THE ATTRIBUTES OF FIRM GROWTH - WHY AND WHY NOT A FIRM DOES GROW

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ABSTRACT

Although previous studies suggest that innovative behavior has a positive effect on firm growth, little is known about the interaction between innovative behavior and different attributes of growth. In this study we examine the interaction between firm growth and different arrangements of growth attributes, such as willingness, abilities and opportunities for growth. We suggest that the order or causal relationship of growth attributes is not definite. In addition, we investigate does the innovative behavior moderate the relationship between growth attributes and firm growth by applying a qualitative configurational approach. Our results show that innovative behavior moderates firm growth: non-innovative firms seem to benefit more from growth intentions than other firms.

INTRODUCTION

In recent years, there has been an increasing interest in examining the different factors affecting on the firm growth. Primarily, the growth of the firm is related to the intentions of the entrepreneur or manager (Birley & Westhead, 1990; Wiklund, Davidsson, & Delmar, 2003; Wiklund & Shepherd, 2003). Entrepreneur or manager makes the fundamental decision to grow or not to grow his/her firm. However, these intentions are only one dimension of the attributes of firm growth (Sexton & Bowman-Upton, 1991; Toivonen, Stenholm, & Heinonen, 2006). As Covin and Slevin (1997) emphasized in their theoretical model that the effect of growth aspirations on firm growth is likely moderated by market constrains, entrepreneurial capabilities, and organizational resources.

In this study we assume that all of the three attributes, willingness, abilities, and opportunities, have to be fulfilled to achieve growth. As previous studies have shown, growth aspirations are positively associated with firm growth. However, this relationship is affected by other factors, like abilities and opportunities (Sexton & Bowman-Upton, 1991; Wiklund & Shepherd, 2003). Growing a firm requires abilities or their reconfiguration to adapt firms’ activities and outcomes to the perceived growth opportunity. Without required abilities, like management skills or financial resources, growth is unlikely, even if primary decision-maker would have growth intentions (Penrose, 1959; Wiklund & Shepherd, 2003). If a firm already owns or is able to acquire the particular resources, it is likely that firm is able to react to the recognized opportunities. However, taking advantage of growth opportunities may require innovative behavior. In order to match the firm’s abilities to the recognized opportunities firms may have to renew and reconfigure their abilities as well as introduce new products or services to the markets (Lumpkin & Dess, 1996). Similarly, innovative behavior may create a whole new set of opportunities for growth.

Therefore, we assume that innovative behavior moderates the relationship between the attributes of growth and actual growth. This assumption is partly supported by previous research that shows that different kinds of innovative behavior have a positive effect on firm growth (Sandvik and Sandvik 2003; Wolff and Pett 2006). However, still it is not clear how innovative
behavior may interact with the attributes of firm growth and firm growth. By using a longitudinal data we examine the association between growth attributes and realized growth, and how innovative behavior does moderate this association. Due the non-linear characteristics of growth attributes, we analyze them with a qualitative configurational approach examining different configurations and combinations of the attributes of firm growth (cf., Fiss, 2007). This approach enables us to sort out the interaction of different growth attributes and innovativeness. Our study starts with an overview of the attributes of firm growth and the role of innovativeness in firm growth. Then we represent the theoretical aspects related to our study. After specifying our research design, we introduce results and conclude the study.

**ATTRIBUTES OF FIRM GROWTH**

The prerequisites of firm growth have been traditionally linked to the essential role of individual’s motivation. Concepts like growth aspirations, personal motivation or willingness have been the starting points when studying growth. Growth aspiration is related to the personality and psychological factors of the entrepreneur or manager and to exogenous factors, like situational factors that may affect the decision-making (Bird, 1988; Davidsson, 1991; Krueger, 2000; Miner, Smith, & Bracker, 1994; Moran, 1998). Theoretically this attribute is related to the theory of planned behavior (Ajzen, 1991), which models in more detail the psychological processes preceding the observed behavior. Theory of planned behavior has frequently been used in illustrating the importance of intentions and perceptions, norms and situational factors related to growth behavior (Delmar & Wiklund, 2003; Wiklund & Shepherd, 2003). In addition, the behavior takes place under limited volitional control (Delmar & Wiklund, 2008), and the actions based on the aspirations are dependent on the perceived desirability (outcomes), feasibility (abilities) and opportunities associated with intended behavior (Ajzen, 1991; Davidsson, 1991; Krueger, Reilly, & Carsrud, 2000; Wiklund & Shepherd, 2003). In addition, possible earlier growth experiences do also affect the aspirations, and according to Delmar and Wiklund (2008) including the notions of feedback and stability of motives in the analysis is likely to lead to better models of firm growth.

As such, the aspiration for growth is, however, only a predictor for actual behavior, not the end result. Still, the reason for the crucial role of growth aspiration is apparent. The entrepreneur or management makes the actual decision to grow or not to grow the firm (Davidsson, 1991; Gibb & Davies, 1990; Kolvereid, 1992; Wiklund et al., 2003). Hence, the growth aspiration is perceived here as one of the crucial attributes of firm growth (Birley & Westhead, 1990; Cliff, 1998), but its’ existence without other attributes of growth is not explicit.

Previous studies show a positive relationship between growth intentions and growth (Baum, Locke, & Smith, 2001; Bellu & Sherman, 1995; Delmar & Wiklund, 2008; Kolvereid, 1992; Kolvereid & Bullvag, 1996). However, the some of these results show that association seems to be rather frail, which implies that the association between growth aspiration and growth is affected also by other factors (Saemundsson, 2003; Wiklund & Shepherd, 2003). Covin and Slevin (1997) and Sexton and Bowman-Upton (1991) suggested that the relationship between growth aspiration and actual growth is likely moderated by market constrains, entrepreneurial capabilities, and organizational resources. Wiklund and Shepherd (2003) found that the relationship between aspirations and behavior is moderated by the resources and opportunities available. In addition, Dutta and Thornhill (2008) found that entrepreneurs’ or managements’ perception of the competitive conditions may modify their growth intentions. These findings suggest that the relationship between aspirations and growth appears to be more complex than usually is stated.
Thus, two other attributes of growth are required to take into consideration: abilities and opportunities (Davidsson, 1991; Morrison, Breen, & Ali, 2003; Sexton & Bowman-Upton, 1991; Toivonen et al., 2006). The lack of abilities or unrecognized opportunities may hinder the firm growth, especially in small-sized firms, even if primary decision-maker would have intentions for growth (Penrose, 1959). The abilities refer to the resources and skills needed in pursuing growth (Brown & Kirchhoff, 1997; Gibb & Davies, 1990; Penrose, 1959). Accordingly, this attribute of growth is grounded on the resource-based view. Here, we emphasize the importance of management skills and expertise in growing a firm (Birley & Westhead, 1990; Gibb & Davies, 1990; Greiner, 1972; Penrose, 1959). Moreover, managerial skills are required for directing and acquiring other growth abilities, such as human resources, organizational routines, and financial resources which are also the key denominators for separating strategically relevant resources from those less strategically relevant (Barney, 1991; Wernerfelt, 1984). Consequently, the importance of managerial skills as a key ability for firm growth is made particularly explicit in this study.

Managerial skills are also decisive in recognizing growth opportunities or generating competitive strategies for growth (Baum et al., 2001). As such, growth opportunities are typically understood as a specific feature of the external environment, as an exogenous factor for firm growth. The environment can offer opportunities to grow, such as new market-product combinations or new market niches, providing revenues and chances for growth (Sexton & Bowman-Upton, 1991). Among others the institutional theory (DiMaggio & Powell, 1983; Scott, 1995) as well as resource dependence theory (Pfeffer & Salancik, 1978) emphasizes the role of limiting factors to the autonomous choices done by organizations or individuals. Thus, growth is taking place only, if the environment is positive for growth. According to Gartner (1985) and Krueger (2000) the importance of the environment has been acknowledged as a background factor of growth, mainly as an explanatory factor of desires. However, the external environment can be seen as subjective and the opportunities it provides are the result of entrepreneurial capabilities obtained by a firm. According to Brown and Kirchhof (1997) the subjective understanding of the growth opportunities offered by the environment is more important than the objective. The processes linked to acquiring knowledge are thus important preconditions for perceiving the opportunity (Eckhardt & Shane, 2003). Here, we assume that the perception of growth opportunities is an essential growth attribute.

As presented here, our approach on firm growth combines three different theoretical aspects. Moreover, our approach on firm growth leans on the work presented by Davidsson (1991). His model of determinants of small firm growth includes growth motivation, abilities as well as opportunities as prerequisites for firm growth. Instead of assuming the cause-and-effect – relationship, we represent an approach in which growth attributes are coexisting and interacting through different configurations.

**Interactions of the attributes of firm growth**

As Delmar and Wiklund (2008) have underlined a linear setting for analyzing the relationship between growth aspiration and growth may not be valid as such. Previous studies show that this relationship is moderated by external (competition, environment) and internal (resources, abilities) factors (Baum et al., 2001; Saemundsson, 2003; Wiklund & Shepherd, 2003). Accordingly, in this study we assume that three growth attributes have to coexist before firm growth may occur (cf. Toivonen et al., 2006). Access to resources and abilities are needed to achieve growth. These, again, are directed according to the opportunities recognized. Moreover, the choices taken in previous dimensions operate as double constraints (Thakur, 1999) against which the growth aspiration should be mirrored. Important addition here is that the order or causal relationship is not
definite. Abilities required for growth and recognized opportunities may exist before growth aspirations take place. The task of sorting out these interactions into configurations, or complements, of practices poses a problem of complex dimensionality (Kogut, MacDuffie, & Ragin, 2004).

The assumption of coexistence requires including the interaction effects of different growth attributes into the analyses (cf., Wiklund & Shepherd, 2005). At its purest form, in the core of growth, the interaction is three-dimensional between each attribute – coexistence of willingness, abilities, and opportunities. In addition, there are several other possible combinations of attributes that offer different ways for fulfilling all the attributes of firm growth (Table 1). For instance, a firm may have willingness to grow but it has not yet recognized any suitable opportunities or reconfigured its abilities accordingly. Thus, it is still on the verge of becoming a potential growth firm. On the other hand there are firms that have the abilities and opportunities available, but they still lack the aspiration for growth. Similarly, the recognition or willingness to search for growth opportunities may vary according to the growth aspirations (Toivonen et al., 2006), but still the abilities and opportunities may remain the same. In all cases the route to achieving growth is different. Consequently, as previously emphasized by Delmar and Wiklund (2008), adding more and more factors/variables into the growth models increases their complexity, and hence, direct them out of reach of traditional causal analysis (cf., Fiss, 2007). Therefore, it is important to notice that growth is contingent, and thus, when analyzing causal relationships many effects will remain hidden if only the main effects of the relationships are investigated.

The interaction between different growth attributes may be contextual, and the potentiality of different combinations arises from the ways how and when individual activities are performed (Dess, Lumpkin, & Covin, 1997; Porter & Siggelkow, 2008; Wiklund & Shepherd, 2005). In addition, two different attributes may be complementary with each other. According to Milgrom and Roberts (1990) two different activities should be defined to be complementary if the marginal benefit of one activity was increased by the level of the other activity. This could be the case in the association between opportunities and abilities – taking advantage of recognized growth opportunities for growth may increase the incentives for reconfiguring or acquiring needed abilities. On the contrary, if the marginal benefit of one activity decreases by the level of the other activity, these activities are substitutes (Porter & Siggelkow, 2008).

In this study we assume that the differences between different combinations of growth attributes will produce different growth results. We expect that the attributes of firm growth themselves are complementary and in addition their interactions produce complementsaries. In addition, we propose that a major reason for the differences between firm growth or for the lack of it is the complementary effect of innovative behavior.

**Fulfillment of the attributes of firm growth and growth of the firm**

In this study we assume that in order to achieve growth all of the three attributes, willingness, abilities, and opportunities, has to be achieved. As previous studies show growth aspirations are positively associated with firm growth, but this relationship is more likely moderated with other factors, like abilities and opportunities (Wiklund & Shepherd, 2003). Like in the case of business start-up, growing a firm requires resources and abilities or their reconfiguration in order to adapt firms’ activities and outcomes to the perceived growth opportunity (Alsos, Borch, Ljunggren, & Madsen, 2007; Sexton & Bowman-Upton, 1991; Shane, 2003). If a firm owns or is able to acquire the particular resources and capabilities (Covin & Slevin, 1997; Damanpour, 1991; Rastogi, 2000), the more likely it is able to react to the recognized opportunities for growth or gain
competitive advantage (Verhees & Meulenberg, 2004; Wolff & Pett, 2006). When these three attributes are fulfilled, firm may achieve growth. Hence, we propose the following hypothesis.

**H1:** Firms that fulfill all three attributes of growth are more likely to grow than firms that will not fulfill all three attributes of growth.

Innovative behavior as a complementary attribute for firm growth

The presence of moderating factors in the association between growth aspiration and growth indicates that the boundaries and opportunities of the markets are decisive for firm growth. Due to changes, uncertainty, and competition in the market, firm abilities or products/services may not always meet the requirements of the markets or firm’s ideas may be a couple of sets ahead of customer needs (Lumpkin & Dess, 1996). Therefore, in order to take advantage of recognized growth opportunities, firm has to innovate (Katila & Shane, 2005). This may require new processes, products/services or adaptation of new technologies that will offer the needed chances for creating new value for present or prospective customers (Ardichvili, Cardozo, & Ray, 2003; Kirzner, 1997). This kind of innovative behavior is an indication of the market orientation, and it has shown to have a positive impact on firm growth (Verhees & Meulenberg, 2004). Gundry and Welsch (2001) found that high-growth-oriented entrepreneurs actually do emphasize innovative activity, such as technological change and organizational development, more than other entrepreneurs. In addition, innovative behavior is related to the recognition and exploitation of opportunities (De Carolis & Saparito, 2006; Lumpkin & Dess, 1996). Previous results also show that simply improving firms’ ability to adopt or implement new innovations is positively associated with firm performance and growth (Cho & Pucik, 2005; Santos-Vijande & Alvarez-González, 2007; Subramanian & Nilakanta, 1996). Innovative entrepreneurs seem to follow the market changes more actively than their less innovate counterparts (Manimala, 1992). This, again, means that innovative behavior is also related to managerial capabilities, since the evaluation of opportunities and finding innovative solutions are dependent on them (Thakur, 1999). This suggests that innovative behavior would increase the likelihood for the firm growth, and therefore, complete or replace the attributes of growth. Hence, the following hypotheses are proposed.

**H2a:** Innovative behavior increases the likelihood for firm growth when all of the attributes of growth are not fulfilled.

**H2b:** The lack of innovative behavior hinders firm growth even if all of the needed attributes are fulfilled.

**RESEARCH DESIGN**

**Variable definitions and measures.**

**Firm growth.** Firm growth is measured with the growth of the number of employees. Even if hiring new personnel is decided by the entrepreneur or manager, the growth of the number of employees is a clear and objective indicator of firm growth (Delmar, 1997; Dobbs & Hamilton, 2007). However, in order to use firm growth as an outcome measure it requires data from, at least, two different time points (Blackburn, Hart, & Stokes, 2004; Delmar, Davidsson, & Gartner, 2003). In this study the growth measure is based on self-reported numbers of employees in 2003 and 2006. Different types of employment growth, organic or non-organic (Delmar et al., 2003), are not separated in this study. The relative growth is calculated as a percentage of change in the
number of employees in 2003–2006. An increase of over zero percent is defined as moderate growth and an increase over 30% as high growth.

**Willingness to grow.** Growth intentions are usually measured with different subjective indicators, which are based, at their simplest, on a question of the type “aspires-does not aspire to grow” asked from the management. Even if the growth intentions are discovered to have an effect on the realized growth of the enterprises (Delmar & Wiklund, 2008; Wiklund & Shepherd, 2003), the deficiency in this subjective measurement is that it does not indicate the actual growth. This deficiency, however, may be minimized by using longitudinal data. In this study the willingness to grow is measured with a question: “Does your firm aim at growth?” with five-point-scale of “Yes, remarkably … Not, at all.” This measure is from year 2003, and it was recoded as a dummy variable in which an indication of a will to grow (Yes, remarkably – Yes, at some level) combined as one category. The value of 1 indicates that a primary decision-maker had a will to grow their firm.

**Growth opportunities.** Growth opportunities are defined as the perceived development of the total markets in which a firm was operating. Previous research indicate that in a dynamic environment growth intentions would be higher (Wiklund & Shepherd, 2003), and, consequently more growth would emerge (Eisenhardt & Schoonhoven, 1990). Thus, the perceived development of the markets was used as a measure of growth opportunities. This was measured by the attitude statement: "The growth of our enterprise is made difficult by the diminishing total markets of our industry" with five-point-scale from totally agree to totally disagree. This variable was recoded as a dummy variable in which value of 1 indicates that primary decision-maker has perceived growth opportunities.

**Growth abilities.** According to Penrose (1959) the lack of managerial skills may hinder the firm growth, especially in small-sized firms, even if intentions for growth would exist. Consequently, growth abilities are defined here as managerial competence needed for growing a firm. Growth abilities were measured by an estimate of the skills of the management with the attitude statement: “The growth of our enterprise is made difficult by the fact, that the skills of the management are not adequate for managing larger organization” with five-point-scale from totally agree to totally disagree. This variable was also recoded as a dummy variable in which value of 1 indicates that firm has growth abilities.

**Innovative behavior.** Innovative behavior was studied with three self-reported measures. First, respondents were asked about their firms’ activity in launching of new products/services (commercialization) during the previous three years (cf. Chaston & Mangles, 1997; Covin & Slevin, 1997; McDaniel, 2002). Second, in order to analyze the role of internal innovative behavior respondents were asked about their firms’ activity in developing of their internal processes during the previous three years (Chaston & Mangles, 1997; Covin & Slevin, 1997). Third, the activeness in acquiring new technologies (adaptation of external technologies) was asked in order to evaluate the level of absorptive activities during the previous three years. All of these measures were recoded into dummy variables in which value of 1 indicates that firm is behaving innovatively.

**Control variables.** Previous research shows that the size and industry of the firm have an effect on firm growth (Almus & Nerlinger, 1999; Cliff, 1998; Davidsson, Kirchhoff, Hatemi-J, & Gustavsson, 2002; Kangasharju, 2000; Wiklund & Shepherd, 2003). For example, the use of relative growth measure seems to favors smaller firms (Delmar et al., 2003; Rosa, Carter, & Hamilton, 1996), because of which the size of the firm should be controlled for. In addition, earlier
research suggests that entrepreneur/manager characteristics, such as the managerial experience and previous growth experiences (growth history), would affect firm growth (Delmar & Wiklund, 2008; Kolvereid, 1992). These demographic factors were used in the analysis.

Sample and data.

We used a longitudinal data in our analysis. Data were collected from Finnish small- and medium-sized enterprises in years 2004 and 2007. The sample frame consisted of Statistics Finland’s data on all Finnish enterprises from all industries. In 2004 sample was based on a stratified random sample in which stratifying was done by firm size. Small and medium-sized enterprises were defined along with the recommendation of European Commission, and enterprises only less than 250 employers were included in the sample in 2004. Data were collected through telephone interviews in both years. The final, representative sample of Finnish SMEs was 1,300 firms, of which 498 participated in the survey in 2004. The telephone interviews were targeted at the primary decision-maker (owner-manager or entrepreneur) of the firm. If he/she could have not been reached, some other owner or somebody else from the management was interviewed instead.

A follow-up data from these respondents were collected during the spring 2007, and 276 observations were obtained. Total of 102 firms refused to participate in the follow-up survey. The rest of non-follow-up-participants, 120 firms, had either closed their businesses, or could not be reached by phone despite multiple attempts. Chi-square test and Student’s t-tests were conducted in order to check for non-response bias. Analyzes were done concerning industry, location, age and size between the 276 who responded and the 222 who did not participate in the follow-up survey. No statistically significant differences were found between non-respondents and respondents. In the final sample the average number of employees was 39 and the average age of the firms was 25 years. Almost half of the firms (43%) were in manufacturing and every fourth were operating in service sector.

Analysis method

The relationship between attributes of growth is complex due to three-dimensional interactions and their coexisting nature. Thus, linear analysis methods do not offer appropriate means for our study, since statistical techniques tend to ask which incremental change in the dependent variable is caused by another incremental change in the independent variable (Grandori & Furnari, 2008). Instead, we examined growth non-linearly with a qualitative configuration analysis (QCA) including different configurations of the growth attributes and innovative behavior. We analyzed attributions of firm growth using a QCA based on Boolean logic (Ragin, 1987). With this approach it is possible to find if a given factor works as a sufficient or necessary condition or as part of a sufficient or necessary condition for the known outcome (Wagemann & Memoli, 2007). As presented by Fiss (2007) configurational approach to organization are based on the fundamental premise that patterns of different possible attributes will exhibit different features but still they may lead to same outcome depending on how they are arranged. Accordingly, configurational approach emphasizes multivariate interaction of multiple organizational elements and possible equifinality of different combinations for reaching the same outcome.

The first step in QCA is to generate of truth tables. For these tables the data must be coded into “1” (yes or present) and “0” (no or not present). Combinations of elements can be then expressed in the Boolean algebra language. The number of combinations in the truth table grows exponentially if adding new variables into analysis. Therefore, focus has to be on variables with
specific theoretical importance. Important part of QCA is Boolean algebraic reduction which logically eliminates unnecessary configurations (see Ragin, 1987). Typically QCA results deal with the necessary and/or sufficient conditions of an outcome to occur. In this study, the combinations of elements or attributes were derived from existing entrepreneurship literature and organizational theory. Therefore, we restricted our analysis of theoretically important three growth attributes, and left the reduction of configurations outside of this study’s objectives and empirical section. We tested the simultaneous co-existence of proposed growth attributes and furthermore explored theory-based growth configurations by modifying the original truth tables. Finally, we evaluated how attributes interact with each other. It has been said that revealing a configuration is not enough, and therefore, we should also have insights into theoretical mechanisms beyond each configuration.

RESULTS

First, we tested the presence of growth attributes that we assume to be the necessary attributes of growth (Table 2). Out of all the firms 23 % were high growth firms that grew more than 30 % (in number of employees) during years 2003–2006. In addition, 50 % of the firms grew moderately more than 0 % during the same time period. As seen in table 2, the results related to growth attributes were unexpected and confusing. We hypothesized (H1) that firms with all of the growth attributes would grow more than the other firms. However, half of these most potential growth firms show moderate growth. At the same period of time 63 % of the firms with only two attributes (willingness and abilities) show similar growth. Therefore, the presence of all growth attributes seems to have no impact on likelihood of moderate or high growth. On the contrary, there were several other configurations which had higher likelihood to grow. Thus, there is an indication that H1 could be rejected.

In order to find an explanation for unexpected results we modified the hypothesized growth attributes with different attributes related to firm growth. In the second step of our analysis we tested the role of some theory-driven attributes in growth configurations. We created configurations all of which included innovative behavior. Other variables illustrated best the different growth configurations in the data according to our judgment and analysis. In addition, we included some demographic variables, such as the size and industry of the firm as well as education and managerial experience of the primary decision-maker, into the analysis as control variables. However, the differences between higher and lower education, and longer and shorter managerial experience seemed too coincidental or marginal, and therefore they were excluded as irrelevant from our analysis. Respectively, the industry and firm size proved to be significant factors in differentiating growth configurations from each other.

In practice, the modification of the second version of truth table meant creating several dozens tables with different attributes. When the truth tables were introduced with innovative behavior and demographic variables some of the original attributes – growth opportunities and abilities – were identified as irrelevant after several trials. However, willingness to grow still hold its’ position as an essential attribute of growth. After several modifications the attributes in the second version of the truth table were willingness to grow, growth history and innovative behavior added with size (less than 50 employees) and industry of the firm (manufacturing vs. other industries) (Table 3).

Results show that innovative behavior has the role that we hypothesized in the hypothesis H2a (Table 3). Innovative behavior seems to increase the likelihood for growth even if all attributes are not fulfilled. Results also suggest than innovative behavior may even replace growth abilities and
opportunities, but this takes place only under certain configurations. Results related to configurations 3 and 4 show that some growth may take place even if firm would not have high levels of innovative behavior. This is explained partly by the effect of industry. Non-manufacturing firms were growing if they were willing to grow and had a growth history despite the level of their innovative behavior. The effect of demographic variables on the moderating role of innovative behavior suggest that hypothesis H2b could be rejected.

As seen from table 3 even willingness to grow did not have unambiguous role in the growth attributes. Despite the fact that willingness is low in configuration 2, this configuration still achieved high proportion of growth firms. How this can be explained? Configurations 1 and 2 are otherwise similar meaning that if a firm is innovative, has a growth history, has less than 50 employees and is a non-manufacturing firm, it doesn’t matter, if it has willingness to grow or not. It must be noted that manufacturing firms did not grow as often over 30 % as other firms (18 % vs. 26 %). Therefore, it was justifiable to represent configurations 5 and 6 with manufacturing firm. These configurations show both similarities and dissimilarities with each other. Both configurations include manufacturing firms with high willingness to grow and growth history. However, an apparent difference between manufacturing firms is that large firms need behave innovatively to grow but small firms manage to grow even without being innovative. On the other hand, this difference may be partly explained by the use of relative growth measure.

As the results were still somewhat ambivalent and contradictory we decided to look the relationships between growth history, willingness to grow, and innovativeness in a traditional way (see Wiklund & Shepherd, 2005) by analyzing the different interactions between these attributes. We studied four sets of interactions that illustrate different configurations of firm growth. In each of the following figures we marked firms behaving innovatively with solid line (Figure 1).

Results show that under conditions of growth history and non-willingness to grow firms with innovative behavior grew more often than any other condition. In addition, figure 1 show also that innovative and non-innovative firms behave differently depending on their willingness to grow and growth history. How is it possible that the best configurations are related to a) innovativeness and non-willingness and b) non-innovativeness and willingness when firm has no growth history? We found that innovative behavior has a clear moderating role between realized growth and willingness to grow, but the direction of the moderation was not as assumed. Since innovative behavior is usually regarded as a necessary condition to growth, we assumed that innovative behavior would accelerate growth, and act as a complementary attribute with other attributes. However, results show that willingness to grow is linked to growth, but it is not a growth attribute among innovative firms. Only non-innovative firms seem to benefit from growth intentions.

CONCLUSIONS

Our results show that innovative behavior moderates firm growth. In the case of high growth, growth history is an essential attribute for growth. Willingness to grow is also linked to growth, but it’s not a vital growth attribute for firms that behave innovatively. Results also show that non-innovative firms seem to benefit more from growth intentions. Consequently, innovative firms with growth history, but no willingness to grow, may still grow at least with moderate results. Thus, our results suggest that the one of the major reason for the differences related to firm growth is related to the innovative behavior or to the lack of it. Innovative behavior may act as a complementary attribute with other growth attributes. However, there are some limitations that should be noted when interpreting the results. At this phase of the study further statistical analysis comparing variance in different groups has been neglected. Thus, these results are yet indicative.
In conclusion, our study has revealed details about the attributes of growth. Two of the proposed growth attributes proved to be irrelevant for firm growth. Thus, configurational approach turned out to be useful in evaluating different combinations of attributes. Our results contribute on the possible reasons why some firms with required growth attributes do not grow, and on the contrary, why firms may grow without these attributes.

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NOTES

1. The reliability of self-reported number of employees was tested with correlation tests. In both years the correlation between self-reported numbers and number collected from Amadeus database was very good (2003: Pearson 0.930, p<.001, n=134, 2006: Pearson 0.932, p<.001, n=124). Because there was no balance sheet data available for all firms in the survey, self-reported numbers were selected in order to include enough observations in the analyses.

REFERENCES


Table 1: Possible combinations of the attributes of firm growth

<table>
<thead>
<tr>
<th>Growth attributes to be fulfilled and their different combinations</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Willingness, opportunity and abilities</td>
</tr>
<tr>
<td>B1</td>
<td>Abilities and opportunity, but no willingness</td>
</tr>
<tr>
<td>B2</td>
<td>Willingness and abilities, but no opportunity</td>
</tr>
<tr>
<td>B3</td>
<td>Willingness and opportunity, but no abilities</td>
</tr>
<tr>
<td>C1</td>
<td>Abilities, but no willingness nor opportunity</td>
</tr>
<tr>
<td>C2</td>
<td>Opportunity, but no abilities nor willingness</td>
</tr>
<tr>
<td>C3</td>
<td>Willingness, but no abilities nor opportunity</td>
</tr>
<tr>
<td>D</td>
<td>No willingness, no abilities and no opportunity</td>
</tr>
</tbody>
</table>

Table 2: Truth table on possible combinations of growth attributes

<table>
<thead>
<tr>
<th>Willingness to grow (managerial)</th>
<th>Abilities</th>
<th>Opportunities</th>
<th>n (of which % has the attribute)</th>
<th>Firms growing over 30 % 2003–2006, %</th>
<th>Firms growing over 0 % 2003–2006, %</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 1 1</td>
<td>83 (33%)</td>
<td>27</td>
<td>53</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 1 0</td>
<td>41 (50%)</td>
<td>22</td>
<td>63</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 0 1</td>
<td>33 (64%)</td>
<td>33</td>
<td>55</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0 1 0</td>
<td>24 (73%)</td>
<td>21</td>
<td>38</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0 0 0</td>
<td>20 (82%)</td>
<td>15</td>
<td>35</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0 1 1</td>
<td>18 (89%)</td>
<td>17</td>
<td>39</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 0 0</td>
<td>14 (95%)</td>
<td>29</td>
<td>50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0 0 1</td>
<td>12 (100%)</td>
<td>0</td>
<td>33</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>245</td>
<td>23</td>
<td>50</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 3: Six moderated configurations on firm growth

<table>
<thead>
<tr>
<th>Willingness history</th>
<th>Innovative behavior</th>
<th>Size</th>
<th>Industry (manuf. yes, others no)</th>
<th>Firms growing over 30 % 2003–2006, %</th>
<th>Firms growing over 0 % 2003–2006, %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Configuration 1 (n = 10)</td>
<td>High</td>
<td>High</td>
<td>High</td>
<td>Small</td>
<td>No</td>
</tr>
<tr>
<td>Configuration 2 (n = 12)</td>
<td>Low</td>
<td>High</td>
<td>High</td>
<td>Small</td>
<td>No</td>
</tr>
<tr>
<td>Configuration 3 (n = 19)</td>
<td>High</td>
<td>High</td>
<td>Low</td>
<td>Large</td>
<td>No</td>
</tr>
<tr>
<td>Configuration 4 (n = 52)</td>
<td>High</td>
<td>High</td>
<td>Low</td>
<td>Small</td>
<td>No</td>
</tr>
<tr>
<td>Configuration 5 (n = 14)</td>
<td>High</td>
<td>High</td>
<td>High</td>
<td>Large</td>
<td>Yes</td>
</tr>
<tr>
<td>Configuration 6 (n = 11)</td>
<td>High</td>
<td>High</td>
<td>Low</td>
<td>Small</td>
<td>Yes</td>
</tr>
<tr>
<td>Total n=118/260</td>
<td>24</td>
<td>50</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Figure 1: Interactions between innovative behavior, growth history and willingness to grow

Firms with growth history

Share of firms with growth over 30%  
Willingness to grow  

Firms with no growth history

Share of firms with growth over 30%  
Willingness to grow  

Willing to grow

Share of firms with growth over 30%  
Growth history  

Non-willing to grow

Share of firms with growth over 30%  
Growth history