

TYPES OF KOREAN VENTURE FIRMS: STRATEGIC PROFILES AND POLICY IMPLICATIONS

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ABSTRACT

This study explores the types of Korean ventures in terms of their contexts, strategies, entrepreneurial and firm characteristics, and financial performance, based on the survey result of 2,452 ventures in Korea. Sample firms are categorized by two variables: the stage of growth of their product/market and their technological capability. Type I includes "high-tech" start-ups with strong technological capability in an emerging sector. Type II is tech-based ventures, which have developed a strong technological capability in an established sector. Type III encompasses niche players which have a relatively lower level of technological capability in an emerging sector. Type IV, dubbed as traditional ventures, is least technologically capable and operates in a mature product/market. Each type of ventures exhibits different patterns of behavior and financial performance levels. The results of this study offer several managerial and policy implications for the successful management of Korean ventures.

KEYWORDS

Korean Venture, Strategy, Entrepreneurship, Government Policy

1. Introduction

As a way of escaping from the IMF crisis, the Korean government has striven to support the creation and growth of new ventures in Korea. In 1997, the Korean government introduced the Law on Special Measures for Fostering Venture Enterprises. It defines the designated venture as a firm which satisfies one of the four conditions: a small & medium enterprise (SME) 1) in which invested venture capital(s) corresponds to 10 percent or more of the enterprise's total capital; 2) whose R&D expenses account for 5 percent or more of its total sales amount;

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3) whose sales of patent and new technology products account for 50 percent or more of its total sales amount; or 4) which is recognized as having excellent technology. Government support programs have focused on these designated ventures and have provided various services and resources such as physical location, financial resource, technology, human resource support, and management assistance.

These efforts, together with the emergence of IT-based new economy and the rapid growth of new ventures in the U.S. and Israel, produced great results in terms of the number of ventures newly created and the amount of capital invested in these ventures. To date, more than 6,000 small and medium companies have been designated as venture firms. Furthermore, 200 to 300 companies are newly designated as venture firms each month.

There appear many different types of ventures, however, which display diverse patterns of strategic adaptation and thus need different external resources and support services for survival and growth. Without considering the heterogeneity of the ventures, the current policies may not be effective in fulfilling initial objectives. This study addresses this issue, by identifying different types of venture, which require different government supports. The Korean government's definition of the term 'venture' is used in this study, although there are many definitions or terms to express a newly established technology-based SMEs with high-risk and high return.

There have been many attempts in advanced countries to identify different types of ventures with respect to their strategic behavior, entrepreneurial and firm characteristics, and performance levels (Keeley, Knapp and Rothe, 1996; Bantel, 1998; McDougall and Robinson, Jr., 1990; Carter, Stearns, Reynolds and Miller, 1994; Woo, Cooper and Dunkelberg, 1991; Westhead, 1995). They used to use strategic items, entrepreneurial characteristics of the founder(s), or organizational characteristics such as the level of technological capability and the growth stage of the firm as classification variables. They used these characteristics, as well, to examine the relationships with their environmental contexts and performance levels. They found that there exist diverse groups of ventures, which display different patterns of strategic adaptation and managerial features according to their entrepreneurial orientation, internal capabilities and external contexts.

Unfortunately, there are few studies which identify distinctive types of Korean ventures. The patterns of Korean ventures in terms of their strategy, entrepreneurial and other firm characteristics, however, may not be similar to those found in advanced countries. Given its lower level of **technological capability** and the gap in the **product/market evolution stage** compared to the advanced countries, Korean ventures might exhibit different styles of firm characteristics and the patterns of strategic behaviors. For instance, Kim (1997) and Lee et al. (1988) assert that many different types of technology-based firms can coexist in Korea due to differences in the sequence and pace of industry development from those in advanced countries. Some firms may focus on improvement of technology imported from overseas, while some may initiate a new technology to compete in the international market. Both types of firms can operate in emerging industries or in established ones at the same time. However, they might exhibit different patterns of strategic behavior and managerial characteristics, and need different external supports due to their differences in internal capability and the nature of target market domain.

Combining these two variables – technological capability and the product/market growth stage, a research framework of four cells is identified: (1) high-tech start-ups (firms with high technological capability in growing product/markets), (2) technology-based ventures (firms with high-technological capability in established

product/markets), (3) niche players (firms with low technological capability in growing product/markets), and (4) traditional ventures (firms with low technological capability in established product/markets). The following research question reflects this scheme. Are there any differences in the context, strategy, entrepreneurial and other firm characteristics among four different types of ventures classified by the technological capability and the growth stage of the target market?

2. Research Methods

The population of this study encompasses 4,008 Korean ventures designated by the Government as of Aug. 1999. A survey instrument was developed based on the literature review and the panel discussion of local experts comprised of several university professors in the field of strategic management and entrepreneurship, industry experts including accountants, and a government policy-maker. Among 4,008 firms contacted by telephone, e-mail, fax, and mail, 3,592 firms returned the questionnaire, but only 2,452 samples were usable and finally analyzed in this study.

As criteria to distinguish the group with high technological capability, the firm must satisfy at least two of four conditions: R&D intensity (R&D investment/total sales in 1998) exceeds 30%, R&D manpower ratio exceeds 30%, possession of at least one patent right, or existence of an R&D lab certified by the government. Otherwise, the sample was categorized as having low technological capability. To discern high growth product/markets, either the growth rate in the domestic market must have exceeded 50% in 1998 or the PLC of main product/markets must be in the introductory or early growth stage. Otherwise, the firm was classified into the lower market growth group. Among samples, as shown in Figure 1, 35.4%(n=868) was classified into **high-tech start-ups**, 13.4%(n=328) into **tech-based ventures**, 34.7%(n=852) into **niche players**, and 16.5%(n=404) into **traditional ventures**, respectively. Table 1 also shows classification variables among four different types of Korean ventures. As expected, variables concerned with technological capability and product/market growth stage are significantly different among them.

		Market growth		
		High	Low	total
Technological capability	High	High-tech. start-ups (n=868, 35.4%)	Technology-based ventures (n=328, 13.4%)	n=1,196 (48.8%)
	Low	Niche players (n=852, 34.7%)	Traditional ventures (n=404, 16.5%)	n=1,256 (51.2%)
total		n=1,720 (70.1%)	n=732 (29.9%)	n=2,452 (100%)

<Figure. 1> Criteria and distribution of venture types

<Table. 1> Classification criteria of venture types (ANOVA)

Classification criteria	High-tech. start-ups	Tech.-based ventures	Niche players	Traditional ventures	Mean	F-values
R&D intensity(1998, %)	83%(a)	38%(b)	11%(c)	8%(c)	46%	21.86***
R&D manpower ratio (1998, %)	63%(a)	55%(b)	45%(c)	35%(d)	52%	107.85***
Number of patents (1999, number)	1.3(b)	1.8(a)	0.4(d)	0.8(c)	1.0	33.90***
R&D lab. (1999, yes/no)	64.8%(b)	71.7%(a)	12.3%(c)	15.5%(c)	39.6%	340.93***
Domestic market growth rate(1999, %)	117.6%(a)	11.9%(b)	94.0%(a)	15.9%(b)	74.7%	22.61***
Oversea market growth rate (1999, %)	161.6%(a)	35.9%(b)	94.9%(ab)	34.6%(b)	100%	6.14***

+ : p<0.1, * : p<0.05, ** : p<0.01, *** : p<0.001; a, b, c, d : Duncan multi-range test

3. Results

Contexts, firm profiles, and performances: High-tech start-ups compete in IT related industries, while tech-based ventures are more likely to focus on the electronics industry. Niche players are scattered in many industries, while the traditional ventures can be found more frequently in the machinery and chemical industries (See Table 2). Table 3 presents various profiles of these firms in terms of size, age, and performance. Firms in established product/market domains (Tech-based and traditional ventures) are more likely to be big, old, and relatively profitable but grow slowly than those in emerging sectors (High-tech start-ups and niche players).

<Table. 2> Industry distribution of four different types of ventures (Crosstab)

Industry distribution	High-tech. start-ups	Tech.-based ventures	Niche players	Traditional ventures	Total
Software/ Internet	17.0%	6.3%	11.8%	6.0%	11.9%
Information Communication / Multimedia	19.5%	14.6%	13.3%	4.7%	14.2%
Electricity/ Electronics/ Semiconductor	24.9%	29.8%	19.2%	18.7%	22.6%
Machine Metal/ Equipment	14.5%	24.1%	22.2%	33.8%	21.7%
Chemical/ Fiber/ Environments/ Bio-tech.	15.0%	14.2%	15.6%	19.5%	15.8%
Construction/ Minerals/ Others	9.2%	11.1%	17.8%	17.4%	13.8%
Total	34.9%	13.8%	34.6%	16.8%	100%

Chi-Square=170.4 (d.f.=15, p<0.001)

<Table. 3> Various profiles of four different types of ventures (ANOVA)

Profiles	High-tech. start-ups	Tech.-based ventures	Niche players	Traditional ventures	Mean	F-values
Number of employees (1999, person)	27.1(c)	69.7(a)	26.5(c)	48.8(b)	36.2	67.35 ***
Sales amount (1998, mil. won)	2,346(b)	9,714(a)	4,320(b)	7,394(a)	4,902	15.93 ***
Firm age (end of 1999, year)	5.7(c)	11.0(a)	6.7(b)	10.2(a)	7.5	78.45 ***
Sales growth (1998, %)	57%(a)	9%(c)	37%(b)	24%(bc)	37%	9.69 ***
ROA (1998, %)	0.0%	2.2%	-0.1%	4.2%	1.1%	1.44
ROS (1998, %)	-16.7%(b)	-4.0%(a)	-2.8%(a)	2.3%(a)	-7.5%	6.86 ***

+ : p<0.1, * : p<0.05, ** : p<0.01, *** : p<0.001; a, b, c, d : Duncan multi-range test

Strategies: Table 4 shows that high-tech start-ups and tech-based ventures are more likely to deploy a technology leadership strategy, while niche players and traditional ventures resort more to marketing and cost leadership strategy. Each type of venture report different critical success factors to compete in its product/market area. High-tech start-ups consider technology leadership, funding capability, foreign exports, and time-to-market, while tech-based ventures emphasize import substitution as a critical factor for successful competition (See Table 5).

<Table. 4> Strategy type of four different types of ventures (Crosstab)

Strategy type	High-tech. start-ups	Tech.-based ventures	Niche players	Traditional ventures	Total
Technology-driven	65.8%	59.8%	56.7%	40.7%	57.7%
Marketing-driven	9.3%	9.3%	14.2%	16.5%	12.2%
Cost minimization	1.5%	1.6%	3.5%	5.9%	2.9%
Hybrid or combination	23.4%	29.4%	25.6%	36.9%	27.2%
Total	35.5%	13.5%	34.7%	16.4%	100%

Chi-Square=86.2 (d.f.=9, p<0.001)

<Table. 5> KSFs of four different types of ventures (ANOVA)

KSFs	High-tech. start-ups	Tech.-based ventures	Niche players	Traditional ventures	Mean	F-values
Technology leadership	4.75(a)	4.70(a)	4.62(b)	4.51(c)	4.66	15.44***
Licensing from overseas	3.79	3.89	3.83	3.8	3.82	0.91
Funding capability	4.12(a)	3.99(bc)	4.04(ab)	3.90(c)	4.04	6.12***
Symbiosis with large firms	3.14	3.16	3.04	3.16	3.11	1.36
High growth market	3.94(a)	3.79(bc)	3.89(ab)	3.68(c)	3.86	8.28***
Time-to-market	4.30(a)	4.28(a)	4.14(b)	4.07(b)	4.2	7.58***
Foreign exports	4.08(a)	4.03(ab)	3.91(bc)	3.87(c)	3.98	5.99***
Import substitution	3.75(b)	3.97(a)	3.68(b)	3.76(b)	3.76	4.04**
Customer-driven marketing	4.12	4.14	4.1	4.07	4.11	0.44

+ : p<0.1, * : p<0.05, ** : p<0.01, *** : p<0.001; a, b, c, d : Duncan multi-range test

Entrepreneurs: The roles of CEOs in high-tech start-ups, as indicated in Table 6, focus on R&D, corporate vision-making, and external linkage activities, while those in niche players and traditional ventures emphasize manufacturing and procurement activities. The proportion of high-tech start-ups spun-off from university and research institutes is higher than any other type of venture, while most niche players and traditional ventures originate from other SMEs (see Table 7). As to the roles of founder(s) in the incubating organization, Table 8 reveals that the high-tech start-up founder was more likely to work in the R&D function, tech-based venture founders were usually in sales, niche players were in finance/accounting, and traditional venture founders were in manufacturing and sales functions.

<Table. 6> Functional role of CEO (ANOVA)

Functional roles	High-tech. start-ups	Tech.-based ventures	Niche players	Traditional ventures	Mean	F-values
R&D	4.51(a)	4.54(a)	4.47(ab)	4.39(b)	4.48	2.73*
Mfg./ Procurement	3.63(b)	3.74(ab)	3.79(a)	3.82(a)	3.73	5.53***
Marketing/ Sales	4.17	4.16	4.19	4.16	4.18	0.18
HRM	3.9	3.85	3.85	3.84	3.87	0.57
Financial management	4.07	4.04	4.07	4.01	4.06	0.62
Strategic management	4.40(a)	4.36(ab)	4.38(a)	4.27(b)	4.37	2.53+
External activity	3.59(a)	3.49(ab)	3.52(ab)	3.38(b)	3.52	2.95*

+ : p<0.1, * : p<0.05, ** : p<0.01, *** : p<0.001; a, b, c, d : Duncan multi-range test

<Table. 7> Incubating organizations (Crosstab)

Incubating organizations	High-tech. start-ups	Tech.-based ventures	Niche players	Traditional ventures	Total
University/ Institution	12.3%	6.2%	7.1%	3.1%	8.1%
Large firms	30.4%	35.5%	23.8%	30.1%	28.8%
SMEs	46.2%	51.1%	57.6%	57.9%	52.8%
Others	11.1%	7.2%	11.5%	8.8%	10.3%
Total	34.7%	13.6%	34.7%	17.0%	100%

Chi-Square = 61.3 (d.f.=9, p<0.001)

<Table. 8> The roles of the founders in incubating organizations (ANOVA)

Roles in incubating organizations	High-tech. start-ups	Tech.-based ventures	Niche players	Traditional ventures	Mean	F-values
R&D	56%(a)	49%(b)	45%(b)	44%(b)	49%	9.04 ***
Mfg./ Procurement	8%(c)	12%(bc)	13%(b)	17%(a)	12%	7.51 ***
Finance/ Planning	16%	15%	17%	15%	16%	0.53
Sales/ Marketing	21%(b)	28%(a)	24%(ab)	27%(a)	24%	3.01 *
Director	17%	20%	18%	20%	18%	0.94
HRM/ Others	15%(a)	10%(b)	15%(a)	11%(ab)	14%	2.95 *

+ : p<0.1, * : p<0.05, ** : p<0.01, *** : p<0.001; a, b, c, d : Duncan multi-range test

Utilization of external resources: As shown in Table 9, firms with high technological capability have more frequent linkages with local universities and research institutes. In addition, high-tech start-ups have more collaboration with other industrial firms, while tech-based ventures approach foreign firms more in their technology development process. Niche players are more likely to use local individual experts. Traditional ventures exhibit least collaboration activities with other technology sources. With respect to the utilization of government support programs, high-tech start-ups utilized physical location and founding assistance and technology resources, while tech-based ventures took advantage of most support programs including technology, human resources, and other management assistance. Traditional ventures appreciate government's financial and management support programs. Niche players, however, did not use the support services much, except for assistance in establishing the firm (see Table 10). Since the government support programs, on the one hand, have preferred technology-based firms and, on

the other hand, have given special favor to established SMEs in their allocation of resources, niche players have been relatively isolated from the government support programs.

<Table. 9> Technological collaboration of four different types of ventures (ANOVA)

Tech. collaboration	High-tech. start-ups	Tech.-based ventures	Niche players	Traditional ventures	Mean	F-values
Domestic universities	71%(a)	70%(a)	58%(b)	58%(b)	64%	12.67***
Public R&D institutes	50%(a)	50%(a)	36%(b)	35%(b)	43%	12.74***
Other industrial firms	49%(a)	41%(b)	35%(b)	39%(b)	42%	8.73***
Individual experts	55%(ab)	54%(ab)	58%(a)	49%(b)	55%	2.32+
Overseas firms	34%(b)	41%(a)	29%(b)	33%(b)	33%	3.45*
Overseas universities	9%(a)	7%(ab)	6%(ab)	4%(b)	7%	2.93*
Foreign experts	21%	23%	20%	21%	21%	0.41
Others	10%(ab)	2%(b)	13%(a)	7%(ab)	9%	.01

+ : p<0.1, * : p<0.05, ** : p<0.01, *** : p<0.001; a, b, c, d : Duncan multi-range test

<Table. 10> Utilization of external resources (ANOVA)

External resources	High-tech. start-ups	Tech.-based ventures	Niche players	Traditional ventures	Mean	F-values
Foundation/ Location	15.0%(a)	6.7%(c)	13.1%(a)	9.7%(b)	12.3%	12.41***
Financial resource	35.4%(b)	36.0%(b)	31.1%(c)	40.6%(a)	34.9%	9.79 ***
Human resource	22.4%(c)	33.1%(a)	18.8%(d)	29.0%(b)	23.8%	25.14 ***
Technology	42.7%(a)	44.9%(a)	30.9%(c)	35.3%(b)	37.8%	21.68 ***
Management/ Marketing	21.9%(b)	27.6%(a)	21.0%(b)	28.2%(a)	23.4%	9.93 ***

+ : p<0.1, * : p<0.05, ** : p<0.01, *** : p<0.001; a, b, c, d : Duncan multi-range test

4. Summary and discussion

This study explored various aspects of four different types of ventures in Korea, categorized by their technological capability and the growth stage of the target market. The results shows that high-tech start-ups are most similar to those found in advanced countries in terms of their entrepreneurial, strategic, and other firm characteristics. Tech-based ventures resemble “long-evolved technology-based small firms” (Kim, 1997) in the sense that they are relatively old and technically capable in established industries. Niche-players appear to be market-oriented ventures to grab an emerging opportunity in various industries, while traditional ventures share commonalties with other SMEs in their internal capability and strategic behaviors.

Currently, policies for fostering ventures in Korea are directed toward the creation of an active business inauguration atmosphere, improvement of the fund supply systems, enhancement of technological capabilities, globalization of venture enterprises, and the formation of a venture enterprise network. These policies may not be equally effective in supporting four different types of ventures, given their aforementioned characteristics. Depending on the ultimate objectives of the policies, the government should focus on suitable types of ventures. For instance, if the government

is interested in creating and nurturing new ventures to compete in emerging sectors, not just high-tech start-ups but also the niche players must be emphasized in the resource allocation.

The results of this study are cross-sectional in nature. However, four different types of ventures can evolve as their product/market become mature or as indigenous development efforts accumulate technological capability. Thus, it is necessary to conduct future research to examine the types of ventures and their characteristics from a dynamic perspective.

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