

DETERMINANTS OF SMEs' EMPLOYMENT GROWTH RELATING TO THE CHARACTERISTICS OF THE MANAGER*

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Summary

Considerable empirical research has been devoted to the study of the impact of the manager's characteristics on the growth of his firm. However, the majority of this work is centred on the analysis of one or of a limited number of predictors. Furthermore, no research has provided an exhaustive list of all of the variables previously studied. We have filled this gap and tested the potential influence on employment growth of 28 variables, grouped into 5 sub-categories. Our results show that employment growth within SMEs is uniquely influenced by certain variables linked to two sub-groups, namely, the expertise of the manager and his demographic characteristics. Psychological characteristics, motivations and the presence of a team of managers do not exert a significant impact on employment growth in the sample of Belgian SMEs that we studied.

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1. Introduction

Since the publication of Birch's work in 1979, an impressive number of studies have been carried out on the role of SMEs in job creation. The data and methodology used by Birch (1979) have given rise to criticisms (Armington and Odle, 1982). The most resounding of these criticisms was made by another American economist, Bennett Harrison (1997). Apart from the fact that Birch did apparently not establish a difference between SMEs and subsidiaries of large companies, Harrison stated that Birch did not underline that most employment was created by a tiny proportion of firms, i.e. fast growing firms. However, Birch did observe this phenomenon in a book published in 1987. Moreover, it was he invented the term "gazelles", commonly used to refer to high-growth firms (Birch, 1987).

Several studies, both European and American, confirm this phenomenon. In a study on the European Economic Community, Storey and Johnson (1987) observed that in 12 years, less than 10% of firms created at the start of the period had grown beyond 20 workers and less than 1% of them had surpassed 100 workers.

Along the same lines, a recent OECD study (1999) shows that, out of the SMEs with between 20 and 500¹ employees at the start of the period, firms that had doubled their employment over recent years only represented between 2% and 10% of the surviving firms, but had generated between 48%² and 88%³ of new employment created by this type of firm in France, Italy, the Netherlands, Spain and Quebec. These tendencies are confirmed by studies on Germany, Greece and Sweden (Julien, 2000), Ireland (O'Farrel, 1984), the United States (Dunkelberg and Cooper, 1982), Canada (McMullan and Vesper, 1987) or some regions in the United Kingdom (Gallagher and Miller, 1991).

High-growth firms are relatively marginal (Deakins, 1996). According to Starbuck (1965), growth is neither a spontaneous nor a random phenomenon, but rather the consequence of a decision: the decision to hire and/or not to fire, the decision to increase output in response to an increase in demand or the decision to stimulate demand. He underlines that growth can be an objective in itself. It can constitute a yardstick for the success of the manager and his firm, and for the "progress" achieved by the latter. However, the majority of SMEs' managers do not, include growth in their objectives (Kolvereid, 1992; Davidsson, 1989; Hakim, 1989; Gibb and Scott, 1986; Chell, 1986). Beyond a certain stage, sometimes called the "comfort zone" (Perry, 1987), it becomes for instance impossible for the manager to exert direct control over the tasks carried out within the firm.

Growth has been measured on the basis of an impressive number of variables, the two indicators most widely used by literature being employment and sales. We have chosen to limit this communication to the study of employment growth. Apart from the fact that it is a measure of economic growth (Kirchoff, 1991), for the entrepreneur, it can serve as an indicator of his success and, for the company as a whole, it is a measure of the economic contribution of the firm to common good (Dunkelberg and Cooper, 1982). That is why this criterion has been used

¹ Between 10 and 500 for Quebec

² Italy

³ Spain

by numerous economists and sociologists, although within the firms themselves, success seems to be measured more in terms of sales growth (Hughes, 1998; Donckels, 1990) and that the latter criterion has been privileged by researchers in management sciences (Weinzimmer, 1993). Moreover, according to Child (1973), employment is an adequate criterion for the measurement of the size of an organisation, because it is above all human beings who are "organised". Finally, since the manager in principle expects demand to stabilise before recruiting personnel, employment is theoretically a less volatile measure than sales (Delmar, 1997). In some European countries, such as Belgium, the stability of this criterion is heightened by rigidities on the labour market linked to restrictive social legislation.

Growth is sometimes regarded as the most important, reliable and easily accessible measure of a firm's performance (Wiklund, 1999; Delmar, 1997), although, given that badly managed growth is liable to lead to bankruptcy, it evidently cannot be considered as such (St-Pierre, 1999).

As growth is a complex and multidimensional phenomenon (Weinzimmer, 1993), it goes without saying that a purely internal approach, limited to the impact of the resources and in particular to the determining factors linked to the manager, neglects the prediction potential of variables linked to the firm, the strategy, the environment and the interactions between these different types of variables (Janssen, 2002). However, within the limited framework of this paper, we have chosen to concentrate on factors relating to the manager⁴.

When asked about success factors, venture capitalists, business angels and managers themselves consider that the entrepreneur is the main explanatory element of a firm's performance (Herron and Robinson, 1993). Some researchers, such as Sandberg (1986) share this opinion.

The analysis of the relations between the manager's characteristics and the growth of his firm has already given rise to numerous empirical studies. However, the vast majority of research on growth has only studied the impact of a limited number of variables. Moreover, the theoretical anchorage of most of this work is relatively weak. The concept of growth is rarely theoretically founded. This research area is highly fragmented. This is accentuated by an excessive attention given to the manufacturing sector, and by means of significant heterogeneity in terms of time period studied and of operationalisation of the growth measure. Finally, apart from Swedish and, mainly, British studies, few European researchers have taken an interest in this issue.

Several authors (Grinyer et al., 1988; Miller and Friesen, 1984) consider it necessary to test the impact of a large number of variables simultaneously in order to create a more complete and realistic image of the growth phenomenon. To our knowledge, there has been no attempt made to establish an exhaustive list of all of the independent variables examined by previous studies.

Based on a "state of the art" of the research on manager-related growth determinants, we developed 28 hypotheses. These hypotheses use all of the determining factors that we have identified in the literature on growth, and also a certain number of original hypotheses.

⁴ For an analysis of a complete growth model, see Janssen (2002)

Rather than making value judgements on the relative importance of one or the other variable, which would have meant retaining only a more limited number of hypotheses, we preferred to test all of them, as some recent empirical work had demonstrated the surprising importance of factors that may at first sight seem of minor interest (see, for example, Gartner and Bhat, 2000).

These hypotheses were tested on a sample of Belgian SMEs. As SMEs are often characterised by an interpenetration between managers and their firm (Janssen, 1998), the strategic decision-making power is frequently concentrated in the hands of the manager (Dromby, 2000). Determining factors relating to managers are therefore more liable to have an impact on the growth of an SME than on that of a larger firm. That is why we have limited our research to this type of firm.

2. Determinants linked to the manager

We have categorised the growth determinants relative to the characteristics of the manager into 5 groups: the psychological characteristics of the manager, his expertise and family background, his motivations, his demographic characteristics and the presence of a team of managers.

2.1. Psychological characteristics

Research on the link between the psychological characteristics of the manager and the growth of his firm finds its source in past studies on "traits"⁵, which aim to differentiate entrepreneurs from other professional groups.

The aim of these studies has been, for instance, to demonstrate that one of the main characteristics of entrepreneurial behaviour lies in the need for achievement, that is, the need to excel and to fulfil a certain goal with a view to personal achievement (McClelland, 1961). To this day, it has not been proven that a causal link exists between a significant need for achievement and the act of managing and owning a firm (Brockhaus, 1982). With regard to growth, Murray et al. (1995) have observed that managers of growing firms have a need for achievement that is more similar to that of large firms' managers than to new venture creators.

Another psychological characteristic on which research lays emphasis relates to the locus of control, a concept taken from a theory developed by Rotter in the '60s (Rotter, 1966). The entrepreneur is supposed to have an internal locus of control. In other words, he perceives the consequences of his actions as depending on his own behaviour. Empirical work targeting the validation of this theory has however only established a weak positive correlation between this feature and the entrepreneur (Perry et al., 1986; Brockhaus, 1982) or has led to the conclusion of an absence of relationship between these variables (Hull et al., 1980). However, Miller and Toulouse (1986) observe a positive relationship between this trait and the performance of the firm, which nevertheless varies in function of environmental variables. Kalleberg and Leicht

⁵ Traits can be defined as being the ongoing characteristics of the personality that become evident through relatively constant behaviour in a wide variety of situations (Herron and Robinson, 1993).

(1991) on the other hand establish an absence of link between growth and the fact that the entrepreneur has an internal locus of control⁶.

Numerous studies have also been carried out in order to determine whether the propensity to take risks could be considered as one of the fundamental characteristics of the entrepreneur (Brockhaus, 1982). Authors are far from reaching unanimity on this notion (Timmons et al., 1985; Hull et al., 1980). Gasse (1987) points out that some researchers simply reject it, others think that the entrepreneur would take moderate risks, while others are still of the opinion that the propensity to take risks is the very essence of entrepreneurial activity. Concerning growth, Siegel et al. (1993) observe an absence of relationship between the latter and the willingness to take risks.

Still others have looked into the link between growth and the flexibility of the manager's character or his IQ (Delmar, 1996; Miller and Toulouse; 1986), without reaching clear-cut results.

The analysis of the traits of the entrepreneur has given rise to equivocal results that do not allow to isolate the psychological characteristics that would make it possible to identify entrepreneurs who are more liable to succeed than others (Chell, 1985). Likewise, research relating to the impact of personality traits on growth has so far not revealed any significant relationship between these variables (Snuif and Zwart, 1994). Delmar (1996) underlines that these traits only allow an explanation for a minor number of differences in performance between firms. This author attributes the disappointing character of the results to problems that are both theoretical and methodological. Firstly, advocates of this school of thought have not been capable of reaching a consensus on the importance of the numerous traits studied, nor on the way in which they vary according to the situation. Secondly, these researchers generally postulate that the characteristics of the entrepreneur and of their environment are stable. However, the environment is liable to change and traits alone do not allow an explanation for entrepreneurial behaviour. Finally, the methodologies used are outdated in the light of modern psychology. For example, the personality of an individual is no longer measured unidimensionally.

However, as research by Miller and Toulouse (1986) concluded on a tenuous but positive relationship between performance and an internal locus of control, we will retain this variable and test the following hypothesis:

H 1: growth is positively influenced by an internal locus of control on the part of the manager

2.2. The expertise and family background of the manager

Aside from the traits, researchers have studied other incubating factors in an individual's entrepreneurial behaviour, such as professional experience, education or family context.

⁶A feeling of overall confidence on the part of the manager also seems to stimulate growth, unlike the will to ensure safety and protection (Ivanaj and Géhin, 1997). However, an older study observes an absence of influence on growth of the degree of confidence expressed by the manager (Kalleberg and Leicht, 1991).

Beyond their influence on entrepreneurship in the broader sense, numerous authors have examined the impact of the manager's expertise on the development of their firm.

This expertise of the manager can result from previous functional experience, venture creation or self-employment experience, sector experience, education or family context.

According to Gasse (1982), the impact of an entrepreneur's experience can be positive or negative. Experience can help the manager to avoid or to more easily solve previously encountered problems. It could, however, also inhibit their creativity and degree of adaptability by pushing them to cling to solutions that have been tried and tested in the past. A conservative management style, which is limited to products and managerial approaches that have already been proven, inhibits growth (Grinyer et al., 1988).

In principle, previous functional experience allows the development of expertise liable to promote growth. Certain empirical studies show that previous management (Storey et al., 1989) or supervision (Dunkelberg and Cooper, 1982) experiences have a positive impact on growth. Previous experience in the field of marketing also seems to stimulate growth (Storey, 1994). Functions linked to output, i.e. in the field of marketing, sales or R&D, are supposed to lay emphasis on growth (Hambrick and Mason, 1984). We presume that the fact that the manager has previously worked in consultancy will also give him a certain expertise in a large number of areas of management liable to foster growth. On the other hand, previous experience in higher education seems to inhibit growth (Westhead, 1995). Although a few studies do not confirm the influence of previous functional experience (Brush and Changati, 1998; Dunkelberg and Cooper, 1982), we make the hypothesis of a positive link between these variables:

H 2: growth is positively influenced by previous management or supervisory experience

H 3: growth is positively influenced by previous experience in the field of marketing, sales or R&D

H 4: growth is positively influenced by previous experience in the field of consultancy

H 5: growth is negatively influenced by previous experience in higher education

The size of the firm in which the manager was previously employed can also have an impact on growth. Having worked in a large firm has allowed him to familiarise himself with management techniques that are favourable for growth. Westhead and Birley (1995) observe a positive relationship between the fact that the manager has previously worked in a large firm and growth. Several studies show that the founders of high technology, high-growth companies have frequently worked for large firms, even quoted companies (Feeser and Willard, 1989; Cooper and Bruno, 1977). Dunkelberg and Cooper (1982), on the other hand, observe that the size of the firm in which the manager has previously been employed does not exert an influence on growth, unless the firm employs less than 100 people, in which case the influence on growth is negative. As this study is relatively isolated, we will assume a positive relationship:

H 6: growth is positively influenced by the fact that the manager has previous experience in a large firm

Some authors have studied the influence of past experience in firm creation (Dahlqvist et al., 1999). They observe a positive influence of this variable on growth. Other studies, on the other hand, find no impact of previous experience in venture creation (Brush and Changati, 1998; Siegel et al., 1993). These studies also find that the number of years of professional experience in the broad sense is not of decisive importance for growth. In the same line of thought, there would be no link between previous self-employment experience and growth (Kalleberg and Leicht, 1991). In order to confirm or invalidate these conclusions, we will test the hypothesis of a positive relationship:

H 7: growth is positively influenced by previous experience in new venture creation

H 8: growth is positively influenced by previous self-employment

H 9: growth is positively influenced by the number of years of professional experience prior to the creation of the firm

Sectoral expertise can also hold some importance. Siegel et al. (1993) note that sectoral knowledge has a positive impact on growth. Comparative studies between high technology, high-growth companies and companies in the same sector that have left the market or experienced slower growth also demonstrate that the former are more likely to use the same technology and serve the same markets as firms for which the founders have worked (Feeser and Willard, 1990; Feeser and Willard, 1989; Cooper and Bruno, 1977). Dunkelberg and Cooper (1982) observe that the production of the same product or provision of the same service as during previous employment has a positive influence on growth. Although two other studies have concluded that there was no link between sectoral experience and growth (Brush and Changati, 1998; Kalleberg and Leicht, 1991), we will test the hypothesis of a positive link:

H 10: growth is positively influenced by previous experience in setting up a firm within the same sector

The relationship between the number of firms owned and/or managed by the manager and growth has also given rise to some studies. According to Storey (1994), numerous owner-managers own more than one firm. In fact, multicreation constitutes a particular means of growth. Westhead (1995) observes that the fact that a manager owns and/or manages more than one firm has a negative impact on the growth of the isolated firm. This negative impact may be due to the fact that they spend less time on the latter when they own several firms. An American study confirms this relationship, but only for firms managed by women (Kalleberg and Leicht, 1991)⁷. We will therefore test the hypothesis of a negative impact on growth:

H 11: the growth of one particular firm is negatively influenced by the fact that the manager owns several firms

⁷This variable would not have an effect on the growth of firms managed by men.

That fact that, during the creation period, the manager does not dedicate himself permanently to the new firm could have a positive influence on its subsequent growth. In fact, according to Storey (1994c), such a manager has been able to evaluate his entrepreneurial skills in a low-risk manner. This formula can therefore be considered as a form of learning:

H 12: growth is positively influenced by the fact that, during the starting period of the firm, the manager has had other activities

Strangely, the impact of a former entrepreneurial failure on the growth of a second firm set up by the same manager has, to our knowledge, not been empirically tested. For reasons linked to a negative perception of this experience or an awareness of the limits of their managerial skills on the part of the manager, one could think that this factor should have a negative influence on growth. Conversely, this failure could represent a learning factor that is favourable to the development of skills that stimulate growth. We nevertheless assume that the inhibitive factor will predominate:

H 13: growth is negatively influenced by a previous entrepreneurial failure

Numerous studies establish that the level of education of the manager has a positive impact on growth (Julien, 2000; Hall, 1995; Westhead, 1995; Storey et al., 1989; Dunkelberg and Cooper, 1982)⁸. The fact that the manager has a higher education degree, or even additional post-graduate degrees, seems to stimulate the growth of their firm. Likewise, we may suppose that the type of studies pursued will have an impact on growth. We therefore also set the hypothesis that studies with a direct link to the activities of the firm, such as business administration or training in firm creation⁹, contribute to the development of the latter:

H 14: growth is positively influenced by the manager's level of education

H 15: growth is positively influenced by the fact that the manager has followed studies that are linked to the activities of the firm

H 16: growth is positively influenced by education in management

H 17: growth is positively influenced by education in firm creation

Curiously enough, the impact of family background on growth has only gained the attention of a few researchers. However, the hypothesis of the influence of an intergenerational heritage on entrepreneurship and more particularly on venture creation, is far from new (see Bolton, 1971). Some studies find that more than 50% of entrepreneurs have a parent involved in entrepreneurial activities (Gasse, 1987). With regard to growth, we could suppose that a manager coming from a family with one or more owner-managers will benefit from the experience of these people and can count on family financing. Consequently, we can make the hypothesis that this variable will have a positive influence on growth (Storey, 1994). Indeed, Julien (2000) observes a positive link between an entrepreneurial family origin and growth. On the reverse side, the family could impede growth so as not to lose control of the firm or to avoid taking overly high risks (Gibb and Davies, 1990). However, on the basis of Julien's results we suppose that the first aspect will predominate:

⁸However, Brush and Chaganti (1998) observe an absence of link.

⁹ Although Dahlqvist et al. (1999) note an absence of link between the two variables.

H 18: growth is positively influenced by an entrepreneurial family background

Finally, several authors have examined the relationship between the type of link existing between the manager and the founder of the firm, on one hand, and growth, on the other. Dunkelberg and Cooper (1982) observe that firms headed by a manager who has succeeded the founder grow less than those that are still directed by the first generation. According to these authors, this phenomenon could be due to the fact that second generation managers are not characterised by the same will to achieve as their elders. A European study also observes a positive link between the fact that a firm is managed by its founder and growth (Delmar, 1997). In the same line of thought, McCarthy et al. (1993) show that growth in assets of firms managed by their founder is higher than those of other firms. Dunkelberg and Cooper (1982) observe that firms managed by external managers generally have a relatively high growth rate. These managers are probably professional managers. High-growth firms must deal with a series of problems, such as those related to delegation or leadership, which require managerial skills that the founder does not necessarily possess (Willard et al., 1992; Hambrick and Crozier, 1985). These external managers are, in principle, less inclined to conserve a status quo. Willard et al. (1992) have compared the performances of a sample of high technology, high-growth firms managed by their founder to those of firms of the same type but managed by professional external managers. However, they do not observe any significant difference between the two categories of firm. One Swedish multisectoral study comes to the same conclusion (Delmar, 1999). On the basis of prior results, we will test the two following hypotheses:

H 19: growth is positively influenced by the fact that the firm is managed by an external manager rather than by its founder

H 20: growth is negatively influenced by the fact that the firm is headed by a family manager who has succeeded the founder

2.3. Motivations

According to Delmar (1996), the motivations of the manager are important determining factors for growth. These can be either "push" or "pull" motivations. "Pull" type motivations are intrinsic factors that the manager controls, whereas "push" motivations are extrinsic factors over which the manager has little influence (Walker et al., 1999).

Several studies reveal the existence of a positive link between growth and the presence of a "pull" or "positive" motivation on the part of the manager at the time of creation, such as the perception of a market opportunity (Storey et al., 1989; Kalleberg and Leicht, 1991), personal accomplishment motivations or the search for a certain social status (Stratos Group, 1990; Kolvereid, 1991). On the other hand, growth would not be influenced by pecuniary motivations (Davidsson, 1989). Julien (2000) nevertheless observes that the objectives of profit and of meeting a challenge promote stronger growth. More fundamentally, a motivation for growth on the part of the manager seems to stimulate the real growth of the firm (Delmar,

1999). A few studies have, however, concluded that there is no link between these motivational variables and growth (Dahlqvist et al., 1999; Brush and Changati, 1998). To the extent that the majority of studies observes a positive link between growth and "pull" type motivations, we make the following hypothesis:

H 21: growth is positively influenced by "pull" type motivations on the part of the manager at the time creation, such as the perception of a market opportunity, meeting a challenge, personal achievement, independence, improvement of social status, search for profit or a growth target

According to some authors, growth prospects are lower in a firm initially set up in the light of a "push" or "negative" type of motivation, such as unemployment (Storey, 1994b; Wynarczyk et al., 1993). We can suppose that unemployment should result in a loss of professional contacts and a weakening of professional skills (Dahlqvist et al., 1999). Logically speaking, the same should apply in the case of firm creation following previous unsatisfactory professional experience. However, in an empirical study comparing successful entrepreneurs with those who have failed, Brockhaus (1980) observes that the former express a higher level of discontent than the latter with regard to their previous employment. As the author notes, this phenomenon could be linked to the fact that these entrepreneurs had been more motivated to develop a successful activity in order not to have to return to their former function or a similar job. It could also be the result of a cognitive conflict, in other words, the desire to create congruency in apparently contradictory facts. Dunkelberg and Cooper (1982) do not observe any significant link between the reasons for which the manager has left his previous employment and growth. A Swedish study finds that "push" type motivations linked to unemployment do not affect the performance of the firm (Dahlqvist et al., 1999). As several studies observe a negative link, we formulate the following hypothesis:

H 22: growth is negatively influenced by "push" type motivations on the part of the manager at the time of establishment, such as a previous situation of unemployment or a previous unsatisfactory professional experience

2.4. Demographic variables

Demographic variables, such as the age and gender of the entrepreneur or the fact that he/she belongs to an ethnic minority, have also given rise to certain studies.

Age is generally associated with more conservative behaviour, supposed to exert a negative impact on the performances of the firm for three reasons (Hambrick and Mason, 1984). Firstly, an older manager is in principle less inclined to adopt innovative behaviour or to adhere to a new idea. Secondly, such a manager would be more attached to a certain organisational status quo. Finally, objectives related to wage and professional security generate a more prudent behaviour. A younger manager would, on the other hand, be more inclined to take risks (Hambrick and Mason, 1984). In the same sense, some observe that values, in other words the guiding principles in the life of an individual, such as conformity and tradition, have a negative impact on firm performance (Delmar, 1996).

Several studies (Delmar, 1997; Weinzimmer, 1993; Dunkelberg and Cooper, 1982) indeed observe a negative impact of the manager's age or average age of the management team on growth. Our hypothesis therefore follows these conclusions:

H 23: growth is negatively influenced by the age of the manager(s)

Gender and ethnicity can contribute to determine employment opportunities and access to professional networks for an individual (Dahlqvist, 1999). For example, women who start a self-employment career would be at a disadvantage in comparison to men, due to the existence of barriers linked to education, family pressure and work environment (Kalleberg and Leicht, 1991). Moreover, a woman whose behaviour deviates from socially accepted behavioural standards according to the gender of an individual is exposed to social disapproval, whereas nonconformist or innovative behaviour is tolerated and even encouraged for men (Papalia and Olds, 1981). A study carried out by Dahlqvist et al. (1999) on newly created firms in Sweden observes a negative link between the fact that the entrepreneur is female and growth. This study also notes that the fact that the entrepreneur is an immigrant has a negative influence on growth. Other studies, on the other hand, do not observe a significant link between the gender of the manager and growth (Delmar, 1999). Likewise, a comparison of the survival and performances of firms managed by men or women concluded on an almost general absence of differences (Kalleberg and Leicht, 1991). However, on the basis of theoretical arguments, we assume a negative link:

H 24: growth is negatively influenced by the fact that the manager is female

H 25: growth is negatively influenced by the fact that the manager is an immigrant

2.5. The presence of a team of managers

According to Vesper (1990), the presence of a team of managers means a higher quantity of work, in addition to greater variety and a greater balance of skills and resources liable to generate synergies. Each manager brings his own expertise. This also allows risks to be shared. Furthermore, Vesper underlines that, in this case, the firm can allow itself to grow to a greater extent than an firm managed by one single person before resorting to external managers. Moreover, the fact that the initial founder has assembled a team is a sign of his capacity to attract and manage other people, whereas inability or reluctance to create a team could, in the eyes of potential investors, be symptomatic of an absence of managerial qualities required for growth. Finally, Vesper considers that the recruitment of the management team members can lead to a first evaluation of the idea that was at the basis of the new venture and of its potential success. However, the presence of several managers may also slow down the decision-making process (Feeser and Willard, 1990).

Several studies show that firms established and owned by several people are more inclined to grow than firms with just one single owner (Siegel et al., 1993; Weinzimmer, 1993; Feeser and Willard, 1990; Dunkelberg et al., 1987; Woo et al., 1989). In addition to this, it also appears that high technology, high-growth firms have generally been set up by several people (Cooper and Bruno, 1977). One study nevertheless observes an absence of link between the

fact that a firm has more than one owner and reinvestment decisions, measured by growth in assets (McCarthy et al., 1993). As this study is isolated, we assume a positive link:

H 26: growth is positively influenced by the fact that the firm is managed by a team

Beyond the size of the group of managers itself, the heterogeneity of the group in terms of sectoral and/or functional experience has also been the subject of several studies. Homogeneity is likely to lead to a phenomenon called “groupthink” (Eisenhardt and Schoonhoven, 1990) which is a deterioration in the decision-making process caused by too important desire for unanimity within the group (Kreitner and Kinicki, 1992). However, heterogeneity is also liable to provoke crises within the team and, consequently, to complicate the implementation of the decisions (Ensley et al., 1998). Eisenhardt and Schoonhoven (1990) observe a positive impact of heterogeneity of previous sectoral experiences among the members of the management team on growth. Likewise, Weinzimmer (1993) notes that heterogeneity, both functional and sectoral, positively influence growth. Although an isolated study observes a negative impact of heterogeneity in terms of sectoral, functional and educational experience on growth and performance (Ensley et al., 1998), we will assume a positive link between heterogeneity and growth:

H 27: growth is positively influenced by the fact that a firm is managed by a heterogeneous team in terms of functional, sectoral and/or educational experience

Previous joint work experience is also liable to accelerate the decision-making process. Such joint experience makes it possible to increase the efficiency of the decision-making process (Eisenhardt and Schoonhoven, 1990). This hypothesis has been empirically confirmed (Eisenhardt and Schoonhoven, 1990). We therefore make an identical hypothesis:

H 28: growth is positively influenced by the fact that the firm is managed by a team of people, some of whom have previous joint work experience.

3. Methodology

3.1. Population, sample and representativeness

In order to determine the population of SMEs to be analysed, using a database compiled by the BBL and including all firms established in Belgium that have delivered their annual accounts to the Accounts Central of the Belgian National Bank, we have retained all firms that were active over the period studied (from 1994 to 2000), for which we have data on employment for 1994 and 2000 and which corresponded in 1994 to the definition of an SME given by the European Commission¹⁰. Insofar as numerous firms in Belgium have been created purely for fiscal reasons¹¹ and do not really undertake activities, we have eliminated firms that were already active in 1994, but that still employed less than 5 people in 2000.

On the basis of these criteria, the population was composed of 11,481 firms. We randomly selected 788 firms, while at the same time ensuring proportions of micro- (less than 10 people), small- (between 10 and 49 people) and medium-sized (between 50 and 249 people) firms identical to those of the total population. In order to allow a dynamic analysis, this size criterion was checked at the beginning of the period studied, i.e. in 1994. We also kept the proportions of firms from the three regions of the country (Flanders, Wallonia, Brussels) identical to those of the population.

Out of the 788 firms, 331 refused to participate in the survey and 186 were not available during the interview period. For 121 other firms, the telephone number in the database was incorrect or corresponded to a fax number. Our study therefore focused on a sample of 150 firms¹².

In order to determine the representativeness of our sample in relation to the original population, we compared the average growth¹³ of the sample firms to the one of the

¹⁰According to the European Commission's Recommendation of 3 April 1996 (OJEC, L 107/4, 1996), the following firms must be considered as SMEs:

- those employing less than 250 people; the number of people employed corresponds to the number of annual work units.
- those whose either turnover does not exceed 40 million EUR., or the annual balance sheet total does not exceed 27 million EUR.
- those that respect an independence criteria. Independent firms are those which are not owned as to 25% or more of the capital or the voting rights by one or several large firms. We have not used this criterion, given that one of our hypotheses presupposed that the fact that a firm is dependent on another firm would have a positive influence on the growth of the former.

The Commission also establishes a distinction between medium-sized, small and micro-sized enterprises. The small firm is that which employs less than 50 people, which respects the independence criterion defined above and for which either the turnover does not exceed 7 million EUR, or the annual balance-sheet total does not exceed 5 million EUR. A firm is considered to be micro-sized if it has less than 10 workers.

¹¹ The fiscal regime for companies is in fact more advantageous than the regime for physical persons.

¹² According to Harris (1985), the size of the sample must exceed the number of predictors by at least 50. Our sample of 150 observations respects this rule. According to other authors (Bernard, 1999), a minimum of 10 observations per predictor is necessary. Harris (1985) underlines that this principle is not based on any empirical proof. Others suggest more liberal rules than Harris and consider that the number of observations must only exceed the number of variables by 40 (see Howell, 1998).

¹³ For the measure of this variable, see point 3.2.

population¹⁴ using a bilateral t test. One of the application conditions underlying this test on two independent samples is the homogeneity of variances (Howell, 1998). We first used Levene's test to check that there is no significant difference in the variances ($F = 1.476$ and $\text{sign.} = 0.224$), and then tested the difference between the averages of employment growth for the two groups. The results of the bilateral t test ($t = -0.823$; $\text{d.f.} = 11.479$; $\text{sign.} = 0.411$) indicate that the average employment growth of the firms in our sample is not significantly different from that of the firms of the overall population.

As our sample was composed on the basis of size and regional location constraints characteristic of the population, it is no longer necessary to examine the representativeness of the sample in relation to the population with regard to these two criteria. Finally, we also examined the percentages of independent firms within the population and the sample. These are also identical (66.7%). These elements of comparison were chosen because they appear in the initial database.

3.2. Data collection method and measure of the dependent variable

The data published by Belgian firms do not make it possible to test the vast majority of the hypotheses developed in our research. Hence, we opted for a telephone survey¹⁵. We first established a questionnaire (see appendix 1) consisting of closed questions that we had pre-tested on several SME managers. The managers of 150 SMEs were interviewed by phone in November 2001.

The value of the dependent variable was calculated using the initial database. The choice of an appropriate growth index has given rise to a number of theoretical discussions (Wooden and Hawke; 2000; OECD, 1998; Birch, 1986). As none of the proposed measures is neutral (Julien et al., 1998), we decided to use a simple measure, namely the relative variation " $(E_t - E_{t-1})/E_{t-1}$ ", as this is the most frequently used index in studies on growth determinants (Delmar, 1997). In our case, this measure reads $(E_{200} - E_{94}) / E_{94}$.

In order to carry out a logistical regression (see *infra*), these dependent variables were split into "high growth" (code 1) and "low growth, stagnation or regression" (code 0). We defined "high growth" as being growth above or equal to 50% over the period studied. 34.3% of the firms in our sample can be considered as having undergone high growth.

Previous studies differ enormously in terms of the time period studied. In order to identify irregular short-term tendencies and to allow for a reliable estimation of organisational performances, the time period studied should be at least 5 years (Weinzimmer et al., 1998). On the basis of the constraints of our database, we have measured growth over a period of 7 years, stretching from 1994 to 2000.

¹⁴From which we withdrew firms that belonged to the examined sample.

¹⁵The major advantage of this method in relation to personal surveys or by post is its rapidity. In comparison with the personal survey, it also presents a lower risk of bias linked to the person of the interviewer (Lambin, 1990). Finally, it allows for the immediate codification of the responses, thus reducing risks of error.

So as to avoid static measures, when growth is essentially a dynamic phenomenon, we have excluded firms that were established during the period studied.

3.3. Data processing

In order to test our hypotheses, we have carried out a binomial logistic regression with the help of SPSS software. This method presents certain advantages in comparison to the standard multiple regression that is subject to more restrictive application conditions (Garson, 2001; Howell, 1998)¹⁶. Among these advantages, we could draw particular attention to the fact that, contrary to standard regression, logistic regression does not presuppose a linear relationship between the dependent variable and the independent variables, and does not require a normal distribution of the variables. We had observed that our dependent variable did not present a normal distribution. The logistic regression also made it possible to integrate dichotomous or polytomous and metrical predictors into one single model. Each modality of an original variable gave rise to a dummy variable coded 1 if the characteristic was realised and 0 in the opposite case. In order to avoid a linear relation between the independent variables, for each original variable, one of the binary variables created was excluded from the model. In the case of “filtering”, in other words when part of the sample is not concerned by a question, we created a dummy variable composed of the firms not concerned.

4. Results and discussion

Prior to the regression, we compared the growth averages of firms that had responded to our survey with those of the firms who had refused to respond by using a bilateral *t* test. The growth averages for the firms that had responded to the survey were not significantly different from those of the firms that had refused to respond. We then compared the size, independence and regional location of the firms of the two groups using Pearson's χ^2 test. Whether the firm had responded or not to the survey is independent of its size at the start of the period, its independence or dependence and also of its regional situation.

The statistically significant results at the threshold of 5% of the logistic regression of employment growth on the variables linked to the manager are the following:

¹⁶ This also represents certain advantages in comparison to the discriminant analysis that can also be used when the dependent variable is dichotomised. Apart from the fact that the discriminant analysis involves a normal distribution of the variables, it can give rise to "impossible" probabilities of success situated outside the 0-1 range (Howell, 1998).

Table 1: statistically significant predictors of the binominal logistic regression of employment growth on the variables linked to the manager of the firm

Independent Variables	Coeff.	S.E.	Wald	D.F.	Sig.	Exp. (b)
Hypothesis 3: experience in marketing, sales or R&D	- 4.453	1.569	8.051	1	0.005	0.012
Hypothesis 4: consultancy experience	3.092	1.425	4.706	1	0.030	22.023
Hypothesis 12: other activities at time of creation	4.574	2.221	4.242	1	0.039	96.969
Hypothesis 15: education related to the activities of the firm	3.237	1.283	6.361	1	0.012	25.446
Hypothesis 24: female manager	- 4.948	2.178	5.161	1	0.023	0.007
Hypothesis 25: immigrant manager	3.626	1.408	6.630	1	0.010	35.571

χ^2 of the model: 51.890 Sign. 0.015

Degree of concordance between the predicted values and the values observed: 85.9%

Six variables linked to the manager have a significant influence on employment growth.

Out of the five categories of independent variables linked to the manager that we have studied while making the hypotheses, three groups exerted no significant influence on employment growth. These are the variables linked to psychological characteristics, motivations and the presence of a team of managers.

Four variables that had a significant effect on employment growth are linked to the expertise of the manager. Two of these variables are linked to their functional experience.

The results relating to the fact that the manager has an experience in marketing, sales or R&D invalidate our third hypothesis. Whereas, according to Hambrick and Mason (1984), output-related functions are supposed to lay emphasis on growth, we observe that this experience has a negative influence on employment growth. It can be supposed that this experience will lead the manager to focus on these functions to the detriment of others, which could slow employment growth. It could also bring them to favour turnover instead of employment growth.

Conversely, in accordance with our hypothesis 4, the fact that the manager has previously worked in the field of consultancy seems to give him an expertise that accelerates the development of his firm. This experience is a statistically significant predictor of the chances of employment growth. The influence of this variable on growth had not been tested yet.

As we presupposed in our hypothesis 12, the fact that the manager did not dedicate himself permanently to the new firm at the time of its establishment has a positive influence on its subsequent growth. This formula can be considered as a way of learning that allows an evaluation of his entrepreneurial qualities while not relying uniquely on the revenues generated by his firm (Storey, 1994c).

In accordance with hypothesis 15, the fact that the manager has pursued studies that have a direct link to the activities of the firm contributes positively to the development of the latter. This observation is interesting as this variable had not yet been the subject of empirical studies. On the other hand, neither the level of the studies, nor the fact that the entrepreneurs have followed management or firm creation training has a significant influence on employment growth.

Finally, two out of the three demographic variables tested have a significant impact on employment growth. These are the gender of the manager and the fact that he has an immigrant background. Only age does not constitute a significant determining factor.

Like the study carried out in Sweden (Dahlqvist et al., 1999) and in accordance with our hypothesis 24, the results of the regression demonstrate that the fact that the manager is female has a negative impact on employment growth of their firm. This observation confirms the theoretical arguments relating to the relative social disadvantages for women who start an entrepreneurial career (Kalleberg and Leicht, 1991). An American study (Kalleberg and Leicht, 1991) nevertheless observed an absence of differences in terms of impact of independent variables on the growth of firms according to whether they were managed by men or women. These differences between American and European firms could be the result of cultural differences, as Europe is more conservative in this respect.

Finally, contrary to Dahlqvist et al. (1999), whose study also partly concerned employment growth, and to our hypothesis based on the results of this study, we observe that the fact that the manager is an immigrant has a positive influence on the growth of his firm. Entrepreneurship can be a social integration factor (Wtterwulghe, 1998). Hence, a potential explanation of the positive link between growth and the fact that the manager is an immigrant could lie in the fact that the firm's growth would accelerate this phenomenon of integration.

Conclusion

The study of the impact of the manager's characteristics on the growth of his firm has given rise to numerous empirical studies. However, the focal point of most of this work has been the study of one or a reduced number of predictors. Moreover, no research has given an exhaustive list of all of the previously analysed variables. We have tried to fill this gap and have tested the potential influence on employment growth of 28 variables, which we grouped into 5 sub-categories: psychological characteristics¹⁷, the expertise and the family origins of the manager, his motivations, demographic variables and the presence of a team of managers.

Our results show that employment growth within SMEs is only influenced by certain variables linked to two sub-groups, namely, the expertise of the managers and their demographic characteristics. Their psychological characteristics, their motivations and the presence of a team of managers have no significant impact on chances of employment growth in the sample of Belgian SMEs that we studied.

Four variables affecting employment growth are linked to the expertise of the manager. Two of these variables are linked to functional experience, namely the fact of having experience in the field of marketing, sales or R&D and of having experience in the field of consultancy. The sign of the relationship is not, however, necessarily that which we had presumed. The fact that the manager has carried out other professional activities during the establishment of his firm also has a significant influence on employment growth. The fourth variable linked to expertise is the education of the manager, i.e. the fact that he has pursued studies that are linked to the activities of his firm. The other variables linked to functional experience (management or supervisory experience, experience within a university, experience in a large firm, experience in firm creation or in self-employment) have no significant influence. The same can be said for sectoral experience, the number of years of professional experience, the possession of several firms, previous entrepreneurial failure, entrepreneurial family background, other variables linked to education (education in new venture creation or in management and level of education) and the circumstances that have brought the manager to be at the head of the firm.

Finally, two demographic variables are also significant predictors of employment growth. These are the gender of the manager and whether he is an immigrant. Age does not represent a determining factor.

The conclusions of our research are subject to certain limitations. First of all, it exclusively concerns individual firms. However, some organisations are liable to grow through the creation of other firms or franchises by their manager. As groups of firms were not our analysis unit, this type of growth is necessarily ignored within the framework of our results. Furthermore, we measure growth on the basis of data relating to the start and the end of the period. However, growth is not necessarily regular. In fact, the development process can be "serrated". However, our study does not take this phenomenon into consideration, because it does not take account of the intermediate data. Moreover, the type of inquiry carried out and of questions posed prevented us from obtaining longitudinal data for a certain number of variables. Finally, our

¹⁷ Note that we only made one single hypothesis regarding the psychological characteristics of the manager.

methodological choice to test most of the variables simultaneously and not to exclude factors that could perhaps appear to be minor generally dilutes the potential contribution of the various predictors. Another research possibility that would make it possible to overcome this problem would consist in the adoption of a more selective approach based on the results of the present research.

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APPENDIX: Questionnaire

1. Quel âge avez-vous?

/__/__/ans

2. Quel est le diplôme le plus élevé que vous ayez acquis ?
INT. : une seule réponse

1. Etudes primaires
2. Etudes secondaires
3. Etudes supérieures de type court (graduat)
4. Etudes supérieures de type long ou université
5. Diplôme universitaire complémentaire (« postgraduate »)
6. Doctorat

3. Ces études ont-elles un lien direct avec l'activité actuelle de votre entreprise ?

1. oui
2. non

4. Avez-vous suivi une formation ?

a) En gestion

1. oui
2. non

b) à la création d'entreprises

1. oui
2. non

5. Un membre de votre famille avait-il précédemment créé une entreprise autre que celle que vous dirigez ?

1. oui
2. non

6. Etes-vous ou l'un de vos parents est-il né ailleurs qu'en Belgique ?

1. oui
2. non

7 . Vous dirigiez l'entreprise parce que ...?

- 1. vous en êtes le fondateur ⇒ Q.8
- 2. vous faites partie de la famille du fondateur (au sens large) ⇒ Q.10
- 3. autre ⇒ Q.10

INT. Si pas fondateur (code1), passer à la question 10

8. Avez-vous exercé d'autres activités professionnelles durant la phase de démarrage ?

- 1. oui
- 2. non

9. Quelle était votre motivation principale lors de cette création ?
Etait-ce ?

INT. : LIRE - une seule réponse

- 1. la perception d'une opportunité de marché
- 2. la réalisation d'un défi
- 3. quitter un emploi peu satisfaisant
- 4. la réalisation personnelle
- 5. l'amélioration de votre statut social
- 6. le profit (l'argent)
- 7. la croissance
- 8. L'indépendance
- 9. quitter une situation de chômage
- 10. Autre (à préciser) :

A TOUS

10. Quelle est votre motivation principale aujourd'hui en tant que dirigeant ?
Est-ce

INT. : LIRE - une seule réponse

- 1. la réalisation d'un défi
- 2. la croissance
- 3. la réalisation personnelle
- 4. l'amélioration de votre statut social
- 5. le profit (l'argent)
- 6. l'indépendance
- 7. Autre (à préciser) :

11. Avez-vous une expérience d'au moins un an dans une autre organisation ?
INT. Si plusieurs expériences – parler de la dernière ou de la plus importante .

- 1. Oui ⇒ Q.12

2. Non ⇒ Q.16

INT : si non, passer à la question 16

12. De quelle catégorie cette organisation fait-elle partie ?
INT. LIRE – une seule réponse

1. PME (< 250 personnes)
2. Grande entreprise belge (> 250 personnes)
3. Grande entreprise étrangère
4. Institut d'enseignement supérieur

13. Y exerciez-vous des fonctions ?

a) de management ou de supervision

1. oui
2. non

b) de marketing ou de vente

1. oui
2. non

c) de recherche et de développement

1. oui
2. non

d) de consultant

1. oui
2. non

14. Combien d'années y avez-vous travaillé avant de créer et/ou diriger votre entreprise ?

/___/___/ années

15. Cette organisation était-elle active dans le même secteur que l'entreprise que vous dirigez ?

1. oui
2. non

A TOUS

16. Avez-vous une expérience antérieure ...

a) de création d'entreprise ?

1. oui ⇒ Q.17

2. non ⇒ Q.18

b) en tant qu'indépendant ?

1. oui ⇒ Q.17

2. non ⇒ Q.18

INT. Si non partout, passer à la question 18

17. Avez-vous connu un échec avec cette entreprise ou cette activité ?

INT. Si plusieurs expériences, répondre pour n'importe laquelle (même si un seul échec, oui)

1. oui

2. non

A TOUS

18. Possédez-vous ou dirigez-vous plusieurs entreprises ?

1. oui

2. non

19. Combien de personnes dirigent cette entreprise (càd détiennent le pouvoir de décision)?

..... personnes

INT. Si seulement une personne, passer à la question 23

20. Est-ce que les expériences professionnelles antérieures des dirigeants sont similaires (entre eux) ?

a) en termes de fonction (par exemple, vente, marketing, R&D, production,...)

1. oui

2. non

b) en termes de secteur s'activité

1. oui

2. non

21. Est-ce que les dirigeants ont pour la plupart suivi une formation similaire ?

1. oui

2. non

22. Certains de ces dirigeants avaient-ils déjà travaillé ensemble avant de créer ou de rejoindre l'entreprise ?

1. oui
2. non

A TOUS

23. Quel est votre degré d'accord avec l'affirmation suivante :

« J'estime que les résultats de mon entreprise sont largement influencés par mes propres efforts ».

Répondez à l'aide de l'échelle suivante :

1= pas du tout d'accord

2=	plutôt		pas	d'accord
3=		sans		avis
4=		plutôt		d'accord
5=	tout	à	fait	d'accord