The Relationship of Competitive Strategy, Innovation Selection and Firm Performance

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Abstract

The effects of basic competitive strategy on firm performance have always been focus in academic circles, but findings diverge in the empirical studies. Based on the extant correlative literature, this study constructs a conceptual model to embody the relationship of competitive, innovation selection and firm performance using incremental innovation and radical innovation as mediator. An empirical study with a sample of 316 firms from questionnaire is conducted. The results show that both low cost strategy and differentiation strategy has distinct positive impact on firm performance, but respective influence mechanism is different. Low cost strategy can effect both direct and indirect by a mediator of incremental innovation on firm performance, but differentiation strategy effect only indirect by a mediator of radical innovation on firm performance.

Keywords

Low cost strategy, Differentiation strategy, Incremental innovation, Radical innovation, Firm performance.

1. Introduction

Economic globalization and dynamic environment make the competition between enterprises more intense and more complex. Enterprises want to occupy a favorable position in the competition, it is necessary to formulate a clear competitive strategy to obtain a sustainable competitive advantage. The impact of competitive strategy on the performance of enterprises has been the basic problem in strategic management research, and also the frontier issue.

This paper reviews more than 60 studies on the impact of competitive strategies on organizational performance in major international journals. It is argued that there is still a great deal of controversy as to which basic competitive strategies can be used to achieve better performance, some scholars even doubt whether the competition strategy has a positive impact on Performance [1-7].

Reviewing these researches, they focuses on the comparison of Potter's basic competitive strategy performance, and pay little attention to competitive strategy impact business performance through what way, especially in China, also found no empirical study based on the data of the mainland. Direct analyses the influence of competitive strategy on firm performance or compares the performance of several competitive strategies, the conclusions have limited guide value to enterprise management practice. Researching on the way that enterprise competition strategy affects the performance, and mining mechanism inside the black box, which is a more practical problem.

We should explore the intermediary variable which competitive strategy affecting on firm performance. It can not only provide a new criterion variable to research on the effect of competitive strategy and have important theoretical value to study on black box between competitive strategy and firm performance, but also provide an accurate first-run indicator to effectively predict the trend of the ultimate goal. At the same time, it will also help Chinese enterprises to improve their understanding of the mechanism of competition strategy and enhance their ability to judge and apply the actual effectiveness of competitive strategy.

A lot of related research shows that the innovation activities of enterprises can improve the performance of enterprises. Therefore, this paper will be based on enterprise innovation, put forward a new conceptual model, empirical analysis of how competitive strategy to choose innovatively, different innovative choice how to influence corporate performance, and in the process, whether innovation plays a mediating effect. Around these issues, this paper includes the definition of basic concepts, research assumptions and conceptual model, research design, data analysis and research conclusions, discussion, and so on.

2. Research hypothesis and model

2.1 Competitive strategy, firm performance and innovation

The section headings are in boldface capital and lowercase letters. Second level headings are typed as part of the succeeding paragraph (like the subsection heading of this paragraph). All manuscripts must be in English, also the table and figure texts, otherwise we cannot publish your paper. Please keep a second copy of your manuscript in your office. When receiving the paper, we assume that the corresponding authors grant us the copyright to use the paper for the book or journal in question. When receiving the paper, we assume that the corresponding authors grant us the copyright to use the paper for the book or journal in question. When receiving the paper, we assume that the corresponding authors grant us the copyright to use. One of my papers has discussed theoretically the relationship of competitive strategy, firm performance and innovation in detail (Zheng B.Y, 2017) [8]. Here's a simple summary.

The academic circles generally believe that the implementation of basic competitive strategy can bring about growth of performance to enterprise. The enterprise should choose right competitive strategy according to external environment and internal environment [9-17].

Both low cost strategy and differentiation strategy attach importance to innovation, but the choices of innovation modes are different. Through incremental innovation in R&D activities, reducing costs, improving production efficiency, leveraging high product quality, and effective marketing methods to meet customers' needs, low cost strategic companies rarely engage in disruptive innovation, radical technological innovation will make the past experience and accumulation come to naught [18-20]. Enterprises with a differentiation strategy focus on multiple new technologies or services, inevitably tends to carry out radical innovation to grasp the new opportunities in the market [21].

In the field of organizational innovation, many studies have demonstrated the impact of innovation on performance, and the positive impact of innovation on performance has been supported by many scholars through their empirical researches, suggesting that innovation leads to better organizational performance in any industries [22-26]. Further, Menguc&Auh (2005) fount that incremental innovation and radical innovation had a significant positive impact on the firm's overall performance [27-28]. In addition, incremental innovation through long-term local accumulation or improvement and innovation [29], from quantitative to qualitative change, and ultimately achieve fundamental innovation.

Thus, the present study proposes and will validate the following assumptions:

H1:Low-cost strategy has a direct positive impact on business performance.

H2:Differentiation strategy has a direct positive impact on business performance.

H3:The implementation of low-cost strategy is conducive to incremental innovation.

H4:The implementation of low-cost strategy is not conducive to radical innovation.

H5:Take the differentiation strategy is conducive to radical innovation.

H6:Incremental innovation has a positive impact on corporate performance.

H7:Radical innovation has a positive impact on business performance.

H8:Incremental innovation has a positive impact on radical innovation.

2.2 Hypothetical model

Based on the above hypothesis analysis, this study presents a conceptual model of the relationship between competitive strategy, innovation choice and firm performance, as shown in figure 1. In this model, innovation is as an intermediary variable, competitive strategy has a matching relationship with innovation choice. The arrows in the figure indicate a significant influence relationship, and the sign in parentheses indicates the expected impact direction.

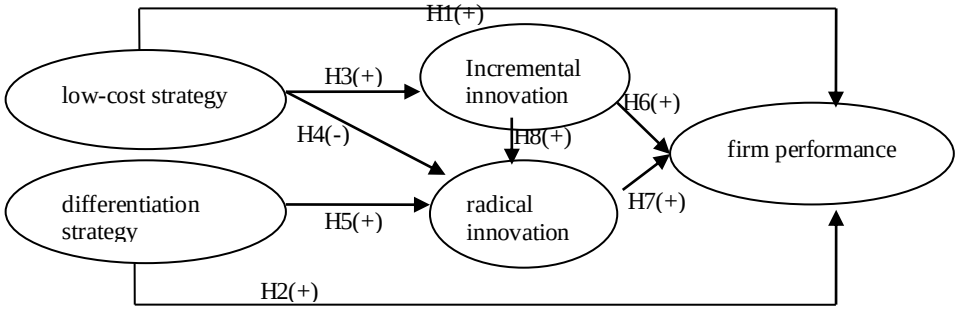

Fig. 1 The relationship model of competitive strategy, innovation selection and firm performance

3. Research and design

3.1 Scale design

In order to ensure the validity and reliability of the measurement tools, this study tries to use the scales which have been used in domestic and foreign papers to describe the operational definition and measurement methods of competitive strategy, innovation choice and enterprise performance, and then modify it as a tool for collecting empirical data according to the purpose of presenting study. Before the formal finalization and investigation of the questionnaire, some business executives and strategic management experts were asked to pre-test the relevance, sequence and linguistic expression, clarity, and according to their opinions, the questionnaire was revised accordingly.

Dess&Davis (1984) empirically study the type of competitive strategy in earlier time. They summed up 21 factors, and designed a scale which is used to measure the type of competitive strategy. In the subsequent study, most of the index sets were based on the 21 competing methods set by Dess & Davis (1984) and adapted according to the characteristics of the studied subjects, for example, Kim et al (2004) obtained the factors of E-commerce Company's competition dimension according to 18 variables [30]. This article also based on Dess & Davis's scale design (1984) to modify, and there have 16 items in total. In the exploratory factor analysis, there are two items' factor load is too small, there are two items' factor load are larger both on the low cost and differentiation, remove the four items, then we finally have 12 items to measure the type of competitive strategy.

In the light of Ettlie et al.'s (1984) definition and measurement of incremental innovation and radical innovation [31], combining with the research of Sun Y.F (2007) [32], we design 8 items to measure innovation. Incremental innovations are measured in four ways: 1) improving existing technologies to adapt current needs; 2) improving the applicability of existing technologies in multiple related business areas; 3) using existing technologies to introduce new products; 4) the companies often improve and innovation existing process. Radical innovation is measured in four ways: 1) often introducing new ideas in product development; 2) creating new products in the performance and sale them in the market: 3) introducing and developing new technology in innovation; 4) creating new technology and process to expand existing markets.

Enterprise performance refers to summary of the benefit and efficiency of business management and the business management performance of the enterprise's management in a certain period. Research papers generally use financial indicators to measure business performance, such as return on assets, return on investment, sales revenue and so on. The general adoption of financial indicators is mainly because we can access to data easily, we can obtain the required data based on the annual financial

statements of the research enterprise. Moreover, due to following the same financial accounting system, so there has a strong comparability. However, a growing number of studies have found that financial indicators cannot fully reflect the business situation, so some scholars have suggested that in addition to financial indicators, some non-financial indicators, such as growth, brand recognition, customer satisfaction and loyalty have a deeper meaning in the reflection of enterprise performance, Kim et al. and other scholars (2004) used enterprise growth potential to measure firm performance. This study uses multiple indicators to measure business performance, including financial performance, market performance and learning & growth performance, a total of 8 items.

3.2 Samples and analytical methods

Respondents were asked to have senior management status, who can participate in strategic planning and decision-making, and are able to fully and accurately grasp the strategic behavior of enterprises and other information. In addition to competitive strategy, innovation selection and enterprise performance, the questionnaire also includes some basic information of enterprises to test the representation of samples. The survey issued a total of 600 questionnaires, 329 questionnaires were recovered. Thirty-three of the 329 questionnaires were excluded because of incomplete information, so the number of valid questionnaires was 316. The total recovery rate of the questionnaire was 54.83% and the effective rate was 96.05%. The general description of the sample questionnaire is shown in Table 1. We use a structural model to estimate the impact of competitive strategy on firm performance and innovation choices. The method verifies the direct, indirect and unreasonable interrelation between variables through multi-layer path analysis. This method is suitable for the existence of latent variables in the model, it is used to illustrate the relationship between them, and verify the convergence of the model. The analysis tool which is used is AMOS 6.0.

Talbe 1. The description of sample questionnaire

Characteristic	Systematic	Number of samples	Percentage(%)
Nature of firm	Owned on controlled	181	57.28
	Private	56	17.72
	Foreign investment or joint venture	79	25.00
Firm size	large	107	33.86
	middle	176	55.70
	small	33	10.44
Firm - owned industry	Electronic manufacturing	81	25.63
	Clothing manufacturing	113	35.76
	Pharmaceutical manufacturing	65	20.57
	Chemical manufacturing	45	14.24
	Other	12	3.80
Respondent age	under30 years old	10	3.16
	30 --- 40 years old	129	40.82
	40 --- 50 years old	177	56.01
Service life of the respondent	5 years or less	66	20.89
	5 ---10 years	168	53.16
	more than 10 years	82	25.95
Business area	Beijing	56	17.72
	shanghai	81	25.63
	Jiangsu Province	112	35.44
	Central six provinces	53	16.77
	Other	14	4.43

4. Empirical results

4.1 The reliability and validity of the scale

The analysis and description of the model are carried out in two stages [33]. First, the reliability and validity of the measurement model are estimated. Second, the causal relationships of the model are estimated. Before statistical relationship between the variables concluded that a two-stage analysis of the estimated model branches can ensure that you have reliable and valid measurement variables.

Table 1 shows the results of determination of the structural model before making measurements relationship model. In practice, the path value of each measured variable for mandatory factor analysis should be greater than or close to 0.71 [34] (Reference values below are relevant indicators that are all taken from this document).Table 2 is our latent variable factor analysis and internal consistency verification result made variable, it showed that most of the measured variable path values are greater than or close to 0.71, minor path values are less than 0.71, but all path values are greater than 0.55.Thus these measured variables are suitable. Because the factor load of the social science research scale is affected by the nature of the measurement, external interference and measurement error, even the formation of constructive nature and the influence of reflective controversy. Tabachnick and Fidell (2007) suggest that the load factor is too small and it is recommended to 0.55 as a good standard.

The reliability of the assessment scale was based on whether Composite Reliability of the potential variables was above 0.7 and whether Average Variance Extracted of the potential variables was above 0.5.As shown in Table 2, the combined reliability of the low-cost strategy, differentiation strategy, incremental innovation, radical innovation and organizational performance were 0.90, 0.88, 0.83, 0.84 and 0.88, while the Average Variance Extracted were 0.58,0.60,0.55, all have exceeded the minimum acceptable level. Therefore, the overall theoretical model proposed in this paper has good reliability.

Table 2. The index of variable measure and result of factor analysis

Variable	Project	Factor loading	Residual	Reliability CR	Average Variance Extracted
Low cost strategy	Attention to competitive prices	0.76	0.42	0.90	0.58
	Attention to the total cost of control	0.81	0.34		
	Attention to the manufacturing process innovation	0.72	0.48		
	Attention to the enterprise operational efficiency	0.86	0.26		
	Attention to staff training and learning	0.59	0.65		
	Attention to access to low-cost raw materials	0.86	0.26		
	Attention to improve existing products	0.67	0.55		
Differentiation strategy	Attention to develop new products	0.77	0.41	0.88	0.60
	Attention to high-priced market segments	0.61	0.63		
	Attention to corporate image, high advertising costs	0.86	0.26		

	Attention to provide a unique product	0.87	0.24		
	Attention to R & D and Independent Innovation	0.72	0.48		
Incremental innovation	Improve the existing technology to meet current needs	0.76	0.42	0.83	0.55
	Improving the applicability of the prior art in a number of related business areas	0.78	0.39		
	The introduction of new products using existing technology	0.61	0.63		
	Improvements and innovations in existing processes.	0.81	0.34		
Radical innovation	The introduction of new ideas in business innovation	0.74	0.45	0.84	0.56
	In the enterprise and the introduction of new products on the market	0.73	0.47		
	Introduce and develop new technologies from innovation	0.76	0.42		
	Creating new technologies and processes to expand the existing market	0.77	0.41		
Firm performance	Business Satisfaction with ROI	0.76	0.42	0.88	0.50
	Business satisfaction with sales margin	0.69	0.52		
	Business to Cash Flow Operations Satisfaction	0.68	0.54		
	Business satisfaction with sales growth rate	0.58	0.66		
	Business to the market share of satisfaction	0.66	0.56		
	Customer satisfaction with the product	0.71	0.50		
	Employees' satisfaction with the company and their work	0.67	0.55		
	The company's satisfaction with the career prospects of employees	0.88	0.23		

4.2 The fitting degree of the model

According to the estimation method we have adopted, we have selected several indexes with good stability. (1) Absolute Fit Index. ① Chi-square Degrees Of Freedom. According to the degree of freedom of our model (df = 337), we can see that the Chi-square Degrees Of Freedom of the model (8.26) is insignificant. Its value is large, because of the main index is greatly influenced by the sample

size. When the sample is large, it is easy to reject the model, and this index loses the test value [36]. ② Goodness of Fit Index (GFI). GFI measures how much variance-covariance matrix of the observed variables is predicted by the model-defined variance-covariance matrix. Thus, the closer the GFI is to 1, the better the fitting of the model. The GFI of our model is 0.96, which is close to 1, so the fitting of our model is great. Since GFI increases with the total number of parameters in the model and is affected by sample size ,it is also necessary to calculate the Adjusted Goodness Of Fit Index (AGFI). The AGFI (0.95) of our model is greater than 0.9, so we can better fit the defined model ④ Root Mean Square Error Of Approximation (RMSEA).The RMSEA of our model is 0.01<0.05, which indicates that the data fit well with the defined model.(2)Relative Fitting Index, the overall fitting degree of the model is examined by comparing the fit of the target model with a basic model. ① Normed Fit Index (NFI). The NFI of our model is 0.95, which is greater than 0.9, so the fitting of our model is great. ② Comparative Fit Index (CFI). Test results show that our model of CFI is 0.94, which is greater than 0.9, the fitting of our model is good.

4.3 Hypothesis test results

The validation of the study hypothesis is shown in Table 3.As can be seen, the assumption H1, H3, H5, H6 and H7 have passed the test, but H2, H4, H8 are untested .The concrete model and its variable relation are shown in Figure 2.

(1) Competitive strategy and Firm performance. The low cost strategy has positive correlation with firm performance (P <0.01), hypothesis 1 is supported. There is no direct positive relationship between the differentiation strategy and firm performance (P>0.1), hypothesis 2 is not supported.

(2) Competitive strategy and innovative selection. The low cost strategy has positive correlation with incremental innovation (P<0.05), hypothesis 3 is supported. There is no negative correlation between low-cost strategy and radical innovation (P>0.1), which is opposite to our expectation, hypothesis 2 is not supported. There is a positive correlation between the differentiation strategy and radical innovation(P<0.05), hypothesis 5 is supported.

(3) Innovative selection and Firm performance. Both incremental innovation and radical innovation have positive correlation to firm performance(P<0.01), hypothesis 6 and 7 are supported. In addition, empirical evidence shows that incremental innovation has no effect on radical innovation (P>0.1),hypothesis 8 is not supported.

Table 3. The result of hypothesis test

Hypothesis number	Hypothesis description	Standard Regression Coefficient	P values	Conclusion
H1	low-cost strategy → firm performance	0.68	0.005	support
H2	differentiation strategy → firm performance	0.37	0.417	not support
H3	low-cost strategy → incremental innovation	0.47	0.031	support
H4	low cost strategy → radical innovation	0.29	0.562	not support
H5	differentiation strategy → radical innovation	0.78	0.028	support
H6	incremental innovation → firm performance	0.35	0.008	support
H7	radical innovation→ firm performance	0.66	0.006	support
H8	incremental innovation → radical innovation	0.31	0.508	not support

We can analyze the effect of competitive strategy on firm performance, and low-cost strategy has two effects on firm performance. One is a direct effect with a value of 0.68, the other is the indirect effect with a value of 0.47×0.35≈0.17, through the incremental innovation has an impact on firm performance. The direct effect of low-cost strategy on firm performance is greater than its indirect effect, and its total effect is 0.85.Differentiation strategy has only indirect relation to firm performance. The effect of differentiation strategy on innovation is 0.78, while the effect of radical innovation on firm performance is 0.66.Therefore,the indirect effect of differentiation strategy on firm performance is 0.78 × 0.66≈0.51. Overall comparison, the effect of low-cost strategy on firm performance is stronger than that of differentiation strategy.

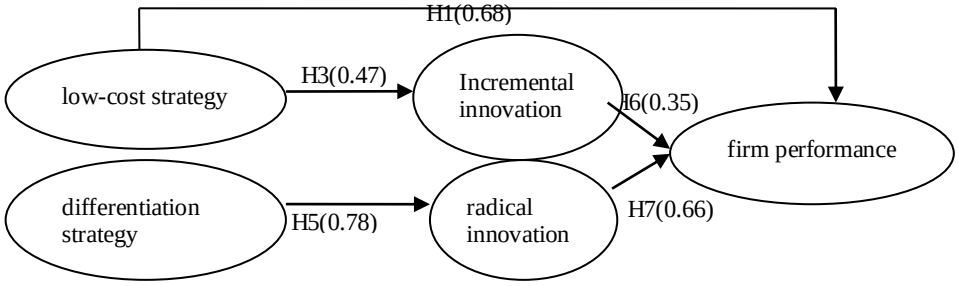

Fig. 2 The whole model and the relationship of the variables

5. Conclusion and discussion

This paper takes incremental innovation and radical innovation as mediator variables that connect the competitive strategy on the impact of firm performance, the purpose is to study the relationship between competitive strategy, innovation selection and firm performance. This paper constructs a conceptual logical model of the three concepts through literature review, and uses the field survey data carry on the empirical test, and obtains some valuable conclusion.

Both competitive strategies have a positive effect on firm performance, but the two competing strategies have different mechanisms. Most research scholars believe that competitive strategy has positive impact on firm performance, and this thesis also confirms the argument. Firms in the fierce competition must be clear for their own competitive strategies according to their actual situations, whether it is low-cost strategy or differentiation strategy than there is no clear competitive strategy of firms with competitive advantage. But at the same time, the conclusion also shows that the two competitive strategies have a different impact on the mechanism of firm performance. Low-cost strategy has two effects on performance. One is the direct effect, which is the direct impact of low-cost strategy on firm performance. Another is the indirect effect, which is the indirect affect of low-cost strategy on firm performance through incremental innovation. Differentiation strategy can not directly improve firm performance, and it can only influence firm performance by radical innovation. Some foreign scholars believe that the differentiation strategy can directly affect the firm performance directly, which is different from the conclusion of this paper. Due to different national scenarios, the results of foreign studies are not entirely suitable for China's actual situation. Differentiation strategy can not directly affect firm performance, it reflects the consumer's game behavior from one aspect. Customers buy differentiation products, who consider their price in addition to enjoying their uniqueness, and has a certain degree of sensitivity to the price .If the price reduction is more effective than the difference in the product, the customer will abandon the product's uniqueness and choose the low cost product. So differentiation strategy can not directly improve firm performance. Differentiation strategy can make the product have significant difference through radical innovation, If the radical innovation is greater, the greater the uniqueness of its product utility, which enough to offset the effect of price reduction .Customers will choose differentiation products, thereby enhancing business performance.

The innovation selection of competitive strategy is different, that low cost strategic choice of incremental innovation, and differentiation strategy choice radical innovation. Different competitive

strategies differ in structure and function, and different implementation of competitive strategies require differences in organizational arrangements, control procedures and innovation systems [37]. In the choice of innovation, the conclusion of this paper is basically the same as the expected hypothesis. The low cost strategy focuses on cost and operational efficiency. In order to achieve a lasting competitive advantage, we need to reduce operational costs in a variety of ways through continuous incremental innovation. Differentiation strategies focus on product uniqueness and emerging markets, through the strength of a radical innovation and product differentiation significantly show up, and gain a competitive advantage. Therefore, firms in innovative practice, should be based on the type of competitive strategy, innovation resources, innovation and cultural activities, so that the firm's innovative approach to match the competitive strategy.

Innovation plays a mediating role in the process of competitive strategy affecting firm performance. Gradually innovation partly mediates the impact of low-cost strategy on firm performance, and radical innovation completely mediates the impact of differentiation strategy on firm performance. This means that no matter enterprises implement what kind of competition strategy, they must pay attention to play the important role of innovation, so that innovation can be as a bridge of competitive strategy and firm performance. In the cases of fierce global competition and shorter product life cycle, innovation is the source of sustained growth of enterprises and the mainstream of enterprise management activities. Continuous incremental innovation has a great significance to the low cost strategic enterprise. Enterprises gradually shorten the distance with the leaders of innovation through continuous incremental innovation, or to find the lessons from the failure of the leaders in technological innovation. In the process of management practice, the enterprises of implementing low-cost strategy, most of their innovations are incremental innovation, and operational efficiency is also achieved through incremental innovation. Radical innovation establishes high technical barriers for the differential strategic enterprises, and it is difficult to be imitated by other enterprises, so it can obtain lasting competitive advantage and performance improvement. It should be noted that radical innovation requires long-term and careful strategic planning, huge R & D investment and practical implementation planning and management, and high uncertainty in technology, market, organization and resources, enterprises should have high abilities of risk predicting and bearing.

This paper expands the research framework of the competition strategy and performance relationship, and confirms the results under the Chinese situation through a new conceptual model based on the innovation choice, and finds some conclusions that are different from the foreign research, and further enriches the research in this field. Although the research in this paper is consistent with the principle of scientific research in theoretical deduction and empirical research, but because of various reasons, there are some limitations in this study, which are mainly manifested in the following aspects. (1) Cross-sectional study design is used in this paper, but the implementation of competition strategy and innovation behavior and the generation of effect will take some time, future studies using longitudinal design will be more conducive to in-depth exploration of the linkages between these variables. (2) The research model only considers the mediating effects of innovation and does not take into account the moderating effects of regulatory variables such as the competitive environment, which may change the relationships among the variables. Subsequent studies will consider the inclusion of regulatory variables in the model to further reveal the influence mechanism of market orientation and innovation orientation on firm performance. (3) The model does not take into account the control variables such as firm type, size, age, and so on. Different types of firms, different firm ages and firm sizes may influence the model and assumptions.

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