

Study on the Action Mechanism and Conduction Path of Quality Immune System Resilience in Special Precision and New Enterprises of Liaoning Province

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Abstract: With the continuous evolution of the global economic landscape and the increasingly fierce competition in the market, the resilience of the enterprise quality immune system has become increasingly important. As an important province in Northeast China, Liaoning Province has rich industrial resources and talent reserves. In recent years, with the country's attention to and support for the innovation and development of small and medium-sized enterprises, Liaoning's "specialized, special and new" enterprises have gradually emerged and become an important force to promote regional economic development. In-depth research on it will not only help to enhance the core competitiveness of enterprises, but also help promote the industrial upgrading and economic development of the entire region to adapt to the changing market demand and competitive environment. By consulting relevant books, periodicals, policy documents, etc., we can deeply understand the core competitiveness and market position of Liaoning's "specialized, special and new" enterprises. Through the study of the resilience of the quality immune system of enterprises, the advantages of enterprises in specific fields or technologies can be revealed, and the development potential and growth space of "specialized, special and new" enterprises in Liaoning can be evaluated, which help to promote the development of enterprises further.

Keywords: Quality Immune System; Resilience; Conduction Pathway; Market Competitiveness; Quality

1. Introduction

Liaoning is a province in China. With its unique professional technology, fine management, characteristic products and novel development

model, Liaoning's "specialized, special and new" enterprises have occupied a place in the market competition. However, with increased competition in the market and changing consumer needs, these companies are also facing more and more challenges. Therefore, building a sound and efficient quality immune system and improving the resilience of enterprises have become an urgent problem for these enterprises to solve.

Quality immune system resilience refers to an organization's ability to quickly identify, assess, respond to, and learn to adapt to internal and external risks. For "specialized, special and new" enterprises, the mechanism and transmission path of the resilience of the quality immune system are not only related to the survival and development of the enterprise, but also have an important impact on the stability and development of the regional economy.

2. The Concept of Specialization, Refinement, and Innovation

Specialized, refined, special and new refers to industrial small and medium-sized enterprises with the characteristics of "specialization, refinement, specialization, and novelty". Specifically, these companies focus on their core business and have the ability to specialize in production, service and collaboration [1]. Its products and services are in a dominant position in a certain link of the industrial chain, providing high-quality parts, components, supporting products and supporting services for large enterprises, large projects and industrial chains.

Refinement: Fine and efficient operation and management, the establishment of fine and efficient systems, processes and systems, to achieve fine production, fine management, fine service, the formation of core competitiveness, its products or services of

excellent quality.

Specialization: For specific markets or consumer groups, the use of characteristic resources, traditional skills, regional culture or the use of unique processes, technologies, formulas or special raw materials for research and production or to provide unique products or services, with uniqueness, uniqueness, exclusive production characteristics, strong influence and brand awareness.

Novelty: Remarkable results in innovation ability, focusing on technology research and development and innovation, and launching more innovative and differentiated products and services to meet the changing market demand.

"Specialized, refined, special and new" enterprises are an important foundation for China's economic resilience, the main force to protect market entities and employment, and a key link to improve the stability and competitiveness of industrial and supply chains [2,3]. In order to accelerate the improvement of these characteristics of small and medium-sized enterprises, the Liaoning Provincial Government has issued a series of support policies to encourage small and medium-sized enterprises to develop in the direction of "specialization, refinement, special innovation" [4]. These policies include financial support, tax incentives, innovation support, etc., aiming to help Liaoning's "specialized, special and new" enterprises improve their professional level, enhance refined management, develop characteristic products and services, and enhance their innovation capabilities.

At present, the development of "specialized, special and new" enterprises in Liaoning is characterized by continuous growth in number and uneven geographical distribution [5]. These enterprises play an increasingly important role in economic development and are of great significance for enhancing the overall industrial competitiveness of the country. In the future, Liaoning's "specialized, special and new" enterprises will continue to face development opportunities and challenges. With the continuous change of market demand and continuous technological progress, these enterprises need to continuously improve their professional capabilities and technical level, strengthen brand building, promote industrial chain

synergy, achieve green development, and actively embrace digital transformation [6,7]. At the same time, the government and all sectors of society will continue to increase support for "specialized, special and new" enterprises to create a better development environment for them.

3. The Concept of System Resilience

System resilience refers to the internal ability of a system to adjust its function and continue to function in the face of change and disruption. It covers resilience characteristics such as defense, resilience, and adaptability, enabling the system to perform the required actions in both expected and unexpected situations [8]. This resilience is not only about the system's resilience to failure, but more importantly finding a balance between productivity and safety to ensure that the system can proactively absorb shocks and maintain the continuity of its functions and services in the face of extreme risk shocks.

The resilience of the quality immune system of specialized and special new enterprises mainly depends on their unique quality management concepts, advanced quality management methods and continuous quality improvement activities. Together, these elements form an effective risk identification, assessment, response, and learning and adaptation mechanism [9].

To improve the resilience of the quality immune system of Liaoning's "specialized, special and new" enterprises, we can start from many aspects. For example, the defense capability of the system is enhanced by proactively adjusting the system elements, optimizing the system structure, and shaping the system environment, establishing a risk-free or risky emergency plan to deal with possible accidents or attacks, ensuring that the system can still operate in degraded mode after adverse events and conditions cause interference, implementing regular software upgrades, data backup and recovery, system monitoring and early warning and other measures to enhance the reliability and resilience of the system, and strengthening employee security awareness education and safety drills to improve employees' ability to respond to emergencies [10]. It is necessary to comprehensively consider the design, implementation, management and other aspects to ensure that the enterprise quality immune system can maintain the continuity and stability

of its functions and services in the face of various challenges.

4. The Conduction Path of the Resilience of the Enterprise Quality Immune System

The transmission path of enterprise quality immune system resilience is a cyclical process from risk identification to learning and adaptation to continuous improvement. In this process, enterprises need to continuously improve their quality management level and enhance the resilience of the quality immune system to cope with various complex and changeable market environments.

The conduction path of the resilience of the quality immune system of "specialized, special and new" enterprises is a multi-link and multi-level progressive process. Starting from risk identification and perception, through risk assessment and early warning, resource allocation and response, learning and adaptation, and continuous improvement and optimization, the advantages of quality immune system resilience are gradually transformed into the actual competitiveness of enterprises [11]. Ensure that enterprises can maintain a stable level of quality in the face of complex and volatile market conditions.

The conduction path of enterprise quality immune system resilience can be roughly divided into the following key links:

The enterprise quality immune system first needs to identify the possible risks in the internal and external environment in a timely and accurate manner. This includes monitoring and analysis of raw materials, production processes, product quality, market demand, policy changes, and more. Through risk identification, enterprises can perceive potential threats and challenges, and lay the foundation for subsequent risk response.

After identifying the risks, companies need to conduct qualitative and quantitative assessments of these risks to determine the extent to which they may affect the company's quality immune system. At the same time, an effective early warning mechanism should be established to give early warning of risk factors that may cause quality problems, so that enterprises can respond quickly.

When the risk warning is triggered, enterprises need to quickly mobilize internal resources, including human, material, and financial resources, to respond to the risk. This includes

measures such as adjusting production processes, strengthening quality control, and optimizing product design to mitigate the impact of risks on the quality of the enterprise. At the same time, enterprises also need to establish a cross-departmental and cross-level coordination mechanism to ensure that all departments can respond quickly and effectively respond to risks. In the process of dealing with risks, enterprises need to constantly learn lessons and learn new quality management methods and skills. Through continuous learning and adaptation, enterprises can improve their own quality management level and enhance the resilience of the quality immune system. At the same time, enterprises also need to pay attention to the development and changes of the market and technology, and adjust their own quality standards and requirements in a timely manner to adapt to the changing market environment.

The resilience of the enterprise's quality immune system is not only reflected in the ability to respond to risks, but also in the continuous improvement and optimization of the system. Enterprises need to regularly evaluate and review the quality management system, find existing problems and deficiencies, and formulate targeted improvement measures. Through continuous improvement and optimization, enterprises can continuously improve the performance and effect of the quality immune system, and enhance the competitiveness and anti-risk ability of enterprises.

5. Conclusions and Prospects

The resilience of the quality immune system of Liaoning's "specialized, special and new" enterprises has played an important role in resisting risks and enhancing competitiveness. These companies have effectively improved the resilience of their quality immune system by building a sound quality management system, implementing strict quality control measures, and continuously improving quality management methods. In the face of market risks, technological challenges and competitive pressures, these companies are able to respond quickly, maintain stable production and operation, and show strong resilience and adaptability.

The conduction path of the resilience of the quality immune system presents a clear progressive relationship in the "specialized,

special and new" enterprises in Liaoning. Starting from risk identification and perception, these enterprises can identify potential risks in a timely manner and take corresponding measures through effective risk assessment and early warning mechanisms. In the resource allocation and response phase, enterprises can quickly mobilize internal and external resources to respond to risk events. Through the learning and adaptation mechanism, the company continues to summarize lessons and improve the level of quality management. Finally, in the stage of continuous improvement and optimization, enterprises continuously optimize quality management processes and methods to improve the overall effectiveness of the resilience of the quality immune system.

Looking forward to the future, there is still broad space and potential for the research on the resilience of the quality immune system of "specialized, special and new" enterprises in Liaoning. With the intensification of market competition and the continuous emergence of technological innovation, enterprises need to continuously improve the quality management system and improve the quality management level to cope with the more complex and changeable market environment. At the same time, the government and all sectors of society should also increase support for "specialized, special and new" enterprises, provide them with a better development environment and policy guarantees, and promote the further improvement of the resilience of their quality immune system.

To sum up, the research on the mechanism and conduction path of the resilience of the quality immune system of Liaoning's "specialized, special and new" enterprises has important theoretical significance and practical value, and provides strong support for Liaoning's "specialized, special and new" enterprises to improve their quality management level and enhance their competitiveness.

Acknowledgements

This work was supported by Social Science Planning Fund Project of Liaoning Province (L23BGL017).

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