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Impact of Entrepreneurial Orientation on Radical Innovation and Its Internal Control Modes

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Abstract: This paper studies radical innovation and its internal managerial control modes from the perspective of entrepreneurial orientation; then proposes a conceptual model and theory hypotheses. On analyzing the effective sample data from 682 enterprises of different industries across 10 provinces and cities in China, we have confirmed the theoretical model. The results indicate that entrepreneurial orientation more emphasizes radical innovation and manages it by strategic control; strategic control is more helpful for enterprise's radical innovation, financial control is not helpful for enterprise's radical innovation.

Keywords: Entrepreneurial orientation, Strategic control, Financial control, Radical innovation

1. INTRODUCTION

Growing global competition, the market continues to segment as well as emerging new technologies, the enterprises are forced to gain new wealth through creating new modes of resources integration. And the innovation is an important way for enterprises to improve their organizational efficiency. Many researches results show that innovation apparently influences enterprises' performances, more valuable productivity of employee, its high efficiency and the value creation in many industries. The enterprises that invest more in innovation will gain more returns than those invest few. But it is a perplexed problem in the process of enterprise's development through the innovation strategy that which degree of innovation and managerial control mode should be adopted.

Existing studies suggest that the environmental and organizational internal factor will influence enterprise's innovative choice, and different enterprises have different emphasis. Such different understandings on the environment and enterprise's resource, which decide its strategies, performances and how to gain competitive advantages, are resulted from different enterprise's strategic orientations.^[1] Therefore the issues on enterprise's innovative choice and managerial control modes are analyzed from the perspective of entrepreneurial orientation, the paper which also a conceptual model of innovative choice and managerial control is proposed. Then the conceptual model is verified by the research data with analysis of results.

2. THEORETICAL MODEL AND HYPOTHESIS PRESENTATION

From perspectives of strategic thinking and organization learning, the enterprise's orientation can be divided as entrepreneurial orientation and market orientation.^[1] Entrepreneurial orientation emphasizes the powerful place of "strategists" in strategic establishment and considers survival and development of enterprises as the result of active change and seeking for market opportunity. Seeing from the aspect of strategic thinking, entrepreneurial orientation is heuristic thinking mode, which can make judgments and decisions in case of relative information insufficiency, and more helpful for developing indefinite market opportunities. Seeing from the respect of organization learning, entrepreneurial orientation inclines to be an experimental and probe style learning.

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According to entrepreneur-oriented strategic thinking and learning, this paper declares that entrepreneurial orientation more does the radical innovation of large extent. Moreover, a kind of control mechanism is needed to manage innovation better. Its function used to adjust governors' behaviors lies in insuring to achieve the scheduled goal or aim, and is very important to strategies' execution.^[2] This paper considers that due to different way of thinking and learning to control and manage innovation, entrepreneurial orientation more favors to strategic control.

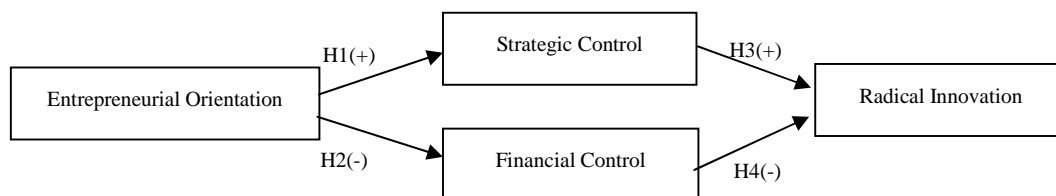


Figure 1. Impact of entrepreneurial orientation on radical innovation and its internal control modes

2.1 Entrepreneurial orientation and strategic control

In an entrepreneurial-oriented firm, the control system must be able to encourage innovation, initiative, courage to take risks, act with foresight. Strategic control can encourage each department and staff to exert their creativity and thus get opportunities. A good strategic control can stimulate employees' innovation of product or craft that is slow but significant and takes a long time to enter market.^[4] On the contrary, the non-entrepreneurial orientation enterprises lay no stress on strategic control, because they get competitive advantages not through innovation but rapid and small adjustment of strategies to reach a stable development. Because of high consumption of managers' time and energy, strategic control should be avoided as far as possible. Thus strategic control accords with entrepreneurial orientation.

Hypothesis 1: there is a positive correlation between entrepreneurial orientation and strategic control.

2.2 Entrepreneurial orientation and financial control

Barringer and Bluedorn(1999) consider that entrepreneurial orientation positively correlates with financial control.^[6] Compared with the strategic control, the financial one is clearer, specific and requires more highly on discipline, which is favorable for examinees to reach agreement on the criterion of evaluation on objective performance. These offer more advantages for non-entrepreneurial orientation enterprises. These enterprises are not prominent in encouraging creativity and innovation, so strategic control of long-term which costs managers' more energies and control abilities is in no need. However, financial control stressing short term and results is unfavorable to innovation and venturous spirits.

Hypothesis 2: there is a negative correlation between entrepreneurial orientation and financial control.

2.3 Strategic control and radical innovation

Hitt(1996) etc think that the two main kinds of control modes in enterprise management are strategic control and financial control.^[3] The strategic control focuses the improvement of long-term performance. Such enterprises evaluate the department performance on its actual strategic behaviors not concrete results; emphasizes the long-term development of the core business. And it is helpful in establishing one kind of risk-decentralized mechanism between the enterprise and its departments. These features make the strategic control more favor to the practice of radical innovation. Because the department managers believe their strategic proposals can be understood and be appraised based on strategic behaviors not short-term financial results by the enterprise's manager, they are more possible to undertake venture projects.^[4] Thus, we convince the strategic control may promote enterprise's radical innovation.

Hypothesis 3: strategic control is more helpful for enterprise's radical innovation.

2.4 Financial control and radical innovation

In those companies of focus on financial control, the department managers are appraised according to short-term and objective financial indexes, and rewarded for objective completed financial performance, short-term financial goals can be achieved by lowering the long-term investment. The completion of radical innovation needs a long time and massive investments, whose profit-making needs more time. What's more important, the department managers' tenure generally won't be very long, thus it is difficult for them to be rewarded until profit was made by radical innovation, which is more obvious in economic transition of china for the frequent personnel change on the position. Moreover, the inter-independence of departments with few shared resources is necessary for the financial-controlled enterprises; while radical innovation needs share of resources and knowledge and decentralization of risks.^[5] Therefore we hold financial control is not helpful for radical innovation.

Hypothesis 4: financial control is not helpful for enterprise's radical innovation.

3. RESEARCH METHODOLOGY

3.1 Samples and data collection

For the sake of increasing the representativeness of the sample enterprises with different income levels, districts, ownerships in China, we have done a large-scale questionnaire to various kinds of enterprises (mainly including the ones of state-owned, three types of foreign-funded, collective (partnership), private and township) across ten provinces and cities. It is required that this investigation concentrates in the industry of manufacturing (mainly including the electron, machinery, pharmaceutical industry, processing and so on). Before formal investigation, we made a pre-investigation and randomly selected to investigate across enterprises in Hubei provinces, and perfected the questionnaire according to the result of feedback.

This research collects data by E-mail. We sent 1950 questionnaires totally, and some people didn't primely reply a letter, we sent E-mail to them again. At last 28 questionnaires were sent back for they can't be delivered, so we got 773 questionnaires back. It's a pity that 91 of 773 were eliminated because of non-cooperation, liquidation of enterprises and incomplete research information. As results there were 682 available questionnaires. Up to December of 2009, the overall response rate for the survey was 39.64% and the effective rate was 34.97%, given that the surveys were completed by CEOs or their designees; most respondents held upper-management positions and had averaged 8.3 years with the same enterprise, undergraduates or above occupies 61.8%. Generally speaking, in the research of social science, it is acceptable that the response rate of top managers reach 20%,^[7] so the result of this research is creditable.

3.2 Variables construct

Because of the difficulty to apply objective index on strategies, control and innovation activities, we chose the subjective way. The subjective scale is appropriate if no objective scale.^[8] Through it, multi-aspect information that cannot be reflected by objective indexes can be obtained. The variables and indexes used in this paper are as follows:

3.2.1 Entrepreneurial orientation

According to Lumpkin and Dess(1996)^[9], 4 indexes were used to measure entrepreneurial orientation: (1) emphasize the research and development, and innovation of product and craft; (2) adopt bold and active attitude to face the uncertainty for maximizing the use of latent opportunities; (3) frequently introduce new product, service, technology and so on.; (4) take competitive and aggressive manners. The Cronbach's coefficient alpha for this scale is 0.8175.

3.2.2 Internal control

With reference to Hitt(1996) etc^[3], 3 indexes were used to measure strategic control: (1) top managers

emphasize strategic competition rather than be benefit-oriented; (2) top managers often communicate with the department managers; (3) top managers stress continuous innovation rather than short-term benefits; The Cronbach's coefficient alpha for this scale is 0.8219. Also, 3 indexes were used to measure financial control: (1) stress the assessment of investment yields; (2) stress the appraisalment of cash flow; (3) stress the increment of net assets value; The Cronbach's coefficient alpha for this scale is 0.7092.

3.2.3 Radical innovation

According to Ettlief(1984) etc.^[10], 4 indexes were used to measure radical innovation: (1) creates products of new capability; (2) introduces latest ideas into product research and development; (3) develops and introduces brand-new technique in its industry; (4) the inventor of new craft and technique; The Cronbach's coefficient alpha for this scale is 0.7678.

4. TESTING RESULTS

In practice, the alpha of factor variable should be larger than or approximate 0.7. The alpha of all factor variables exceed 0.7, thus, these testing variables are appropriate. Results show that the research model in this paper is basically supported by the investigated data, except for one hypothesis(H2) not passing the tests. The following tables show it specifically:

Table 1. Model consistence testing results

Testing Index	Model Evaluation	Illustration
Model Fit		
Discrepancy	113.167	Compared with DOF, X ² value is unconsPICuous
Degrees of Freedom(DOF)	103	
P	0.291	Larger than 0.05, good consistence
Discrepancy/df	1.010	Approximate 1, good consistence
GFI	0.979	Approximate 1, good consistence
Adjust GFI	0.933	Larger than 0.90, good consistence
RMSEA	0.007	Smaller than 0.05, good consistence
Model Comparison		
Tucker-Lewis Index (TLI)	0.982	Approximate 1, good consistence
Normed Fit Index (NFI)	0.985	Approximate 1, good consistence
Model Parsimony		
Parsimonious Fit Index (P close)	0.991	Approximate 1, good consistence
Akaike Information Criterion (AIC) Fit	361.752	Small numerical value, good consistence

Table 2. Hypotheses testing results

Hypothesis	Roadmap	Illustration	P-Value	Regression Coefficient	Result
H1	Entrepreneurial Orientation	Strategic Control	0.003	0.571	Support
H2	Entrepreneurial Orientation	Financial Control	0.009	0.236	Nonsupport
H3	Strategic Control	Radical innovation	0.041	0.318	Support
H4	Financial Control	Radical innovation	0.028	-0.151	Support

5. CONCLUSION

The results of these empirical analyses help the enterprise to make better choice and management of innovation, and enrich the studies of innovative theory. The analysis indicates that entrepreneurial orientation

from non-rational perspective, more stresses the venturous spirits, innovation, and utilization of the each kind of internal control, so it can make decision with little information.

The results show that entrepreneurial orientation stresses both the strategic control and the financial control from the perspective of the internal control mode adopted by entrepreneurial orientation. The strategic control is adopted because entrepreneur-oriented enterprises more stress creation and opportunity which is just encouraged by strategic control.^[9] We once thought entrepreneurial orientation is a negative correlation with the financial control(H2), but results show positive correlation, which may be caused by characteristics of Chinese enterprises. According to further research, the profit-making ability of state-owned enterprises is generally poor, with unreasonable capital structure, they are difficult to be financed from bank, and face many problems to be solved urgently (such as workers' medical service, subsidy of laid off workers), all of which make them massively lack fund. So do failures of most private enterprises. Therefore the short-term profits are also needed even if entrepreneur-oriented enterprises obtain continual competitive advantages through innovation. As result, when focusing strategic control, they also use short-term financial indexes to appraise department managers for necessary capital in the short-term. It is indicated that in China's economic transition, entrepreneur-oriented enterprises need various kinds of control (including strategic control and financial one) to manage innovation.

Adopted from internal control modes of entrepreneurial orientation, the results indicate that strategic control is helpful for radical innovation; financial control is not helpful for it, which matches with our hypotheses. They also show because of the significance and risk of investment, enterprise should manage radical innovation from its whole scope to gather all its resources and abilities, and reduce the risk caused by single department's performance. Because of its long- time implementation, radical innovation also need appraise departments' managers not from short-term financial indexes, but non-financial and subjective standards. Thus it actually presents that the strategic control is a necessary condition for radical innovation's implementation. The financial control with short-term objective financial indexes is not helpful for radical innovation.

The relationship between entrepreneurial orientation, internal control and radical innovation is testified by a conceptual model analysis, which provides theoretical basis and meanwhile a help for further study on innovative choice and management in China's economic transition. Certainly we also realize some flaws: the paper neglects the enterprises' type, size, age and other control variables which can influence the model and the hypotheses, this needs further study later on.

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