Research on the Effect of Entrepreneurship on Diversification and Capital Structure Strategy in Small and Medium-Sized Enterprises

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Abstract Many scholars have thought that entrepreneurship has an important effect on improving enterprise competitive position and obtaining enterprise competitive advantage. Then, what effect does the entrepreneurship has on diversification and capital structure strategy? In this paper, entrepreneurship is classified into radical entrepreneurship and gradual entrepreneurship, enterprise performance into the overall financial performance and new product performance. On the basis of questionnaire survey, by exploratory factor analysis and structural equation modeling, the results show that the radical entrepreneurship is helpful to SMEs realizing diversification, however, the gradual entrepreneurship is helpful to specialized operation; Whether radical entrepreneurship or gradual entrepreneurship has little effect on capital structure strategy in SMEs; Diversification indirectly affects the overall financial performance through affecting the new product performance.
Key words Entrepreneurship; Small and medium-sized enterprises; Diversification; Capital structure; Structural equation modeling

1 Introduction

In Western academia, the study on the relationship between diversification and capital structure began in the 20th century, 70's, which has proposed a variety of theories such as "the debt capacity theory", "the internal capital markets theory" and so on. These theories have made different explanations from different angles. Then, are the results of foreign research suitable for China? From the mid-90s of 20th century, domestic scholars have involved in the study on the relationship between diversification and capital structure and using empirical methods studied the relationship between diversification and capital structure. Some scholars have believed that there is a positive correlation between diversification and capital structure(Lei Lianghai, Xu Yongguo, 2002; Lei Lianghai, Du Xiaojuan, 2003; Chang Yong, Cheng Hongwei, 2006; Hong Daolin, Xiong Dehua, Liu Li, 2007)and some have believed that there is a negative correlation(Wang Jiaqian, 2003; Lin Kongtuan, Li Jianjian, Wu Jianfeng, 2006),in addition, Some scholars have also believed that there is an inverted U-shaped non-linear relationship (Shao Jun, Chen Shuliang , 2006; Jiang Fuxiu, Lu Zhengfei, 2006). Due to the different objects and control variables，the results of studies of domestic scholars are quite different, but many scholars have believed that entrepreneurship has a significant effect on diversification and capital structure decisions （Burgelman，1983；Zahra，1993，1995，1996）. Taking the Small and medium-sized enterprises in Urumqi, Xinjiang, as investigation object, this paper mainly explores the action mechanism of entrepreneurship to diversification and capital structure decisions and then investigates the effect of entrepreneurship on enterprise performance.

2 Literature Review and Theoretical Hypotheses

2.1 Entrepreneurship

With the increasingly intensifying trend of competition and the rapid development of science and technology, the entrepreneurship is playing an increasingly important role in the enterprise operation process. After 90's of the 20th century, some scholars (eg, Guth & Ginsberg, 1990; Zahra, 1995, 1996) have suggested that entrepreneurship in the organization is classified into three categories. The first is new business development in the existing companies, including the company's internal venture, new business division and internal innovation and adventure. The second is renewal or reengineering of existing organizations, including strategic renewal, strategic change, reengineering and strategic strip. The third is innovation. There exists intense debate on which type of entrepreneurship will help improve enterprise performance in academia. In this paper, according to the classification method by Hendenson

and Clark (1990), entrepreneurship is classified into gradual entrepreneurship and radical entrepreneurship. Gradual entrepreneurship tends to strengthen and upgrade the strategic orientation of existing products or markets, focus on full use of existing products or markets, seek continuous improvement and realize specialization. Entrepreneur with gradual spirit has a lower capital requirement, so the enterprise tends to choose a lower capital structure level. Radical entrepreneurship tends to develop the strategic orientation of new products or markets, get rid of competition pressure of existing products or markets, seek new profit space and realize diversification. For SMEs, entrepreneur with radical spirit often takes an active debt financing to raise funds for developing the new products or markets, so the enterprise tends to choose a higher capital structure level. Therefore, this article has the following hypotheses:H1a: radical entrepreneurship promotes diversification;H1b: gradual entrepreneurship promotes specialization;H1c: radical entrepreneurship promotes enterprise operating in a high capital structure level (high total asset-liability level); H1d: gradual entrepreneurship promotes enterprise operating in a low capital structure level (low total asset-liability level).

2.2 Relationship between diversification and capital structure

Studying the difference between diversified enterprise and non-diversified enterprise from enterprise finance, western scholars believe that the motive of diversification is to increase the overall debt capacity and achieve the improvement of enterprise performance, which is the debt capacity theory. From the perspective of debt capacity, Lewellen (1971) has examined the causes of joint ventures and thought that diversified enterprise can increase the overall debt capacity and enhance the enterprise value through combining the different business whose cash flow volatility is uncorrelated or even negatively correlated. The internal capital markets theory holds that diversification can eliminate the volatility of enterprise income and get more stable cash flow, which can effectively provide funds for those underfunded sectors within the enterprise, namely forming the internal capital markets, and reduce the operational risks brought by single-sector operation, thus bringing about co-insurance effect. Stulz (1990) has pointed out that as creating a strong internal capital markets, diversified enterprise, through capital movement within the enterprise, can effectively solve the above problem of insufficient investment and make diversified enterprise more difficult to lose good investment opportunities comparing to specialized enterprises and thus enhance the enterprise value. When an industry within the enterprise is in recession, a large number of idle funds generated by this industry can be transferred to other industries, which can avoid the waste of enterprise resources and ensure other industries within the enterprise have enough strength to participate in market competition.Comment and Jarrell (1995) have found that the financial leverage of diversified enterprises is 38% to 40% while the average financial leverage of all enterprises is 33% to 34% in their samples. Therefore, this article has the following hypotheses: H2a: there is a positive correlation between diversification and capital structure (total asset-liability level);H2b: there is a negative correlation between specialization and capital structure (total asset-liability level).

In fact, diversification and capital structure strategies are both to improve the enterprise performance. In order to further explore the effect of diversification and capital structure on enterprise performance, referring to the research by Jiang Chunyan and Zhao Shuming (2006), this article has classified enterprise performance into the overall financial performance and new product performance. Generally speaking, through diversification, the enterprise can get more marginal profit from new products than from mature products (Li & Atuahene.Gima, 2001, 2002), thus the enterprise can get higher new performance. In other words, as the market demand for the product being saturated, in order to win the competition, the enterprise must constantly introduce new products.Because of the constant change of market demand for the product and the rapid development of science and technology, it is possible to introduce new products and make the product life cycles gradually shortening. It can be said that the effect of new product performance on the overall financial performance is increasing. Therefore, this article has the following hypotheses:H3a: there is a positive correlation between diversification and new product performance;H3b: there is a positive correlation between specialization and the overall financial performance;H3c: there is a positive correlation between new product performance and the overall financial performance.

3 Research Methods

3.1 Sample and data collection procedures

This study collects data by questionnaires. According to the research needs, this study has a rigorous screening on returned questionnaires. Screening criteria are: (1) the measured enterprises should be through the start-up, so the age of enterprise must be more than 3 years; (2) the enterprises,

with over 1,500 employees should be removed; (3) the questionnaires should be filled in by those who are middle-senior managers with working age over one year in the enterprise to ensure the information quality of the survey data. From July 2009 to September 2009, this study distributes 600 paper questionnaires to MBA students and enterprise people and collects 302 questionnaires 213 of which are valid, the valid rate of the questionnaires is 35.5%.

3.2 Indicator System

To ensure the validity and the reliability, this study has tried to adopt the used scale in the existing literature at home and abroad and then made some appropriate modification according to the purpose of this article. To ensure the design quality of the questionnaire, after inviting five referees from MBA students to make items sorting, this study has eliminated some items and modified the wording of some items and then formed pre-survey questionnaire. To assess the accuracy of questionnaire design, the study has made a pilot test on MBA students and then made some appropriate modification again according to the advice provided by the pre-volunteers. Eventually, the items measuring entrepreneurship have eight, four of which measure gradual entrepreneurship and four measure radical entrepreneurship. The items measuring enterprise performance has six, three of which measure the overall financial performance and three measure new product performance. All items are measured in Likert 5 scale and 1 represents very low while 5 represents very high.

The measurement of radical /gradual entrepreneurship has taken the He and Wong (2004) scale, including eight items of "introducing new products, expanding new products range, developing new markets, entering new areas of technology, improving the quality of existing products, increasing the flexibility of current production, reducing the cost of current production, increasing output and reducing energy consumption". All items are measured in Likert 5 scale and 1 represents very low while 5 represents very high.

The measurement of diversification has combined business strategy classification by Palepu (1985) with average information. The sample enterprise is classified into low related diversification-high unrelated diversification and high related diversification-low unrelated diversification to examine the diversification.

In our reality, it is difficult for enterprise to define the long-term liabilities and short-term liabilities through renewal, so the capital structure is represented by the total asset-liability ratio. However, it is still very difficult to obtain the true and absolute total asset-liability ratio, therefore, this study has adopted the relative value used by most empirical research. All items are measured in Likert 5 scale and 1 represents very low while 5 represents very high, requiring respondents to answer the questions according to the liabilities.

The overall financial performance is represented by "the relative level of net profit, the relative level of sales revenue, the relative level of return on assets". The measurement of new product performance has taken the Li and Atuahene-Gima (2001) scale, including three items, respectively, measuring the number, sales growth and market share of new products. All items are measured in Likert 5 scale and 1 represents very low while 5 represents very high.

3.3 Methods

In this study these 213 valid sample data were analyzed using SPSS12.0 and LISREL8.50. Firstly, to assess the consistency of measurement items, exploratory factor analysis and confirmatory factor analysis were performed by structural equation modeling (SEM), then to judge whether there is a match between measurement model and data, fit index was tested and finally to test the hypotheses, the goodness-of-fit of structure model and the distinctiveness of path coefficient were tested.

4 Data Analysis and Research Results

4.1 EFA

This study has taken the Cronbach's alpha coefficient to test the reliability of variable. The Cronbach's alpha coefficient of radical entrepreneurship, gradual entrepreneurship, new product performance and the overall financial performance is 0.830, 0.794, 0.799, 0.816, all above 0.70, therefore the scale has satisfactory reliability.

The primary component analysis (PCA) of four items of radical entrepreneurship shows that Bartlett's globular test statistics is significant and the minimum factor loading coefficient of items is 0.57. The PCA of four items of gradual entrepreneurship shows that Bartlett's globular test statistics is significant and the minimum factor loading coefficient is 0.76. The PCA of three items of new product performance shows that Bartlett's globular test statistics is significant and the minimum factor loading

coefficient is 0.62. The PCA of three items of the overall financial performance shows that Bartlett's globular test statistics is significant and the minimum factor loading coefficient is 0.67. Because each factor loading coefficient in this scale is all above 0.5, the scale has satisfactory construct validity. After oblique rotation cumulative variance explained reaches 57%, indicating that the measurement has satisfactory construct validity. Table 1 shows the results of exploratory factor analysis of four latent variables.

Table 1   the Result of EFA

item	F1 radical entrepreneurship	F2 gradual entrepreneurship	F3 the overall financial performance	F4 new product performance
Introducing new products				
Expanding new products range				
Developing new markets				
Entering new areas of technology				
Improving the quality of existing products				
Increasing the flexibility of current production	0.84			
Reducing the cost of current production	0.69			
Increasing output and reducing energy consumption	0.81	0.86		
	0.57	0.78		
The relative level of net profit		0.86		
The relative level of sales revenue		0.76	0.80	
The relative level of return on assets			0.67	
The number of new products			0.68	0.70
The sales growth of new products				0.80
The market share of new products				0.62
Cronbach's alpha coefficient	0.830	0.794	0.816	0.799
Eigenvalue	3.6	2.6	1.2	1.1
The cumulative percentage of variance explained	26.4	40.6	51.1	57.0

Table 2 shows the mean, standard deviation and Pearson correlation coefficient of all variables. Overall, new product performance and the overall financial performance is significantly correlated (r = 0.38). Diversification and capital structure is not significantly correlated with the overall financial performance(r =0.10, r = 0.06) but correlated with new product performance(r = 0.23, r = 0.20). Radical entrepreneurship is more significantly correlated with diversification and capital structure than gradual entrepreneurship with diversification and capital structure(r = 0.35 and r = 0.18 compared with r = 0.12 and r = 0.05). Meanwhile, radical entrepreneurship and gradual entrepreneurship are all significantly correlated with the overall financial performance(r =0.30, r = 0.31), while, radical entrepreneurship is more significantly correlated with new product performance than gradual entrepreneurship(r = 0.44 and r = 0.23).

Table 2   the Mean, Standard Deviation and Pearson Correlation Coefficient of all Variables

variable	mean	standard deviation	F1	F2	F3	F4	F5	F6
radical entrepreneurship F1	3.89	1.09	1					
gradual entrepreneurship F2	3.31	0.88	.24	1				
the overall financial performance F3	3.22	0.93	.30	.31	1			
new product performance F4	2.89	1.90	.44	.23	.38	1		
capital structure F5	2.77	1.01	.18	.05	.06	.20	1	
diversification F6	1.16	0.29	.35	.12	.10	.23	.07	1

4.2 Structure model and test of the research hypotheses

The structure model has a better goodness-of-fit:
χ^2=729.43,p<0.01;GFI=0.91,RMSEA=0.060,SRMR=0.042, NNFI=0.93, IFI=0.92.By the parameter test of modified model, the results show in Table 3.

Radical entrepreneurship promotes diversification, while gradual entrepreneurship promotes

specialization, that is, hypothesis 1a and hypothesis 1b are supported. The hypothesis 1c of radical entrepreneurship and capital structure and the hypothesis 2a of diversification and capital structure are not supported. However, the hypothesis 1d of gradual entrepreneurship and capital structure and the hypothesis 2b of specialization and capital structure are supported. Diversification and new product performance, specialization and the overall financial performance, new product performance and the overall financial performance are all significantly correlated, that is, hypothesis 3a, 3b and 3c are all supported. Therefore, radical entrepreneurship is the important factors not only affecting diversification but also affecting new product performance.

Table 3　the Path Coefficients of Structure Model and the Test Results

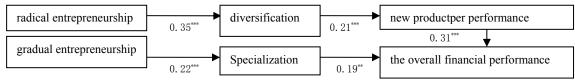| path	the relationship between variables	path coefficient	T	Corresponding hypothesis	test result
γ_{11}	radical entrepreneurship→diversification	0.35***	4.20	H1a	support
γ_{12}	gradual entrepreneurship→specialization	0.22**	2.78	H1b	support
γ_{13}	radical entrepreneurship→high debt	0.13***	3.02	H1c	no support
γ_{14}	gradual entrepreneurship→low debt	0.25***	2.75	H1d	support
γ_{21}	diversification→high debt	0.07***	3.87	H2a	no support
γ_{22}	specialization→low debt	0.15**	1.98	H2b	support
γ_{31}	diversification→new product performance	0.21***	2.75	H3a	support
γ_{32}	specialization→the overall financial performance	0.19***	3.43	H3b	support
γ_{33}	new product performance→the overall financial performance	0.31***	3.02	H3c	support

Note：*　p<0.05；** p<0.01；*** p<0.001.

Figure 1　The Modified Structure Model and the Relationship Between Variables

Figure 1 shows the modified structure model and the relationship between variables (omitting the direct effect of entrepreneurship on capital structure).

5 Conclusions

Based on the classified of enterprise performance, this paper discusses the relationship between entrepreneurship, diversification, capital structure and enterprise performance. Building a theoretical model by studying literature, choosing the small and medium enterprises in Xinjiang as the empirical research object, the results of this study show that entrepreneurship has a significant effect on diversification and capital structure. As the following: (1) radical entrepreneurship is helpful to SMEs realizing diversification, however, gradual entrepreneurship is helpful to specialized operation; (2) Whether radical entrepreneurship or gradual entrepreneurship has little effect on capital structure strategy in SMEs; (3) Diversification indirectly affects the overall financial performance through affecting the new product performance.

The results of this article have great significance in the theory and practice related to portfolio diversification and capital structure. First, the results of this article show that entrepreneurship has a significant effect on diversification, while has little effect on capital structure. The possible reason is that because of difficulties in debt financing, the SMEs in the underdeveloped regions tend to rely more on self-accumulation in the process of diversification. Therefore, the results of this article have made some contribution to the research on the survival and development issues of SMEs in the underdeveloped regions. Second, the results of this article show that diversification and capital structure indirectly affect the overall financial performance through affecting the new product performance, enriching the theory of optimal capital structure.

However, there are still some limitations in this article. First of all, this sample was obtained through convenience sampling and this non-probability sampling limits the results analogizing to all underdeveloped regions; Secondly, this article uses some subjective performance indicators, although these indicators are effective and acceptable in survey research, but some objective performance indicators should be more persuasive; Finally, this article only studies the effect of entrepreneurship on

diversification and capital structure without considering such factors as the intensity of market competition, competition policy and so on. Therefore, the application of the conclusions of this article has some limitations.

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