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# THE STRATEGIC COMPETITION IMPROVEMENT PATH FOR CHINA HIGH TECHNOLOGY ENTERPRISES

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## Abstract

*Based on the era background of "Made in China 2025 Strategy" and "High Quality Development", the strategic goals of China's high-tech enterprises face higher development requirements. Therefore, formulation and implementation of strategic competition actions that are compatible with the macroeconomic environment to ensure the rational allocation and effective use of enterprise resources, and truly achieve sustainable and healthy development of these enterprises is of great strategic important. However, the overall development level of China's high-tech enterprises is still witnessed with huge expectation gap especially in the practice of market competition. The competition among Chinese high-tech enterprises around performance is becoming more and fiercer, and the traditional model focusing on single strategic competition means that it could not respond to the volatile or changing market environment. In order to further improve the accuracy of strategic competitive actions, this paper conceptualized that the development of high-tech enterprises requires both correct strategic competitive actions and needs to consider the deep impact of strategic groups. Therefore, this paper intends to provide the perspective of industry structure in the study of the relationship between enterprise strategic competition and enterprise performance. Combined with the research task, this study collected the sample enterprises of telecom industry from 21 Chinese cities to conduct an empirical test using SPSS 23, and draws the following research conclusions: The empirical results found that the enterprises' quantitative and heterogeneous strategic competitive actions has a positive effect on enterprise performance; the enterprises' simplicity strategic competitive action has a negative effect on enterprise performance. In general, the attributes of an enterprise's strategic group in the industry will have an impact on the relationship between its strategic competitive actions and its performance.*

**Keywords**: high-tech enterprises; strategic competitive actions; strategic groups; industrial barriers; enterprise performance

## Introduction

Existing research shows that in the high-tech industry, with the increase in the depth and breadth of competition between companies, the use of a single strategic competitive method is easily observed and imitated by its competitors (Altungul et al., 2017), which leads to competitive disadvantages. To overcome this problem, companies often increase their competitive advantages in market activities by increasing the number of competitive actions, intensively taking different types of competitive actions, and taking differentiated competitive actions from competitors. With the deepening of research, how to use a certain combination of competitive actions to improve enterprise performance in a certain period of time has attracted the attention of many scholars. Related scholars have discussed the characteristics of enterprise competitive actions from different dimensions. The literature describes the indicators of enterprise competition actions mainly divided into three categories: quantitative, simple, and heterogeneous. Among them, the number of competitive action categories refers to the total number of competitive actions taken by a company in a certain period of time; the simplicity of enterprise action categories refers to the combination of competitive actions taken by a company in a certain period, including different types of competitive actions. The degree of heterogeneity of enterprise competition action refers to the degree to which a company's competitive actions are not similar to its competitors.

In general, previous research focused on the combination of competitive actions taken by a company in a certain period of time, and focused its research on the most microscopic level of individual actions in the field of competitive strategy.

From the perspective of the category structure indicators of enterprise competitive action, the existing research on the three core variables of quantitative, simplicity and heterogeneous competitive actions is scattered, often focusing only on the test of a certain variable, and lacking competitive action comprehensive discussion of three variables: quantitative, simplicity and heterogeneous. In fact, these three variables represent different structural dimensions of enterprise competition action categories, and a discussion focused on one dimension cannot fully describe and reflect the competitive situation.

Existing research on enterprise strategic competitive action often focuses on competitive action itself, and has not yet paid attention to the impact of the degree of competition within the industry on enterprise action and the outcome of competition. Existing literature believes that competition among companies will also affect business performance. Therefore, based on the consideration of industry competitors in this industry, this thesis intends to include the competition factors between enterprises in the study of the relationship between enterprise strategic competition actions and enterprise performance, and analyzes the degree of market competition between enterprise strategic competition actions and enterprise performance Impact of relationships.

Combining the above studies, it can be considered that since the strategic group is the result of the barriers to competition and interaction between enterprises within the industry, this article can use the perspective of the strategic group to divide the enterprises within the industry to distinguish the enterprises. Does the market competition have different impacts on the relationship between enterprise strategic competition actions and enterprise performance? Existing literature in the field of strategic groups distinguishes market competition among enterprises based on whether competitors belong to the same strategic group. Market competition within strategic groups and market competition between strategic groups However, these studies only affect the business performance of the resulting contrast (Cozza and Zanfei, 2016), did not take into account differences between companies competing action of industrial organization economics analysis method based on different types of competition. The purpose of this article is to use the strategic group theory to distinguish the market competition between enterprises into two types: the first is the market competition between the enterprise and other members of the strategic group, and the second is the market competition with enterprise members from other strategic groups. If the above two types of competitive relationships can be distinguished and measured, the impact of different types of market competition in the two groups on the relationship between enterprise strategic competitive action and enterprise performance can be analysed.

## Research Objectives and Significance

In view of the intensified market competition and the complex and changeable competitive environment, high-tech companies in particular need to take more comprehensive strategic competitive actions. However, in reality, the strategic sectors of Chinese high-tech companies have not paid enough attention to how to combine and match the various types of strategic competitive actions can achieve better enterprise performance. There is also a lack of effective analysis on how market competition affects the relationship between strategic competitive actions and enterprise performance. In particular, the description of enterprise strategic competitive actions is not comprehensive, and it does not consider the impact of market competition on the relationship between enterprise strategic competition actions and enterprise performance from the perspective of industry structure, nor does it consider whether there are differences between competitors within the industry, and whether there are different types of market competition within the industry. This article takes the strategic competitive actions of enterprises as the starting point, and explores the influencing factors of enterprise performance from the perspective of the combination of enterprise strategic competitive actions and strategic groups.

In order to promote the performance improvement of Chinese high-tech enterprises, considering that the descriptions of enterprise strategic competitive actions in previous studies are often limited to a certain aspect and fail to reflect the full picture of enterprise strategic competitive actions. Based on this problem, this article attempts to describe the strategic competitive actions

of enterprises from the three dimensions of quantification, simplicity, and heterogeneity, and tests the relationship between enterprise strategic competitive actions and enterprise performance.

This study can be considered to have initially achieved the integration of the perspective of enterprise behavior and the perspective of industry structure in the strategic field.

## Literature Review

The relationship between the strategic competitive action and the performance of high-tech enterprises, and through the introduction of the concept of strategic group as a tool to describe the industry structure, that combines the strategic competitive action and strategic group is explored. Therefore, to understand the origin of development process and research status of the relevant theoretical system, it is considered the prerequisite and important foundation for the identification of research gap (Kodialam M. et al. 2017)

Enterprise strategic competitive action is the core of building competitive advantage. Predecessors have verified the important role of strategic competitive action from the dimensions of competitive strategy and enterprise resources. However, in today's enterprise management practice, due to the aggravation of market competition and the complexity of the external environment, enterprises need to take more comprehensive strategic competition actions. In the past research, the enterprise strategy Department has not paid enough attention to how to combine and match all kinds of strategic competition actions of enterprises to achieve better enterprise performance (Elm D et al. 2016)

At the level of enterprise strategy theory, there are also gaps in the research on the above issues. Although the existing research on the category theory of enterprise competitive action has analyzed the relationship between some strategic competitive actions and enterprise performance from the local dimension, the description of enterprise strategic competitive actions is not comprehensive enough.

The concept of strategic group has been widely concerned by strategic management scholars and researchers since it was put forward, and has become one of the themes in the field of strategic management (Gilliland S. et al. 2016). From the perspective of mobile barriers, the existing research finds out the impact of strategic groups on enterprise performance. However, there is still some ambiguity in the current research on the relationship between strategic groups and firm performance. Although scholars have done a lot of empirical research on banking, aviation, medicine, retail and other industries, they have not reached a unified conclusion on the core issues of strategic group research.

Scholars in the study of strategic groups are mostly focused on a specific industry, but have not carried out a detailed and systematic analysis of Chinese high-tech enterprises. Moreover, with the development of information technology, the competitive advantage of high-tech enterprises is

more difficult to last, and the survival of many high-tech enterprises has become a key problem (Wang L. et al. 2017; Roome et al. 2016; Dyczkowska J. 2017; Ergunova O. T. et al. 2017; Hu J. et al. 2018 ) In this context, how to use the strategic group theory to analyze and deal with the complex and changeable market environment in the industry, and build their own competitive advantage has become an important proposition for enterprises. The existing literature has not yet put forward a clear response to this problem. Therefore, it is of great theoretical and practical significance to study the mechanism of strategic groups and performance based on Chinese high-tech enterprises.

## Methodology

Based on the literature review of strategic competitive actions, strategic groups and enterprise performance, this study puts forward the research hypothesis that needs to be tested, and takes the data of telecommunication industry as the research sample, puts forward the overall research design around the two levels of individual strategic competitive actions of Chinese high-tech enterprises, the relationship between strategic groups and enterprise performance. Because different enterprises follow different strategies in a series of strategic dimensions, such as scale, product line width, geographical area and so on, and different enterprises have different resources, they adopt similar strategic orientation or are committed to building similar strategic resource sets to form strategic groups. Based on the past literature review and summary, for the same enterprise, in different strategic groups, different market competition will definitely have different impact on the relationship between the strategic competition action and enterprise performance. This study will use the data of China telecom industry to carry out empirical analysis on the basis of research hypothesis.

In addition, this section will propose appropriate research variables and empirical test methods for the above research hypotheses and model design, in order to verify the relationship between strategic competitive actions, strategic groups and enterprise performance. Based on the previous research methods, this study proposes the research methods according to the purpose of this research, and then measures the relationship between enterprise performance according to the dimensions of strategic competitive action and strategic group.

Based on the availability of data, this study selects Chinese telecom enterprises as the research sample. Telecom enterprises are a special high-tech industry, and they are an ideal contact situation of independent competition. They meet all the necessary conditions for the analysis of different strategic competition actions of enterprises in the strategic group, and can ensure the typicality of industry environment and the objectivity of data. In the selection of variables, this study refers to the variables used by the previous scholars in the empirical study of strategic groups, and adjusts them according to the specific situation of China's telecom enterprises. In general, the product classification of China telecom industry can meet the research requirements well. The data of the selected samples in the above aspects are relatively complete, and the indicators are relatively rich, which can support the research well. Based on the available data,

SPSS 23 is used to carry out multi-level linear regression on the data, so as to verify the research hypothesis and lay a good research foundation for the research conclusion.

## Population/Sampling/Unit of Analysis

Combined with the research tasks, this research scenario selects the provincial capitals, municipalities directly under the central government and cities specifically designated in the plan in 21 provinces (Hebei Shijiazhuang, Henan Zhengzhou, Shandong Jinan, Hubei Wuhan, Hunan Changsha, Jiangxi Nanchang, Guangdong Guangzhou, Anhui Hefei, Zhejiang Hangzhou, Guizhou Guiyang, Shanxi Taiyuan, Guangxi Nanning, Fujian Fuzhou, Jilin Changchun, Liaoning Shenyang , Tianjin, Shanghai, Foshan, Ningbo and Shenzhen). China telecom industry meets all the necessary conditions for the analysis of different strategic competitive actions of enterprises in strategic groups, which can ensure the typicality of industry environment and the objectivity of data. First of all, compared with other industries, the competition subjects within the industry of China's telecom industry are an ideal contact situation of independent competition. In addition to the headquarters, each telecom company will choose to set up branches in different provincial capitals, municipalities directly under the central government, cities with separate plans (such as Foshan, Ningbo, etc.) according to the size of the company, so as to ensure that the enterprise can benefit itself We should take different strategic competitive actions. Secondly, compared with other industries, China's telecom enterprises have developed rapidly in recent years, with fierce competition in the industry. Most of them have their own advantages and disadvantages in each market they operate. Due to business competition, different enterprises are likely to form different strategic groups, and pay close attention to each other's behavior in each market, which is consistent with the situation of this study.

## Findings and Analysis

Based on the theoretical framework and research hypothesis, this section tests the impact on the performance of Chinese high-tech enterprises from the perspective of the combination of strategic competitive actions and strategic groups through descriptive statistics of variables, empirical results and analysis, robustness test and other steps, and gives strategic suggestions based on the empirical results. In order to ensure the accuracy and credibility of the empirical analysis results, this study conducted a variety of tests on variables and data in strict accordance with the application conditions of statistical methods, such as multicollinearity test. This section describes the empirical test methods applied in detail, the preconditions of each method, the pre test to be carried out, the applicability of the method, the process of applying the method, etc., to enhance the credibility of the research results with the most rigorous design. Based on the available data, SPSS 23 was used to analyze the data. SPSS 23 is a powerful multivariate statistical analysis software, which synthesizes several latent variable analysis methods in a unified general latent variable analysis framework. SPSS 23 has higher statistical test power for large sample data and is more suitable for the sample data of this study. Based on the above tools, because the data samples come from multiple cities, the traditional linear regression model

can only make analysis at the level of enterprises. The potential assumption of this processing method is that the differences between cities have no impact on the data at the level of enterprises, which is obviously inconsistent with the research situation of this thesis. HLM uses shrinkage estimation, which is more accurate than OLS regression. It can decompose the errors in traditional linear regression, and test the relationship between strategic competitive action and firm performance at the level of firm and region.

This section tests and deals with all the research hypotheses put forward above. The specific empirical research contents are as follows: firstly, through the data of three dimensions of quantity, simplicity and heterogeneity, it comprehensively describes the strategic competitive actions of enterprises, and then tests the relationship effect between the strategic competitive actions and the performance of enterprises. Through the empirical analysis of SPSS 23 software, based on the data of telecommunication industry, this section verifies the research hypothesis and draws the strategic suggestions for the development of enterprises, and the empirical results of this part provide necessary support for the following research conclusions. There is no general standard for the purpose setting of strategic competitive action, but it should be determined according to the comprehensive analysis of enterprise resources, competitors and industry environment.

According to the data processing results, this thesis further tests the correlation between the quantitative data of strategic competitive action and the performance data of the sample enterprises. The specific test results are shown in Table 1. From the positive and negative sign differences and significance of the correlation coefficients among the various variables, it is basically consistent with the research goal of this study, that is, the number of strategic competitive actions of enterprises is positively correlated with the performance of enterprises, the specific value is 0.269, and the significance level of the results is less than 0.001.

Table 1.The correlation results between the quantitative strategic competitive actions and enterprise performance

| Variable | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1.Quantitative | | | | | | | | | | |
| 2.Simplicity | −0.622** | | | | | | | | | |
| 3.Heterogeneity | 0.534** | 0.083** | | | | | | | | |
| 4.Enterprise performance | 0.269** | −0.185** | 0.129** | −0.324** | | | | | | |
| 5.Market share | 0.549** | −0.363** | 0.219** | 0.238** | 0.225** | | | | | |
| 6.Number of employees | 0.188** | −0.089** | 0.137** | 0.176** | 0.123** | 0.101** | | | | |
| 7.City population | −0.047** | 0.084** | −0.063** | 0.454** | 0.185** | −0.189** | 0.062** | | | |
| 8.Capital expenditure（$） | 0.233** | −0.129** | 0.102** | 0.114** | 0.128** | 0.253** | 0.074** | −0.028** | | |
| 9.Selling expenses | 0.264** | −0.098** | 0.179** | 0.090** | 0.057** | 0.171** | 0.077** | −0.030** | 0.389** | |
| 10.Market concentration | −0.102** | 0.090** | −0.108** | −0.108** | −0.097** | 0.153** | −0.045** | −0.533** | 0.001 | −0.012 |

*(Note: significance level: * * * P < 0.001, * * P < 0.01, * P < 0.05.)*

## Discussions

The results of empirical research fully show the relationship between the quantity of strategic competitive action and enterprise performance, and the quantity of strategic competitive action has a significant impact on enterprise performance. It preliminarily verifies the research objective of this study, that is, the quantity of strategic competitive action has a positive impact on enterprise performance, which shows that the assumption of this section is relatively reasonable. Therefore, in general, the sample data results and research scenarios in this study have shown good support for the assumption.

The quantity of strategic competitive action has a positive impact on the performance of enterprises. From the perspective of organizational learning theory, the breadth of experience range is an important asset of an enterprise. Enterprises that take more strategic and competitive

actions in the market can accumulate more market experience and learn more about competition and survival methods (Zollo, 2016). In addition, the effect of enterprise learning can reduce the cost and efficiency of enterprise follow-up competitive actions, and constantly improve the breadth of experience range of enterprises (Babu, 2017). Through the reaction and counterattack of other enterprises, the enterprises that take more strategic competition actions can understand more clearly which enterprises in the market are more potential competitors, and formulate future competition strategies more predictably. From the perspective of the internal structure of the industry, Su & Jin (2016) believed that the number of competitive actions of enterprises would affect the intensity of competition among enterprises. In the face of high intensity of competition, the cost of enterprises in obtaining scarce resources, raw material supply and other aspects would be increased. At the same time, Tan (2016) believed that in the high level of competition In the environment of degree, the competitors will launch more competition attacks or make more competition responses in product competition, market position competition and other aspects, which will offset the effects of various competition behaviors among enterprises and reduce the profits of enterprises' competition actions. In the context of information economy, the identification and positioning of competitors is also an important source for enterprises to improve competitiveness and create competitive advantage. Therefore, enterprises taking more strategic competitive actions can improve the experience range of enterprises through the accumulation of market knowledge, establish enterprise competitive intelligence system and improve the competitive analysis ability, provide more effective guidance for follow-up actions, so as to establish sustainable competitive advantages.

## Conclusion

The quantity of strategic competitive actions of enterprises refers to the total number of strategic competitive actions taken by enterprises within a certain period of time. The quantity of enterprises' strategic competitive actions helps enterprises get more market opportunities and they are in an offensive position in the market (Yan, 2016). In general, enterprises that take more strategic competitive actions show more strategic aggressiveness in the market. Enterprises take more economic actions in order to find profit opportunities. According to this idea, enterprises taking more strategic competitive actions can get more market opportunities. Relevant research also shows that those enterprises with good historical performance tend to indulge in the existing success and honor, and reduce the number of competitive actions, and ultimately be overtaken by competitors, or take the existing market share by competitors. Previous studies have confirmed that enterprises take more strategic competitive actions to help them gain more competitive advantages from both positive and negative aspects.

In the competitive interaction with competitors, compared with small-scale enterprises, those enterprises with large scale and long existence time have larger experience range width. The experience range width advantage of large enterprises can support enterprises to take more competitive actions, and also help large enterprises learn more market experience in practice.

These market experiences can help enterprises obtain more experience,more competitive skills, and improve the efficiency of resource utilization, and then reduce the cost of various competitive actions. Combined with the research situation, Su & Jin (2016) believes that large enterprises have advantages in the breadth of experience range, learning ability, etc., and it is easier to accumulate knowledge and skills in the competitive interaction with competitors. These knowledge and skills, like contracts, relationships, brands, and network status, can help enterprises gain competitive advantages. In contrast, Zhang and Kan (2017) think that small-scale enterprises do not have advantages in the breadth of experience and resources, and it is difficult to develop the ability to use resources efficiently or reduce operating costs in the competitive interaction with other enterprises.

Based on the empirical test results, the conclusions of this study are divided into two levels: first, the quantity and heterogeneity of strategic competitive action have significant positive effect on enterprise performance; the simplicity of strategic competitive action has significant negative effect on enterprise performance. In an industry, the number of strategic competitive actions or efforts to take in competition with competitors in different means are supportive to improving enterprise performance.

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