS Biotechnology Co., Ltd.	Beijing	Pharmaceuticals industry
碧海舟(北京)节能环保装备有限公司	Bihaizhou (Beijing) Energy Saving and Environmental Protection Equipment Co., Ltd.	Beijing	Chemical industry
北京方德精密化工设备有限公司	Beijing Fangde Precision Chemical Equipment Co., Ltd.	Beijing	Chemical industry
上海秀爱鞋业厂	Shanghai Xiuai Shoes Factory	Shanghai	Textile clothing, apparel industry
上海凤佳印花服装厂	Shanghai Fengjia Printing Garment Factory	Shanghai	Textile clothing, apparel industry

企业名单	List	Location	Industry
上海飞鹏制衣厂	Shanghai Feipeng Garment Factory	Shanghai	Textile clothing, apparel industry
上海厚兴电子有限公司	Shanghai Houxing Electronics Co., Ltd.	Shanghai	Electronics industry
上海市卢湾区通用电视配件厂	Shanghai Luwan District General TV Accessories Factory	Shanghai	Electronics industry
上海威田电子灯光器材厂	Shanghai Weitian Electronic Lighting Equipment Factory	Shanghai	Electronics industry
上海仪弛实业有限公司	Shanghai Yichi Industrial Co., Ltd.	Shanghai	Chemical industry
上海拓铤液压机械有限公司	Shanghai Tuocheng Hydraulic Machinery Co., Ltd.	Shanghai	Chemical industry
上海创呈实业有限公司	Shanghai Chuangcheng Industrial Co., Ltd.	Shanghai	Other manufacture industry
上海亿丹家具有限公司	Shanghai Yidan Furniture Co., Ltd.	Shanghai	Other manufacture industry
广州星火服装有限公司	Guangzhou Xinghuo Clothing Co., Ltd.	Guangdong	Textile clothing, apparel industry
广州卡丹王鞋业有限公司	Guangzhou Kadanwang Shoes Co., Ltd.	Guangdong	Textile clothing, apparel industry
广州顶盛皮革箱包有限公司	Guangzhou Dingsheng Leather Bags Co., Ltd.	Guangdong	Textile clothing, apparel industry
广州洁珑化工有限公司	Guangzhou Jielong Chemical Co., Ltd.	Guangdong	Chemical industry
广州市潘特化工有限公司	Guangzhou Panter Chemical Co., Ltd.	Guangdong	Chemical industry
广州市科维奇化学材料有限公司	Guangzhou Kovich Chemical Materials Co., Ltd.	Guangdong	Chemical industry
广州市德弘医药科技有限公司	Guangzhou Dehong Pharmaceutical Technology Co., Ltd.	Guangdong	Pharmaceuticals industry
广州造福堂医药科技有限公司	Guangzhou Zaofutang Pharmaceutical Technology Co., Ltd.	Guangdong	Pharmaceuticals industry
新乐章(广州)科技实业有限公司	New Movement (Guangzhou) Technology Industrial Co., Ltd.	Guangdong	Electronics industry
广州瑞迅德智能科技有限公司	Guangzhou Ruixunde Intelligent Technology Co., Ltd.	Guangdong	Electronics industry

企业名单	List	Location	Industry
浏阳市诗兰德鞋业有限公司	Liuyang Shilande Shoes Co., Ltd.	Hunan	Textile clothing, apparel industry
长沙锦琳服装有限公司	Changsha Jinlin Clothing Co., Ltd.	Hunan	Textile clothing, apparel industry
长沙华洋合成材料有限责任公司	Changsha Huayang Synthetic Materials Co., Ltd.	Hunan	Chemical industry
湖南凯米克化工有限公司	Hunan Kemike Chemical Co., Ltd.	Hunan	Chemical industry
湖南省双龙木质纤维素有限公司	Hunan Shuanglong Lignocellulose Co., Ltd.	Hunan	Chemical industry
湖南省宁乡县银河电子有限公司	Hunan Ningxiang County Galaxy Electronics Co., Ltd.	Hunan	Electronics industry
湖南今朝计算机系统工程有限公司	Hunan Jinzhao Computer System Engineering Co., Ltd.	Hunan	Electronics industry
长沙和硕医疗器械有限公司	Changsha Heshuo Medical Equipment Co., Ltd.	Hunan	Pharmaceuticals industry
湖南瑞尔惠仁医学科技有限公司	Hunan Ruier Huiren Medical Technology Co., Ltd.	Hunan	Pharmaceuticals industry
成都派登服饰有限责任公司	Chengdu Paideng Clothing Co., Ltd.	Sichuan	Textile clothing, apparel industry
成都晋沙汇川服装有限公司	Chengdu Jinsha Huichuan Clothing Co., Ltd.	Sichuan	Textile clothing, apparel industry
四川轩禾康生物科技有限公司	Sichuan Xuanhekang Biotechnology Co., Ltd.	Sichuan	Pharmaceuticals industry
四川科伦博泰生物医药股份有限公司	Sichuan Kelunbotai Biopharmaceutical Co., Ltd.	Sichuan	Pharmaceuticals industry
成都泰森电气设备有限公司	Chengdu Taison Electrical Equipment Co., Ltd.	Sichuan	Electronics industry
四川科维迪电气有限公司	Sichuan Keweidi Electric Co., Ltd.	Sichuan	Electronics industry
成都优诺新材料有限公司	Chengdu Younuo New Materials Co., Ltd.	Sichuan	Chemical industry
四川迈科睿新材料有限责	Sichuan Maikerui New Materials Co., Ltd.	Sichuan	Chemical industry

企业名单	List	Location	Industry
任公司			
四川石达化学股份有限公司	Sichuan Shida Chemical Co., Ltd.	Sichuan	Chemical industry
珞石机械(成都)有限公司	Luo Shi Machinery (Chengdu) Co., Ltd.	Sichuan	Other manufacture industry
成都华盛工艺包装厂	Chengdu Huasheng Craft Packaging Factory	Sichuan	Other manufacture industry
四川大硅特玻科技有限公司	Sichuan Silicon Special Glass Technology Co., Ltd.	Sichuan	Other manufacture industry
青海大通机电厂	Qinghai Datong Mechanical and Electrical Factory	Qinghai	Electronics industry
青海长德电力工程有限公司	Qinghai Changde Electric Power Engineering Co., Ltd.	Qinghai	Electronics industry
西宁荣智电力工程有限公司	Xining Rongzhi Electric Power Engineering Co., Ltd.	Qinghai	Electronics industry
青海藤林工贸有限责任公司	Qinghai Tenglin Industry and Trade Co., Ltd.	Qinghai	Chemical industry
西宁油脂化工厂	Xining oleochemical factory	Qinghai	Chemical industry
青海有杰新型材料有限公司	Qinghai Youjie New Materials Co., Ltd.	Qinghai	Chemical industry
青海月王青藏药业有限责任公司	Qinghai Yuewang Qingzang Pharmaceutical Co., Ltd.	Qinghai	Pharmaceuticals industry
青海高德威生物保健制品有限公司	Qinghai Gaodewei Biological Health Products Co., Ltd.	Qinghai	Pharmaceuticals industry
湟中区李家山发魁饲料加工厂	Huangzhong District Lijiashan Fakui Feed Processing Factory	Qinghai	Other manufacture industry
青海藤林工贸有限责任公司	Qinghai Tenglin Industry and Trade Co., Ltd.	Qinghai	Other manufacture industry
青海修竹园中药材有限责任公司	Qinghai Xiuzhuyuan Chinese Medicinal Materials Co., Ltd.	Qinghai	Other manufacture industry
吉林新源玉米开发有限公	Jilin Xinyuan Corn Development Co., Ltd.	Jilin	Other manufacture industry

企业名单	List	Location	Industry
司			
吉林市船营区明国淀粉制品加工厂	Jilin City Chuanying District Mingguo Starch Products Processing Factory	Jilin	Other manufacture industry
政通新材料技术(吉林省)集团有限公司	Zhengtong New Material Technology (Jilin Province) Group Co., Ltd.	Jilin	Chemical industry
吉林新航化工科技有限公司	Jilin Xinhang Chemical Technology Co., Ltd.	Jilin	Chemical industry
通化万赢生物科技有限公司	Tonghua Wanying Biotechnology Co., Ltd.	Jilin	Pharmaceuticals industry
吉林紫鑫初元药业有限公司	Jilin Zixin Chuyuan Pharmaceutical Co., Ltd.	Jilin	Pharmaceuticals industry
吉林省东联生物科技有限公司	Jilin Donglian Biotechnology Co., Ltd.	Jilin	Pharmaceuticals industry
吉林盖特维生物科技发展有限公司	Jilin Gateway Biotechnology Development Co., Ltd.	Jilin	Pharmaceuticals industry
吉林市船营区石鑫木材加工厂	Shixin Wood Processing Factory, Chuanying District, Jilin City	Jilin	Other manufacture industry

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