

PICKING THE WINNERS – EXPLAINING FACTORS OF NEW VENTURE GROWTH

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Abstract

This study is a part of a longitudinal research project which has followed the development of 200 SMEs in the branches of metal-based manufacturing and business services since their start-up in 1990. The paper concentrates on 86 survived respondents after seven years activity. We develop a model for testing the factors that differentiate growing new ventures from the non-growth companies. One half of the respondents (43 firms) appeared to be steadily growing (over 10 % annual growth in turnover). The combined model classifies correctly 89.2 % of observations. The high total classification rate is based on the successful classification of growing ventures. The model classifies correctly 39 of 43 growing ventures. Growing ventures are opportunity driven (pull motivation), and applying group management style, have increased their production capacity and their external network relations, and adopt a specialized product policy, i.e. are aiming to differentiate their products from the products of their competitors. Subcontracting and specialization as a firm's strategy were successful differentiators, too. The successful differentiators in the combined model did not include any statistically significant entrepreneur specific variables. It could be argued that the fit of entrepreneur is necessary but not a sufficient condition for successful performance. The implications of this study for academics, educational institutions, entrepreneurs, and other practitioners is encouraging. The most of those factors that differentiate growing ventures from non-growth companies could be taught and learned, and are dependent on strategic and operative choices of the entrepreneur.

Introduction

Over the past twenty years, much research has been devoted to answering the question what factors explain the performance of the firm. Sandberg (1986) carried out one of the earliest studies integrating the effects of various forces on new venture performance. Sandberg and Hofer (1987) tested their model on a sample of 17 ventures drawn from the files of venture capital firms. They found no support that success would be based solely on entrepreneurial

characteristics but introduced the view that venture strategy and industry structure should be included in the venture performance model. Even if entrepreneur's characteristic were not supported in testing of their propositions they concluded, on the basis of venture capitalist's strong belief in the importance of the entrepreneur as a source of success, that some characteristics of the entrepreneur are important determinants of new venture performance but biographical data are not amongst those characteristics (Sandberg and Hofer 1987). McDougall (1987), and McDougall et al. (1992) set forth a model that explained a great deal of the variance in new venture performance. McDougall et al. (1992) demonstrated, parallel to Sandberg and Hofer (1997), that not only strategy and industry structure by themselves are important, but also the interaction between strategy and industry structure affects new venture performance.

Chrisman et al. (1999) analysis of the determinants of new venture performance extended the model developed by Sandberg and Hofer (1987). Their extended model specified that the performance of a new venture was a consequence of a confluence of factors that encompass attributes of entrepreneurs, industry structure, business strategy, resources, and organizational structure, processes, and systems. They propose that new venture performance will be a function of the decisions and behaviours of entrepreneurs in recognizing environmental opportunity, assembling resources needed to pursue opportunity, developing a strategy to align resources to exploit opportunity, and designing an organization capable of putting the strategy into action. But as Shane and Venkataraman (2000) note the attributes that increase the probability of opportunity exploitation do not necessarily increase the probability of success.

As an essential part of new venture performance firm growth has been studied widely starting from the terms of management and the development of new activities as well as the reformulation of a firm's problems and goals. However, several authors have noted that there is no single theory that can adequately explain new business growth (Gibb and Davies, 1990). According to Gibb and Davies (1990), previous studies on growth have included four main types of approach: the impact of the entrepreneur's personal characteristics, the strategic factors affecting the firm's performance, sectoral and broader market-led approaches and organisational development approaches (e.g. Smallbone et al., 1995). Cooper et al. (1994) studied the determinants of high growth versus marginal survival and found that the chances of both survival and high growth were positively associated with having a higher level of education, greater industry-specific know-how, and larger initial financial resources. Davidsson and Wiklund (2000) state that a lot of studies focusing on new firm growth have been completed within last 20 years but these studies have several theoretical and methodological shortcomings and are generally lacking longitudinal designs.

Based on the problems of testing wide models we decided to test the impact of different variables separately and there after include their interaction. First we studied the impact of entrepreneurial characteristics, motivation and environment as well as their interaction as differentiating factors between growing and non-growing firms (Littunen and Virtanen, 2004). The results were parallel with Sandberg and Hofer (1987) otherwise but analysis suggested that the age of the entrepreneur could be personal characteristic to explain the performance, meaning that experience induces growth. Vocational training was also dis-

covered to be a statistically significant explanatory variable. The form of motivation (pull motivation) to seize the opportunity was discovered to be the most effective differentiator between growing and non-growing firms. This analysis reformulates the model including only those entrepreneurial characteristics found to be statistically significant with motivation (push and pull) factors and including also the decision and behavioural variables (business strategy, style of management, changes in production and markets etc.).

Theoretical background and hypothesis

The purpose of this study was to investigate which factors involved in the firm's birth, start-up and the first seven years' development differentiated growing from non-growth firms. As suggested by Sandberg and Hofer (1987) we build our analysis on contingency model of performance. According to contingency theory, the start-up and growth of firms cannot be examined in isolation from their specific context and environment (Gilad and Levine, 1986). The analysis of start-ups by utilizing contingency theory makes it possible to evaluate the factors affecting the birth of new firms on a broad scale (Gilad and Levine, 1986; Storey, 1994) and including the founder's phase of life at start-up in the analysis. Moreover, contingency perspective takes into account uniqueness and discontinuity which are the typical characteristics of entrepreneurial markets by suggesting that universal theories cannot be applied to organizations because each is of them is unique. Virtanen (1997) suggests that we should use different theories in different contexts. But if we have longitudinal data about growth of a firm we may have different contexts in the same model and thus contingency approach seems to be the most appropriate one.

The various situational factors that describe the founder's phase of life at start-up can be seen as reflections of the overall situation of the economy, and these provide the link between founder's previous experience and the start-up situation (Littunen, 2000; Littunen and Tohmo, 2003). Situational factors link the success of new firms with the kinds of entrepreneurial knowledge and skills considered to be important to growth (Cooper and Dunkelberg, 1987; Cooper and Gascon, 1992). Different management styles are seen as central factors in the entrepreneurial competence of the individual. The contingency theory framework notices the changes of situational factors, for example changes in the strategies of a firm, too. In this study we analysed the situational factors at start-up and the changes of those situational factors during first seven years of development.

The entrepreneurial motives (E_m) for founding and running a business could be divided into 'push' and 'pull' factors (Gilad and Levine, 1986; Storey, 1994). The model distinguishes those entrepreneurs motivated by a positive idea, those with specific knowledge of a market opportunity, and those primarily forced into entrepreneurship. The motivations of those attracted by the opportunity are in accordance with conventional economic theory and in the core of the current entrepreneurship research (e.g. Shane and Venkataraman 2000). A "forced" motivation exists when the founder feels to be pushed into starting a firm under the pressure of circumstances. Individuals may be dissatisfied with their present jobs or promotion aspects or may also be faced with the prospect of unemployment. Psychological "pull" factors, like a desire to work independently or to realise own ambitions are included also in the entrepreneurial characteristics which were studied separately. The founders of

growing firms might have had different motives for setting up and running a business compared to the founders of non-growth firms. Thus the variable “Motives at start-up”(external push and pull factors, internal motives) was constructed to reveal the motives behind founding a business.

The strategy of a new firm must be designed to utilise its management capabilities in order to attain its goals and ways of realising them (Sandberg and Hofer, 1987). According to Mintzberg (1987), the strategy of a firm can be conceptualised as a plan, position in the market, vision concerning the future and the firm’s state or as a model for actions in the stream of decisions. In this study the basic strategic choices of firms were studied as models for actions. The conceptualization of a firm’s strategy as a model for actions is based on the view in which the business plan and the operative management are connected. One purpose of this paper was to study how changes in the competitive situation of a firm affect its growth. Thus the action is approached from the point of view of the firm’s market orientation. Four categories based on the firm’s market orientation were formed: a) sales as a sub-contractor (co-operation), b) concentration on local markets, c) specialization and d) internationalisation. The firms which had reported specialization as their strategy were further classified into those specializing in products and those specializing in satisfying customers’ needs, as the resources connected with these two strategies are very different. These strategies and management actions were studied in relation to products and markets, changes in ownership, changes in product and marketing policy, changes in production processes and changes in networks (Storey 1994).

On the bases of the above reasoning we developed a model for new venture growth:

$$(1) \text{ NVG}_{1...j} = f(\text{Es}_{1...j}, \text{Em}_{1...j}, \text{F}_{1...j}, \text{IS}_{1...j}, \text{St}_{1...j}, \Delta\text{St}_{1...j}),$$

where NVG is growth a firm and j stands for the number of firms, $\text{Es}_{1...j}$ includes the characteristics of entrepreneur discovered to be statistically significant in our previous analysis, $\text{Em}_{1...j}$ describes motives, $\text{F}_{1...j}$ demonstrates financing and $\text{IS}_{1...j}$ industry sector up, $\text{St}_{1...j}$ represents the strategy variables of firm, and $\Delta\text{St}_{1...j}$ the changes of strategy variables during first seven years’ development. Based on the above discussion and former studies we derived the following hypothesis and tested each group of variables separately before combining the model.

H1: Experience factor (age) differentiates growing new ventures from the non-growth firms.

H2: Skills and education (vocational training) of an entrepreneur or entrepreneurial team differentiate growing new ventures from the non-growth firms.

H3: Motives at start-up situation differentiate growing new ventures from the non-growth firms.

H4: Financing at start-up situation differentiates growing new ventures from the non-growth firms.

H5: Management style of an entrepreneur (entrepreneurial team) differentiates growing new ventures from the non-growth firms.

H6: Strategic orientation of the venture differentiates growing new ventures from the non-growth firms.

H7: Change in the strategic orientation of the venture differentiates growing new ventures from the non-growth firms.

Description of the data

This study is a part of a longitudinal research project which has followed the development of 200 SMEs in the branches of metal-based manufacturing and business services since their start-up in 1990 (Littunen, 1992). The owner-managers were personally interviewed for the first time at the beginning of 1992. Follow-up data were collected annually through telephone interviews held between 1993 and 1996 and in 1998. In addition, each year the second author conducted 20-25 interviews personally in order to spot possible inaccuracies in the telephone interviews. For the first personal interviews, 200 firms were selected as subjects from the SME register of Statistics, Finland.

The sample consists of 138 metal-based manufacturing firms and 62 business service firms from all over Finland. At the seven-year follow-up 86 firms responded, 55 firms had closed down and 59 firms refused to participate in the follow-up. We classified the respondents into two growth groups on the basis of their performance during 1990-97 (e.g. Smallbone et al., 1995). This paper concentrates on the 86 survived firms where from 43 firms were discovered to be growing (average annual growth rate more than 10 % in 1990 – 1997). About one third of the growing firms (14 firms) could be considered to be the so called gazelles whose annual growth was more than 25 % per year (4,8 times the turnover in seven years).

The studied firms were mostly small: about 60 percent had less than five employees at the start-up. The connection between the firm and the entrepreneur was strong and the studied firms were often dependent on the entrepreneur's own labour and that of his/her family. The strategy of the firm was chosen by the entrepreneur. Over 45 percent of the entrepreneurs in the study had basic education no higher than elementary school. Empirical studies suggest that new entrepreneurs start their firms by relying on work experience gained earlier as employees in a firm owned by someone else. The most of the new entrepreneurs had come from SMEs and in the most of the firms the selection of products was in the first place based on the entrepreneur's previous work experience, too. Other important factors affecting the choice of the firm's product were a combination of previous work experience, vocational training and identification of the needs of customers in the market.

The data were analysed by grouping the features of the respondents and their firms by means of cluster analysis. The aim of these groupings was to unify the rather varied interview data. The management styles of firms were described according to four different dimensions: a) group management (2 items), b) action planning (6 items), c) innovativeness (4 items), and d) interactivity (2 items). Using cluster analysis the firms were classified into three categories portraying styles of management, according to the participation in the firm's management of different interest groups. The *situational style* of management characterizes the entrepreneur who takes an independent position and does not make very much

use of personal networks. In the *network building style* the entrepreneur has obtained ideas about how to manage a firm through discussions with customers as well as with his entrepreneurial and other business contacts or with specialists. In the *group management style* the key affairs of the firm are managed by a group of people (see Littunen and Tohmo, 2003).

Logistic regression analysis was used as statistical technique in locating differences between growing (growth of turnover more than 10 % annually) and other firms and their owner-managers in the selected attributes. We chose logistic regression analysis because it captures synergistic relationships between variables but does not require as restrictive assumptions as e.g. discriminant analysis. The purpose of the analysis is to find out those variables which differentiate growing ventures from the non-growth firms. With logistic regression we also avoid one impediment identified by Davidsson and Wiklund (2000). They state that using current variables to predict past process breaks with the principle that the cause must precede the effect. By using logistic regression we do not explain the growth process but are trying to find out which factors differentiate growing firms from non-growth companies.

Results

First we tested entrepreneurial characteristics, the motives, the importance of management capabilities in terms of internal/external networks, and the importance of strategies for the growth separately. The estimated models explained the location of the observations rather well classifying correctly about 69 % and 76.5 % observations. In separate testing age (experience) did not appear to be statistically significant but vocational training and motives for establishing a firm were discovered statistically significant factors. This means that H1 should be rejected whereas H2 and H3 got support from the analysis. In the second model the statistically significant factors were: financing at start-up (H4 supported), firm's strategic choice (H6 supported), change in product policy and change in target market (= old versus new customers, H7 supported). Management style of an entrepreneur (entrepreneurial team) did not appear to be a statistically significant differentiator between growing new ventures and the non-growth firms suggesting that we should reject hypothesis 5.

After separate testing we combined the model to include all the variables and experimented several different versions to reach the best model. Table 1 presents our selection as the best logistic regression model describing growth of firms as function of the following start-up variables: age, vocational training, motivation, main product selection, financing and industry sector. From these variables motives and industry sector appeared to be statistically significant.

Table 1 about here

Style of management, strategy variables including firms strategy choice and change in product policy, in production process, in target market conditions and in external personal networks were the variables selected in the model from those variables collected after the third year of operation. From these variables style of management, firm's strategic choice,

change in production process and change in external personal networks were discovered to be statistically significant. Change in product policy, in production process and in target market conditions after seven year of operation were also included in the model. From these variables change in product policy was the only statistically significant variable. The results suggest that group management style was emphasised in the growing firms whereas situational style and network building style were linked mostly to non-growth firms. The combined model suggests that we should accept hypothesis H3, H5, H6, and H7 but reject H1, H2, and H4.

The estimated model explained the location of the observations in the growth/non-growth firms very well. Over 89 per cent of observations were classified correctly by the logistic regression model. The high total classification rate of the model was mostly based on the successful grouping of the growing firms (92,1 %) which means that 40 from 43 growing firms were classified correctly.

Conclusions

This study has examined what factors differentiate growing firms from the non-growth ventures. Doubling of turnover during 1990-97 (over 10 % annual growth) was used as the criterion of continuous growth. Contingency theory was used as the starting point in the study. First we tested separately the start-up factors including entrepreneurial characteristics (experience, skills and training of the entrepreneur), motives, financing, product selection and industry as explanatory variables. Thereafter style of management and strategy variables and changes of those variables were tested.

As a separate testing education (vocational training) and motives of the entrepreneur (positive situational and “pull” motives) were discovered as statistically significant differentiating variables whereas experience (age of the entrepreneur) was not significant. The results suggest that we should accept our second and third hypothesis but reject the first one. The second partial model included management style, strategic choice and changes of strategic characteristics (product policy, production process, target market, networks) of a firm.

The growing ventures of this study come more often from the branch of metal-based manufacturing, are opportunity driven (pull motivation) and applying group management style, have increased their production capacity, have increased their external network relations, and adopt a specialized product policy. In most cases active strategies, particularly with respects to markets, were necessary to achieve growth over an extended period. Change in product policy (developing new products) in the seventh year of operation was statistically significant. Obviously, the best performing new firms are aiming to differentiate their products from the products of their competitors. In addition to above strategy variables the sub-contracting and specialization as a firm’s strategy differentiated growing firms from non-growth companies. However, the signs of these explanatory variables were conflicting so that this relationship needs further investigation.

The study suggests that those variables which quite successfully differentiated growing ventures from non-growth firms in the combined model did not include any statistically

significant entrepreneur specific variables confirming the results of e.g. Sandberg and Hofer (1987). However, some biographical variables appeared to be statistically significant when they were tested separately at the start-up phase. Thus it could be said that fit of the entrepreneur is necessary but not a sufficient condition for successful performance. The implications of this study for academics, educational institutions, entrepreneurs, and other practitioners is encouraging. The most of those factors that differentiate growing ventures from non-growth companies could be taught and learned. Moreover, the most of them are dependent on the strategic and operative choices of the entrepreneur.

Even if the combined model succeeds very well in differentiating growing from non-growth firms (total classification rate 89.2 %) we need further information and data on these relationships to be able to interpret all of the findings. For example, the management style was not statistically significant in the second separate model but appeared to be statistically significant in the combined model. Overall, in interpreting the findings of this study and planning future research, certain limitations need to be kept in mind. Entrepreneurs and the processes they use in starting their firms will vary by line of the business, by region and in background and aims. Since the study was restricted to firms in two industries, caution must be exercised in generalising the results across other sectors. At the time the research was conducted the Finnish economy was in the middle of a recession, which undoubtedly affected the results. Future studies, conducted during a less turbulent time period and with larger samples from a wider-range of industries and regions, would yield more conclusive findings.

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Table 1.: Logistic regression model (Dependent variable: other firms vs. growing firms)

Theoretical model: NVG _{1...j} = f (Es _{1...j} , Em _{1...j} , St _{1...j} , ΔSt _{1...j}) Independent variables	Model 3: Coefficient	Std. Error	Significance
<i>Start-up phase:</i>			
Age			0.138
Age (1)	2.760	1.834	0.132
Age (2)	-1.331	1.085	0.220
Vocational training			0.267
Training (1)	3.155	1.959	0.107
Training (2)	0.974	1.384	0.482
Motive			0.037*
Motive (1)	1.694	1.081	0.117
Motive (2)	-1.998	1.544	0.196
Financing at start-up			0.443
Financing (1)	-1.447	1.144	0.206
Financing (2)	-0.681	1.421	0.632
Main product	-1.008	1.063	0.343
Industry sector	2.384	1.348	0.077*
<i>Third year of operation:</i>			
Style of management			0.161
Style (1)	-3.601	2.073	0.082*
Style (2)	-1.887	1.143	0.099
Change in product policy			0.705
Product policy (1)	-0.156	1.204	0.897
Product policy (2)	1.206	1.889	0.523
Change in production process	3.603	1.673	0.031*
Change in target market	-0.085	1.066	0.936
Change in external personal networks	-3.680	1.467	0.012*
Firms' strategic choice			0.077*
Choice (1): Subcontracting	-5.829	2.825	0.039*
Choice (2): Local market	-3.976	2.516	0.114
Choice (3): Specialisation	-6.697	2.601	0.010*
Choice (4): Internationalisation	-4.551	2.714	0.094
<i>Seventh year of operation:</i>			
Change in product policy			0.130
Product policy (1)	0.326	1.496	0.827
Product policy (2)	3.414	1.745	0.050*
Change in production process	-0.677	1.065	0.525
Change in target market	-1.820	1.217	0.135
Constant	3.283	3.079	0.286
Model of Chi-square =0.001; Df=25	Total classification rates (%) =89.2		* p < 0.09