

*In memory of my father Tore Wiklund*

*Du kan göra vad du vill med dina händer  
och fångenskapens väggar är en myt  
Du är fri att följa vinden vart den vänder  
är kläderna för trånga, byt!  
U. Lundell (1982)*



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## **Preface**

At the age of ten I knew. I should become a physics professor and live in Australia. Some 25 years later I have now completed my dissertation concerning the growth and performance of small Swedish firms. What went wrong?

Nothing really. Looking back, it is not all that surprising. Those people who knew me encouraged me to take an engineering and business degree, leading to a relatively well-defined professional career, rather than a "dubious" pure science degree. The access to a role model - my mother has been a small business owner-manager all my life - fostered an interest in, and understanding of, the problems of small firms. My interest in research remained over the years, and eventually led me into an academic career. In addition, a number of circumstances, of a more or less random nature, created the opportunity for me to pursue my doctoral degree.

I believe that a similar logic may be applied to the development of small firms. The interests and goals of the entrepreneur, his or her access to role models, influences from customers, competitors and other actors in the environment, chance events etc. all influence the actions which small firms may take. These in turn affect outcomes such as growth and performance.

It is difficult, not to say impossible, to predict the outcomes of a particular firm or the life-story of an individual (like myself). However, it may be possible to estimate the probability that firms exhibiting certain characteristics will perform better or grow more, than other types of firms. This dissertation attempts to identify such characteristics.

There is sometimes a tendency to overemphasise and glorify one single individual in the small firm - the entrepreneur. It is, however, likely that other people, within and outside the firm, contribute to its development. The same is true of this dissertation. Other people have made valuable contributions which I wish to acknowledge.

First and foremost, I am indebted to Per Davidsson; supervisor, colleague and friend. Per has always had a genuine interest in my research, and a firm belief - often more firm than my own - that I would be able

to complete my dissertation and make a contribution to the research field. No philosophical discussion has been too far-reaching, no word choice too trivial, for him to share his views. This has been very encouraging.

Co-supervisors, Leif Melin and David Storey, have complemented Per, taking on different roles. Leif has pointed to useful literature and the necessity of clear definitions. David has questioned the validity of some of my empirical findings, which has forced me to advance my thinking. Lars Kolvereid acted as opponent at my final seminar and external reviewer of an earlier version of the manuscript. His insightful analysis of strengths and weaknesses was very helpful in the subsequent revision of the manuscript.

I have had many long discussions with Terrence Brown over the essence of entrepreneurship, and the link between entrepreneurship and opportunities, which helped me advance my ideas in these important areas. I have had equally long, if not longer, discussions with Per Franke-lius on various topics, such as the role of research in society. These discussions have fuelled my motivation to produce a text which hopefully is meaningful to others than myself. Anders Melander's often obnoxious comments were really expressions of a genuine interest in my research, and were complemented with moral support at crucial stages. Frederic Delmar gave practical advice on the dos and don'ts of telephone interviews, and helped me select questionnaire items. A surprisingly large number of colleagues at Jönköping International Business School read and commented upon earlier versions of the manuscript, principally Charlie Karlsson and Magnus Taube.

Elin Wiklund has taught me the importance of curiosity, and the need to ask questions in order to acquire new knowledge. Curiosity and questioning are indispensable elements of research. Nils Wiklund continues to remind me of the equally important element of persistence. Writing a dissertation requires the same persistency as does convincing your parents that you know better than they do.

A full-service writing retreat, in which most of the writing took place was provided by Maud Wiklund. She also shared with me her experiences of managing a small firm through periods of expansion and consolidation. Maria Wiklund always encouraged and supported my proceeding my research wholeheartedly, even though it sometimes meant being a single parent. She also shared with me the joys and frustrations



## *Preface*

of writing this dissertation, but more importantly, continues to share my life.

I am particularly grateful to those more than 450 small business managers who have taken the time to participate in two extensive telephone interviews and complete one mail questionnaire. Without their participation, this book would not have been possible. I hope that the booklet with a summary of the findings, which was sent to them shows some of my gratitude, and can be helpful in the future development of their firms. P-O Norlander of The National Swedish Organisation of Small Businesses in Jönköping also made a seemingly small, yet important contribution. I am convinced that his enthusiastic introductory letter had an impact on the respondents' willingness to participate and thus on the quality of the study.

I would finally like to acknowledge my gratitude to Jan Wallander's foundation, Knut and Alice Wallenberg's foundation and Ruben Rausing's foundation, for providing the financial support necessary for the completion of the research presented in this book.

Huskvarna, May 1998

Johan Wiklund



# 1 Introduction

## **1.0= The importance of small firm growth=**

Why is it that some small firms perform well and grow while others do not? Does entrepreneurship play a role in this process? These are the two principal questions to be addressed in this dissertation. The reasons why these questions have occupied my mind during the last few years and why they are of general interest, is presented in this and the subsequent section.

During recent years, many Western economies have faced high unemployment and slow economic growth. An increasing number of people argue that to solve these problems, the growth of small firms and an increased level of entrepreneurship is essential. From a situation where small firms were treated with disinterest or even aversion, we have reached the other extreme where the term entrepreneurship is in vogue and where the small business sector is expected to solve unemployment and development problems in the future. This change in attitude is relevant; research from different industrialised countries has shown that small firms are of great and increasing importance to the development of the economies (Baldwin & Picot, 1995; Birch, 1977; Davidsson & Delmar, 1997; Davidsson, Lindmark & Olofsson, 1994; 1996; Kirchoff & Phillips, 1988; Storey, 1994b; 1996). This has also led to an interest in, and need for, systematic knowledge about entrepreneurship and small firms.

Small and new firms have a great impact on the creation of new jobs. Recent research reveals that small firms employ over 50% of the working population of Sweden and are of crucial importance in the creation of new employment (Davidsson et al., 1996). Relatively speaking, the number of jobs created by expanding small firms is larger than the number of jobs created by new firms during their first year of operation or by large firms. New jobs are primarily created by a large number of small firms that employ one or two new persons, the average growth of each firm being marginal (Davidsson et al., 1994; 1996). This is not to say that most small firms do grow, on the contrary, the majority do not

grow at all, some grow a little, and very few firms exhibit substantial growth (Storey, 1996; 1997). However, since the population of small firms is large, the aggregate effect of the growing firms becomes substantial in the labour market.

Another reason for the interest in small firms has to do with the renewal of the economic system. For a healthy economic development, it is essential that old ideas are replaced by new ones and that old products, services and processes are substituted by those which are better and more effective. New ideas and innovations are often created by new, small ventures that grow rapidly and sometimes even create new industries. Many of the best known and most successful Swedish companies such as IKEA, SKF, Tetra Pak, AGA and Electrolux, were founded and developed based on individual innovations. More recent examples are Apple, Microsoft and Netscape; all relatively young companies that have grown extremely rapidly and have changed the computer industry. Most people would regard these as examples of exceptional entrepreneurship.

The above implies that entrepreneurship is a key to economic development, the creation of wealth and employment, and illustrates how closely connected entrepreneurship is to small firm growth. In his classic definition of entrepreneurship<sup>1</sup>, Schumpeter (1934) stressed that entrepreneurship has to do with combining resources in new ways that create disequilibrium in the economic system. In other words, entrepreneurial firms are innovative to such an extent that they have an impact on the market. In another well recognised definition of entrepreneurship, Stevenson advocates that pursuit of opportunity is the most important component of entrepreneurship (Stevenson, 1984; Stevenson & Gumpert, 1991; Stevenson & Jarillo, 1986; 1990). This definition concerns the firm's relation to, and success in, the market place, realising what the wants and needs are, and will be in the future. These two definitions complement each other. When combined, entrepreneurship is defined as *taking advantage of opportunity by novel combinations of resources in ways which have impact on the market*. This is the view of entrepreneurship held throughout this dissertation.

---

<sup>1</sup> Schumpeter refers to the new combinations as economic development, the process of carrying out the new combinations as enterprise, and the people that carry out the new combinations as entrepreneurs. By others, these three concepts have jointly been referred to as entrepreneurship.

### *introduction*

It is hard to imagine a small firm taking advantage of opportunity and having considerable impact on the market place without growing. Let us consider Microsoft for a moment. If Microsoft sold 100 licences a year, it would neither have any considerable impact on the market, nor would Microsoft take advantage of the opportunity that apparently exists in the computer software market. If we accept the view that entrepreneurship is a matter of degree and not a dichotomous yes or no variable (Davidsson, 1989; Greene & Brown, 1997; Stevenson, 1984), growing Microsoft is at least more entrepreneurial than refraining from doing so. Thus, it seems that growth is an important manifestation of entrepreneurial behaviour in small firms.

### **1.0= Growth and performance=**

Whereas, on aggregate, small firms appear to be a vital part of the economy, the prospect for any individual firm is uncertain. Many small firms die during their first years of operation, or struggle to survive. The number of small firms that achieve large economic returns for their owners and grow substantially is limited.

Some previous research suggests a close connection between the growth and the performance of a small firm. At the most basic level of performance - survival - larger firms perform better than small (Storey, 1994b), suggesting that growth is an appropriate survival strategy for small firms. Also, when studying small firms that survive, it has been suggested that growth is the most appropriate indicator of performance (Brush & VanderWerf, 1992).

Much research has been produced concerning the performance of small firms during recent years. A striking feature of this research is that many different measures of performance are used, and there is little consensus as to what measures are more appropriate. Some researchers claim that traditional performance measures such as profitability are not relevant to small firms (e.g. Van de Ven, Hudson & Schroeder, 1984). These authors advocate employment or sales growth as more appropriate performance measures.

It may be intuitively appealing to equate small firm growth with small firm performance. However, growing firms are not necessarily successful in other respects, and successful small firms do not necessarily grow. A firm may experience negative cash flow and low return on in-

vestment during an expansion phase (Flamholtz, 1986). But it is also possible for a small firm to deliberately trade off long-term growth for short-term profits (Zahra, 1991). Such a small firm can exhibit high economic performance while not growing, suggesting that the relationship between economic performance and growth may be relatively complex, and dependent on choices made by small business managers.

Thus, restricting a study to the growth of small firms, omitting other aspects of performance, may be too limited. There is reason to further investigate the connection between growth and performance and whether the factors contributing to growth also enhance performance. Understanding the factors that enhance and restrict the performance of small firms is essential for small business managers as well as policy makers. If the performance of small firms could be improved, much would be gained for the firms themselves, as well as society as a whole.

### **1.0= The need for systematic knowledge=**

Research has revealed that the majority of small firms do not grow, and that many are not even interested in pursuing growth (Davidsson, 1989; Delmar, 1996a; Gundry & Welsch, 1997; Storey, 1994a). Rapid-growth firms are not concentrated to specific industries. Contrary to common belief, these firms may be found in labour as well as knowledge intensive industries; in manufacturing as well as the service sector (Ahrens, 1992; Blixt, 1997; Davidsson & Delmar, 1997; Smallbone, Leigh & North, 1995; Storey, 1996). Furthermore, growth is an important aspect of performance, but growth may be traded off in favour of profits (Zahra, 1991).

This raises some challenging questions. Is it at all possible to predict which firms will grow, or is firm growth haphazard? To what extent can we equate growth with performance, i.e. do the firms that grow more also perform well financially? Do high-performing small firms share any common characteristics that distinguish them from low-performing firms? What is the role of entrepreneurship in the growth and performance of small firms? If we wish to take policy measures to stimulate the development of small firms, which groups should be stimulated and what type of measures should be taken?

Unfortunately, our present knowledge is insufficient to answer these questions with any degree of confidence, and more research is needed to

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gain the necessary systematic knowledge. Research in this area is not well developed, which is illustrated by these two recent quotations:

*In some areas theorists have already made a major contribution to our understanding of small firm issues, but in others their contribution is much weaker...In other areas - most notably small firm death and growth, it is much weaker. (Storey, 1994b, p. 5, emphasis added)*

*At this time our ability to predict performance of new firms is limited. (Cooper, 1995, p. 120)*

### **1.0& Some problems in previous research and= suggestions as to how they may be overcome=**

#### *1.0.0 Empirical and theoretical problems*

As illustrated by the quotations in the previous paragraph, our knowledge about why some small firms perform well and grow while others do not, is still insufficient. This is at the same time both discouraging and encouraging. It may be discouraging for a small business manager asking for advice on suitable strategies, or a policy maker in search of policy measures, to learn that the literature provides little guidance. On the other hand, it provides challenges and opportunities for researchers interested in advancing our knowledge in the area.

The lack of knowledge should be taken seriously and can be broken down into a number of more specific areas. First of all, it is important to find out which factors affect the growth and performance of individual small firms. Of particular importance is to identify those factors that could be influenced by small firms themselves and/or society in general. Knowledge of these factors could form the basis for activities to improve small firm performance. It is, for instance, of little or no use to a small business manager to know that the firm would perform better if he or she had a different personality. For the same reason, it is important to find factors that have a sustainable rather than temporary influence on growth and performance.

It is also important to gain knowledge about *how* different factors affect growth and performance outcomes. Prior sector experience is an

example of a factor that is commonly believed to enhance small firm performance. However, this experience could influence the performance in different ways. It is possible that an experienced small business manager, due to knowledge of industry pricing policies etc. makes more appropriate decisions that enhance the firm's performance. But it is equally likely that prior industry experience provides the small business manager with a personal network of potential customers, which gives easier access to the market. There are ways other than prior sector experience to gain both relevant knowledge and a personal network. However, the alternatives to other sources of knowledge (e.g. education) and other sources of an extensive personal network (e.g. membership in some association) are vastly different. Depending on how experience is conceptualised to influence performance (knowledge or personal network), different empirical and theoretical conclusions are drawn.

This "experience" example also illustrates the importance of building knowledge on a more general level. It may be more relevant to address the influence on growth and performance from acquired personal abilities or an extensive personal network - of which sector experience may be one example - instead of addressing the importance of experience *per se*.

These issues have not been fully acknowledged in previous research. The major shortcoming is not that the area of small business growth and performance is understudied. Rather, the field is lacking conceptually strong and empirically comprehensive studies.

Small firm growth and performance are areas that have been studied from a multitude of perspectives. A review of published research in the area shows that the overwhelming majority is empirical, often with a relatively low degree of conceptualisation. This literature review is presented in Section 2.2 and Appendix 1.

The theory of the research is, in many cases, not explicitly stated. The level of abstraction is usually low. Manifest variables, with little theoretical content, that have been previously found to be antecedents of performance and growth, are often utilised without a thorough discussion of the theoretical assumptions underlying their inclusion, or the theoretical consequences of using different types of variables. The most common assumption is that growth and performance are linear combinations of a set of non-collinear explanatory variables. This is certainly a way of finding manifest variables that have an effect on firm growth and



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performance, but does not necessarily enhance the development of theory. Neither is the empirical work usually impressive (though there are some exceptions). Samples are usually small, response rates low and data collection strictly cross sectional.

A major weakness in our knowledge about small firm growth and performance, on entrepreneurship, and within social science in general, is that it is highly fragmented. The same or similar phenomena are often studied in isolated research projects using different concepts, models and methods. It is rare that researchers build on theories and models developed by others. This problem has been highlighted in a number of reviews (Cooper, 1995; Low & MacMillan, 1988; Storey, 1994b; VanderWerf, 1989):

*This section reviews a number of empirical studies which relate elements within the entrepreneur, firm and strategy components to the growth of the firm...There are a number of problems in using this approach, because the vast bulk of studies have been conducted independently of each other. Frequently they address issues of specific interest to the researcher, but do so in a way which makes compatibility with other studies difficult. (Storey, 1994b, p. 125)*

The more substantial problems in previous research - although there are exceptions - would appear to have their origin in the three following areas:

- A lack of conceptualisation and a lack of use and development of theory.
- A lack of integration of previous knowledge into research models.
- Not sufficiently rigorous research methods.

#### *1.0.0 Attempts to overcome these problems in the present research*

Some of the above mentioned problems are more or less inherent. The research field is relatively young (Cooper, 1995), and it takes time to build systematic knowledge. This process of knowledge creation may be particularly slow in the area of firm growth and performance, since these are complex phenomena. In addition, access to information is limited, as small firms may not always be willing to divulge that information

which researchers consider most interesting (Brush & VanderWerf, 1992).

However, some progress may still be possible. In order to overcome the above mentioned problems to the greatest possible extent, the following approach to the empirical study of small firm growth and performance has been chosen:

- The study is longitudinal in the sense that a cross sectional study is repeated and follow-up measures of the dependent variables are collected at a later point of time. Thus, it will be possible to infer causal direction among variables (Low & MacMillan, 1988)<sup>2</sup>. The lack of longitudinal designs in the field of entrepreneurship research is a major methodological shortcoming, hampering further theoretical development, according to recent reviews (cf. Aldrich & Baker, 1997; Sexton, 1997).
- Variables from different levels of analysis are integrated. In entrepreneurship research, variables relating to the individual are often used to explain small firm outcomes. These models are not sufficient, as other factors beside the individual influence the development of small firms (Davidsson, 1989). The same is true for the studies restricted to the use of organisational variables; the explanatory power is reduced since the characteristics of the entrepreneur are omitted.
- A wide range of variables are used to reflect multiple facets contributing to growth and performance. With this design, it is possible to build on a wide range of previous research. A striking feature of Storey's (1994b) review of studies of small firm growth, is that each of them only covers a fraction of the variables that have been considered important in other studies. Hence, previous research may have been too narrow in scope.
- The variables in the study are treated as indicators of theoretical constructs in empirical analyses. That is, theoretical constructs are abstracted from the empirical observations in order to build theoretical

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<sup>2</sup> **A longitudinal design gives a time lag between cause and effect. This temporal sequentiality between cause and effect is a necessary but not sufficient condition for causality. The fact that night follows day does not imply that the daylight causes the darkness at night. Rather, both phenomena are jointly caused by the rotation of earth. It is impossible to prove that a relationship between two variables is causal and not spurious. Temporal sequentiality must be supplemented by theory and common sense in order to make the causes of a phenomenon plausible (Ruist, 1990).**

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knowledge on a more general level. By using this approach, theoretical concepts can be elaborated and empirically validated, and a stronger link between theory and empirical findings can be established.

- The present study is intended to comprise all business activities of the entrepreneur. Previous empirical research on small firm growth has focused on the growth of a single firm (Scott & Rosa, 1996). However, different growth patterns are possible; one person could, for example, run multiple firms and small firms could form company groups. This information should be of interest and crucial regardless of whether the researcher is interested in small firm growth as such, entrepreneurship, or small firm performance. Focusing on one single firm and omitting information on other economic activities of the entrepreneur could distort the results.

### **1.0= Research questions=**

In summary, the previous sections stress that:

- Small firm growth and performance are areas of great and general importance.
- Our present knowledge about these phenomena is still insufficient.
- The questions of *which factors* influence small firm growth and performance and *how* they influence small firm growth and performance are of particular importance.
- Some of the problems in previous research are more or less inherent, but it is nevertheless possible to further advance our knowledge by choosing an appropriate research approach.

Based on this, the specific research questions that will be addressed in this dissertation are the following:

- Is it possible to identify crucial factors that enhance or restrict small firm growth and performance?
- If so, which are these factors?
- In what pattern do these factors affect growth and performance, i.e. how should small firm growth and performance be modelled?
- What is the relationship between entrepreneurship on the one hand and small firm growth and performance on the other?

## **1.0= Research approach=**

The focus of this dissertation is on the growth and performance of individual small firms. Thus, population ecology models, which focus on the death and survival of populations of organisations, or regional economics studies comparing aggregate performance levels of small firms in different locations, is not the main concern.

Some streams of research (e.g. industrial economics) take a relatively deterministic view of organisational design and performance outcomes. There are always some constraints in any decision making situation. However, the view held here is that small business managers have substantial discretion to exercise choice in the course of action of their firms and that they are able to influence performance and growth outcomes of their firms. The destiny of the small firm is not completely determined by the characteristics of the environment and other factors outside the control of the small firm.

Given the attainment of some threshold level of performance, managers may choose to pursue various goals that are not necessarily economically rational. Depending on personal goals, small firms may perform at levels far below their full potential. The profit maximisation motive, implicitly present in economic theory, is probably not applicable to small firms.

This view of small firm performance and growth has previously been labelled a strategic choice approach (Keats & Bracker, 1988). This seems to be an appropriate label to describe the theoretical domain of the present research.

Variables from different levels of analysis will be integrated; something that has been called for by other researchers in the field (Low & MacMillan, 1988; Zahra, 1993). In the analyses, variables relating to the entrepreneur, the firm and the environment will be integrated. Small firms are a particularly suitable area for conducting this type of research (Chandler & Hanks, 1994b). Due to their small size, small firms are less well insulated from environmental impacts, which makes it necessary to take environmental influences into consideration. Their small size also leads to a relatively simple organisational structure and a relatively homogenous organisational culture, permeated by the entrepreneur's vision. In a sense, the firm and the entrepreneur are intertwined.

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In the small firm the entrepreneur has a direct and crucial influence on actions of the firm, whereas in the large firm more people are involved in the decision making process. This is largely reflected in the literature where actions of small firms are studied by entrepreneurship researchers, largely focusing on the entrepreneur, whereas the actions of large firms are studied by strategy researchers, mainly focusing on the organisation. There is, most likely, a gradually diminishing influence from the individual as firms become larger. The influence of the individual is, to some extent, an inverse function of firm size. But, at what size does the organisation become more interesting than the entrepreneur and vice versa? There is, of course, no such size. Instead, the dual focus on both the individual and the organisation is needed in research on small firms.

If firms are new and/or very small, single individuals are responsible for important decisions and actions and there is little need to study entrepreneurial strategy: *"All revolves around the entrepreneur. Its goals are his goals, its strategy his vision of its place in the world."* (Mintzberg, 1984, p. 534)

As the firm becomes larger, usually between 10 and 20 employees, but varying across industries, more people inside the firm are likely to get involved in its management (Stanworth & Grey, 1991). Generally speaking, after a firm gets established and starts growing, the smaller the influence from a single individual gets and the more professional management becomes. It is important to recognise strategic issues in these firms. Hence, it is important for entrepreneurship researchers to recognise entrepreneurial dimensions of strategy in addition to individual level entrepreneurship. Miller (1983a) states that:

*The emphasis has been upon the innovative abilities of the individual, and generally it is the entrepreneur as actor who has been the focus of this research. This paper shifts the emphasis somewhat looking at the entrepreneurial activity of the firm... The entrepreneurial role stressed by Schumpeter is socially vital but it can be performed by entire organization which are decentralized. It can easily exceed or even circumvent the contributions of one central actor. (p. 770)*

Miller's view receives support from other researchers. In their recommendations for future research in entrepreneurship, Low & MacMillan

(1988) emphasise that the survival and growth of entrepreneurial firms may be better explained by micro variables such as strategy, whereas start-up can be explained by macro variables.

In their conceptual model of entrepreneurship as firm behaviour, Covin & Slevin (1991) stress that an entrepreneur's effectiveness can be measured in terms of his or her firm's performance. Firm performance is a function of organisational- as well as individual-level behaviour.

To sum up; firm level analyses of entrepreneurship are important and the impact from the environment needs to be considered, in addition to more traditional studies, preoccupied with the entrepreneur. When conducting firm-level analyses of entrepreneurship, strategic issues play an important role. In this dissertation, environmental-level, firm-level and individual-level analyses will be combined.

## **1.0= Definition of key concepts=**

Small firms, growth and performance are the essential concepts of this dissertation and need to be clearly defined. Words starting with "entrepreneur" are also central and used numerous times. It may be helpful to clearly define these concepts at the outset to avoid the risk of confusing the concepts and in order to make the text more easily understandable.

- The European Union's definition of a *small firm* is used. A firm with 10 to 49 employees and annual sales of not more than ECU 7 million is considered small. The rationale for choosing this definition is provided in Section 4.4.2.
- *Growth* refers to change in size or magnitude from one period of time to another. Growth can involve the expansion of existing entities and/or the multiplication of the number of entities. In biological beings, both these growth processes take place simultaneously; individual cells grow, and the number of cells is multiplied through fission. In our case, growth could refer to the increased size of individual firms, but is not restricted to this. Growth can also be obtained by the multiplication of the number of firms controlled by a particular individual or group of individuals. An operationalisation of the growth concept and its empirical content is discussed in Section 3.6.

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- *Performance* is, at the most general level, a concept referring to the degree to which a society's resources are being used as efficiently as possible to maximise the welfare of the individuals within that society (Thurik, 1996). This is an *output* definition concerned with the outcomes of the use of resources (Cameron, 1978). Performance in this study is associated with the organisational performance or effectiveness of the firm (i.e. the favourable reception in the market place) rather than the operating performance or efficiency (i.e. the ratio between input and output). Furthermore, performance is limited to those outcome dimensions most important as guides to decision making, i.e. those dimensions of performance that are likely to influence and be influenced by actions taken by the small firm. An operationalisation of the concept and its empirical content is discussed in Section 3.7.
- *Entrepreneurship* is defined above as "taking advantage of opportunity by novel combinations of resources in ways which have impact on the market" and is a conceptual term that will not be studied empirically. As a conceptual term, it is a mental construction and not a direct description of specific empirical circumstances. Entrepreneurship is associated with processes and outcomes of processes, involving one or many firms, one or many individuals.
- *Entrepreneurial orientation* (abbreviated EO) is an empirical term that is operationalised and measured. Entrepreneurial orientation refers to the small business manager's self-perception of the firm's strategic orientation. The term is best described as the strategic orientation or outlook of the firm. EO is further discussed in Section 3.4.3.
- *Entrepreneurial behaviour* is also an empirical term that is operationalised and measured. As an empirical term, entrepreneurial behaviour is concerned with observational manifestations corresponding to the previous definition of entrepreneurship. The concept and its link to EO and growth is further discussed in Chapter 8.
- *Entrepreneur* is a term referring to an individual. Some authors refer to entrepreneurs as individuals exhibiting behaviour similar to those described above, and distinguish entrepreneurs from small business managers. Others use the term to describe small business managers (or business founders or owner-managers) in general. When reference is made to other authors, their meaning of the concept

“entrepreneur” can be inferred from the context of the writing. The term entrepreneur, as such, is not central to the present research. Instead, the characteristics of the individuals are explicitly described (e.g. whether the individual is a business founder, has growth aspirations, or his/her goals). Therefore, when the term entrepreneur is used it refers to the respondent of the study, who is a small business manager, and most often, but not always, the majority owner.

## **1.0& The general outline of the dissertation and a preview of subsequent chapters=**

Figure 1.1 serves as an illustration of the structure of the dissertation, based on the content of the individual chapters. The arrows in the figure indicate how the chapters are linked to each other.

The next chapter, Chapter 2, comprises the theoretical framework of the dissertation. It starts with a review of the more recent literature dealing with small firm growth and/or performance. Based on the variables utilised in previous studies, four theoretical perspectives are derived, and the possible contribution of each of these perspectives to small business growth and performance is discussed. Three of these theoretical perspectives are then integrated into a model, referred to as the *theoretical model*.

In Chapter 3, the theoretical model is operationalised which results in the *research model*. This research model contains six theoretical constructs, each measured with a number of manifest indicators. This chapter may be seen as the bridge between theory and the empirical study.



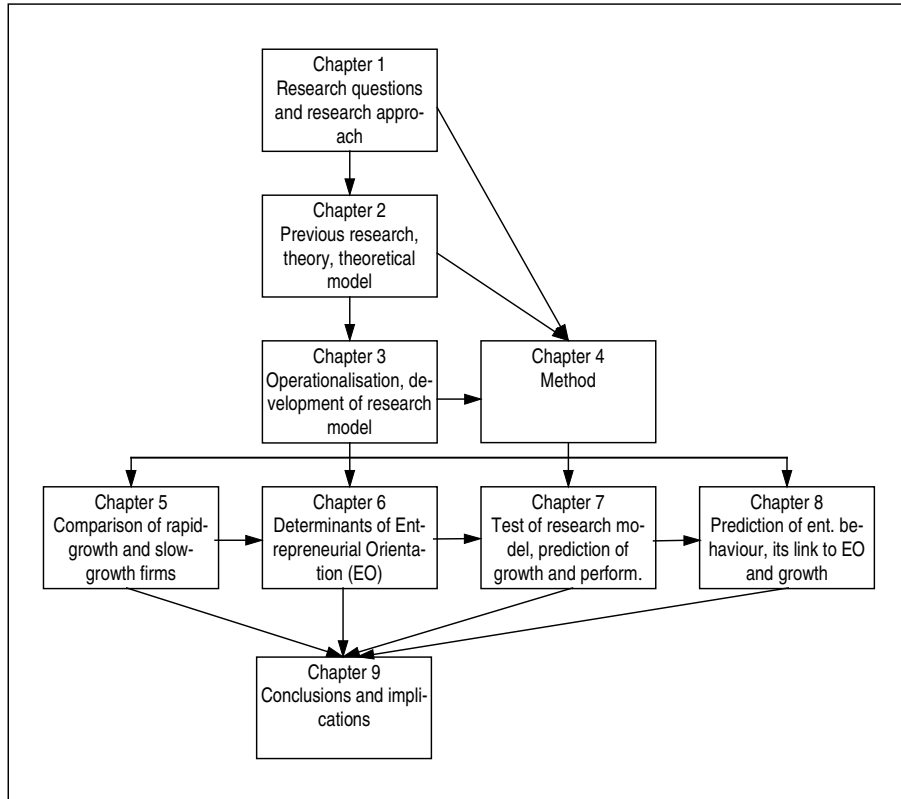


Figure 1.A. The structure of the dissertation

The subsequent chapter, Chapter 4, deals with methodological issues. It covers the whole span from a basic scientific standpoint, through empirical definitions to sampling, measurement and data analysis. Here, motivations are given for many of the empirical choices made; choices which have consequences for the empirical analyses in the subsequent chapters.

Chapters 5 to 7 contain the major empirical part of the dissertation. Analyses move from the relatively simple in Chapter 5, through the somewhat more sophisticated in Chapter 6, to the most sophisticated modelling and analyses in Chapter 7. To a great extent, the same data and variables are analysed in different ways in the three chapters. It may seem superfluous to analyse similar data in three different chapters. However, there are some valid reasons for doing so. The simpler analyses are more easily scrutinised and interpreted. More sophisticated mod-

els, on the other hand, take more factors into consideration, which reduces the risk of neglecting important factors or relationships. This is likely to give more reliable results. Furthermore, when different methods produce the same results, this can be seen as a validation of the findings. Finally, the three chapters address somewhat different questions, and suitable methods are chosen in relation to these questions.

In Chapter 5, non-causal means comparisons, and Student's t-test of significance are utilised. Aggregate mean differences between groups of rapid-growth and slow-growth small firms are compared. The research model is guiding the analyses. However, the research model is mainly used for structuring the variables so that variables belonging to the same theoretical constructs are analysed jointly.

The aim of Chapter 6 is to explain differences in the degree of entrepreneurial orientation (EO) between individual firms. Multiple linear regression is used for analysis. The direct linear effect of a set of independent variables on one dependent variable is estimated. EO is the dependent variable, and variables relating to the theoretical constructs of the research model are independent variables. In order to reduce the number of variables, and to increase measurement reliability, a number of indices are summed from manifest indicators. These indices are used in this, as well as the two remaining empirical chapters.

In Chapter 7, growth and performance are predicted, i.e. the full research model is tested. The purpose is to estimate which factors influence growth and performance and the pattern of their influence. Analyses are conducted for both ultimate dependent variables separately. The final analysis of the chapter comprises a separate assessment of small business owner-managers, to examine whether motivation has a stronger impact among this group than small business managers in general. For the purpose of analysis, the PLS technique is utilised, where the theoretical constructs of the research model are considered to be latent variables.

Chapter 8 is also empirical but has a slightly different orientation compared to the previous empirical chapters. The purpose of this chapter is twofold; (a) to establish the extent to which EO leads to actual entrepreneurial behaviour, and (b) to find out whether growth and other indications of entrepreneurial behaviour are associated with each other. In order to do this, the research model predicting growth and performance is utilised. The only alteration of the model is that entre-

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preneurial behaviour replaces growth and performance as the ultimate dependent variable.

Chapter 9, finally, provides a summary of the most important empirical and theoretical findings. Implications for practitioners and policy makers are provided on the basis of these findings. The theoretical framework is assessed and further developed, covering an assessment of the usefulness of the utilised theoretical perspectives, a modification of the research model and an extension of Stevenson's conceptualisation of entrepreneurship. Finally, limitations of the present study and suggestions for future research are discussed.

## 2 Theoretical framework

### 2.0= Introduction=

Entrepreneurship and small firm growth/performance are empirical phenomena which have received attention within many scholarly fields. Valuable contributions have been made from the fields of management, psychology and economics, amongst others. Multi-disciplinary studies have also been carried out as well as those that emphasise theory to a lesser extent. When seeking to achieve theoretical knowledge within the areas of entrepreneurship and small firm growth/performance, it would seem unwise to ignore the multitude of different approaches.

In order to give the present study a solid theoretical foundation related to previous research in the field, the theoretical assumptions underlying previous empirical research, together with other relevant theories, are categorised into four different theoretical perspectives; *the resource based perspective, the life-cycle perspective, the strategic adaptation perspective and the motivation perspective*. Three of these four perspectives are then integrated into a model which provides the theoretical basis for the empirical research conducted here. Due to this combination of theoretical perspectives, the present study may be regarded as multi-disciplinary.

In a following chapter (Chapter 3), the research model developed is operationalised. This means that the theoretical constructs of the model are specified, in order to be empirically measurable. It also means that the causal relationships among theoretical constructs are operationalised. In other words, the causal effect of one construct on another is quantified. As a result, the constructs, as well as their relationships, are quantified.

The emphasis in this chapter is on the theoretical assumptions of the research and not on any empirical findings. Empirical research findings are presented together with the empirical analyses in subsequent chapters.

## **2.0& Review of literature on small firm growth and performance=**

The table in Appendix 1 provides an overview of the more recent empirical research on small firm growth and performance. In total, the review covers nearly 70 published articles, books, book sections and conference proceedings, with more than 100 individual contributors. Emphasising that it is a review of empirical research might be superfluous, since very few conceptual contributions were found altogether. Some things are immediately discernible from the table. First, quantitatively speaking, small firm performance and growth are not understudied areas as was the case in the past (VanderWerf, 1989). A number of books and articles are published annually. Judging from dates of publication, the output seems to be increasing rather than decreasing.

Second, the second column of the table - which covers the dimensions of growth and/or performance studied - exhibits a multitude of different variables. Performance and growth seem to be conceptualised, operationalised and measured in many different ways. It is curious to note that discussions of the conceptual meaning of the two terms were somewhat lacking, while discussions of appropriate measures were more common. This suggests that the conceptual meanings of the concepts are either taken for granted, or of little interest. Considering the variety of measures, conceptualisation may be helpful in guiding the quest for appropriate measures to be used in future research.

Many of the studies concerned with performance use growth as the sole performance indicator. This suggests that in empirical research, growth and performance are often used interchangeably. Nor are any systematic differences evident between "growth studies" and "performance studies" in the theories applied or explanatory variables studied. It would therefore appear that the small firm growth and small firm performance literature can be seen as one stream of research, rather than two distinct ones.

Third, even greater variations exist concerning the factors that are thought to contribute to growth and performance. It is difficult to find any single variable that is represented in more than a small fraction of all the studies. This illustrates the fragmentation of the field and the difficulty in comparing findings from different studies. Empirical findings, samples and types of analyses have been left out of the table. If these

were included, the fragmentation would become even more accentuated.

As the headings of the table in Appendix 1 indicate, the attempt was made to group this great number of different variables into different *types* of variables. Initially, all individual variables from the studies were listed. Thereafter, similar variables were put into groups. As a final step, these groups were then arranged into consolidated, larger groups based on common conceptual themes.

It appears that the overarching labels *strategy*, *resources*, *motivation* and *environment* cover the vast majority of variables in the studies. These labels should be viewed as theoretical constructs. Stated differently, strategy, resources, motivation and the environment are theoretical variables on a high level of abstraction, which can be given different empirical manifestations. By introducing these theoretical constructs, it is possible to classify the foci of previous studies and compare them in a more meaningful way than if individual variables were assessed. The theoretical constructs introduced to label variables in previous research, do not, necessarily, match the categorisations made by individual authors but are *interpretations* of the theoretical meaning of the variables used. Some researchers, for example, consider R&D expenditure to be a dimension of the firm's resources, whereas others relate it to the strategy of the firm.

When comparing the studies at this level of abstraction, it becomes evident that relatively few studies have utilised variables relating to all the theoretical constructs jointly. It is possible to conclude, however, that all four identified dimensions are important and future research needs to be aware of, and study, all these theoretical constructs in order to build on and extend previous research.

Models, theories and variables utilised, probably reflect the background and preferences of the individual researchers. As illustrated in the table, many studies cover a multitude of variables (although these are not necessarily related to all four theoretical constructs). This suggests that the majority of empirical studies are multi-disciplinary in character. The level of abstraction is usually low. Manifest variables, with little theoretical content (low-level variables) that have been previously found to be antecedents of performance and growth, are often utilised without a thorough discussion of the theoretical assumptions underlying their

### *theoretical framework*

inclusion, or the theoretical consequences of using different types of variables.

It has been suggested elsewhere that most of the work in the field suffers from the absence of defined theoretical frameworks (e.g. Cooper, 1995; VanderWerf, 1989). The lack of conceptualisation and multi-disciplinarity makes it difficult to classify previous research in more traditional ways, such as strategic management studies, psychology studies, sociology studies, industrial economics studies etc. Nor is it possible to trace the development of any distinct theory of small firm growth and performance, or any theory of entrepreneurship, from the literature review. Instead, based on the types of variables included in the reviewed studies, an alternative approach focusing on *theoretical perspectives* as outlined in the sections below, is chosen to classify previous research.

A major question arising from the review is *how* different factors contribute to growth and performance. Motivation, for instance, can give the propensity for certain actions. But motivation alone cannot affect the outcomes of a firm, in terms of growth and performance, unless first converted into some kind of action. The same is true for resources. Resources provide the small firm with growth and performance potential, but they must be utilised in order to affect outcomes. These issues are rarely addressed in the reviewed literature. How resources, environment and motivation affect growth is often something of a "black box".

Turning to the studies concerned mainly with small firm strategies, the question arises of why small firms make the strategic choices they do. It is implicit in most research that small firms are thought to have wide discretion in choosing any strategy they wish. However, this is not likely to be the case. Jennings & Beaver (1997) maintain that strategies of small firms are adapted to their circumstances. They are based on the manipulation of a limited amount of resources, and reflect the personal preferences and attitudes of the firm's entrepreneur. Thus, strategies are likely to be closely connected to - and restricted by - both the resource base and environment of the small firm, as well as the motivation of the entrepreneur.

Four theoretical perspectives have been introduced and identified in order to overcome the problem of building the present research on a multi-disciplinary, highly fragmented research field lacking conceptualisation. These theoretical perspectives address how the prevalent theoretical constructs of strategy, environment, resources and motivation af-

fect growth and performance. The theoretical perspectives are derived from theories that examine in detail how one or more of the theoretical constructs are linked to growth and/or performance.

This is one way of overcoming the lack of compatibility among the studies but still make use of their propositions and findings. These theoretical perspectives are not necessarily explicitly utilised in small business research. However, they are based upon fundamental research where the small business growth and performance literature resides, and that more thoroughly examines and formulates theoretical issues.

## **2.0= Theoretical perspectives=**

A researcher studying real life events will inevitably make certain assumptions about the nature of these events. These assumptions compose what is here called a *theoretical perspective*. The theoretical perspective delimits what is observed and perceived by the researcher. As MacIver (1942) puts it:

*Causal knowledge is always inferential, never immediate...The assertion of any relationship, no matter how simple or obvious, involves the appeal to reason, and its establishment is a scientific construction.*

The researcher must be aware of, and able to articulate his or her theoretical perspective. The assumptions may be explicitly stated. If not, the researcher must provide a logical and coherent presentation, so that these assumptions may be implicitly inferred.

To give an example: most economists assume that when business decisions are made, there are a number of different specific alternatives, each of which could lead to a specific outcome known to the individual making the decision. The decision maker will choose the alternative that gives him or her the greatest expected utility, which is most often the greatest profit. These assumptions may be appropriate in some situations, depending on the purpose and circumstances of the research. In most cases these assumptions are not explicitly stated, but any reader with a basic knowledge of economics will infer the assumptions from the context of the writing. This is not a theory. It is the assumption that an economist makes about how decisions are made, and an important aspect of the economist's theoretical perspective.



### *theoretical framework*

An excellent definition of what a theory is has been provided by Gartner (1989, p. 29):

*A theory gives a study a specific purpose and a logic. As Daft (1985) puts it, "Theory means explaining what the variables mean and why they are related to one another in organizations" (p. 195). Or as Kerlinger (1973) more formally defines it: A theory is a set of interrelated constructs (concepts), definitions, and propositions that present a systematic view of phenomena by specifying relations among variables, with the purpose of explaining and predicting the phenomena (p. 4). Two words should be emphasized in the Kerlinger definition: explaining and predicting. A theory explains by giving reasons for why specific variables influence, or are influenced by, other variables. A theory predicts by suggesting causality: that is, a theory indicates which variables influence other variables. A theory offers a model of the phenomenon as well as definitions of all the variables.*

A theoretical perspective is broader, less restrictive and on a higher level of abstraction than a theory. The focus is on general concepts and how they influence each other. It is "meta-theoretical" to use Astley & Van de Ven's (1983, p. 245) terminology. By conducting an analysis at this level it is possible to categorise a larger number of theories into a smaller number of theoretical perspectives.

The four theoretical perspectives outlined here draw on previous research in the small business growth and performance area, but even more on other theories that address resources, environment, motivation and strategy and their relation to performance and growth outcomes in insightful ways.

## **2.0= The resource based perspective=**

### *2.0.0 A general outline of the perspective*

The most salient characteristic of the resource based perspective is the focus on the firm's internal strengths. The resource based perspective is probably connected to the seminal work by Penrose (1959) more than any other. However, the perspective has experienced a revival during the

1990's in the strategic management literature (Baden-Fuller, 1995; Barney, 1991; Grant, 1991; Hamel & Prahalad, 1990; Miller & Shamsie, 1996). To a great extent, this has been a reaction to the analyses of the 1980's, where the focus was on the relationship between strategy and the external environment (Grant, 1991).

At the most basic level, the perspective describes the firm in terms of the resources that it integrates: *"Thus, a firm is more than an administrative unit; it is also a collection of resources the disposal of which between different uses and over time is determined by administrative decision"* (Penrose, 1959 p. 24). However, Penrose does not discuss the definition of resources in greater detail.

Following Penrose, classifications of the resources that the firm possesses have been made. Six major categories of resources have been suggested by Hofer & Schendel (1978): financial resources, technological resources, physical resources, human resources, reputation and organisational resources. Other researchers have used different categories (Barney, 1991; Grant, 1991) basically referring to the same types of resources. A wide array of attributes may be put into these categories. Often, the term resources is delimited to those attributes that enhance the firm's efficiency and effectiveness (Wernerfelt, 1984). Miller & Shamsie (1996) hold that resources must have some capacity to generate profits or prevent losses. A general availability of resources will neutralise their advantage to the firm. Hence, in order for a firm to gain high levels of performance and sustained competitive advantage, it needs to possess resources that are heterogeneous across firms and difficult to create, substitute or imitate.

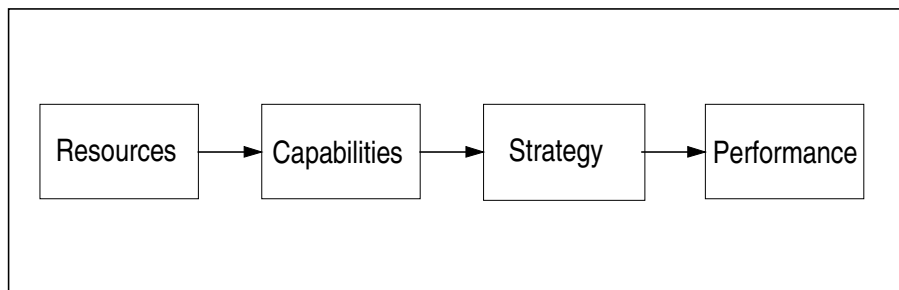
The resources can be used by the firm in many different ways and for different purposes. It is therefore important to differentiate the resources themselves from how they are organised, and for what purposes they are used. Penrose introduces the term services for their organisation, while Hamel & Prahalad (1990) refer to core competencies. In the present research the concept *capabilities* (Grant, 1991) is used to define how the resources are utilised by the firm:

*The capabilities of a firm is what it can do as a result of teams of resources working together. (p. 120)*

*theoretical framework*

Baden-Fuller (1995) disagrees with the main view of the resource based perspective. He claims that resources, as such, are tradable and thus transferable and imitable. Instead, capabilities are unique and the source of competitive advantage, which reinforces their importance.

In the resource based perspective, managers have to select an appropriate strategy in order to make the most effective use of the firm's resources and capabilities (Grant, 1991). The extent to which core resources and capabilities are identified and exploited in appropriate ways by the firm's strategy will influence its performance (cf. Figure 2.1).



**Figure 2.A. The resource based perspective.**

Penrose has taken the argument one step further, treating growth and performance as two conceptually different and causally linked constructs, and explicitly assessed the impact of performance on growth. In essence, Penrose's argument about the relationship between performance and growth is that managers generally try to maximise the profits of the firm<sup>3</sup>, which is a common assumption in most economic literature. Furthermore, she assumes that the managers, rather than the owners, are in control of the operations of the firm. Thus, it is possible for the managers to pay enough dividends only to keep the present owners from complaining and to attract additional capital if required. Managers' salaries and benefits are limited by what is perceived as being "politically correct". Even though salaries may be high they will only re-

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<sup>3</sup> It must be pointed out that Penrose does not imply that all managers want their firms to grow. She is well aware of the great number of people running firms for other reasons than profit and that a large share of all firms do not grow. Since then, this has been confirmed empirically again and again. It is an important consideration still ignored by many researchers.

flect a small proportion of total profits. The remaining profits, after dividends and management salaries are paid, are then reinvested into the firm, allowing the firm to obtain additional resources and thus grow further. Growth refers to the expansion of assets controlled by the firm. The growth rate is limited by the rate at which the firm can obtain enough managerial capacity to manage these new assets, often referred to as the "Penrose effect" (Marris, 1964). Although the link between profits and growth may be oversimplified in Penrose's argument, and derived from logical deduction rather than systematic empirical observation, no other resource based explanation has replaced it.

In the resource based perspective, the environment provides few restrictions on the growth of the firm. Increasing costs for resources and declining revenues for individual products may limit the expansion for those particular resources and products, but the firm is able to use other resources and it can create new markets. The environment does not limit the firm to a fixed set of growth opportunities. Rather, growth opportunities always exist to the extent that the firm has the resources to identify and exploit these.

### *2.0.0 The perspective's contribution to the present research context*

In the entrepreneurship literature, there is a tradition of focusing upon the individual; the entrepreneur. Although a resource based perspective is rarely explicit, it is evident that resource oriented variables are expected to contribute to growth and performance. The socio-demographic characteristics of the entrepreneur often provide the personal abilities which facilitate small firm growth and performance according to this literature<sup>4</sup> (Begley, 1995; Bird, 1993; Box, White & Barr, 1994; Chandler, 1996; Davidsson, 1989; Macrae, 1992; Miller & Toulouse, 1988). Some researchers in this tradition extend their studies beyond a single individual, incorporating the personal abilities of the management or founding *team* in their studies (Barkham, 1994; Brush

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<sup>4</sup> Bird (1993) presents an overview of research on demographic factors important to entrepreneurship, firm growth being one aspect, and an interesting and more detailed model of how demographic factors contribute to the capability of the entrepreneur, much along the same lines as here.

### *theoretical framework*

& Chaganti, 1997; Cragg & King, 1988; Doutriaux, 1992; Siegel, Siegel & MacMillan, 1993).

In addition, some studies complement the individual characteristics of the entrepreneur with strands of resources beyond the entrepreneur. Access to financial capital is one resource which is noted in some studies, together with resources of the entrepreneur (Cooper, Gimeno-Gascon & Woo, 1994; McGee, Dowling & Megginson, 1995).

Other researchers take an organisational focus, and are mainly concerned with resources not directly related to individuals such as the overall competency or capabilities of the firm (Chandler & Hanks, 1994a; Chaston & Mangles, 1997; Heeley, 1997; Smart & Conant, 1994), or availability of capital (Bamford, Dean & McDougall, 1997). Attempts have also been made to look beyond the individual firm, and include resources from the individual's or the organisation's network (Donckels & Lambrecht, 1994; 1997; Hansen, 1995; Harrison & Mason, 1997).

Some shortcomings of the entrepreneurship literature emerge when comparison is made with the resource based perspective outlined above. First, resources are usually not explicitly defined and the definitions from the strategic management literature are not referred to (Brush, Greene, Hart & Edelman, 1997). That resources exist and are important is obvious, but whether studies refer to specific strands of resources or to all the resources of the entrepreneur or the firm is not made clear.

Second, the distinction between variables referring to the resources of the entrepreneur and variables referring to other dimensions of characteristics of the entrepreneur (e.g. values, attitudes and personality traits) is often lacking in models showing how characteristics of the individual influence growth and performance. It is likely that those variables related to resources, and those variables relating to motivation, influence growth and performance in different ways (cf. Keats & Bracker, 1988). This distinction is important in the resource based perspective.

In psychology research, in which individuals are the subject of analysis, the distinction between the individual's own resources (i.e. their personal ability) and their motivation, is important (see further Figure 2.4). The confusion of variables relating to resources and other characteristics is likely to be an expression for lack of conceptualisation. Most often wide arrays of low-level variables are analysed without clear definitions of the theoretical constructs they accompany.

Finally, and probably more important: the modelling of how resources contribute to the capability, strategy and performance of the firm is usually fairly simplistic in the entrepreneurship literature. If, for example, the education and previous experience of the entrepreneur is thought to be important resources which facilitate growth, how do those factors affect growth? How do they affect the capabilities of the firm? Do they have any influence on the management style? A possible explanation to the lack of studies on how resources can contribute to the capability, strategy and performance of the firm may be the extensive use of cross sectional data in which it is hard to establish these relationships.

When including specific resources in studies of small firm growth and performance they must be clearly defined, and a rationale for why they are unique and difficult to imitate must be given. Research into the resource based perspective provides guidelines as to how this can be done.

A recent exception from the above criticism is the work by Cooper et al. (1994). In this, resources are clearly defined and categorised. The way in which the resources contribute to the capability of the firm is also explained and justified in an excellent way. This can serve as one illustration that it is indeed possible to develop the resource based perspective within entrepreneurship research.

Recently, the resource based view as defined in the strategic management literature has started to probe its way into the entrepreneurship field (Brush & Chaganti, 1997; Brush et al., 1997; Chandler & Hanks, 1994b; Greene & Brown, 1997) and it has now been recognised that the link between resources, strategy and performance has not been the subject of enough consideration in entrepreneurship literature (Brush & Chaganti, 1997). The resource based perspective does seem to have relevance to the entrepreneurship context. The emphasis on "new combinations" in the present definition of entrepreneurship - drawing on Schumpeter (1934) - could be compared with unique resources, heterogeneous across firms.

The major contribution of the resource based perspective is that it can help us to understand the importance of the internal resources of the firm for its capacity to achieve high performance, and how small firms can utilise different resources in their strategies. However, the resource based perspective alone is probably not sufficient to explain the performance and growth of small firms. No firm is detached from or

### *theoretical framework*

outside its environment. It is probably particularly important to take environmental influences into consideration when studying small firms since they, because of their small size, are more influenced by their environment (Chandler & Hanks, 1994b). When environmental dimensions are added to the resource based models, much is gained:

*The competitive value of resources can be enhanced or eliminated by changes in technology, competitor behavior, or buyer needs which an inward focus on resources will overlook. (Porter, 1991, p. 108)*

## **2.0= The life-cycle perspective=**

### *2.0.0 A general outline of the perspective*

Life-cycle models have been accused of having a lack of conceptualisation and theoretical foundation (O'Farrell & Hitchens, 1988). However, it is possible to describe life-cycle studies of firm growth as a specific application of the more general configuration approach. Hence, to understand the assumptions of life-cycle models it may be helpful to start by assessing the concept of configurations.

In contingency theory, the concept of configuration has been used to analyse relationships between environment, structure, and strategy (e.g. Burns & Stalker, 1961; Miller, 1990; Miller & Friesen, 1984; Mintzberg, 1979). It is claimed that elements of structure, strategy, and environment are aligned with each other and appear in a limited number of configurations (see Miller, 1990 for an extensive discussion of configuration theory and a review of conceptual and empirical research). Thus, in a large random sample of firms, a smaller number of configurations will appear, which makes it possible to establish a taxonomy of configurations.

Researchers have proposed a number of causal directions of the configurations. Some argue that a particular environment will influence the structure and strategy of the firm, whereas others have their starting point in the strategy of the firm, suggesting that based on a strategy, the firm chooses the appropriate structure and environment. Authors have also claimed that structure is the cause, and that the other dimensions of the configuration are effects of structure.

According to this view, few mismatches between strategy, structure and environment can be expected. Competitive business conditions in the market place force configurations to be optimal and firms must adjust their configurations to survive; firms that do not will be selected out. Van de Ven & Drazin (1985) refer to this deterministic approach as "the selection approach"<sup>5</sup>.

Miller (1990) suggests that the dimensions of the configuration affect each other and reinforce each other in a circular manner. This creates inertia and resistance to change. Small changes in one of the dimensions of the configuration will be reversed due to the circular causality. To give the firm a new direction, quantum changes in multiple dimensions of the configuration are needed. This is a central theme in the life-cycle perspective, which will be further elaborated below.

Turning now to the application of configuration theory in life-cycle models, it is quite appealing to describe the development of an organisation by using a metaphor from biological life. Gestation, birth, growth, and death are biological terms that appear regularly in studies of organisational development. Few streams of research have brought the biological metaphor further than the life-cycle literature. Here it is suggested that like biological beings, firms grow through a number of predictable life-cycle stages:

*Organizations have lifecycles just like living organisms do; they go through the normal struggles and difficulties accompanying each stage of the Organizational Lifecycle and are faced with the transitional problems moving to the next phase of development. (Adizes, 1989, p. xiii)*

Quite a number of life-cycle models have been developed over the years, and reviewers have divided them into subcategories depending on their characteristics (e.g. Hofer & Charan, 1984). One review found that some researchers talk of life-cycle stages, whilst others use terms such as growth stages or development stages (Hanks, Watson, Jansen & Chandler, 1993). However, no efforts were found to distinguish the terms, and many used the terms interchangeably. For our purposes, it is sufficient to assess the life-cycle models as a group, since their conceptual similarities are greater than their differences.

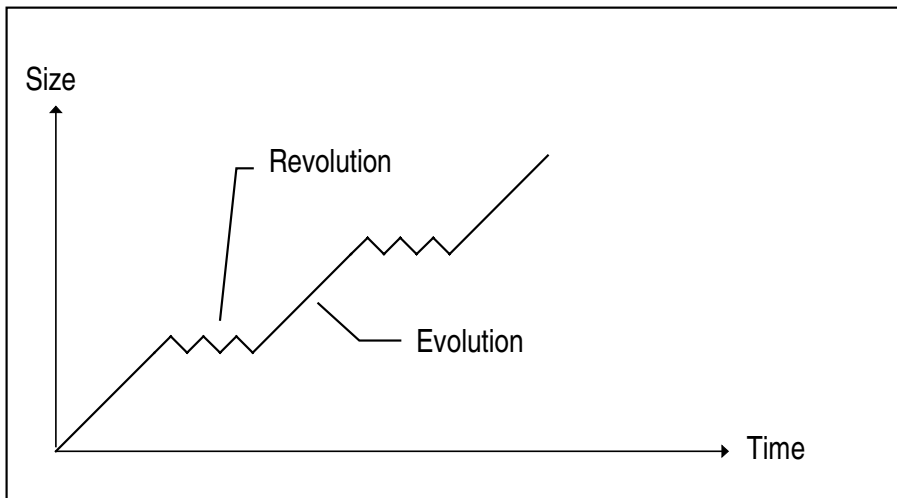
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<sup>5</sup> For an excellent discussion of selection versus adaptation and determinism versus voluntarism see Astley & Van de Ven (1983, pp 253-254). =



*theoretical framework*

In the life-cycle perspective, the firm grows in distinct evolutionary phases, each phase followed by a revolutionary transformation into the next phase (Figure 2.2). This gives the growth curve of the firm a step-wise appearance with periods of growth interrupted by volatile crises phases, where the firm is transformed into the next growth phase. The logic behind this discontinuous growth pattern is that in each growth phase, the firm needs to adopt a specific configuration. Usually, the configuration refers to relationships between size, age, strategy, organisation structure and environment, as mentioned above. As the firm grows within a particular growth stage, the configuration becomes inappropriate and the firm again needs to transform. After the transformation, the firm enters the next configuration and growth stage, where the process is repeated. The firm is particularly vulnerable during its transformations, where it faces the risk of failure unless the transformation is successfully completed (Churchill & Lewis, 1983; Greiner, 1972)



**Figure 2.B. The life-cycle perspective.**

Growth itself, or more accurately, the larger size that a growing firm reaches, is the contingency that puts the firm's configuration out of balance, and triggers the transformation of the firm into a new configuration:

*An organization will face significant problems if its internal development is too far out of step with its size. The greater the degree of incongruity between an organization's size and the development of its operational systems, the greater the probability that the firm will experience the onset of growing pains. (Flamholtz, 1986, pp. 44-45)*

As this quotation illustrates, life-cycle models are mainly concerned with the need for change that growth imposes on the firm, and how this growth affects other characteristics of the firm such as its organisation structure and strategy. Growth creates organisational problems within the firm that need to be resolved (Fombrun & Wally, 1989).

The stages and transformation that appear most frequently in the empirical literature are probably when a founding entrepreneur manages a small firm in an idiosyncratic and centralised way, making virtually all decisions by him- or herself, without any formal organisation. As the firm grows and becomes larger it will experience a growth crisis since the structure and strategy is no longer adequate for the larger size. There is a need for professional management, a formal organisation and decentralisation. To survive, and to continue growing, the firm must be transformed into another configuration.

### *2.0.0 The perspective's contribution to the present research context*

Researchers within the life-cycle perspective have realised that the character of a small firm is fundamentally different from that of a large firm, and that different problems must be addressed, resulting in the need for different management skills, priorities and structural configurations. Empirical studies have looked into managerial issues and the problems of firms of different sizes and growth rates (Flamholtz, 1986; Fombrun & Wally, 1989; Hanks et al., 1993; Kazanjian & Drazin, 1989; 1990). These studies find that small firms are not just scaled down versions of large firms, which is in itself a valuable contribution to our knowledge of small firms.

The life-cycle perspective has received criticism (Davidsson, 1989; Penrose, 1959; Storey, 1994b). The main criticism is that the models used are deterministic. The determinism of life-cycle models is twofold. First, it is assumed that all firms pass through all the stages of the life-

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cycle. However, a large proportion of firms cease to trade within their first few years, and die after passing through only one or two stages (depending on the definition of stages in the particular model). Many firms that survive never grow beyond a very small size, nor do they have any ambition to grow and become large. Thus, they remain in an early stage. Second, it is assumed that for each stage of development, there is an optimal configuration. Critics argue that at a given stage, equally successful firms can have different configurations. This debate remains unresolved. More empirical research is needed to validate how the configurations develop as firms grow.

The criticism against determinism is relevant and should be seriously considered. Researchers in the life-cycle perspective must take into account the fact that growth is not an effect of a natural law, but dependent on the will, decision, and action of individuals. When delimited to empirical studies of the firms that actually grow, the approach remains valid, and therefore the first type of criticism against determinism could be overcome.

The second criticism against determinism may be dealt with by realising that different configurations are possible at each stage of development, and that more than one development trajectory is possible. Recent development in the strategy-structure-performance literature could be used as guidelines (Galunic & Eisenhardt, 1994):

*[T]he new model we envisage is one that takes into account configuration patterns and equifinality, multiple contingencies and fits, new and realistic concepts of strategy, structure and performance, and the process of changing fits and boundaries. (p. 251)*

Hence, if life-cycle models are to be used in research on small firm growth and performance, different development patterns and end states need to be recognised. If the main interest is to compare small firms that grow to those that do not grow, this perspective may be less well suited since life-cycle models are applicable only to the small number of firms that actually do grow significantly, and pass through different development phases.

## 2.0= The strategic adaptation perspective=

### 2.0.0 A general outline of the perspective

Population ecology, industrial economics and strategy researchers all emphasise that the fit between environmental demands and strategy have performance implications. Different environments require different strategies to achieve high performance (Tushman & Romanelli, 1985). While the focus of population ecologists and industrial economists is on populations of firms (whilst allowing limited strategic choice for managers or small performance effects of strategic choices), strategists focus on individual firms. As this dissertation is concerned with individual firms, this section is delimited to the propositions put forward by strategists concerning the relationships between environment, strategy and performance.

Strategic choice theorists maintain that managers have the freedom to choose between different strategic orientations under the same environmental contingencies (Child, 1972), i.e. strategy may depend on, but is not completely determined by, environment. Organisations may converge on a strategic orientation which may or may not be consistent with environmental requirements. Under conditions where an organisation fails to achieve consistency with respect to the overall strategic orientation-environment fit, low performance will be the result. Hence, managers in different firms may *choose different courses of action* and those that choose an appropriate strategy that is in line with the environment will perform better than those who choose a less than optimal strategy. Firms which do not achieve consistence between strategic orientation and environment will be outperformed and eventually fail (Tushman & Romanelli, 1985). In other words, in order for firms to achieve high performance, they need to adapt their strategies to their environment.

The need for firms to adapt their strategies to environmental conditions in order to achieve high performance is the general assumption underpinning the strategic adaptation perspective<sup>6</sup>. When defining ad-

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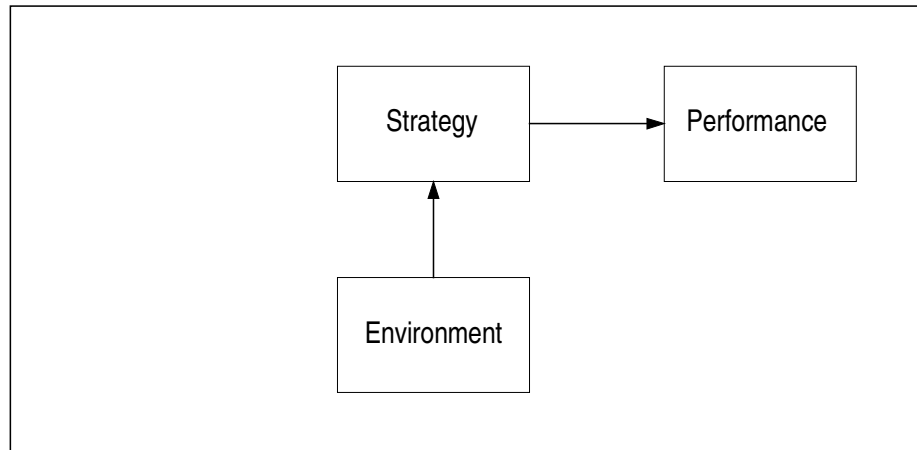
<sup>6</sup> The term "strategic adaptation" was introduced to the entrepreneurship field by Low & MacMillan (1988) and Tsai, MacMillan & Low (1991). Numerous other terms have been suggested for the thesis that organisations adapt to environment.=

*theoretical framework*

aptation, Tushman & Romanelli (1985) state that adaptation is a general term describing a period of gradual, long continued and incremental change in response to environmental conditions.

Miller & Friesen (1978) describe the adaptive behaviour of a firm using a biological metaphor. Just as organisms respond to the stimuli they receive, firms adapt through their strategy making to the stimuli they get from the environment. If organisms are able to adapt well to stimuli they will be healthy; if firms are able to select an appropriate strategy, they will be successful. This implies that in a particular environment some strategies will outperform others, i.e. some strategies are better suited to a specific environment than others, see Figure 2.3.

Changes in the conditions of the environment create both new opportunities and threats to firms. These changes may alter the congruence between the firm's strategy and environment and pressure on the firm to select a different strategic orientation. However, organisational responses to environment can vary; including not responding at all. Threats and opportunities in the environment can lead to responses with either an internal or external target (Dutton & Keats, 1987). Internal targets refer to intraorganisational responses such as a new strategic orientation, or new organisational structure, whereas external targets refer to intraorganisational responses. These responses could involve mergers as well as actions taken to influence politicians to change decisions. Internal responses are easier to implement since management has better access to the resources needed for these. Therefore, internal responses are likely to be more common.



**Figure 2.C. Performance under the strategic adaptation perspective.**

The magnitude of the strategic response to the environment may also vary from small to large. Responses involving major strategic reorientations are obviously more costly and difficult to implement than changes of smaller degree (Miller & Friesen, 1984). Hence, it could be expected that firms in most cases respond to the environment by strategic changes that have an internal target and are small in magnitude.

Forces such as group commitment to present strategic orientation and structural complexity, contribute to creating organisational inertia and reluctance to change (Tushman & Romanelli, 1985). Due to this inertia, environmental pressures for strategic change may build up during long periods of time, until the firm's strategy is far out of line with its environment. This, in turn, will lead to change that is fundamental in character when it finally occurs (Miller & Friesen, 1982). Hence, fundamental change in the direction of activities is rare, and occurs only through a discontinuous interruption of on-going activities. Since structural complexity follows size, inertia is likely to be greater in large firms, whereas small firms are able to be more flexible in their adaptation. Therefore, fundamental changes are more likely to be common in small firms than in large firms.

Consequently, we can expect organisations to adapt to the environment through longer periods of convergence, punctuated by shorter periods of reorientation, which in turn lead to new periods of convergence (Miller & Friesen, 1984; Tushman & Romanelli, 1985). The reorienta-

### *theoretical framework*

tion frequency will depend on the characteristics of the environment. If the environment changes at a high rate, organisational reorientations are likely to be more frequent than if the environment is stable.

The pattern of convergence and reorientation chosen by the firm has performance implications. High-performing firms are likely to reorient according to the environment, whereas low-performing firms reorient either too often, or too seldom.

Some suggestions have been made concerning suitable strategic choices under different environmental conditions (Dess & Beard, 1984; Miller, 1987b; Zahra, 1991). *Dynamic environments* are characterised by instability and continuous change. Windows of opportunity arise from social, political, technological and economic changes. Development of new products or new marketing, production or administrative practices are suitable strategies in response to dynamic environments. Through implementing these innovative strategies firms may be more successful in taking advantage of emerging trends. Such innovative strategies may not be equally well suited to stable environments with high predictability and low rates of change.

A *hostile environment* creates threats to the firm, either through increased rivalry or decreased demand for the firm's products. To cope with hostility, firms may choose to diversify into new fields, thereby avoiding direct competition. Direct competition can also be avoided by building customer loyalty through advertising or by tailoring products to the least competitive market segments. Thus, a marketing differentiation strategy may be best suited in hostile environments.

*Environmental heterogeneity* indicates that there are several different segments of the market with varied characteristics and needs that are being served by the firm. Hence, the firm perceives a heterogeneous environment as complex, since they serve many different wants and needs. This requires the firm to supply the market with many different outputs. Therefore, if environments are heterogeneous, a broad breadth strategy may be the preferred choice over a focused strategy.

#### *2.0.0 The perspective's contribution to the present research context*

It is important to take environmental influences into consideration in studies of small firm growth and performance. Small size implies vulner-

ability to environmental influences, illustrated by the fact that the smaller the business, the more likely it is to go out of business in case of a recession (Davidsson et al., 1994; Storey, 1994b). Environment is however not only a threat but can also provide the small firm with opportunities (Davidsson, 1989; Stevenson, 1984; Stevenson & Gumpert, 1991; Stevenson & Jarillo, 1986; 1990).

Recently, researchers studying small firm growth and performance have introduced environmental dimensions into their analyses. In many studies, the environmental influence of location or industry on performance is assessed, the assumption being that there are inherent performance advantages for small firms in particular industries or locations (Barkham, 1994; Begley, 1995; Cooper et al., 1994; McDougall, Covin, Robinson & Herron, 1994; Roper, 1997). In these cases, environment is analysed at aggregate level, i.e. environment is assumed to have the same effect on all firms in a particular industry or location. This agrees with a regional economics or industrial economies conception of performance influences.

Other researchers, however, examine the influence environment may have on the performance and growth of *individual firms*. The characteristics of the small firm's task environment or technical environment (Scott, 1992) such as munificence, turbulence, heterogeneity, hostility, dynamics, customer structure, and competition has been frequently researched (Bamford et al., 1997; Covin & Covin, 1990; Covin & Slevin, 1989; Kolvereid, 1992; Merz, Weber & Laetz, 1994; Pelham & Wilson, 1996; Tsai et al., 1991; Wijewardena & Cooray, 1995).

In this review, 30 studies deal with the influence from environment on growth and/or performance. No less than 20 of these include dimensions of strategy as well as environment in their analyses (cf. Appendix 1). This indicates that many researchers agree that different strategies may be pursued under similar environmental contingencies; they allow for strategic choice. The most common approach is to assume that environment and strategy have independent effects on growth and performance. That is, environment influences growth/performance in the same way and to the same extent regardless of the strategy selected by the small firm. It may be questioned whether this is a valid assumption or not. Probably, the need to adapt strategy to environment is more accentuated in small rather than large firms (Jennings & Beaver, 1997).



### *theoretical framework*

My previous definition of entrepreneurship, drawing heavily on Stevenson's research (Stevenson, 1984; Stevenson & Gumpert, 1991), considers taking advantage of opportunity to be a central characteristic of entrepreneurship. With such a conception of entrepreneurship, the environment - and the firm's relationship to it - becomes essential. It is the environment and its changes regarding technology, consumer preferences, social values etc., that create the opportunities that entrepreneurial firms pursue. To pursue these opportunities, firms must have the ability to perceive environmental changes as opportunities and be able to take advantage of them. Entrepreneurial firms that take advantage of opportunity are likely to perform better and grow more than the non-entrepreneurial firms that refrain from doing so (Davidsson, 1989; Stevenson & Gumpert, 1991). This process of taking advantage of opportunities is driven by the firm's strategic orientation (Stevenson, 1984; Stevenson & Gumpert, 1991).

Thus, researchers interested in small firm growth and performance, and in particular those with an entrepreneurship focus, should recognise that environment may have a crucial, but not independent, effect on performance. Instead, the firm adapts its strategy to the threats and opportunities of the environment. Depending on how successful this adaptation process is, small firms will exhibit different levels of growth and performance. Strategic adaptation states that environment affects strategy in accordance with the model in Figure 2.3.

The discussions on environment and its relation to strategy and performance developed under the strategic adaptation perspective could be a major contribution to research on small firm performance and growth, as well as in entrepreneurship research in general. According to this perspective, the firm and its environment are not two separate entities independent of each other. Instead, by selecting an appropriate strategy suitable to the firm's environment, small firms can perform well and grow.

Research in the area also needs to recognise the fact that different strategic responses to environment threats and opportunities are possible; and that particular strategies are not inherently better. Rather, the success of any particular strategy is dependent on the environment of the small firm.

The strategic adaptation perspective provides an interesting alternative to the resource based view since the focus is on the firm's relation to

its environment rather than on internal processes. However, strategic adaptation also provides an alternative to other streams of research that have a clear environmental focus. According to the population ecology view, the inertia of firms is sometimes too great for them to be able to adapt to new environmental conditions. As a result, environment has a direct effect on performance regardless of the strategy selected by the firm (or aggregates of firms) (Aldrich, 1979). The problem with such a deterministic view of firm performance is that it disregards the influence a small firm and its manager may have on the destiny of the firm.

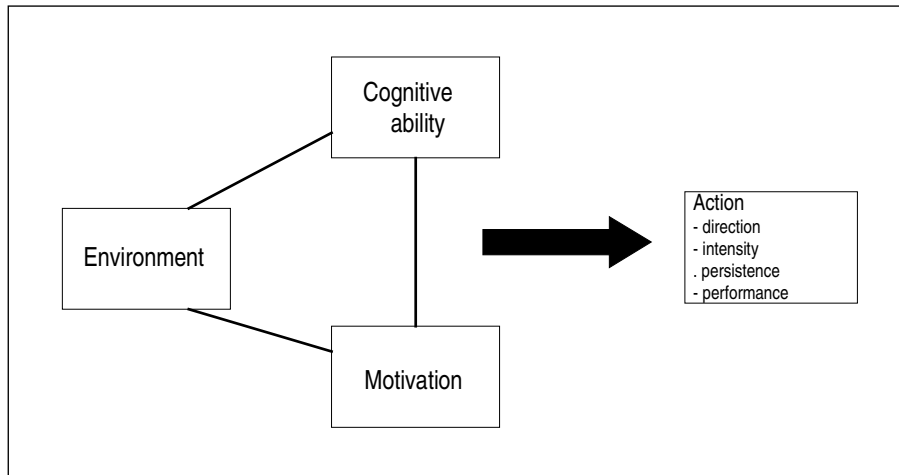
## **2.0= The motivation perspective=**

### *2.0.0 A general outline of the perspective<sup>7</sup>*

In psychological theory, motivation is - together with cognitive ability and environment - important in determining both the direction, persistence and intensity of action as well as the level of performance (Figure 2.4). The underlying logic in the motivation perspective is that someone's choice of work-tasks and the time and energy devoted to these work-tasks (e.g. growing a firm), is dependent on the individual's motivation to perform different tasks.

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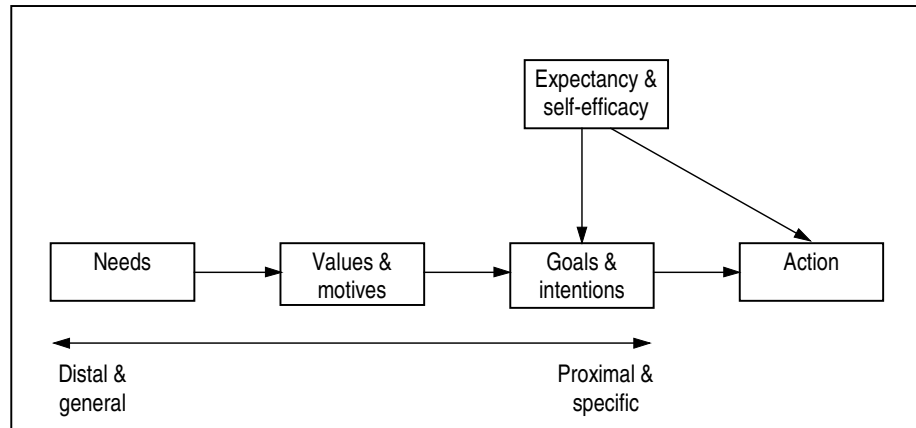
<sup>7</sup> The outline of this perspective is based largely on the attempts to clarify the relationships among different theories on work motivation conducted by Locke (Locke, 1991; Locke & Henne, 1986).=



**Figure 2.D. The influence of motivation on action (Kanfer & Ackerman, 1989; McClelland, 1987).**

However, motivation should not be viewed as only one single theory. Rather, there are many different theories and concepts of work motivation, the main differences being that they focus on different stages of the motivation process (Locke & Henne, 1986), as illustrated in Figure 2.5 below. It should be noted that the figure is a conceptual model provided mainly as a guide to classify previous research. In empirical research it may be quite difficult to separate the different stages in the motivational process.

Some theories are mainly concerned with distal processes such as needs, whereas others focus on processes more directly influencing behaviour. Distal processes are more stable, general and farther removed from actual and specific behaviour, whereas proximal processes are more closely connected to specific actions, but have a greater tendency to change over time.



**Figure 2.E. Model of motivation (Locke, 1991; Locke & Henne, 1986).**

Turning now to the different theories of work motivation, *Hackman-Oldman job characteristics theory* maintains that task characteristics which satisfy the individual's needs will lead to job satisfaction, as well as to internalised work motivation that will affect their work performance. The variety, task identity, task significance, autonomy and feedback of the work-tasks will result in an experience of satisfaction and responsibility as well as knowledge of results. These, in turn, may produce satisfaction and motivation to do high quality work leading to increased task performance (Hackman & Oldham, 1980).

In *Deci's intrinsic motivation theory*, the time spent on a particular work-task during periods of free choice reflects the individual's intrinsic motivation. The stronger the intrinsic motivation, the more time will be spent on the work-task. By enhancing the individual's sense of self-determination or stimulating the sense of expertise and competence by positive feed-back, intrinsic motivation can be stimulated which will increase performance (Deci & Ryan, 1985).

In *equity theory*, the input a person gives to certain work-tasks and the output he or she perceives to receive in the form of, for instance, money or intrinsic rewards must be balanced. Particularly important is that the individual feels that the ratio between input and output is not below the ratio of others (which would imply a state of inequity). If the

### *theoretical framework*

individual perceives an inequity, a number of actions may be taken which effect work performance (Adams, 1965).

McClelland's (1961) *achievement motivation theory*<sup>8</sup> is claimed to be particularly suitable for the entrepreneurial domain (Locke, 1991; Miner, 1980). According to this theory, people with a high need for achievement (nAch), value particular work-task situations and perform well in these. High need for achievement should make people particularly interested in, and able to perform well as entrepreneurs. According to this theory, running a business requires people to take moderate risks, assume personal responsibility for their own performance, pay close attention to feedback in terms of costs and profits, and find new or innovative ways to make a new product or provide a new service. These are the characteristics that are claimed to belong more to a person high than low on need for achievement.

The *role motivation theory* (Miner Sentence Completion Scale - Form H) and *task motivation theory* (Miner Sentence Completion Scale - Form T) developed by Miner (Miner, 1980; 1990; Miner, Smith & Bracker, 1989; 1992; 1994) argue that there is a specific motivational system or complex of values associated with success in different organisational settings. According to the role motivation theory, attitudes towards authority, competition, assertiveness, imposing wishes on others, standing out from the group and routine administrative duties are important in hierarchical organisations. Those showing more positive attitudes towards these dimensions are predicted to have a higher chance of success in hierarchical organisations than those who show more negative attitudes.

The dimensions of Miner's task motivation theory is derived from McClelland's achievement motivation theory. It is argued that entrepreneurs are in a task system rather than a role system where the work-tasks themselves rather than higher levels of management determine the work-tasks of an entrepreneur. Attitudes towards self-achievement, avoiding risks, seeking feedback, personal innovation, and orientation to the future are important for entrepreneurs. Entrepreneurs who have more positive attitudes towards these dimensions are more likely to succeed.

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<sup>8</sup> Locke & Henne (1986) refers to this as a value theory rather than a need theory.=

*Expectancy theory* purports to answer the question of why individuals choose certain actions over others. The focus is on explaining the process by which individuals choose one particular course of action from many possible alternatives. The theory argues that a person's motivation to perform a given act will depend on the anticipated satisfaction associated with each possible outcome of the act, the instrumentality of the act for achieving each outcome and the expectancy (i.e. subjective belief) that a given level of effort will lead to successful performance of the act. The totality of these three dimensions determines the motivational strength of an individual to perform a particular act. The act that receives the highest motivational strength is the one that the person will choose to pursue (Vroom, 1964).

*Goal setting theory* is mainly concerned with the relationship between goals and the performance of work-tasks. In goal setting theory, goals are claimed to influence task performance by directing attention and action, mobilising effort to the task, increasing persistence, and motivating the search for appropriate performance strategies. Feedback on the results of the work-tasks is necessary in order for individuals to relate performance to their goals. Feedback indicating that the individual is lagging behind the goal will motivate the individual to increase his or her performance. Goal commitment is also necessary for goals to affect performance (Locke & Henne, 1986).

*Self-efficacy theory*, finally, is concerned with the judgement by individuals of "how well one can execute courses of action required to deal with prospective situations" (Bandura, 1982, p. 122). Hence, it addresses an individual's belief in his or her capacity to perform a specific work-task. If a person's self-efficacy regarding a specific work-task is high, this person is more likely to perform the task, and more likely to perform it well.

These work motivation theories differ from each other in two principal aspects that are important for their applicability in the present research. The first is the specificity of variables used for explaining behaviour, which range from general needs in Hackman-Oldman job characteristics theory, to specific goals in goal setting theory. The second relates to the scope of what the theory purports to explain, i.e. whether one, many, or all of the direction, intensity, persistence or performance aspects of action are explained. Since the theories differ in specificity and scope, their applicability varies depending on the context in which

### *theoretical framework*

they are applied. In the complex entrepreneurship context, theories that are very specific and have a narrow scope are likely to be less suitable than they may be in an assembly-line context. The applicability of the different theories presented here is elaborated below.

#### *2.0.0 The perspective's contribution to the present research context*

In most economic literature, the economic motive is taken for granted; people act in ways to maximise their profits. Psychologists, concerned with all aspects of human behaviour, have a more diverse view of the motives underlying economic behaviour. It is not surprising that psychologists have gained increased interest in the study of small firm growth/performance and entrepreneurship. Penrose sent them an invitation:

*All the evidence we have indicates that the growth of a firm is connected with attempts of a particular group of human beings to do something; nothing is gained and much is lost if this fact is not explicitly recognised...Enterprise, or "entrepreneurship" as it is sometimes called, is a slippery concept, not easy to work into formal economic analysis, because it is so closely associated with the temperament or personal qualities of individuals. This extremely personal aspect of the growth of individual firms has undoubtedly been one of the obstacles in the way of the development of a general theory of the growth of the firm...so long as a firm is dominated by men who are not ambitious always to make profits it is unlikely that the firm will grow very large...But as soon as such factors as the "temperament" of the entrepreneur – the strictly personal characteristics affecting his judgement – are admitted into the picture it makes little difference whether we assume that he is in search of profits or has a multiplicity of motives for action: in both cases economics must give way to psychology. (Penrose, 1959, pp. 2, 33, 35 and 185)*

Needless to say, the invitation to use a psychological approach to the study of entrepreneurship in general, as well as small firm growth and performance, was accepted.

As Penrose and others have pointed out, entrepreneurs may have other ambitions with their firms than maximising profits and/or growth (Davidsson, 1989; Delmar, 1996a; Gundry & Welsch, 1997; Kolvereid,

1992; Storey, 1994b). Moreover, the motivation for an entrepreneur to grow his or her firm is not solely based on financial expectations. Other expectations have been shown to have larger influence on growth motivation (Wiklund, Davidsson, Delmar & Aronsson, 1997).

This suggests that motivational differences may be an explanation as to why there are such large differences in small firm outcomes. The few studies that have researched the link between motivation on the one hand, and small firm growth or performance on the other, have found that motivation may be an important explanation (Kolvereid & Bullvåg, 1996; Miner, 1990; Miner et al., 1989; Mok & van den Tillaart, 1987; Smith & Miner, 1984). Thus, omitting motivation in the present study could be a severe limitation.

To address the applicability of the motivation theories presented in the previous sub-section, their scope is assessed. The entrepreneurial context can be characterised by high complexity and uncertainty involving fuzzy tasks (Campbell, 1988). The entrepreneur is likely to perform a variety of vaguely defined work-tasks. In such a context, motivation theories that address *direction* of action seem more appropriate than those solely aimed at explaining intensity, persistence and performance<sup>9</sup>. Hence, Hackman-Oldham job characteristics theory, Deci's intrinsic motivation theory and equity theory seem less well suited for research in the entrepreneurship area.

Turning to the specificity of the theories, Locke & Henne (1986) hold that specific theories focusing on proximal processes are better at predicting work-task performance and job behaviour than the more general and distal processes, hence the prior are regarded as more valid. Goal theory, self-efficacy theory and role motivation theory<sup>10</sup> are given the highest ratings of validity by Locke and Henne. However, goal theory and self-efficacy theory are specific with regards to work-tasks. Hence, they are probably well suited for studies of specific tasks, but less applicable in more general studies of entrepreneurship (Shaver & Scott, 1991). This may be illustrated by Brown's (1996) study that uses Bandura's self-efficacy theory (and finds support for it) which is delimited to the specific study of entrepreneurs' fund raising self-efficacy.

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<sup>9</sup> The "fuzzy task" characteristics of the entrepreneurial role is also the reason for abolishing personality trait theories from the entrepreneurship field (cf. Wiklund et al., 1997)=

<sup>10</sup> Miner's task motivation theory was not included in the review. Due to the logic behind Locke's rating, it would most likely get the same rating as his role motivation theory.=



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Miner's task motivation theory has been specifically developed for the study of entrepreneurs, and McClelland's achievement motivation theory is argued to be particularly suitable for the entrepreneurship domain (Locke & Henne, 1986; Miner, 1980). Hence, it is hardly surprising that these motivation theories, or at least concepts from the theories, are commonly used in the field (Barkham, 1994; Begley, 1995; Box et al., 1994; Davidsson, 1989; Kolvereid, 1992; Miner et al., 1989; Perry, Meredith & Cunningham, 1988; Smith & Miner, 1984). However, in this research, need for achievement and other concepts developed by McClelland are often referred to as personality traits rather than needs or values. This is not necessarily a problem, since personality traits just like needs and values refer to characteristics of the individual that are distal to specific behaviour and relatively stable over time.

When examining the research related to McClelland's achievement motivation theory (i.e. the research that uses need for achievement to explain small firm growth and performance), it is evident that not a single study used one of the eight established measurement scales identified by Johnson (1990). Rather, in most cases original scales were developed. Hence, the results obtained from these studies may not be particularly valid. On the other hand, measurement of the construct is considered to be a general problem, and there is little agreement on a suitable measurement instrument (Locke & Henne, 1986). In consequence, it may be advisable not to use the theory until a valid instrument is developed. Another shortcoming of McClelland's achievement motivation theory is that it purports to explain behaviour and performance based on a single value rather than a complex of values, which is likely to reduce the explanatory ability of the theory (Locke & Henne, 1986). This stands in sharp contrast to Miner's task motivation theory which utilises a complex of values, and therefore is considered more valid and better able to explain behaviour in the entrepreneurship context (Locke & Henne, 1986).

In light of the above, it appears that studies aimed at understanding and explaining specific behaviour should rely on goal theory or self-efficacy theory while the role of motivation in complex entrepreneurial situations is better explained by Miner's task motivation theory.

Some shortcomings in previous studies concerning the link between motivation and firm outcomes have been suggested elsewhere. A review of studies in the entrepreneurial field that specifically use locus of con-

trol to explain small firm performance, suggests that the reason why small business managers with an internal locus of control perform better is still poorly understood (Boone, de Brabander & van Witteloostuijn, 1996). The reason for this, it is said, is that the mediating mechanisms between psychological characteristics and performance are not studied. It is further argued that the main mediating mechanism is strategic choice. It is through strategic choices that locus of control affects performance. In a similar vein, Johnson (1993) argues that the link between psychological "input", and performance "output", is lacking in entrepreneurship research.

To conclude: motivation helps us understand why individuals act as they do. The primary contribution of the motivation perspective is that it helps us to obtain insights into the reasons why some small business managers take certain actions (e.g. pursue growth) whilst others do not. In publicly quoted companies, the owners elect a board that employs a CEO. There is a pressure from the owners on the firm to maximise profits. In a small, owner-managed business on the other hand, the owner-manager may have very different goals, as well as the discretion to take actions to achieve these goals. Thus, it would be a major drawback if motivation was excluded from studies of small firm growth and performance. However, when studying motivation it is important to recognise that different, not equally valid, theories exist and that their applicability is dependent on the complexity of the situations in which they are utilised. In the complex case of entrepreneurship, Miner's role motivation theory appears most relevant. In order for research to make progress, it is important to utilise the theories most likely to be applicable in the situations studied.

Furthermore, researchers need to recognise that behaviour intermediaries between motivation and performance. Motivation does not affect performance unless action is taken. Strategic choice provides such a connection between motivation and performance (Boone et al., 1996).

## **2.0= Integrating the perspectives=**

Is it possible, or even desirable, to integrate some or all of the perspectives covered above? It is evident from the review in Appendix 1 that many studies use a wide range of different types of variables, related to two or more of the constructs. Thus, different perspectives are already

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integrated in the empirical research. However, the conceptual meaning and concordance of specific variables is rarely elaborated.

As suggested by Gartner, Bird & Starr (1992), there is no need for the development of new theories concerning research on organisational emergence. Instead, existing theories on organisations can be used. The same probably holds for researchers who theorise on firm growth and performance. As the review of theoretical perspectives illustrates, suitable theories exist, and it is possible to use insights from different theoretical streams and integrate them. The important issue is to understand their basic assumptions, their limitations, and the compatibility of different theories, in order to combine them.

Let us take a closer look at the four theoretical perspectives outlined above to see if it is possible to integrate them. The life-cycle perspective is different from all the others. In this perspective the main concern is what growth brings to an organisation. In other words, growth is the starting point; the cause; and the consequences that growth brings to the firm is the major concern. The three remaining perspectives, on the other hand, are concerned with seeking explanations as to why firms grow and perform well, i.e. the interest is on what brings growth and performance to the organisation. Therefore, the life-cycle perspective is largely incompatible with the other perspectives and cannot be integrated with them in a model where growth/performance is the dependent variable.

It does appear possible to integrate the strategic adaptation, and the resource based perspectives. According to Baden-Fuller (1995) it is important to integrate the inside-out and outside-in perspectives in strategy research (these two perspectives are defined in a similar way as the resource and strategic adaptation perspective in this section). Each of them only gives a single-eyed picture of reality, and it is therefore important to employ a more comprehensive view of research into the firm to take research further. The same is true for research on small firm growth and performance.

The motivation perspective concerns single individuals while the others concern organisations. Strategy is the mediator between capability and performance in the resource based perspective. Strategy is also the mediator between environment and performance in the strategic adaptation perspective. According to these perspectives, growth and per-

formance are linked to actions taken by the organisation through its strategy, rather than related to actions taken by individuals.

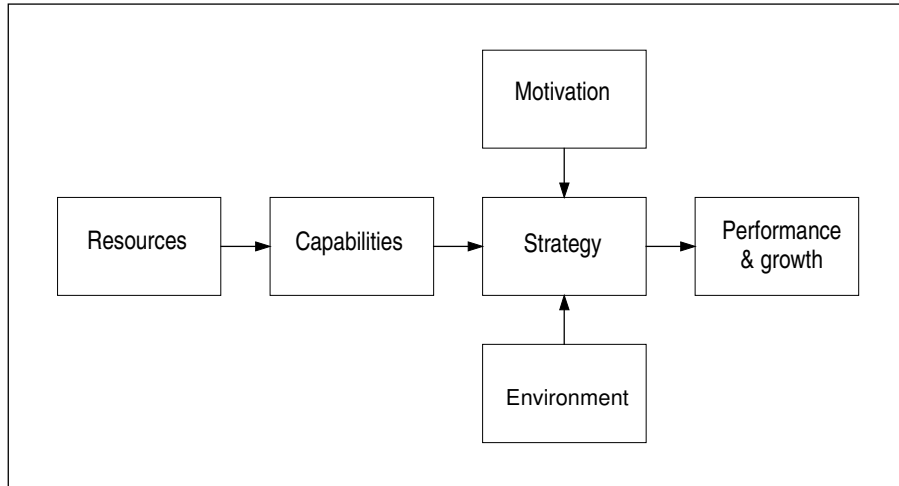
Motivation, on the other hand, has to do with *why* individuals take the actions they do. Thus, we are dealing with different levels of analysis. However, previous research provides some guidance concerning how motivation of individuals is linked to firm-level outcomes. The importance of the leader, and his or her motivation for the firm's strategy has previously been highlighted (Kets de Vries, Miller & Noel, 1993). Boone et al. (1996) hold that the main mediating mechanisms between psychological characteristics and performance is strategic choice. It is through strategic choices that motivation affects growth and performance.

In particular in a small and/or new organisation, the actions taken by the manager have a profound impact on the behaviour of the firm. The individual and the firm are intimately entwined with each other. In this case, it is reasonable to assume that the motivation of the manager has a direct effect on the strategy of the firm, or, as stated by Covin & Slevin (1991) p. 15) "*[I]t is virtually impossible to separate top management values from a firm's strategic choices*".

Hence, motivation is linked to the other perspectives through strategy. It is in the firm's strategy that the actions taken by the firm are manifested, and strategic action is likely to be influenced by the motivation of the small business manager.

The three perspectives, integrated into one model, are depicted in the figure below (Figure 2.6). The different parts of the models have been discussed in previous sections and will not be repeated here.

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**Figure 2.F. A theoretical model integrating the resource based, the strategic adaptation, and the motivation perspectives.**

The theoretical constructs in the model are based on an extensive review of literature on small firm growth/performance. The large number of low-level variables in previous research could be abstracted into the small number of theoretical constructs; environment, resources, motivation and strategy. Drawing on two streams of management research, the resource based and the strategic adaptation perspectives are derived. From psychology, the motivation perspective is derived. Theories of these three perspectives provide a sound and extensive explanation about how and why the different theoretical constructs contribute to the growth and performance of small firms.

The theoretical model attempts to achieve the following:

- To abstract a large number of low-level manifest variables common in research on small firm growth and performance into a limited number of theoretical constructs. By doing so, the framework summarises previous research, and can be used for empirical studies focusing on the influence from specific variables as well as those of a more general interest.
- To provide a sound, yet empirically manageable, theoretical foundation for studies in the field based on extant theories within management and psychology. Thus facilitating the explanation of how, and

why, different classes of variables influence small firm performance and growth.

- To provide a conceptual framework that integrates present theories of particular value (and more or less implicitly utilised) in research on firm growth and performance into one coherent model.

By doing this, it is possible to present a more comprehensive view of the factors contributing to firm growth and the relationships among those factors. Furthermore, this is an attempt to develop a model that utilises variables from multiple levels of analysis, something that has been sought for by other authors (Low & MacMillan, 1988; Zahra, 1993). This is not to say that it is the only possible model of firm growth and performance. However, it is a model that mirrors the empirical research that has been carried out in the field, but further, and more importantly – it places these into one theoretical framework.

Too often, empirical research provides us with arrays of variables that are predictors of small firm growth and performance. Education is important, need for achievement is important, etc. The reasons *why* these variables are important must also be resolved. Education, for instance, could be important because it provides the firm with resources that allows it the capability to gain a competitive advantage, if exploited in the right way by the firm's strategy. Need for achievement of the small business manager could, on the other hand, be important because it gives the individual the motivation to strive for growth, reflected in a growth oriented strategy of the firm.

## **2.0& Is there really a need for additional models of firm growth? =**

A number of conceptual models of, or in conjunction with, small firm growth and performance have been developed. Therefore, an obvious question must be whether a new model is needed or necessary.

Previous models are of two different types. The first type refers to sometimes very sophisticated conceptual models that have not been empirically validated (Covin & Slevin, 1991; Cragg & King, 1988; Keats & Bracker, 1988; Naffziger, Hornsby & Kuratko, 1994). The reason why they have not been validated is in most cases that they are *too* complex and sophisticated for empirical studies employing available statistical methods. In this sense, it would appear that empirical and concep-

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tual research do not develop together, which of course is a serious obstacle to the development of theory. Surprisingly enough, due to quantitative publishing demands, it is common within many scholarly disciplines that theory branches off from the initial joint body of theory and application (Wold, 1982).

Indeed, the Covin and Slevin model (Covin & Slevin, 1991) is one of the most quoted, and parts have been used in empirical studies. However, the full model has not been researched, to the knowledge of this author.

Two rather sophisticated models have been empirically tested, and shown to be relevant in empirical studies. However, both of these are based on specific delimited theories, not frequently used in research on firm growth and performance. Chandler & Hanks (1994a) use a model of individual job performance, whereas Davidsson (1989) elaborates a model of the discretionary economic behaviour of individuals (inspired by George Kantona) in the entrepreneurship and small business growth context. This is not to say that the models are irrelevant; however, they are connected to previous theoretical findings in the field to a limited extent.

Cooper has developed a fairly general model of how the conditions at start-up affect the subsequent performance of new firms (Cooper, 1995; Cooper et al., 1994). However, this model is limited to how initial conditions affect performance and neglects any subsequent influence from strategy, additional employees and environmental changes.

The proposed model has some distinct characteristics that distinguishes it from previous models. First, it is based on *basic*, well established and well known theories that are common in research on entrepreneurship, and small firm growth and performance. Second, different theoretical perspectives are integrated into the model which makes it general from a theoretical standpoint. Third, due to its generality, the model provides a theoretical framework for studies that have already been carried out in the area but lack a more fundamental theoretical foundation. Fourth, and possibly most important; although a conceptual model based on extensive theory, it is relatively easy to use in empirical studies with the application of available statistical techniques. Thus, it is relatively safe to conclude that the proposed model can be considered as relevant and a valuable contribution in the study of small firm growth and performance.

## **2.0= The relevance of the model=**

The proposed model is developed and based on a number of theoretical perspectives which this author considers important in understanding and explaining the growth and performance of small firms. It is by no means exhaustive. A model is by definition a simplification of a complex reality and there is always a trade-off between including certain factors and relationships in the model and disregarding them. Simplicity and complexity need to be balanced (Ruist, 1990).

Generally speaking, when designing a model, two components have a crucial impact on the model's formulation. The first is at which level data are collected. Psychology, for instance, tends to collect data that are stable, but distal, from behaviour in the causal chain, whereas the opposite is true for management literature. Therefore, models that look very different, and focus on different concepts in the causal chain, do not necessarily contradict each other. The other important aspect is which factors and exogenous and endogenous relationships to include or exclude in the model.

The acid test of the relevance of the proposed model is how well it fits the data. If the data do not fit the model, it is possible to revise the model. It is, of course, premature to suggest which revisions of the model are needed before it has been empirically tested, but it is necessary to be open-minded about possible alterations. It should also be noted that if data do fit the model, it is always possible to construct a different model that fits the data equally well.



## **3 Specification of the research model**

### **3.0= Introduction=**

The integration of the theoretical perspectives in the previous chapter gave a general model which encompassed broad and general constructs from different fields of research. It is impossible to include all dimensions of strategy, environment, resources, capabilities and motivation in empirical research. Researchers also make different conceptualisations of the same concepts. For example, strategy and different strategic sub-concepts can be interpreted in many ways by different individuals and schools of thought. Therefore, in order to facilitate empirical research, the concepts used in the model need to be specified and operationalised, which is done in this chapter.

### **3.0= Motivation=**

The present research draws on Miner's task motivation theory since it is specifically developed for the entrepreneurship domain (see Section 2.7 and Bellu, 1993; Bellu & Sherman, 1995; Miner, 1990; Miner et al., 1989; 1992; 1994; Smith & Miner, 1983; 1984). Applying this theory to the present research context, it can be anticipated that certain motivational patterns of the small business manager role will be associated with high levels of growth and performance of their firms.

Some individuals are likely to have a motivational pattern that is better adapted to cope with and perform well in the work-task situations small business management involves. It is probable that they choose to act in certain directions and therefore perform better in those situations. The work-tasks of managing a small business are likely to involve taking moderate risks, assuming personal responsibility for performance, paying close attention to feedback in terms of costs and profits, and finding new or innovative ways to make a new product or provide a new service.

Miner has developed a specific measurement instrument (Miner Sentence Completion Scale - Form T) for measuring task motivation. This scale contains 40 incomplete sentences, or stems, which the respondent completes. The completion of the scale is a relatively time-consuming procedure. Keeping in mind that motivation is but one of many constructs to be measured, the scale is considered too extensive and less well suited for the present research context. Instead, a less time-consuming format is chosen.

The characteristics of the small business manager role are defined from a number of different goals, work-tasks, growth aspirations and expected consequences of growth. In line with the theory, small business managers having more positive attitudes towards specific goals, work-tasks, growth aspirations and expected consequences of growth can be expected to choose a strategy facilitating growth and performance.

Therefore, in order to reveal the motivational pattern of small business managers, their *attitudes* towards goals, work-tasks, growth aspirations and expected consequences of growth must be investigated. Motivation theory and attitude theory are two fields having some degree of overlap and their boundaries are unclear (Delmar, 1996a). In the present research, Miner's role motivation theory is utilised to explain how motives lead to action; whereas attitudes are utilised to capture the different motives.

The definition and measurement of attitudes in empirical research is not without problems, and it is important to clearly define what is meant by attitudes, and their influence on behaviour. An attitude is defined as the valuation of an object or a concept, i.e. to what extent an object or concept is judged to be good or bad (Eagly & Chaiken, 1993).

There has been much controversy concerning the importance of attitudes in predicting behaviour. However, recent research has shown that attitudes are able to predict behaviour, if certain conditions are met (Bagozzi & Warshaw, 1992; Kim & Hunter, 1993). Attitudes have been found to be moderately strong predictors of goal directed behaviour ( $r = .79$  between attitude and behaviour when methodological artefacts were removed, cf. Doll & Ajzen, 1992; Kim & Hunter, 1993). The probability of a significant relationship increases when attitudinal and behavioural measures correspond with respect to action, target, context and time. For example, the relationship is expected to be weak if there has been a substantial time interval between the measurement of atti-

tude, and the behavioural act. The relationship is also expected to be weak if a single act in a specific context (e.g. expanding the business by acquisition with the help of the bank) is measured, instead of a range of actions with no specific context (e.g. expanding the business).

The idea that attitudes are generated through cognitive, affective and behavioural processes has given the result that attitudes are often broken down into three different classes or components of evaluative responses. Eagly & Chaiken (1993, pp. 10-13) make the following definitions: (1) *cognitive responses*, also known as beliefs, are thoughts that people have about the attitude object (e.g. I believe expanding the business will enhance the possibilities of the business to survive a crisis), (2) *affective responses* consist of feelings, moods or emotions that people have in relation to the attitude object (e.g. I feel happy /anxious when developing a new product or service), (3) *behavioural responses* are the overt actions exhibited by people in relation to the attitude object (e.g. I turned down the order, because it would have meant expanding the business). Behavioural responses may also be regarded as encompassing intentions to act that are not necessarily expressed in overt behaviour. The present research utilises all three different classes of evaluative responses.

The three types of evaluative responses are the observable manifestations that can be inferred to the attitudes. The responses that are associated with the attribute object express positive or negative evaluation, and may therefore be measured on scales ranging from extremely positive to extremely negative, for all three classes of evaluative responses.

In the present research, the *goals* of the entrepreneur are viewed as affective responses since they have to do with their feelings regarding a number of possible goals. *Favoured work-tasks* are also seen as affective responses for the same reason. Expectations of changes that will occur in the firm as a result of growth refer to the beliefs held by respondents. Thus, *expected consequences of growth* are classified as cognitive responses. The final sets of variables concern growth aspirations over the next five years to follow. These variables are viewed as intentions. As a result, *growth aspirations* are viewed as behavioural responses.

### **3.0 = Resources and capabilities =**

Resources are basic inputs in the production process, whereas capabilities refer to the capacity for a co-ordinated set of resources to perform

certain tasks or activities. However conceptually different, it is difficult from a measurement perspective to separate resource availability from the capacity to utilise these resources (Chandler & Hanks, 1994b). Skills of individual employees are one type of resource that enhance the competitiveness of the firm. It could, however, be the case that these specific or related skills can also provide the competence of organising other resources, i.e. they provide the capabilities of the firm. Because of the above, it may be unwise to separate resources from capabilities in empirical research on small firms, and this will therefore be avoided in the present study. Instead, resources and capabilities are treated as a joint concept.

Several typologies of resources exist in the resource based literature (cf. Section 2.4.1). However, these categorisations may not be applicable to small firms (Greene, Brush & Brown, 1997). In particular, they do not reflect the important role of the owner-manager that is essential to the small firm. These authors suggest a typology that recognises the important role of the founder, his or her social resources (networks and relationships), and the features of organisational and physical resources.

This conceptual typology maintains an empirical tradition of separating resources in research on entrepreneurship and small firms, depending on the object of analysis. As noted in the review in Section 2.4.2, the distinction between the resources and capabilities related to the entrepreneur, and those related to the firm, is relatively common in empirical research on small firm growth and performance. In individual-level analyses of entrepreneurship, resources and capabilities related to the entrepreneur have been emphasised, whereas organisation-level studies focus upon the resources and capabilities of the firm. Since one of the characteristics of a small and/or new firm is its relatively weak resource base, some researchers have been preoccupied with the question of how the entrepreneur is able to obtain additional resources from his or her personal network. The importance of these resources has been highlighted by some researchers (e.g. Birley, 1985; Brush et al., 1997; Donckels & Lambrecht, 1994; Johannisson, 1986).

It appears that research on small firms and entrepreneurship has provided us with a resource typology that may differ from the ones suggested by research based theory, but is possibly more appropriate when conducting research into small firms. The resource typology used in the

present research is the one outlined above; resources and capabilities of the entrepreneur, of the firm, and of the entrepreneur's network.

### **3.0 = Strategy =**

#### *3.0.0 Important small firm strategy concepts*

Strategy is a broad and general concept. Many different definitions of strategy exist, as well as typologies of possible strategic choices. In the present research, it was essential to identify dimensions of strategy that could reflect the organisational practices, processes, methods and decision making styles that small firms use, and which are likely to influence their growth and performance.

A useful starting point from which to identify important strategic dimensions in small firms could be the typologies of firms suggested by organisation theorists. Based on a thorough review of the literature on organisation structure, Mintzberg (1979) has suggested a typology consisting of five distinctively different types of firms; the *bureaucracy*, the *simple type*, the *adhocracy*, the *professional bureaucracy*, and the *diversified type*. Others have suggested different typologies much along the same lines, the major difference being the labelling of the different types of firms identified. Small firms are most likely to be found amongst the *adhocracy* or *simple* categories (Miller, 1983a; Miller, 1990). There are some characteristics of the strategy of these two types of firms that can give guidance as to those dimensions of strategy which are most interesting when studying small firms.

*Adhocracies* are characterised as being flexible, having flexible organisational structures and a strategy responsive to competitors, customers and market opportunities. A key strategic element for these type of firms is innovation (Miller, 1990).

*Simple* firms on the other hand are dominated by the chief executive, having a simple, informal structure and decision making style, their competitiveness largely stemming from their flexibility in relation to customer preferences. In particular, the risk-taking dimension of strategy is very important for simple firms. Some simple firms show extreme entrepreneurial risk-taking, whereas other are extremely conservative and risk-advert (Miller, 1990).

Mintzberg's classification, which identifies two types of small firms appears relevant, and these two types of firms are similar to descriptions in the small business research literature. It also highlights several important characteristics of small firms. Strategic themes that can be extracted from the above description of these firms are: responsiveness to customers, taking advantage of opportunity, innovativeness and risk-taking. Indeed this leads the thoughts to entrepreneurship and the importance of an entrepreneurial strategy. Therefore, it seems appropriate to focus on the entrepreneurial dimensions of strategy when conducting research into small firms. Furthermore, it may be more difficult to differentiate small firms according to other strategic dimensions, since resource constraints may well prevent small firms from pursuing cost leadership or differentiation strategies (Porter, 1985).

Previous research regards the entrepreneurial dimensions of strategy to be of great importance in general (Burns & Stalker, 1961; Miller & Friesen, 1978; Mintzberg, 1973) and further, that an entrepreneurial strategy has a great impact on performance:

*Those in strategic management are concerned with the performance implications of management processes, decisions, and actions at the level of the firm. Prior theory and research have suggested that an E[ntrepreneurial] O[rientation] is a key ingredient for organizational success. (Lumpkin & Dess, 1996, p. 151)*

To sum up; when studying strategy in small firms, and in particular the strategic choices which may influence performance, it appears relevant to focus on the entrepreneurial dimensions of strategy

### *3.0.0 What is an entrepreneurial strategy?*

Miller & Friesen (1982) hold the view that entrepreneurial firms innovate boldly and regularly while taking considerable risks in their product-market strategies. From a brief literature review, Miller (1983a) concludes that a firm's actions relating to *innovation, risk taking* and *proactiveness* as being the crucial dimensions of entrepreneurship:

*An entrepreneurial firm is one that engages in product-market innovation, undertakes somewhat risky ventures, and is first to come up with "proactive" innovations, beating competitors to the punch. (p. 771)*

### *specification of the research model*

The three dimensions that constitute entrepreneurship already appeared in Miller & Friesen (1978) as three of a total of eleven dimensions of the strategy making process, which reconfirms that Miller takes a strategic approach to entrepreneurship.

This definition of the characteristics of entrepreneurial strategy puts the focus on the process of entrepreneurship, rather than on the actor behind it; i.e. it puts the focus on entrepreneurship rather than the entrepreneur, which has some important implications. First, these proactive, innovative and risk-taking actions taken by a firm may be affected by any number of actors, one or many, people inside or outside the firm. Second, in emphasising actions taken by the firm, it puts entrepreneurship in a management framework. By doing so, correlates of entrepreneurship could be sought in a much wider field than that directly related to the individual. It therefore allows the introduction of traditional management terminology and variables such as strategy, performance and organisational structure into entrepreneurship research.

To a great extent, this definition agrees with the traditional individual-level definitions of what the entrepreneur does. An entrepreneur is most often regarded as an innovative and creative person suitable to manage a firm that emphasises innovation. The proactiveness of a firm indicates that it searches for new opportunities, probably reflecting these characteristics of the entrepreneur. However, the dimension of risk-taking has been questioned in individual-level research. There has been little empirical evidence to support the proposition that entrepreneurs take larger risks than managers (Brockhaus, 1980). Entrepreneurs have even been found to be risk avoiders (Miner, 1990; Miner et al., 1994) or risk optimisers (McClelland, 1961).

#### *3.0.0 Defining and measuring entrepreneurial strategy in terms of entrepreneurial orientation*

The statements concerning the characteristics of entrepreneurial strategy made by Miller have influenced later research empirically as well as conceptually. Miller developed a measurement instrument to capture the construct in empirical research. Subsequent research has had some problems in defining which theoretical construct this measurement instrument really measures, and different labels are proposed.

In Table 3.1 below, research based on the measurement instrument developed by Miller is displayed. The table shows that even though exactly the same measurement instrument, or slight modifications of this, is utilised, different labels are given to the measured construct. Moreover, there is little consensus as to what type of construct it is. Suggestions range from action and behaviour, to business philosophy. In spite of this, it may be concluded that, although different interpretations of the measurement instrument have been suggested, it is a viable instrument for the measurement of important aspects of entrepreneurial strategy.



*specification of the research model*

**Table 3.A. Studies of entrepreneurial strategy using Miller's original measurement instrument or slight modifications of this.**

<i>Study</i>	<i>Construct label</i>	<i>Type of construct</i>	<i>Manifest variables</i>	<i>Scale</i>
Miller (1983)	Entrepreneurship	A firm's actions	Proactiveness, innovation, risk-taking	Items from scales used by Miller and Khandwalla in the 1970's. Presented in Miller and Friesen (1982)
Covin & Slevin (1986)	Entrepreneurial behaviour	Firm behaviour	Proactiveness, innovation, risk-taking	Modification of Miller (1983) 5 items original
Covin & Slevin (1989)	Strategic posture	Overall competitive orientation	Proactiveness, innovation, risk-taking	Modification of Miller (1983) (and Covin & Slevin 1986) 3 items original
Covin & Slevin (1990)	Entrepreneurial posture	Firm behaviour	Proactiveness, innovation, risk-taking	Covin & Slevin's (1989) modification of Miller (1983)
Covin et al. (1990)	Strategic posture	Strategic/ competitive orientation	Proactiveness, innovation, risk-taking	Covin & Slevin's (1989) modification of Miller (1983)
Covin & Slevin (1991)	Entrepreneurial posture	Firm behaviour	Proactiveness, innovation, risk-taking	Covin & Slevin's (1989) modification of Miller (1983)
Miles, Arnold & Thompson (1993)	Entrepreneurial orientation	Underlying philosophy determining the nature and scope of activities and plans	Proactiveness, innovation, risk-taking	Covin & Slevin's (1989) modification of Miller (1983)
Merz et al. (1994)	Strategic orientation	Philosophy of business behaviour	Proactiveness, innovation, risk-taking	Miller (1983)
Zahra & Covin (1995)	Corporate entrepreneurship	Unclear	Proactiveness, innovation, risk-taking	Miller (1983)
Brown (1996)	Entrepreneurial orientation	willingness to engage in behaviour	Proactiveness, innovation, risk-taking	Covin & Slevin's (1989) modification of Miller (1983)
Lumpkin & Dess (1996)	Entrepreneurial orientation	Processes, practices and decision making activities leading to new entry	Autonomy, innovation, risk-taking, proactiveness, competitive aggressiveness	No measures. Miller's and Covin and Slevin's work is the point of departure
Lumpkin & Dess (1997)	Entrepreneurial orientation	See above	Innovation, risk-taking, proactiveness, competitive aggressiveness	Covin & Slevin's (1989) modification of Miller (1983), two original items

Covin & Slevin (1991) agree with Miller that organisations, not only individuals, can behave entrepreneurially. They too advocate the use of risk taking, innovation and proactiveness as the relevant dimensions of

entrepreneurship. However, they refer to this as a type of *behaviour* labelled *entrepreneurial posture*.

Zahra (1993) criticises this definition of entrepreneurship as not being sufficiently specific and comprehensive. Informal entrepreneurial activities are not, but should be included, and more dimensions and different types of entrepreneurial activities need to be recognised. In another paper (Zahra, 1991), Zahra criticises the Miller/Covin & Slevin measurement scale for addressing a firm's disposition rather than actual engagement in corporate entrepreneurship activities, and develops an original measurement scale.

By 1995, Zahra appears to have changed his mind, and uses Miller's measurement instrument, now labelled *corporate entrepreneurship* (Zahra & Covin, 1995).

Drawing on Miller (1983a) and Covin & Slevin (1989) amongst others, Merz et al. (1994) use the same measurement instrument, but argue that it reflects the *CEO's strategic orientation* and should be regarded as a "philosophy of business behaviour that guides the firm as it navigates in its environment".

Brown (1996) suggests that *entrepreneurial orientation* has to do with the willingness of a firm to engage in entrepreneurial behaviour, and that entrepreneurial orientation research gives a more behaviour-oriented view of entrepreneurship than does research into personality traits.

Lumpkin & Dess (1996) argue that the essential act of entrepreneurship is new entry. This may be done either by entering a new or established market with a new or existing product, or by launching a new venture. New entry explains what entrepreneurship consists of, and *entrepreneurial orientation* describes how new entry is undertaken, i.e. the processes, practices, and decision making activities that lead to new entry.

All questions in the measurement scales utilised in all of the studies reviewed here relate to the respondent's self-perception of the firm's strategy. To call this behaviour, as suggested by Covin and Slevin must be considered a dubious practice. Merz et al. (1994) and Brown (1996) probably come closest to giving appropriate labels to the construct when they state that it reflects the CEO's strategic orientation, and the willingness of a firm to engage in entrepreneurial behaviour. Thus, the term

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*entrepreneurial orientation* (abbreviated EO) is used in this dissertation, referring to *the CEO's strategic orientation reflecting the willingness of a firm to engage in entrepreneurial behaviour*. Moreover, in small firms, the strategic orientation of the CEO is likely to be the same as the strategic orientation of the firm. In line with the majority of reviewed research, EO is argued to consist of three separate dimensions; risk-taking, proactiveness, and innovation.

Actual entrepreneurial behaviour is difficult to measure by the response to a mailed questionnaire. For this reason, scales have been developed to measure proxies for behaviour. Clearly, it becomes difficult to interpret what exactly *is* measured when the scale is self-perceptive. This is probably the main reason why so many different conceptual interpretations are obtained from the same scale.

However, there is some empirical evidence to support that the self-perception of the CEO is closely related to the behaviour of the firm. Three forceful arguments in favour of the relevance of this measurement instrument can be provided. First, commonly hypothesised antecedents of entrepreneurship measured at the individual, firm or environmental level have been successful predictors of entrepreneurial orientation in empirical studies (Brown, 1996; Miller, 1983a). Second, entrepreneurial orientation has been shown to be a good predictor of the outcomes of entrepreneurial behaviour (Brown, 1996; Covin & Slevin, 1990; Covin, Slevin & Covin, 1990; Merz et al., 1994; Zahra & Covin, 1995). Third, Zahra (1991) used an original scale in which self-perception questions similar to the ones suggested by Miller, were mixed with actual behaviour. The Cronbach's Alpha for the scale was .86, which indicates that self-perception and behaviour are closely related. Thus, regardless that the measurement instrument really addresses CEO self-perception, it can be stressed that it serves as a relevant proxy for the entrepreneurial strategy of the firm.

To sum up; *entrepreneurial orientation* is the concept that will be used here to characterise the entrepreneurial dimensions of a firm's strategy. In agreement with the majority of previous studies and the original conceptualisation (Miller, 1983a), entrepreneurial orientation is seen as a combination of risk-taking, innovation and proactiveness.

### *3.0.0 The relationship between entrepreneurial orientation and performance and growth*

There appears to be some relevance in the interest in EO and its possible influence on small firm performance and growth. However, as recognised by Zahra (1991) and Covin & Slevin (1991), there is little solid empirical evidence of the link between EO and firm performance. Zahra found most evidence to be anecdotal. A possible explanation for this lack of solid empirical evidence may be that EO is conceptually problematic as mentioned above.

Another reason why a strong link between EO and small firm performance has not been established may be that the bulk of studies in the area use cross sectional designs. In order to empirically test if an EO actually leads to better performance (i.e. whether an entrepreneurial strategic orientation predicts performance), longitudinal data are necessary, where EO is measured at one time and performance outcomes are measured later. To the knowledge of this author, the ability of EO to predict small firm performance has not previously been tested. Only one longitudinal analysis of the influence from EO on performance was found, based on a relatively small sample of large firms (Zahra & Covin, 1995). With this background, longitudinal studies of the EO-performance relationship are imperative.

Although the empirical evidence that EO affects performance is limited, there are some conceptual arguments in favour of such a relationship. Zahra & Covin (1995) hold that firms with an EO are able to target premium market segments, charge high prices and "skim" the market ahead of competitors. These firms monitor market changes and respond quickly, thus capitalising on emerging opportunities. Innovation keeps them ahead of competitors, gaining competitive advantage that leads to better financial results. Their proactiveness gives them the ability to present new offers to the market ahead of competitors, which gives them a competitive advantage. Furthermore, there is reason to believe that the relationship between EO and performance may be particularly strong within small firms. Most likely, smallness per se encourages flexibility and innovation but limits competitiveness in other strategic orientations. Resource constraints may, for example, prevent small firms from pursuing cost leadership or differentiation strategies (Porter, 1985).

### **3.0= Environment=**

Environment is a key concept in the strategic adaptation perspective. Basically, three different approaches as to how environment influences the strategy of the firm are prevalent<sup>11</sup>. Industrial economists (e.g. Porter, 1980; 1985) and some strategy researchers (e.g. Fombrun & Wally, 1989) argue that it is the objective environment, the hard facts, to which strategies should be adapted. In particular, industry has received a lot of attention in strategy oriented small business growth and performance literature dealing with objective environment variables (Brush & Chaganti, 1997; Covin et al., 1990; Fombrun & Wally, 1989; Hofer & Sandberg, 1987; McDougall et al., 1994; Sandberg & Hofer, 1987; Wijewardena & Cooray, 1995).

This literature infers that the industry determines: competitive structure, barriers to entry, technology, life-cycle stage, turbulence, munificence and uncertainty of the firm's environment (Fombrun & Wally, 1989). The major problem with this approach is that it does not take into account the fact that small firms probably operate within narrow market niches. Therefore, characteristics of an industry may affect small firms very differently, depending on their specific market niche.

Other researchers suggest that managers can not directly observe and interpret the objective environment. Instead, they make subjective perceptions of the environment. It is their perception of what the environment is like that will influence them in developing strategies, and thus, beliefs about the environment play an important role in determining performance outcomes (e.g. Child, 1972). Furthermore, if the perception of the environment is accurate, better strategies will be developed than if the perception of the environment is inaccurate. Not only is there a fit issue between strategy and environment, but there also needs to be a fit between the objective environment and the perceived environment (Dess & Beard, 1984; Dutton & Keats, 1987)

Others, still, argue that the objective environment is not important and deny that managers perceive and interpret the objective environment. Instead, they maintain that the environment that managers relate

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<sup>11</sup> For a more extensive discussion of these environmental issues and of writers that contribute to the different approaches of environment see Waddock & Isabella (1989) or Scott (1992).

to is constructed or enacted by themselves (Aldrich & Zimmer, 1986; Weick, 1979). How the environment is enacted has implications for the decisions which influence performance, regardless of what the objective environment really is like. Aldrich & Zimmer (1986) state:

*Environment, as opportunity structures, are diverse, uncertain, and imperfectly perceived, and it is seldom true that a particular individual will both have an accurate view and be aware of it. People are limited by bounded rationality, suffer from limited or biased information and poor communication, and are subject to processes of social influence and reconstruction of reality. (p. 11).*

Whether the environment is enacted or perceived is important from a conceptual standpoint but not necessarily empirically. If individuals are asked to describe their environments, answers will be identical regardless of whether their answers refer to their perception of an objective environment, or an environment that is enacted.

Unfortunately, a common practice is to study the managers' self-perception (or enactment) of environment, but regard this self-perception as being a direct reflection of the objective environment. This is a premature assumption and not necessarily true. There is evidence to suggest that the perception or enactment of environment may be substantially different from the objective environment as the above quotation illustrates.

Authors who study the environment in terms of managers' perceptions tend to measure the *characteristics* of the environment. This is often referred to as the technical environment or task environment (Scott, 1992). Instead of inferring that industry affects these environmental characteristics of individual firms, data is collected on the individual firm level. This facilitates the differentiation of environmental influences on small firms in different market niches. If it is realised that it is the perceived, and not the objective environment which is measured, this approach is relatively attractive, since it is possible to trace environmental differences at the individual firm level.

Task environmental characteristics in terms of dynamism, hostility and heterogeneity have been argued to be critical for suitable strategic choices, i.e. particular strategies are likely to lead to better performance depending on the level of environmental dynamism, hostility and het-

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erogeneity (cf. Section 2.6.1 and Dess & Beard, 1984; Miller, 1987b; Zahra, 1991)

These dimensions are frequently used in small business growth and performance literature (Brown, 1996; Covin et al., 1990; Merz et al., 1994; Miller, 1983a; Miller & Toulouse, 1986). Furthermore, Zahra (1991) suggests that each of these three dimensions should influence EO, i.e. depending on the degree of environmental dynamism, hostility and heterogeneity, firms with a higher or lower degree of EO may perform better or worse.

It is not necessary to choose the "objective environment" over the "perceived environment" approach, or vice versa. Both approaches may be utilised in the same study, and each approach could provide valid contributions (Dess & Beard, 1984):

*We believe that more sophisticated studies could extend the present research and methodology to combine both perceptual and objective measures of the environment...The relevance of both objective and perceptual measures for complex, dynamic models of organizational adaptation such as Miles et al. (1978) is clear. (p. 67, emphasis original)*

Therefore, both the objective environment, in the sense of industry, and the perceived characteristics of the environment in terms of dynamism, hostility and heterogeneity will be included in the present study.

As illustrated by the review in Appendix 1, location variables are also relatively frequent in small firm growth/performance studies. Location may give some firms *inherent* competitive advantages in terms of easier access to inputs and markets. Since location is a variable that has a direct influence on performance not influencing strategy, it does not fit into the theoretical model, thereby representing a type of relationship (i.e. a direct effect of environment on outcomes) that is not considered by this study.

### **3.0 = Growth =**

Growth is a process of changing size. It is possible to use different indicators for the growth of a firm. A growth process is likely to be driven by an increased demand for the products or services that the firm supplies to the market. That is, sales increase first, and thus allow the acquisition

of additional resources such as employees or machinery (Flamholtz, 1986). It seems unlikely that growth could take place in another dimensions without increasing sales. It is also possible to increase sales without acquiring additional resources, by outsourcing the increased business volumes. In this case, only sales would increase.

Hoy, McDougall & Dsouza (1992) stress that a consensus has been reached among academics that sales or revenue growth is the best growth measure. It reflects both short- and long-term changes in the firm, and is easily obtainable. Furthermore, these authors, as well as Barkham, Gudgin, Hart & Hanvey (1996), maintain that sales growth is often used as a performance indicator by entrepreneurs themselves. Therefore, it makes sense to define growth in terms of sales.

On the other hand, due to current levels of unemployment, there is a general interest in the creation of new employment. For this reason, employment growth is another important aspect of growth. This is reflected in the large number of studies that focus mainly on employment growth (Delmar, 1996b). If this measure is used, comparison with other studies is made easier.

However, studying growth in terms of employment is not without problems. In a process of rationalisation, it is possible to replace employees with capital investments. If this is done, a company may increase sales, but decrease employment. In other words, there is to some extent, an inverse relationship between capital investment and employment growth. As a consequence, it makes sense to also include equity as one aspect of growth.

Thus, three dimensions of growth are assessed in the present study; sales growth, employment growth and value growth. This comprises a multidimensional view of growth, something which is necessary, but unfortunately lacking in most previous research according to Birley & Westhead (1990).

### **3.0 = Performance =**

The other ultimate dependent variable in the theoretical model is performance. There is no consensus on appropriate small firm performance measures, and research has tended to focus on variables which are easy to gather information about rather than variables that are important (Cooper, 1995). In other studies, growth is often seen as a direct proxy



*specification of the research model*

for small firm performance (Brown, 1996; Brush & VanderWerf, 1992; Chandler & Hanks, 1993; Fombrun & Wally, 1989; Tsai et al., 1991; Van de Ven et al., 1984). It is argued that growth is a more accurate and easily accessible performance indicator than accounting measures and thus is superior to indicators of financial performance. An alternative view is that performance is multidimensional in nature, and it is therefore advantageous to integrate different dimensions of performance in empirical studies (Cameron, 1978; Lumpkin & Dess, 1996). These authors argue that, depending on the processes studied and the performance aspects measured, it is possible that outcomes are favourable in one dimension but not in another. A firm could, for instance, choose to trade-off long-term growth for short-term profitability (Zahra, 1991).

The multidimensional nature of performance is supported by this author. It is possible to regard financial performance and growth as different aspects of performance, each revealing important and unique information. Taken together, these two aspects give a more complete description of the actual performance of the firm than does each aspect taken separately.

The extent to which performance along one dimension is reflected in the other is an empirical question that can and should be tested. It seems more reasonable to ask whether firms that grow also perform well financially, than a priori stating that growing firms perform well because this is the way performance was defined. First, it is possible to test the alignment for growth and financial performance. That is, to what extent firms exhibiting rapid growth also perform well financially. The degree of correspondence between growth and financial performance determine to what extent they are related. Second, it is possible to test if the model that predicts growth is able to predict both growth and financial performance together. In other words, if the factors that explain growth are also able to explain the wider performance construct, where growth and financial performance are combined.

In this study both these considerations are tested. The model is used to predict growth per se, as well as growth together with indicators of financial performance and the alignment for growth and financial performance is also tested. By placing growth in this wider performance context it is argued that a better operationalisation of performance is achieved, rather than if growth or financial performance were used alone.

### 3.0= Proposed research model=

When substituting the general constructs developed in the previous chapter with the "researchable" constructs suggested here, the model depicted in Figure 3.1 emerges. Four theoretical constructs are suggested, which may influence the degree or intensity of a firm's EO. Each of these constructs, or sets of variables, have multiple components that vary in their potential positive or negative influence on EO. EO is determined by their joint effect. The firm's degree of EO, in turn, influences its growth and performance levels.

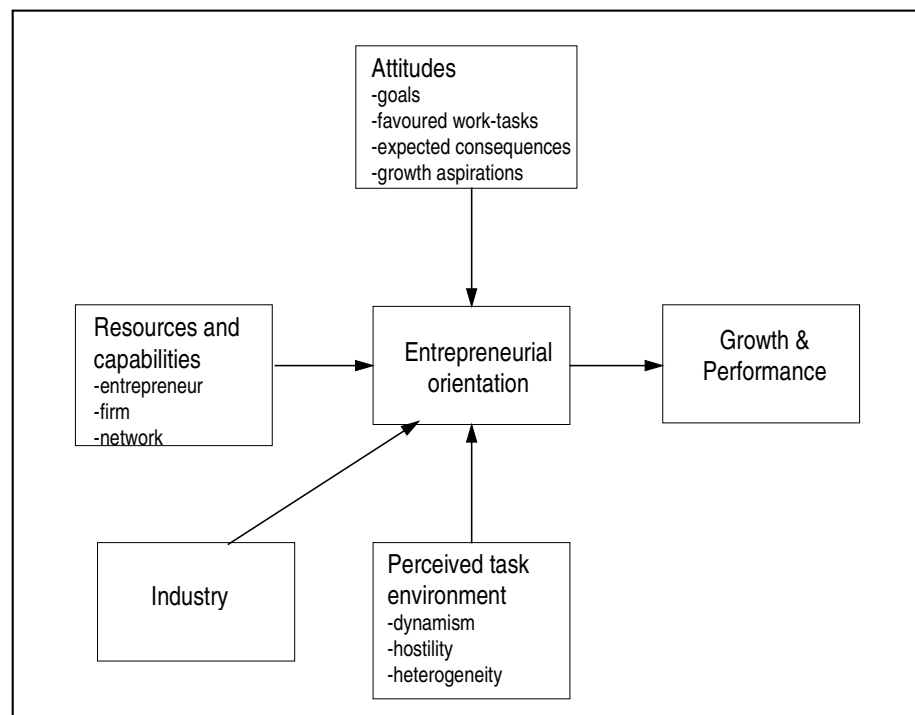


Figure 3.A. The proposed research model.

## 4 Method

### 4.0& Introduction=

In empirical research a number of choices have to be made as to what is to be studied and how these studies are to be conducted. The choices cover the entire range from basic scientific positions to analysis methods. In this chapter these choices are discussed and motivated in relation to the research questions:

- Is it possible to identify crucial factors that enhance or restrict small firm growth and performance?
- If so, which are these factors?
- In what pattern do these factors affect growth and performance, i.e. how should small firm growth and performance be modelled?
- What is the relationship between entrepreneurship on the one hand and small firm growth and performance on the other?

### 4.0& Scientific realism: the scientific point of= departure for the study=

When addressing the research questions, it is initially of value to give some regard to what kind of knowledge can be obtained by the scientific study of these questions. In other words, it is necessary to formulate an ontological and epistemological platform. My platform is grounded in the scientific realism approach to scientific knowledge, which has much in common with positivism but is different in some important aspects.

Today, hardly any scientist would consider him- or herself as a positivist, or at least not defend any positivist standpoint with pride. However, it is apparent that in its wider definition, positivism<sup>12</sup> is still the

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<sup>12</sup> Positivism is used as a unifying name for a number of different expressions that basically all refer to the same scientific perspective. The word "positivism" refers to e.g. logical positivism, logical empiricism, the received view and consistent empiricism. This text is limited to modern positivism developed by the Vienna Circle in the 1920s and further advanced by above others Hempel (e.g. Hempel, 1965).=

dominant underlying philosophy of science in research (Miller, 1987c). Moreover, modern scientific alternatives have been developed in opposition to positivism. Most scientific discussions are still carried out in relation to positivism, which indicates that positivism still has a strong influence on scientific discussions and also on most of the research which is conducted. It may seem as a paradox that a scientific standpoint that to large extent has been abandoned by philosophers of science still dominates research.

The major criticism against positivism is concerned with how research in reality is, and has to be, conducted in relation to positivist rules. The first criticism has to do with the fact that researchers often make assertions about unobservable phenomena. To take an example from physics, quarks are important unobservable building blocks in theories of matter. From a strictly positivist point of view, a theory of unobservable particles can not be accepted and should therefore be rejected. As a consequence, any theory that makes use of unobservable quarks should be rejected

The second criticism is that many, or all, scientific methods depend on the theories in use. This is a fact that now is generally accepted (Boyd, 1991).

Already Albert Einstein, whose contribution to our knowledge of the world is immense, bluntly stated in his *Physics and Reality*:

*It is the theory which decides what we can observe.*

According to positivists, the theoretical structure of a theory is methodologically irrelevant. In principal, it is possible to construct an infinite number of theories about a phenomenon. The interesting aspect about theories is - according to positivists - that they are logically consistent and able to predict empirical phenomena. This is, however, an inappropriate description of science (Boyd, 1984). The theoretical structure of a theory is, in reality, of great importance for the observation of empirical phenomena. For example the measurement of an electrical field which can not be directly observed, i.e. the method for the empirical observation of an unobservable, depends on the theory of how an electrical field is defined. In this case, the theoretical structure determines the results of the empirical observation. In other words, our beliefs about the world influence how we perceive it, and the knowledge we are able to gain.

*method*

This insight has led many researchers into social constructionism and in social sciences hermeneutics, where the aim of science is not to discover objective truths about reality. This is a feasible but not necessary reaction to the shortcomings of positivism.

Scientific realism provides another alternative to positivism. Fundamental for scientific realism - just as positivism - is that there is a world that is independent of our knowledge about it. The purpose of science is to describe and explain the observable and unobservable aspects of this independent world. In order to be justified, science needs to study and generate knowledge of an objective world (Trigg, 1993). This is a key statement of scientific realism. The role of science is to gain knowledge about an objective world, not a world dependent on our interpretations of reality.

The subject is part of this world, but is able to at least partly release itself from its physical and social context to find out what is true about the world and the subject's own place in it. This is made possible thanks to human reason:

*What is needed is both an indication that there is an objective world to be discovered, and an acceptance that we are part of that world, and yet able to distance ourselves from it. As a result we are able on occasions to see what is true and discuss what is false, to make rational judgements and to see the validity of arguments. We are rational subjects, not wholly reducible to the processes of the physical world, but not wholly separate from them either. (Trigg, 1993, p. 228-229).*

There is *proof* neither for the existence of a world that is independent of the observer, nor the possibility to discover truths about the world (Trigg, 1993). Scientific realists stress that theories about reality are *approximately* true, which is a major difference to the positivist point of view. The development of methodology and theory makes these approximations increasingly more accurate. The argument for this is that scientific theories are instrumentally correct, i.e. they work in practice. Observations are theory dependent, but theory dependent development of technology and society illustrates the fact that scientific theories and methods work. It is an objective fact that aeroplanes fly, yet the construction of an aeroplane is based on sophisticated theory together with traditional scientific method:

*The basic claim made by scientific realism ... is that the long-term success of scientific theory gives reason to believe that something like the entities and structure postulated by the theory actually exists. (McMullin, 1984, p. 26)*

Thus, the argument for scientific realism is abductive. Abduction means that the cause of a phenomenon is inferred from its effect, i.e. the explanation of a phenomenon is inferred to the best available explanation<sup>13</sup>. In this case that the reason for the instrumental correctness of theories is their approximate truth. Positivists do not accept abductive inferences neither as the base for scientific standpoint nor as a research strategy in empirical research, since it is possible to postulate unobservable terms based on the theoretical reasoning of observable terms. In social science, the success of attitudes, intentions and beliefs in explaining, predicting and solving pragmatic problems provides warrant for believing that these psychological states exist independently of researchers' labelling of them (Hunt, 1991).

It could be argued that scientific realism represents a dialectic, cumulative view of scientific knowledge where methodology, based on approximately true theories, is a reliable guide to the discovery of new results and improvements of old theories. The results of these improvements would thus lead to even more correct theories and so on.

In defining scientific realism, Boyd (1984) stresses that scientific theories, realistically interpreted, can be confirmed, and are often confirmed as approximately true by established scientific proofs, interpreted according to established methodological standards. That is, the ability of theories to explain and predict phenomena determines their relevance.

McKelvey (1997) holds that scientific realism is appropriate to organisation studies. Idiosyncratic microstates, i.e. the complex idiosyncratic nature of organisational phenomena do exist. All firms are not the same and do not act or react in the same ways. However, these may be ignored or assumed away by introducing idealised models:

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<sup>13</sup> **One example of abduction could be a medical diagnosis where a bacteriological throat infection is inferred from a sore throat.** =

*method*

*Because organization scientists experience firms firsthand and see idiosyncratic human behavior all the time and everywhere, it is easy to focus on the idiosyncrasies and thus miss the background law "forest" because of the idiosyncratic behavior "trees". (p. 364)*

He claims that the early success of other sciences is due to their separation from idiosyncratic details of the phenomena under study. Given that organisation science is at an early stage, it is appropriate to use idealised models constructed without the assumption of any idiosyncrasies. Neither should idealised models attempt to represent the full complexity of the phenomena studied. Complexity needs to be reduced so that relatively simple rules apply. This is said to be the most primitive approach to science, but is still the most suitable approach to organisation science. As theories develop, more complexity can be allowed into the research.

How much, then, can models be idealised and still claim to represent an adequate explanation for the phenomenon under study? Miller (1983b) argues that there are no general principles for determining this. Which factors are to be included in a model and which factors are to be omitted is determined by the theoretical frame of reference of the researcher and will always be open to scientific debate. Different researchers and different eras will have different opinions about the adequacy of different explanatory models. This is not to say that all explanatory factors are equally valid. Miller presents some general criteria to evaluate what is a suitable model in social science. First, a sufficient number of explanatory factors need to be identified. Second, explanatory factors need to be *necessary* to bring about the phenomenon. Third, explanations need to be "deep", i.e. to reach sufficiently far back in the causal chain. If a causal factor is identified but it is likely that this in turn is a result of an underlying factor in whose absence the phenomenon would not arise, then the first factor is insufficient. To determine what "a sufficient number of explanatory factors", "necessary to bring about the phenomenon" and "sufficiently far back in the causal chain" implies for an empirical project is indeed no easy task, but it provides some guidelines for issues that are important to fully comprehend.

The scientific realist view outlined above has some important implications for empirical research that also serve as guidelines for the methodology in the present study. First, the nature of scientific knowledge is

cumulative. As a result, it is important to build upon existing theories and findings when designing a study, in order to extend areas of knowledge in any field of research. From this perspective, progress within the field of entrepreneurship has been limited (Aldrich & Baker, 1997) and further research building on previous findings and theories is needed. Thus, it is important that the present study utilises the theory that has previously been developed.

Second, from a scientific realism outlook, the relevance of theories is determined by confronting them against empirical data. To test their explanatory and predictive power it is necessary to use quantitative data and statistical techniques. Thus, scientific realism calls for a study that makes use of quantitative data rather than qualitative data, using causal statistical techniques that allow for prediction and/or explanation of the employed theories.

Third, the judgement of what is an adequate explanation depends on the theoretical frame of reference and is open to scientific debate. Furthermore, the judgement of when this is achieved is difficult to make. Thus, one important task for the researcher is to be explicit about the choices that are made and to have a humble attitude and an open mind towards other possible explanations.

#### **4.0 = Research design =**

Scientific realism calls for the use of quantitative data and statistical analyses, but it is possible to use other, more practical arguments to support the use of quantitative data in the present study. Yin (1989) suggests that choice of research method best is based on the research question posed. The research questions are general in the sense that they are concerned with small firms in general. In order to draw conclusions about small firms in general, two research strategies are possible. Quite obviously, a census study that involves the whole population of small firms could be chosen. The alternative is to use a representative sample of small firms and infer results from the sample to the population.

Secondary data bases that cover the full scope of the study are not readily available and it is virtually impossible to collect primary data from the whole population of small firms, since it is very large. In essence, this makes a census study impossible.

Instead, a sample is drawn from the population of small firms. The



### *method*

most important feature, when selecting a sample, is that it is representative for the phenomena studied. In the present case where growth is a central concept, this means that firms of different growth rates should be represented in the sample. The generality of the research questions has implications for the size of the sample (it has some implication for other characteristics of the sample which are dealt with later, cf. Section 4.7). In order to be representative to the population and its variation, the sample needs to be fairly large. The sample also needs to be large in order to detect *general* similarities and differences. In small samples, general similarities and differences face the risk of being confounded with characteristics of the individual cases due to random sampling bias and stochastic variation.

In order to facilitate the study of a large sample with a reasonable amount of resources, a survey is used. Data in surveys can be of quantitative or qualitative nature. A quantitative survey will be applied since quantitative data are needed for explanation and/or prediction - important features to achieve scientific knowledge according to the scientific realism view. Moreover, quantitative data make analyses of large data quantities easier and it is easier to draw conclusions regarding the population from findings of the sample. To the degree possible, findings from the sample are inferred to the population using standard statistical procedures.

To answer the research questions, the relative importance of a number of different factors must be determined. Even though a number of similar studies have been conducted, this has most often not been the case (Storey, 1994b). By applying a quantitative survey-based data collection, and using different analytic techniques in the data analysis, it is possible to study a wide range of variables, and determine their relative importance and their interrelations.

Another important advantage of applying the chosen method is that it is possible to build on and develop previous knowledge that has been obtained using similar methods. This way knowledge can be further extended. A weakness in our knowledge about entrepreneurship, and social science in general, is that it is fragmented.

The survey method has some inherent drawbacks and the choice of this method has trade-offs. The survey provides a snap-shot image of the researched firms. In order to fully capture the change processes of a small firm, in-depth real time case studies are called for.

Change can still be captured to some extent in the present survey. In those cases where measurement of change is desirable and respondents are likely to make reliable judgements of the past, retrospective questions are asked (this is the case concerning, for instance, size changes). More importantly, data are collected at two points of time (cf. Section 4.5), and changes during this time are estimated.

Another problem is the extent to which the concepts in the research model can be measured in surveys, i.e. the possibility of achieving measurement validity with the chosen research design. Some precautions have been taken to ensure validity. First, self-perceived and objective measures are clearly distinguished. A problem in survey research is that self-perceived measures are often regarded as objective, which is not necessarily the case (Mintzberg, 1979). Second, previously developed measures that have yielded results in line with theoretical expectations are utilised to the extent this is possible.

In all, due to the characteristics of the research questions, the strengths of a quantitative survey outweigh the weaknesses.

## **4.0& Growth: consequences for sampling, data= collection, studied variables and measurement=**

### *4.0.0 Introduction*

Growth being one of the dependent variables imposes some specific methodological demands on the empirical study. At first sight, the concept "growth" seems straightforward and uncomplicated in empirical studies. Upon closer examination however, a number of specific choices and definitions are necessary in order to obtain a clear view of the empirical meaning of the concept. Unfortunately, little guidance is provided in the literature. Therefore, these issues are discussed at some length in this section.

The fact that growth is a change process which over time affects the firm, in particular its smallness, has implications for sample selection, choice of data collection, studied variables and measurement of variables. In this section, principal definitions are introduced and their consequences are discussed. Practical issues concerning sampling, data collection, variables and measurement is discussed in later sections. How-

ever, the way in which these practical issues are dealt with is a result of the propositions formulated here.

#### *4.0.0 Definition and selection of small firms*

When trying to define what a small firm is, it becomes evident at an early stage that the concept of "smallness" varies and that there is no single suitable definition of a small firm. It is particularly clear that smallness varies from industry to industry since the size of a company is most often compared to the size of its competitors (Bolton, 1971; Stanworth & Grey, 1991; Storey, 1994a). The auto manufacturer SAAB is perceived as being a small company within that industry, whereas not even the largest hairdresser comes close to the size of SAAB.

Basically, there are two different ways of defining small firms. The first type of definitions could be labelled theoretical. Criteria for defining a small firm would typically include small market share, personalised management, vulnerability to environmental conditions and non-economic objectives of the manager. These types of definitions are theoretical in the sense that they, based on previous research, presume that small firms are fundamentally different from large firms concerning these dimensions. These fundamental differences provide the rationale for studying small firms as a separate group. One major problem in selecting a sample of small firms based on these criteria is that we do not know if small firms really *are* fundamentally different until we compare them to large firms, which means that we need a large firm sample for comparison. The other problem is that we would need to do some initial research just to find out whether a particular firm really meets the criteria of smallness and should be included in the sample for further research. Thus, theoretical definitions of small firms lead to very time and resource consuming sample selection.

The second type of definitions could be labelled as quantitative. In this case, size itself is the criterion for smallness, and quantitative size data regarding sales, employees or equity are usually used when classifying firms as large or small. The problem with these definitions of small firms is that they tend to disregard the fact that the small firm sector is heterogeneous and that smallness varies across industries.

The European Union has proposed a quantitative definition based on employment that uses the term "small and medium enterprise" (SME). The SME sector is divided into three components:

1. Very small enterprises (sometimes referred to as micro-enterprises) (0 to 9 employees)
2. Small enterprises (10 to 49 employees and annual sales of not more than ECU 7 million)
3. Medium-sized enterprises (50 to 249 employees and annual sales of not more than ECU 27 million)

This is a quantitative definition that takes some of the theoretical aspects into consideration. According to Storey (1994b), one of the advantages of the distinction of micro-enterprises from small enterprises is that there is a notable shift in the formality regarding organisation and customers at around 10 to 20 employees which makes micro-enterprises different from small enterprises.

In the present research, the quantitative definition suggested by the EU is used to define small firms and to select the sample. Firms with between 10 and 49 employees are included in the study which is equivalent to EU's small enterprise sector. There are two major reasons for this. First, in this definition smallness is already operationalised and employment figures are easily available from data registers. Second, employment figures are frequently used for sample selection in other studies which makes comparison with other research easier.

Using size as selection criterion raises a specific problem when growth (i.e. size change) is studied, since rapidly growing firms do not remain small for a very long time. It is therefore necessary to choose a wide enough size-bracket so that new, rapidly growing firms do not outgrow this size-bracket. This problem is at least partly overcome since the size-bracket of 10 to 49 employees is fairly broad. Moreover, there is a delay from the sample selection to the collection of data which reduces this risk. The register data used for selecting the sample contained size figures reported in the latest annual report. The annual reports were between one and two years old when data were collected from the studied firms. Due to this, rapid-growth firms that have outgrown the size-bracket at the point of data collection will still be included, if they fulfilled the size criterion one to two years earlier.

#### 4.0.0 Modelling firm growth

The fact that growth in itself is a change process leads to some methodological problems that have to be dealt with. The first one is concerned with the actual modelling of the growth process.

It would be preferable to have full and detailed information on growth and study size changes over a period of time in studies of growth. In most cases, however, size information concerning the studied firms is scarce and growth is calculated from the present size compared to the size some years earlier. Growth rate measured as present size minus previous size over previous size is the prevalent measure (cf. Delmar, 1996b). The mathematical expression is presented in equation (1).

$$g_t = (S_{t1} - S_{t0}) / S_{t0} \quad (1)$$

Where  $g_t$  refers to the *total growth rate* during the whole period,  $S_{t0}$  refers to the size at the start of the period (size at time zero) and  $S_{t1}$  refers to the size at the end of the period (size at time one).

When introducing this mathematical equation for measuring growth, or any other for that matter, the researcher is actually modelling a specific growth pattern. The question of how growth should be modelled and the consequences of the particular equation employed needs to be clarified. Therefore it may be useful to address how growth is modelled when using this, the most common, growth measure and assess the possibility of other models.

Equation (1) models growth as a quantum size leap at some time during the period studied, i.e. all sales (or employees) are added at one time. Mathematically, this is explained by the fact that previous size is used in the denominator, i.e. any new sales or employees are added to the firm at the size it had at the beginning of the period. To give an example, firm A has 1 employee at time zero and firm B has 10 employees. After 10 years firm A has 11 employees and firm B has 60 employees. With this model their growth rate will be 1000% and 500% respectively, i.e. firm A has a growth rate that is twice as high as firm B. This example shows that this model is likely to lead to two types of problems. First, it is not probable that all growth takes place at one point of time, in particular when longer time frames are studied. Second, the model is very sensitive to the initial size of the firm, which may be problematic

when studying very small and/or very young firms. This measure has a bias in favour of firms that *initially* had a smaller size, which is illustrated in the example. An effect of the latter problem is that in many empirical studies employing this growth model, initial firm size is amongst the largest explanatory variables for firm growth, and thus firm performance, which may be difficult to justify theoretically.

In other contexts, addressing other issues, economists frequently use Gibrat's law, which assumes that the growth rate of a firm is constant. Mathematically, the expression reads as follows (2):

$$S_{t1} = S_{t0} (1 + g_2)^{t1-t0} \quad (2)$$

Where  $g_2$  refers to the *annual growth rate*.

The underlying assumption of this model is that each year an equivalent *share* of new sales or employees is added, as with retained compound interest in a bank account. Returning to the example above, firm A would have an *annual* growth rate of 27% and firm B of 20%, i.e. firm A has an annual growth rate that is 35% higher than B. This should be compared to a 100% higher growth rate in the previous model. The reason why the difference is smaller in this case is that the growth is assumed to be spread over all ten years in the period.

A third model of firm growth assumes that growth is linear and that an equivalent *amount* of new sales or employees is added each year. Even though it is unlikely that this is the case in any individual firm, it may still be more plausible than assuming that growth takes place as a quantum leap and equally as plausible as equation 2 above. As far as this author is aware, this model has not been used in previous studies of small firm growth and performance. When an equal amount is added each year, the mathematical expression becomes the following (3):

$$g = \frac{1}{N} \sum_{n=1}^{n=N} (S_{tn+1} - S_{tn}) / S_{tn} \quad (3)$$

Where  $S_{tn+1} = (S_{tN} - S_{tn})n/N$ , and  $g$  is the *annual growth rate*.  $N$  refers to the total number of years studied,  $n$  refers to any given year.  $S_{tn}$  refers to the size at year  $n$  and  $S_{tN}$  is the size at the end of the period

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This model is similar to model one, the major difference being that the denominator increases every year. Returning to the example of firm A and B, firm A is assumed to add one employee each year and firm B is assumed to add 5 employees each year. In this case the annual growth rate for firm A is 28% and firm B 19%. Thus, the growth rate of firm A is 47% higher than that of firm B.

The above exercises illustrate the fact that regardless of which growth model we use, we make certain assumptions of the growth pattern of the firm and reach different results regarding growth rates. The three different growth patterns are displayed in Figure 4.1. Which is then the appropriate measure? This question is impossible to answer from these basic exercises.

From an empirical standpoint, it appears unlikely that growth takes place as one quantum leap. This is to say that the most common growth measure would appear to be the least appropriate. Thus, the incremental models appear more relevant. Turning to the incremental models, it appears unlikely that a constant growth rate would be exhaustive over longer time frames, in particular for firms exhibiting rapid growth. For these reasons, the linear model 3 is used to model growth in the present study.

It should be noted that the three models differ when longer periods of growth are studied. The longer the period, the greater the difference. For growth rates over one single year they all yield the same results.

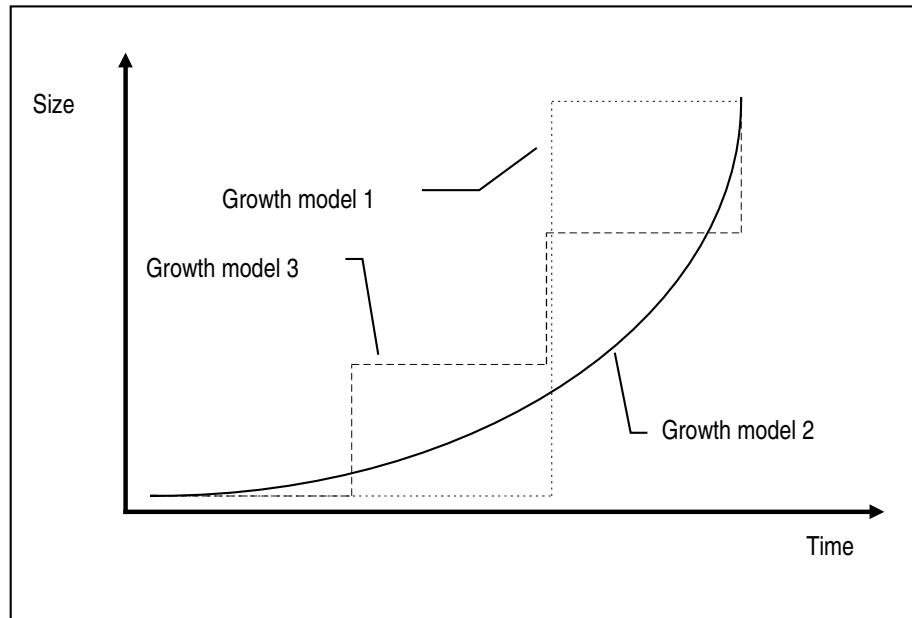


Figure 4.A. Three different models of firm growth.

#### 4.0.0 *The need for longitudinal data in causal analysis of growth*

The fact that growth is a change process that takes place over time imposes some restrictions on data collection when causal analyses are to be made, as is the case in the present study. Most importantly, it is problematic to use cross sectional data in causal analyses of growth.

An inherent problem of cross sectional studies is that it is impossible to empirically infer causality. When causal analysis methods are employed, theory is commonly used to support causal directions among variables. The study of firm growth, however, imposes some delicate problems when a cross sectional design is used. A common practice is to ask for present size as well as the size some years earlier and to use this information to calculate the firm's growth (Delmar, 1996b). Explanatory variables are collected at the same time and measure the present situation of the firm. This method measures a change process that started some time ago and that ends at the time of data collection. In



other words, explanatory variables collected today are used to predict a process of the past. Is this reasonable?

It is not necessarily unreasonable. However, the researcher inevitably has to make either of two assumptions to justify this "prediction of the past". The first possible assumption is that the explanatory variables are stable and do not change during the time period over which growth is studied. This is reasonable when stable explanatory variables such as sex, age, ethnicity of the manager etc. are used for explaining growth (if cases where the manager has been replaced are excluded). It appears virtually inadequate to use this assumption, if explanatory variables are likely to change substantially over time.

The other possible assumption is that growth is a linear process and that past growth predicts future growth. That is, the growth measure calculated from the past should be seen as a forecast of future growth, and the regression equation predicts this future growth. Unfortunately, there are empirical studies which show that it is not a very plausible assumption (e.g. Chandler & Baucus, 1996; Storey, 1997).

But then, how serious a problem is this? It could be argued that any study of this type will have shortcomings such as measurement error and the possible change of variables over time could be seen as just a slight increase of the error term, not really affecting the important relationships. The real answer to the question is that we really do not know how much variables change over the studied time period, and whether or not this is a major problem. Growth, as such, is a change process and it could be that explanatory variables change quite substantially during this process. Until we do know, it must remain an unwise oversimplification to assume that nothing else but size changes.

Methods must be chosen that are suitable for the research questions stated. Cross sectional studies are particularly ill-suited for causal studies of firm growth. A feasible alternative is to collect data on the explanatory variables at one point of time and measure the growth over a time period *beginning* when data are collected, not *ending* there. This is possible by collecting data on size changes at a later time. In other words, when causal analyses of growth are made - as in this study - a longitudinal research design is needed. In the present research, this is dealt with by collecting data on explanatory variables at one time, and data on growth the following year.

#### *4.0.0 Suitable time span in growth studies*

According to Storey (1994b), when studying employment changes in small firms, results will vary depending on the length of the period during which these changes are studied. Generally, a shorter period results in that the number of firms contributing to growth is more widely spread since it does not allow for the full growth of surviving firms to be reached. Storey recommends a period of about one decade to be studied. One problem with a long time period is that it is generally hard to trace firms far back and thus difficult to identify the correct sample. Another problem is that long time spans are difficult to cover in surveys, since all historic data will be "filtered through" the memory of the respondent. If such a long time span should be studied, it would be necessary to have information not only of initial and final size but also of the years in between to fully document the growth pattern. In a longitudinal study, the need for information concerning the years in between is equally important.

The present study analyses two different types of growth measures. Historical growth is measured over a three year period, from 1993 to 1996 and is not used in causal analyses. It is assumed that the growth pattern is incremental in accordance with equation (3) above during this period, and the size during the in between years is not measured.

In the causal analyses of growth, i.e. analyses that make use of the longitudinal data, growth during a one year period is studied. One year is a comparatively short time to determine the causal impact on growth. However, it could be argued that if a longer time span is used, other variables will disturb the relationship between explanatory and dependent variables, making it harder to argue that it really is the explanatory variables of the model that cause growth. Growth data will also be collected in subsequent years, but the results of this is beyond the scope of the present research.

#### *4.0.0 The importance of investigating different growth patterns*

The study of small firm growth is not without problems, since a firm is a legal entity that could be manipulated by the owner(s). Business activities could be ring fenced in different ways, either within a single firm or in a number of different firms. Thus, to some extent, the growth of a firm becomes a matter of how business activities are ring fenced. Others

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have pointed out the risks involved in focusing on the growth of the firm as an entity. Scott & Rosa (1996) point to the possibility of an entrepreneur starting additional firms and expanding his or her total business through them, while the original firm does not show any growth at all. These individuals are sometimes referred to as portfolio business owners (Storey, 1994b). None of their firms may exhibit rapid growth, but their portfolio of firms may grow extensively. If the growth of a single firm is studied, these activities will be overlooked and misinterpreted as a non-growth firm or a non-growth entrepreneur. Scott & Rosa (1996) stress the importance of studying the growth of the entrepreneur's business activities rather than a single firm's.

Moreover, even when the object under study is a single firm, it is important to separate different types of growth. There are two fundamentally different mechanisms underlying the growth of a firm. First, a firm could grow or shrink *organically* through the expansion or contraction of present business activities, i.e. the growing firm creates new resources. Second, it is possible for a firm to expand or contract through acquiring new, or divesting existing, resources. It is also likely that the processes causing the two different types of growth are fundamentally different. If these two types of growth mechanisms are not separated it is highly likely that results will be confounded in any causal analysis using growth as dependent variable. Other empirical studies suggest that the results obtained differ substantially depending on whether total growth or organic growth is measured:

*We have shown already that defining job growth in terms of organic growth rather than total employment growth may have substantial impact on the results and their interpretation. (Davidsson & Delmar, 1997, p. 19)*

To avoid confusing organic growth as opposed to acquisitions and divestments and to gain insight into the growth patterns of the firm's and the entrepreneur's business activities, an extensive number of questions are asked concerning ownership ties, acquisitions and divestments and changes along these dimensions.

#### **4.0 = Data collection =**

Basically, three different methods of data collection are possible in survey studies; mail questionnaires, telephone interviews or personal interviews (Lekwall & Wahlbin, 1993). Personal interviews were ruled out due to the large sample size (over 800 cases, cf. Section 4.7.2). We know that in general mailed questionnaires get lower response rates than telephone interviews. On the other hand, telephone interviews take longer, and it is therefore difficult to include a large number of questions since respondents are likely to get impatient (e.g. Lekwall & Wahlbin, 1993). The format of certain questions may also require respondents to personally complete them.

This study combines the two. In the first year a telephone interview was followed up by a mail questionnaire. This facilitates a reasonably high response rate, thanks to the introductory telephone interview, combined with the possibility of including a large number of questions.

One year after the initial study, a shorter telephone interview follow-up was conducted which makes the study longitudinal and more precisely turns it into a panel study. The data collected during the second year are concerned with growth and performance outcomes. Due to the time lag between collecting the explanatory variables and the outcome variables, it is possible to infer causality for this part of the model. Performance data will also be collected in the following years, but the results from these data collections are beyond the scope of the present research.

Considerable effort was devoted to ensure the quality of the data. The first telephone interview and mail questionnaire were pretested under supervision, on four small business managers. Questions that could be misinterpreted, or were difficult to understand or answer, were modified or deleted. Following this, a pretest was executed among 28 firms from the sampling frame, of which 24 completed both questionnaires. The questionnaires were modified again, in particular the lay-out of the mail questionnaire, before the study was conducted.

Telephone interviewers were carefully selected and trained before the interviews and their progress and interview results were constantly monitored. A sample of completed questionnaires were manually compared to the coded data base for punctuation errors, none were found.

## **4.0= Questionnaires and measures=**

### *4.0.0 General approach*

A guiding principle in developing the questionnaires was to use measurement scales which have been validated by previous research. Generally speaking, it is better to use variables and measures from previous research when available, rather than developing original ones. Existing variables have already been empirically tested and it is possible to determine their empirical validity, e.g. Cronbach's alpha test for multi-item variables and stability of variables in different samples, and their effect on the dependent variables, i.e. their relative importance. What is more important, it allows direct comparison between the findings of the present research and earlier studies.

In the following sections the measures of the individual constructs and their origins are presented in more detail, in accordance with the empirical research model (cf. Figure 3.3). The corresponding question in the questionnaire is given within brackets in conjunction with each variable. T refers to the first telephone interview, B refers to the mail questionnaire and TT refers to the second telephone interview. The three questionnaires can be found in Appendix 2. A list of all the variables in the analysis, the theoretical construct they are connected to, and the questionnaire items used for their measurement is presented in Appendix 3. Appendix 4 contains descriptive statistics for the key constructs: EO, growth and performance.

References to measurement sources do not necessarily refer to the research where the variable first appeared, but rather to authors that have shown the variable to be important and/or have discussed it in illuminating ways.

### *4.0.0 Resources and capabilities*

The entrepreneur's education and experience are measured by the following variables; type and length of education and training [T47 and T48], previous experience before present position (i.e. management, industry, rapid-growth firm and maximum number of subordinates [T39-42]), and tenure in present position [T43]. Other resource oriented characteristics of the entrepreneur are age, ethnicity and gender [T44-

46]. Access to different types of role models is also measured [T38] as well as whether the respondent started, inherited, or bought the firm, or is employed [T21]. The measurement of all these objective variables is fairly straightforward. The exact phrasing of most questions was taken from Davidsson (1989).

Turning to network variables, to evaluate the importance of 14 "network sources", respondents were asked how important each are for ideas and advice when important decisions are made (Davidsson, 1989, one item original) [B1]. The number of external board members [T23] is a straightforward, objective variable (original measure).

Resources of the firm involve the objective measures present size (FTE and sales [T10 and 12], from Davidsson, 1989), management team size [T24], number of employees having university degrees [T25], board size [T22] and whether equity has been sold to a new owner [B10] that are also straightforward, objective variables (these measures are original). The scale for measuring the importance of the board in decision making was an original 7-point opposite statements scale anchored in the influence of the board in important decision making [B3e]. To measure perceived size compared to competitors [B3m] and perceived capital availability [B3u] two original 7-point opposite statement measures were developed. Perceived use of employees in decision making [B3e] was taken from Miller (1987a).

#### *4.0.0 Attitudes*

The measurement scale for expected consequences of growth consists of 10 questions [T29], of which eight were used before (Davidsson, 1989; Delmar, 1996a) and two are original. Growth aspirations in terms of sales and employment were calculated as the relative change from the ideal size five years in the future [T28] and present size (Davidsson, 1989).

To measure the goals of the entrepreneur, 18 questions were asked [B7], eight of which appeared in Davidsson (1987). Another 10 items are original.

The questions concerning the entrepreneur's favoured work tasks [B8] were taken from (Delmar, 1996a), whereas the response categories are original.

#### *4.0.0 Industry*

Which of the four broad industries the firm belongs to was taken from the data register. Specific questions on other industry characteristics, i.e. customer concentration [T4], supplier concentration [T8] and exports [T5], were taken from Davidsson (1989) and Delmar (1996a).

#### *4.0.0 Perceived environment*

The three dimensions of the perceived environment, viz. dynamism, heterogeneity and hostility [B4] were taken from Miller & Friesen (1982). Three of the original heterogeneity items were dropped due to space limitations. The choice to drop items related to heterogeneity and not any of the other dimensions was the hypothesis that small firms would perceive little environmental heterogeneity altogether. In addition, the scale for using heterogeneity change only contains one item. Changes along these three environmental dimensions [B5] have their origin in Miller (1987a).

#### *4.0.0 Entrepreneurial orientation*

The scale for measuring entrepreneurial orientation [B3g, h, i, j, k, r, s, t] was taken from Miller (1987a). Descriptive statistics for this variable is provided in Appendix 4.

#### *4.0.0 Growth and performance*

Two dependent variables are utilised; growth and performance. Growth in terms of sales and employment was calculated as the relative size change in the surveyed firm from 1996 to 1997 [TT1, TT3, T10b, T12]. In order to include growth from the entrepreneur's overall business activities, the sales growth measure was adjusted for sales growth in subsidiaries [TT6f and g]. To separate organic growth from administrative growth, the sales growth measure was adjusted for mergers [TT7a] and divestments [TT8a]. The item [TT26] measures sales compared to competitors and [TT28] measures market value growth compared to competitors.

To measure financial performance, a total of three questions were asked. To measure gross margin, profits [TT24] were divided by present sales volume. Profits and cash flow compared to competitors was meas-

ured by two items [TT25 and TT27]. The measures for financial performance are original, developed in collaboration with two colleagues. The questions were previously used in a large sample of firms. The performance construct consists of the four items measuring growth and the three items measuring financial performance. Descriptive statistics for this variable is provided in Appendix 4.

#### *4.0.0 Entrepreneurial behaviour*

Twelve questions were asked concerning entrepreneurial behaviour. Questions [TT6c] and [TT9] measure the start-up of new organisations. Questions [TT13 to TT18] as well as [TT21] and [TT22] relate to innovative behaviour. Risk taking behaviour is measured by [TT19], while [TT20] is intended to measure proactive behaviour. The measures for entrepreneurial behaviour are original, developed in collaboration with two colleagues. The questions were previously used in a large sample of firms. The entrepreneurial behaviour construct consists of the twelve items measuring along with the four items measuring growth.

## **4.0 = Sample =**

#### *4.0.0 Sample stratification*

A probability sample has the advantage of allowing inference to the population by use of statistical tests. Results from nonprobability samples on the other hand can only be intuitively inferred to the population (Lekwall & Wahlbin, 1993). In the present research a stratified sample (which is a probability sample) was selected. The prime advantages of stratifying the sample are as follows (Malhotra, 1993):

- Extraneous sample variation can be controlled.
- All important subpopulations can be included if the distributions of key variables are skewed.
- Better precision is achieved in estimations, i.e. smaller standard errors.



### *method*

The empirical stratification criteria utilised were growth, industry and size. The rationale for stratifying the sample over these three variables is developed below.

The first stratification variable is growth rates, which is one of the two key research variables. Malhotra (1993) argues that stratification variables should be chosen that are as closely connected to the characteristic of interest as possible. Stratifying the sample is particularly important, since the distribution of growth rates in the population is skewed:

*Stratified sampling can ensure that all the important subpopulations are represented in the sample. This is particularly important if the distribution of the characteristic of interest in the population is skewed. (Malhotra, 1993, p. 365)*

Most small firms do not grow at all and very few display substantial growth (e.g. Davidsson et al., 1996; Storey, 1994b). As a result, random samples of small firms yield very skewed growth distributions with the majority of firms exhibiting no or very moderate growth figures, and a small tail of firms showing substantial growth. This is a problem in two respects. First, many causal statistical procedures such as multiple regression require normally distributed dependent variables for accurate estimation. Parametric statistical tests also require normal distribution of data. Raw growth data from random samples of small firms do usually not meet the normality criterion (Robinson, 1997).

The second problem is that lack of variation in growth makes causal analyses difficult. There is in fact very little variation to explain! The situation is similar to surveying a football team to estimate differences in physical condition based on age. Since all football players are likely to be in good shape, very little variation will be explained.

To avoid both these problems, it is possible to stratify the sample over rapid-growth, slow-growth and non-growth firms. As a result, the sample is likely to include a rather wide variation in growth rates. This is done in the present study. Keeping in mind that most firms do not grow, this should facilitate the establishment of substantial relationships between variables.

Additional stratification variables were used to further control the sample. The problem that smallness varies across industries can be over-

come to some extent by confining the study to a limited number of industries. If within-industry analyses are made, it is important to have large enough strata within each industry. In that case it is preferable to only include one or a few industries. There may be other arguments for including or abandoning specific industries. Technology based firms have, for example, received a lot of attention since this sector is expanding and is of increasing importance to the economy. This sector is often studied separately and may for that reason be included. The same is true for manufacturing, and possibly some other industries. In order to select appropriate industries, the following four industries defined by the Swedish SIC-system were selected. The rationale for selecting each of the four sectors is provided. An equal number of firms from each industry were included in the sample:

- *Knowledge and research intensive manufacturing.* Firms in this sector have a large number of engineers and researchers, invest heavily in research and development and compete based on their product. This sector is similar, albeit not equivalent, to the "high tech" sector and it is growing, much at the expense of the labour intensive sector (Ohlsson & Vinell, 1987).
- *Labour intensive manufacturing.* This sector is characterised by price competition and is exposed to international competition. It is this manufacturing sector that contains the largest number of small firms (Ohlsson & Vinell, 1987).
- *Retail and wholesale.* This sector is dominated by small firms more than any other, and no other Swedish industry contains a larger number of small firms (Davidsson et al., 1996).
- *Professional services* which expands faster than any other sector in the Swedish economy (Davidsson et al., 1996).

The third stratification variable is size. The size distribution of firms is skewed in the population, the bulk of firms being at the lower end of the selected size-bracket 10 to 49 employees. Because of this, an equal number of firms in the size-brackets 10 to 19 employees, and 20 to 49 employees were selected. As mentioned in Section 4.4.3, firm size is among the largest explanatory variables for firm growth in other studies which is the rationale for using size as a stratification variable. Although this was attributed to their calculation of the growth measure (different

measures are employed in the present research), the choice was made to stratify the sample by size.

These three stratification variables taken together give a tightly controlled sample which should facilitate the detection of true relationships among variables and prevent spurious results. The sample is, however, still broad enough to include a wide variety of firms. Most likely this careful stratification gives some measure of security against the recurrent criticism against findings derived from samples either being too vast or too narrow (cf. Mintzberg, 1979)

#### *4.0.0 Sample size and response rates*

The sample frame for this study was taken from the CD-ROM data base UC-Select which bases its information on the annual reports reported to the Swedish Patent and Registration Office. This is information that all limited companies must report by law. The UC-Select data base contains a search engine which makes it possible to select firms based on the criteria for inclusion in this study (independent ownership and size) as well as stratify the sample by the three stratification variables (growth, industry and the additional size criterion). The available growth figures refer to relative sales growth over the two last registered annual reports.

Slightly more than 200 independent firms in each of the four identified industries were randomly selected from the data base. Half of the sample had between 10 and 19 employees, and half between 20 and 49 employees. The growth figures contained in the register are reported as negative, 0-24%, 25-49%, 50-74%, 75-99%, and above 100%. No shrinking firms were included<sup>14</sup>. Half of the selected firms exhibited below 25% growth and an equal share of firms were selected from the remaining four growth brackets. This gave a total sample of 842 firms. Seven of these turned out to be duplicates of other firms in the study.

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<sup>14</sup> The reason for excluding shrinking firms is that more precise information on how much they have shrunk is lacking. If they are shrinking extensively, this may be an indication that they are about to go out of business. Since the data from the register are one to two years old, there is a fairly high risk that these firms have gone out of business prior to the first survey round, or will close during the study. Moreover, the actual sample derived exhibits large variation in size changes, 18% are defined as shrinking firms in terms of sales, 48% as no change firms, and 34% are defined as growing firms in the 1996 to 1997 period. Hence, the prime deviation for the sample in relation to the population may be that failing firms are excluded.

Unfortunately, Swedish subsidiaries of foreign firms were not excluded from this sample. Those firms where the name indicated foreign ownership were manually deleted prior to data collection (e.g. Coca Cola Sweden). Other firms indicated that they were subsidiaries upon initial contact and were not interviewed. A total of 21 firms were excluded for these reasons. Bankruptcy or closure of operations were also reasons for deletion. In total another six firms were removed.

Of the 808 remaining firms, 630 were telephone interviewed in April and May 1996, which gave a response rate of 78%. 465 also returned the mail questionnaire (total response rate 58%). These 465 firms were approached again for a telephone interview a year later. No less than 447 responded, which equals 96% of the remaining firms from the previous year, and 55% of the original sample. The response rate during the last survey round must be regarded as extraordinary high and can possibly be attributed to the fact that a booklet with the results from the first year's study was sent to them shortly before the interview. In the analyses, the effective sample size is usually somewhat smaller due to internal non-responses.

Responses for different sub-samples for the three surveys are reported in Table 4.1. As indicated in the table, response rates are fairly evenly distributed among different industries and size-brackets, with a slight drop for small retail firms.

*method*

**Table 4.A. Number of responses and response rates in different industries and size-brackets.**

	<i>Initial sample</i>	<i>First telephone interview</i>	<i>Mail questionnaire</i>	<i>Second telephone interview</i>	<i>Overall response rate (%)</i>
Labour intensive manufacturing 10-19 empl.	103	88	65	59	57
Labour intensive manufacturing 20-49 empl.	106	77	58	55	52
Knowledge intensive manufacturing 10-19 empl.	100	81	60	58	58
Knowledge intensive manufacturing 20-49 empl.	103	84	59	59	57
Retail 10-19 empl.	96	69	48	45	47
Retail 20-49 empl.	99	79	61	57	58
Professional services 10-19 empl.	103	80	60	60	58
Professional services 20-49 empl.	98	72	55	54	55
Total	808	630	465	447	55

#### *4.0.0 Sample characteristics*

Generally, maximum use is made of data. This means that all firms responding to each of the surveys will be used in the analyses. Due to this, the sample characteristics reported below refer to the sample of 630 firms that responded to the first survey.

An initial analysis was made regarding how well the register data corresponds to the size reported during the telephone interview. This illustrates that 88% of the firms are within the specified size-bracket of 10 to 49 employees (Table 4.2). Overall, the actual distribution within size-brackets and industries matches the specified selection criteria fairly well and analyses will be performed as initially planned.

**Table 4.B. Number and share of firms in different size-brackets and industries.**

<i>Size class reported in interview</i>	<i>Labour intensive manufacturing</i>	<i>Knowledge intensive manufacturing</i>	<i>Retail</i>	<i>Professional services</i>	<i>Total</i>
1-9 Empl.	2.2% (14)	1.7% (11)	1.0% (6)	2.1% (13)	7.0% (44)
10-19 Empl.	10.2% (64)	10.0% (63)	11.1% (67)	9.4% (59)	40.6% (256)
20-49 Empl.	13.0% (82)	12.7% (80)	10.6% (67)	11.7% (74)	48.1% (303)
50+ Empl.	0.8% (5)	1.7% (11)	0.8% (5)	1.0% (6)	4.3% (27)
Total	26.2% (165)	26.2% (165)	23.5% (165)	24.1% (152)	100.0% (630)

*Note:* Share of the total number of firms is displayed in the T able.

Even though this research is primarily concerned with independent small firms, no less than 20% of the firms in the 1996 sample are subsidiaries (Table 4.3). It is interesting to note that 37% of the subsidiaries have been taken over during the three year period during which their historic growth was studied<sup>15</sup>. Another 5% were taken over before the 1997 survey, whereas 2% of prior subsidiaries had become independent. Whether the rapid rate of take-over of small independent firms is a general tendency in the economy or a result of the large share of rapid-growth firms in the sample is difficult to determine.

A decision was made to keep these subsidiaries in the sample even though the study was initially exclusively aimed at studying independent small firms. There are two reasons for this decision:

- The take-over of small growing firms reflects the real dynamics of the economy. Restricting the sample to firms that are independent at the end of the studied period may distort the image of how small firms grow. Any possible differences between subsidiaries and independent

<sup>15</sup> **All retrospective questions in the first survey round refer to what has happened during the previous three years, including ownership changes.**

*method*

firms may be dealt with by analysing the two groups separately, or by using subsidiary status as a control variable.

- The potential problem that administrative growth is easier to achieve in subsidiaries due to company group reconstructions is limited in the present study since the growth patterns of the firms are investigated and the focus is on organic growth (see further Section 4.4.6).

**Table 4.C. Share of firms that are subsidiaries in different industries 1996 and 1997.**

	<i>Subsidiary 1996 (%)</i>	<i>Subsidiary 1997 (%)</i>
Labour intensive manufacturing	8.5	13.2
Knowledge intensive manufacturing	15.2	18.8
Retail	33.1	40.2
Professional services	25.0	28.1
Total	20.0	24.6

*Note:* Share of firms in each industry is displayed in the Table.

#### *4.0.0 Respondents*

All data were collected from the Managing Director. The Managing Director was explicitly asked for at the beginning of the telephone interviews, and the mail questionnaire was sent directly to him/her accompanied by a personal letter. In order to assure a high response rate, only questions that the respondent could answer without referring to written documentation were asked.

#### *4.0.0 Non-response analysis*

To check for possible non-response bias, respondents and non-respondents were compared for each of the three surveys rounds<sup>16</sup>. Information available for non-respondents in the first survey round was restricted to data register information while we know considerably more

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<sup>16</sup> X<sup>2</sup>- and t-test of significance was applied and p<.05 was used as criterion for significance.=

about the firms that completed one or two of the surveys before withdrawing.

No significant industry or size differences were found between the 178 non-respondents and the 630 respondents in the first survey round based on data register information. Possible differences between the 465 firms that completed both questionnaires during the first year and the 165 firm that withdrew after the first telephone interview were tested concerning self-reported size, industry, growth rate and satisfaction with performance. No significant differences were found. Neither were there any significant differences for these variables when the 447 firms that responded to all three surveys were compared to those 18 that withdrew before the final telephone interview. Finally, the firms that completed all surveys were compared to those that did not. No significant size or industry differences were found based on data register information. Hence, it is relatively safe to conclude that there is no significant non-response bias in the sample.

#### **4.0& Some comments on the sample and inference= to the population=**

That over 50% of the sample responded to all three questionnaires can be regarded as a successful response rate. This, in combination with the fact that the actual sample to a high degree reflects the sampling frame regarding size and industry, gives a high level of certainty regarding which population the sample represents<sup>17</sup>. The risk that results from the sample are systematically biased in relation to the sampling frame is therefore low.

One advantage of this stratified sample is that it is quite homogenous regarding size and industry, and it is thus relatively easier to control for the influence of disturbing variables. The rationale for selecting a tightly controlled sample was in the first place to ensure that true empirical relationships could be ascertained, and spurious results avoided. In causal analyses, the possibility of controlling potentially confounding variables is more important than using a random sample (Ruist, 1990).

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<sup>17</sup> **This is of course contingent on the extent to which the sampling frame reflects the actual= population. Since the information in the data register is reported by all firms by law, the view= held here is that relatively few firms that should appear in the data register are left out.=**



### *method*

A drawback of the sample is that it does not represent the total population of small firms. Some industries and size-brackets have not been considered for reasons stated above. Therefore, statistical inference to the total population of small firms will be limited. On the other hand, a sample can, at best, be exhaustive in relation to the sampling frame, never to the population. It is inevitably difficult to select a sample from a data register that represents the entire population of small firms. The major problems are that a large share of small firms fail during their first years of operation and a delay in reporting firm births, deaths, take-overs, growth etc. to data registers. Consequently, there will be deviations in the sampling frame compared to the population. Hence, generalisations to a population of small firms can never be purely done on statistical grounds.

Rather, statistical inference to the population always needs to be supplemented by reasoning. If data behave as if they were generated by postulated models, it is possible to discuss the similarity of other situations to the situation studied and derive possible inference from this (Ruist, 1990). Even though the current sample is controlled, it contains a variety of different types of small firms. If results are stable throughout industries and size-brackets, they could also be generalised to other industries and size groups as well. The use of sophisticated structural models with a high degree of autonomy (cf. Section 4.10.4 below) further facilitates generalisation on rational grounds (Ruist, 1990).

Another important aspect of the sample has to do with the relationship between theory and empirical findings. Regardless of which population the sample represents, empirical findings are tests of theory on the actual sample. These tests are likely to be more valid and unbiased when the sample is controlled.

To conclude, the stratified sample is likely to give less biased results in relation to both the population and theory. This advantage outweighs the possible disadvantage that it may be more difficult to determine exactly the population to which results are inferred. The alternative of using a simple random sample would probably result in much more unreliable and difficult to interpret results. Another way of expressing this is that while internal validity increases considerably by the chosen sampling technique, external validity decreases only marginally.

#### 4.0& A scientific realist account of level of measurement and permissible statistics

The vast majority of the variables in the study are ordinal<sup>18</sup>. A large number also refer to the measurement of unobservable variables such as attitudes. According to the representationist measurement paradigm - developed by Stevens and Suppes & Zinnes above others (Stevens, 1946; Suppes & Zinnes, 1963) - which is grounded in a positivist tradition, only restrictive statistical analysis is permitted for ordinal data. This paradigm maintains, for instance, the view that the assumptions underlying parametric statistical tests are violated by ordinal data. The reason why different levels of measurement are fundamentally different and why they permit different types of statistical operations is - it is said - because the measurement scale is an isomorphic image of the studied attribute. An effect of this is that the logical and mathematical properties of the measurement scale are equivalent to those of the attribute. Thus, not only the measurement scale, but more importantly, the *attribute* has ordinal, interval, or ratio properties.

On the other hand, according to scientific realism, measurement of unobservables such as attitudes and IQ is possible (Hunt, 1991; Swoyer, 1987). Since the attributes are unobservables, we do not know their mathematical and logical properties. The scientist has to discover if an attribute is quantitative and measurable and assign numbers to the attribute, i.e. to develop a suitable measurement scale for the studied attribute (Michel, 1986).

In social sciences, the most interesting variables are often of this unobservable type. The attributes are assumed to be quantitative and continuous but are manifested on ordinal measurement scales. A positive difference on this scale reflects a positive difference in the underlying attribute (Borgatta & Bohrnstedt, 1980). The measurement scale is not an isomorphic image of the attribute. This results in a measurement scale that is not a perfect reflection of the measured attribute, but contains measurement error which should be treated like other measurement errors, such as normality deviation. The important implication is

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<sup>18</sup> Ordinal data refers to measurement scales where a positive difference between two points on the manifest scale reflects a positive difference in the underlying attribute but the intervals on the scale are not equal. Borgatta & Bohrnstedt (1980) use the term "imperfect interval manifest scale" instead.

that measurement scales designed to measure quantitative, continuous variables on an ordinal scale can be treated as interval scales in statistical operations. That is, the statistical procedures used for analysing interval or ratio data can equally well be used to analyse ordinal data.

The above illustrates that the strict criteria for level of measurement and permissible statistical analysis suggested by representationalists is irrelevant according to a scientific realist outlook. The use of parametrical tests etc. of ordinal data is not a dubious practice and a remission in order to squeeze information out of data. Rather it is a sound practice grounded in the philosophy of science and measurement theory. Hence, statistical analyses will be performed equally, independently of whether the scale type used for measurement is ordinal, interval or ratio. It should be noted that nominal and rank ordering scales are not considered as measurement in the same sense (Michel, 1986) and will be treated differently in the analyses<sup>19</sup>.

## **4.0= Analysis methods=**

### *4.0.0 Introduction*

When conducting empirical analyses there must be a balance between model sophistication and simplicity. On the one hand, more sophisticated models are advocated since they, to larger extent, take the complexity of the studied phenomena into account. Haavelmo (1944) introduces the term autonomy to describe the extent to which a model reflects the data generating processes resulting in the data at hand. The more autonomous a model is, the more closely it reflects the actual causal structure of the studied phenomenon, and can therefore be seen as more realistic. Autonomous models facilitate the possibility to reach beyond the most evident empirical relations. The problem with autonomous models is that they may lead to very complex analyses that are difficult to scrutinise both for the researcher and the reader. On the other hand, another - contradictory - virtue is to use as simple models as possible in order to focus on the most important relations and neglect the others. This is often referred to as Occam's razor principle.

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<sup>19</sup> **These variables are either analysed in contingency tables or else transformed into dummy= variables.=**

To resolve the problem of autonomy versus simplicity, both types of analyses are used; bivariate analyses that study individual variables one at a time and therefore are more easily scrutinised and interpreted; as well as more sophisticated and autonomous multivariate analyses that study structural relations between a large number of variables simultaneously. The three empirical chapters move from simple analyses in the first, over more sophisticated in the second, and to the most sophisticated modelling and analyses in the third.

A question which may arise is: which analysis is more trustworthy when the same data are analysed using different methods? Generally speaking, when different methods produce the same results, this can be seen as a validation of the findings (Campbell & Fiske, 1959). More autonomous models take more factors into consideration, which reduces the risk of neglecting important factors or relations. This is likely to give more reliable results (Ruist, 1990). Yet, each method has its own pros and cons and all findings have to be judged on their own merits.

#### *4.0.0 Analyses in the first empirical chapter (Chapter 5)*

The first empirical chapter contains the least sophisticated analyses. Here non-causal means comparisons, and Student's t-test of significance are utilised. Aggregate mean differences between groups of rapid-growth and slow-growth small firms are compared (the properties and assumptions of this analysis and statistical test can be found in any standard statistics textbook).

The grouping of rapid-growth and slow-growth firms is based on their historical growth pattern over the last three years up to the time the first survey was conducted. In other words, this growth measure is not equivalent to the growth measure used in the causal analyses which measures growth during the year between the two survey rounds. The rationale for the choice of a different growth measure here is three-fold. First, analyses are non-causal, i.e. it is not stressed that possible differences between the two groups *cause* growth. Hence, real-time growth is not necessary to distinguish between the two groups. Second, the three year growth period is longer and reflects a more exhaustive growth trajectory than is possible with the one year real-time growth measure. Third, this historic growth measure is most often utilised in other studies (cf. Section 4.4.4), which makes the comparison with other studies

easier.

There are a number of incentives for conducting these simpler analyses in addition to the reason stated above. The analyses are data driven and make minimum use of theory. Theory is mainly used for structuring the variables, so that those variables belonging to the same theoretical construct are analysed jointly. In a sense, the data are allowed to speak for themselves as far as possible. As a result, new associations not suggested by theory, may be revealed. Regardless of whether the findings in this chapter support or challenge the theory utilised in subsequent chapters, they provide valuable input to the more sophisticated analyses. Since these analyses are relatively clear and uncomplicated, it is possible for readers with limited knowledge of statistics to follow the analyses and the conclusions drawn from them.

#### *4.0.0 Analyses in the second empirical chapter (Chapter 6)*

The aim of the second empirical chapter is to explain differences in the degree of entrepreneurial orientation (EO) between individual firms. Multiple linear regression is used for analysis. The direct linear effect of a set of independent variables on one dependent variable is estimated. EO is the dependent variable, and variables relating to the constructs; attitudes, perceived environment, industry and resources are independent variables. This is a causal type of analysis where EO is regarded an effect of the independent variables. Special attention is paid to:

- The ability of the independent variables to explain the variance in the dependent EO variable (adjusted explained variance measure).
- The relative importance of different variables (standardised regression coefficients).
- The probability that the results obtained in the sample also hold for the population of firms which the sample is drawn from (test of significance).

In the analysis of EO as a dependent variable, data are cross sectional. Theory is used to support the causal direction between the independent variables and the dependent variable.

Multiple regression is a more sophisticated technique than the preceding comparison of means even though it has become common in social sciences. A description of this method can also be found in most

statistical textbooks. The analyses in this chapter lean more heavily on theory, in that they are based on a fairly sophisticated theoretical model which can be regarded as more autonomous.

#### *4.0.0 Analyses in the third and fourth empirical chapters (Chapters 7 and 8)*

Yet another step towards increased model sophistication and autonomy is taken in the third empirical chapter, in the sense that structural modelling is used. On the other hand, the number of manifest variables is reduced to a much smaller number of theoretical variables.

The proposed research model is characterised by a number of theoretical constructs at a fairly high level of abstraction. At this level of abstraction, theoretical constructs are impossible to measure directly. This lies in the definition of theory, which is abstraction. Theoretical constructs are, by definition, abstract and hence unobservable. Furthermore, there are structural relationships in the model, i.e. there are two endogenous, causally linked constructs.

To empirically deal with such a situation, statistical techniques sometimes labelled "Second generation multivariate analysis" (Fornell, 1987; Wold, 1989) have been developed. This type of analyses facilitates the direct application of theoretical models - such as the present research model - to empirical data. In "Second generation multivariate analysis", structural relations with many endogenous variables can be estimated simultaneously. In the present research Partial Least Squares (PLS) analysis is used. The software used for the analysis is PLS 1.8 mode PLSC developed by J.B. Lohmöller. The reasons for choosing PLS and an explanation of analytical techniques are provided below.

Another important property is the use of multiple manifest variables as indicators of theoretical constructs, so called latent variables. This overcomes the problem of fuzzy measurement of complex variables, and facilitates the direct empirical measurement of unobservable theoretical constructs such as attitudes<sup>20</sup>. Taken together, the possibility of applying abstract latent variables and model structural relations help to narrow the gap between theory and empirical data (Fornell, 1987). The impor-

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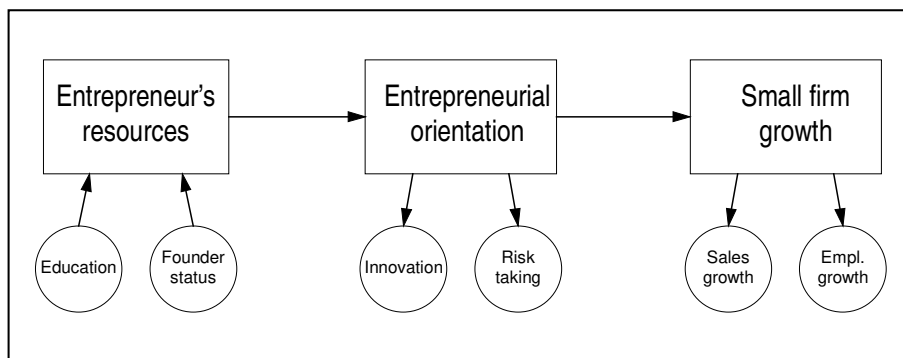
<sup>20</sup> In the empirical chapters in this dissertation the terms latent variables and theoretical constructs are used synonymously. =

tance of such a possibility should not be underestimated. The lack of compatibility between empirical and theoretical development in the field of entrepreneurship was highlighted above (cf. Section 2.9). The same failure to reconcile theory and empirical observation can also be discerned in other fields (Bagozzi, 1984; Wold, 1982).

There are two kinds of relationships between observable empirical variables (manifest indicators) and unobservable latent variables (theoretical constructs). Reflective indicators suggest that the underlying latent variable causes the empirical observations. One example could be how an attitude is manifested in the answers to a number of Likert-questions. The attitude is argued to cause the answers and not the reverse. In graphical presentations, this is illustrated by outward causal arrows from the latent variable to the manifest indicators.

Formative indicators, on the other hand, suggest that the latent variable is an effect of the manifest indicators. One example could be resources, where "the bundle" of resources is seen as the composite effect of different resource categories. Formative indicators are depicted by causal arrows pointing from the manifest indicators to the latent variable.

A simplified version of the research model, leaving out most of the theoretical constructs and manifest indicators, can serve as an illustration of the relationships between manifest indicators and latent variables (Figure 4.2).



**Figure 4.B.** Example of a theoretical model with latent variables identified by formative and reflective manifest indicators and the structural relationships between latent variables.

Note that in the model, both entrepreneurial orientation and growth are dependent (endogenous) variables that are predicted simultaneously. Due to the structural relationships, entrepreneurial orientation is both a dependent variable that is predicted by resources of the entrepreneur, and an independent variable predicting growth. If a direct link was added from resources of the entrepreneur to growth, both the direct effect from resources on growth and the indirect effect mediated through entrepreneurial orientation could be represented in the model. The entrepreneur's resources are composed by two formative indicators in the model, whereas the two other constructs have reflective indicators. The term *inner model* is used for structural relations among latent variables, whereas *outer model* is used for relationships among latent variables and manifest indicators.

The most well-known "Second generation multivariate analysis" is structural equation modelling, SEM (the terms "covariance structure analysis" or "maximum likelihood" (ML) are often used synonymously). Software available to undertake SEM analysis are for example LISREL, EQS, AMOS and CALIS. An alternative to SEM is "partial least squares" (PLS) developed by Herman Wold (Wold, 1980; 1981; 1985; 1989; Wold & Jöreskog, 1982). Although less commonly used, there are some distinct characteristics of PLS which makes it the preferred analysis technique in the present research context.

PLS has been specifically developed to deal with situations where there are few strong theories, and the prime purpose of research is not to test prior theory but rather to predict phenomena, whereas the major strength of SEM lies in theory testing. According to Wold & Jöreskog (1982, p. 270):

*ML is theory-oriented, and emphasizes the transition from exploratory to confirmatory analysis. PLS is primarily intended for causal-predictive analysis in situations of high complexity but low theoretical information.*

The basis for this statement is that SEM maximises the fit between theoretical model and data, while PLS optimises explained variance of dependent theoretical constructs. The trade-off of optimising prediction is that parameter accuracy is less than optimal. However, estimates are asymptotically correct when the sample size is large and the number of manifest indicators per latent variable is large.



*method*

In order for SEM to give good results, the relationships between latent and manifest variables as well as structural relationships among theoretical constructs, need to be known beforehand. Furthermore, SEM makes prior assumptions of the distributions of variables, and different levels of measurement cannot be used in one model. PLS on the other hand, accepts different levels of measurement and makes no distributional assumptions, i.e. PLS is scale free and distribution free.

Wold refers to PLS as "soft modelling" to describe its advantages in situations where theories and measurement are not "strong" but "soft".

In a situation where theory and measurements are soft, the application of statistical analysis to data creates a dilemma for the researcher. Either he or she has to make theoretical and distributional assumptions that are dubious or even incorrect or else less sophisticated statistical techniques than SEM will have to be used. The alternative then is to use PLS. In relation to the present research, the advantages of PLS can be summarised as follows:

1. As stated in earlier chapters, no strong theories exist in the research field, i.e. theory is soft. The prime objective is not to test any specific existing theory or model. Instead, an original model is developed.
2. In the present research, different levels of measurement are utilised and the distributional properties of all variables cannot be assumed to be normal. In other words, measurement is soft.
3. The sample size can be regarded as large, and the number of indicators per latent construct is also large which facilitates parameter accuracy.<sup>21</sup>
4. In PLS but not in SEM, it is possible to use reflective and formative indicators in the same model. This is necessary, since some theoretical constructs in the model are composed by reflective and some by formative indicators.

PLS can be seen as a combination of principal component analysis and multiple regression analysis. A latent variable is always an exact linear combinations of its manifest indicators. Latent variables with reflective

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<sup>21</sup> **A strong rule of thumb is that the sample size should be larger than ten times the scale= with the largest number of formative indicators. The theoretical construct with the largest= number of formative indicators, the entrepreneur's resources, has 15 formative indicators.= The number of cases surpasses 150 by far. No latent variable has fewer than six manifest in= dicators.=**

indicators represent the first principal component of the indicators. For formative indicators, the latent variable is regressed on the indicators.

Technically, PLS uses an iterative process to minimise residual variance for endogenous variables and their manifest indicators. If we start with the first iteration of the process, latent variables with reflective indicators represent the common principal component explaining the maximum amount of variance. During later iterations, the structural relationships are introduced and the correlation among latent construct rather than between indicators and individual latent constructs is optimised. As a result, the latent construct becomes modified and is therefore no longer the principal components giving maximum explanation to its reflective indicators. Rather, the latent construct could be viewed as a rotated principal component. During the iteration process, formative indicators are given regression weights that maximises explained variance of the theoretical constructs they predict, just as in ordinary multiple regression.

In evaluating results:

- Explained variance for dependent latent variables is used for assessment of the inner model, together with path coefficients between independent and dependent latent variables. These path coefficients are equivalent to standardised regression coefficients in multiple linear regression.
- To evaluate the outer model, factor loadings for reflective indicators and regression weights for formative indicators are assessed.
- The PLS software utilised (PLS 1.8) does not calculate an adjusted explained variance measure, nor the significance of path coefficients or regression weights. The general rule applied here is to dismiss path coefficients smaller than .10 and regression weights smaller than .30 as insignificant (Falk & Miller, 1992).
- The root mean square covariance between the residuals of the manifest and latent variables is an overall measure of how well the model fits the data.

## 5 Differences between rapid-growth and slow-growth small firms

### 5.0= Introduction to the analyses=

In this chapter the sample is split into two sub-samples based on historical annual growth rate during the three years prior to the first survey round. The mean values of the two groups are compared for a number of variables to find out if the two groups differ systematically from each other in respects other than growth rates.

Student's t-test of significance is applied and the standardised difference between the groups is calculated. The standardised difference measure provides more information than significance testing alone, since it, in addition to variance, takes effect size into consideration. If the standardised difference is smaller than .25 standard deviations, it is very small and should be disregarded. Differences between .5 and 1 are considered as medium, whereas differences larger than one standard deviation are considered as large (Cohen, 1969). Due to the relatively large sample size, all differences that meet the .25 criterion are also significant at  $p < .05$ . For categorical variables, cross tabulation analysis and  $X^2$ -test of significance is applied. Since groups of firms are compared, findings refer to aggregate results and not individual firms.

As stated in the Method Chapter, this is an exploratory analysis, leaning little on previous theoretical and empirical findings in the area (cf. Section 4.10.2). Hence, little reference is made to previous research. A review of this literature is instead included in the following chapter.

The analysed variables correspond to the theoretical constructs in the research model. Differences in growth, alternative growth patterns (e.g. mergers, start-up and growth of subsidiaries), and areas related to alternative growth patterns (e.g. serial entrepreneurship) are initially investi-

gated<sup>22</sup>. The next section contains an analysis of differences in strategic orientation, followed by a section on attitudes. The next area investigated is resources. An analysis of differences in the perceived environment completes the analyses.

Over the studied three year period, the firms in the sample on average increased their number of employees by 10% and sales by 20% annually. The deviation from the mean is large. Annual growth rates vary from a decrease of 40% to an increase of over 450% annual growth rate!

Rapid growers are defined as having an annual employment growth rate of more than 25% *or* an annual sales growth rate of over 30%. The reason for choosing different levels for sales and employment is that sales growth is compensated for inflation and productivity increases. The 30% annual sales growth rate cut-off for rapid-growth firms is equivalent to that chosen by Storey (1996), and slightly above that utilised by Blixt (1997). With this definition a total of 134 firms (21.8%) are considered as rapid growers.

First of all, the share of rapid growers is compared across industries. This analysis reveals that there is a significant over-representation in the high growth sub-sample from the knowledge intensive industry and an under-representation from the retail sector. To avoid the problem of confounding growth effects with industry effects, industry separate analysis are performed concerning variables where an industry effect is likely. It is, for example, possible that manufacturing firms have, on average, larger exports than retail firms. Therefore, industry separate analyses will be run for export and similar variables. However, these analyses are only the subject of comment, and not displayed in the tables.

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<sup>22</sup> **An alternative would be to include alternative growth patterns in the classification of which category firms belong to. If this was done, entrepreneurs that for example head slow-growth firms but own additional rapidly growing firms would belong to the rapid-growth category in the analysis. However, this would shift the focus from rapid-growth firms to rapid-growth entrepreneurs, i.e. from the organisation to the individual. If this alternative classification was utilised, another 20 firms would be added to the rapid-growth category.=**

## **5.0= Growth and related areas=**

### *5.0.0 Size, growth and growth aspirations<sup>23</sup>*

The rapid growers are larger at the end of the studied period, in particular concerning employment, whereas they were smaller at the beginning of the period. Their growth rate has been considerably higher. This latter finding is hardly surprising given that growth was the means of discriminating between the two groups.

It is interesting to note that the higher growth rates is not a temporary phenomenon that started at the time of the study. Rapid-growth firms are on average younger and have shown significantly higher growth already since the creation of the firms. This suggests that even though small firm growth is not a linear process, neither is it haphazard, but continues over time. These analyses are displayed in Table 5.1.

Further support for this view is given when future growth aspiration is studied. Rapid-growth firms have significantly higher growth aspirations for the future. It appears that both groups (seen as groups) intend to stay on their chosen track; rapid growers strive to maintain their expansion also in the future. If firms with higher growth aspirations actually do grow faster in the future is of course a different question. Earlier research indicates that SME managers' estimates of future growth may relatively well model actual outcomes (Mok & van den Tillaart, 1987).

This can, at least partially, be tested if growth data from the subsequent year are utilised. The chance that a rapid-growth firm in the 1993 to 1996 period would remain a rapid-growth firm in the subsequent year is almost 5 times greater than that of a non-rapid-growth firm during the 1993 to 1996 period becoming a rapid-growth firm in the subsequent year. The analysis also reveals that five year growth aspirations and subsequent year employment growth correlates significantly while the correlation for sales growth is insignificant. Albeit significant, the correlation for employment growth is weak, and it is therefore premature to conclude that growth aspirations lead to actual growth outcomes.

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<sup>23</sup> **The three questionnaires can be found in Appendix 2. A list of all the variables in the analysis, the theoretical construct they are connected to, and the questionnaire items used for their measurement is presented in Appendix 3.=**

The major finding from this analysis of past growth and future growth aspirations is that rapid growers have grown faster in the past and intend to grow faster in the future. The important conclusion to be drawn from this is that other factors than mere chance determine which of the categories rapid growers or slow growers the firms end up in during the three year time frame of this study. From this, it is reasonable to assume that rapid growers have a different development trajectory that is relatively stable over time. The relative stability of the growth process also gives support to the relevance of studying growth during shorter time frames, such as three years, since processes appear to have some stability, at least at the aggregate level employed in this analysis.

**Table 5.A. Size and growth.**

	<i>Slow growers</i>	<i>Rapid growers</i>	<i>Standardised difference</i>
FTE 1996	22	29	-.52
FTE 1993	20	14	.43
Sales 1996	35MSEK	45MSEK	-.17
Sales 1993	27MSEK	15MSEK	.30
Annual increase (employees)	4%	33%	-1.65
Annual increase (sales)	10%	56%	-1.26
Growth aspirations in employees (over 5 yrs)	45%	104%	-.38
Growth aspirations in sales (over 5 yrs)	60%	150%	-.54
Firm age	32yrs	20yrs	.46
Annual growth since creation, FTE	1.5	3.6	-.80
Annual growth since creation, sales	2.3MSEK	5.9MSEK	-.55

### *5.0.0 Subsidiary ownership and development*

In order to explore the possibility of alternatives to expanding the single firm, other growth patterns are examined, starting with the option of growth through subsidiaries.

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A larger share of rapid growers own subsidiaries, have started more and purchased more subsidiaries (Table 5.2). All the differences concerning subsidiaries are in the same direction; rapid growers show greater activity along all the dimensions. The most marked difference concerns the number of subsidiaries being started during the last three years. Almost three times as many rapid growers have started one or more subsidiaries during this time. Moreover, those rapid-growth firms that actually own subsidiaries expand them more than the other firms do<sup>24</sup>.

It could be stressed that the start-up of a subsidiary is an entrepreneurial act and that the rapid growers are also more entrepreneurial from this perspective. Industry separate analyses were also performed which gave identical results for all four industries.

**Table 5.B. Share of firms owning, having started and having acquired one or more subsidiaries.**

	<i>Slow growers (%)</i>	<i>Rapid growers (%)</i>	<i>Significance</i>
Owens subsidiary	13.5	21.6	.020
Has started subsidiary	10.9	18.7	.016
Has started subsidiary over last three years	5.9	15.7	.0002
Has acquired subsidiary	3.4	6.0	.18
Has acquired subsidiary over last three years	2.8	5.2	.18

A minority of firms from both categories own subsidiaries. Among those that do, the growth rate of the rapid growers' subsidiaries is higher. This, in combination with the fact that a larger share of rapid-growth firms start subsidiaries, leads to the conclusion that rapid growers boost their growth even further through their subsidiaries. From a theoretical standpoint it would seem plausible that the start-up of subsidiaries could be an *alternative* to expanding the parent firm. If the firm is already running efficiently at optimal size, organisational diversification could

<sup>24</sup> Mean sales increase for rapid growers' subsidiaries = 5.3 MSEK and for other firms' subsidiaries = 2.4 MSEK, standardised difference = .65 (n=85). =

be an alternative to expanding existing processes (Scott & Rosa, 1996). The empirical results from the present study do not support this view, rather it is contradicted. There seem to be other mechanisms underpinning small firms' start-up of subsidiaries. The line of business of the subsidiaries has not been investigated, but it is likely that expanding firms set up new sales offices to reach new geographical markets or form new legal entities to spread the risk when new products are developed. The fact that the majority of subsidiaries are started during the expansion period studied here, indicates that subsidiaries may be started to reach new markets, rather than to develop new products. If the subsidiaries were set up for product development purposes, a larger share of subsidiaries would, most likely, have been started earlier.

#### *5.0.0 Multiple firms, start-up plans and serial entrepreneurship*

Slow-growth entrepreneurs could be expected to more often own multiple firms, thus compensating for the slower growth of their major firm. No statistically significant difference could be traced concerning the share of firms of each category owning multiple firms. However, it should be noted that as many as approximately 20% of the entrepreneurs in the sample ran multiple firms (Table 5.3).

A question concerning serial entrepreneurship, defined as the entrepreneurs' having started a firm that no longer is controlled, was also asked. This revealed that rapid growers to larger extent had previous experience in the start-up of firms. Whether these firms failed or were sold at a profit was not investigated.

The entrepreneurs' plans for starting additional firms in the future were also investigated. The question did not distinguish between whether these plans concerned starting a new subsidiary or starting a new independent firm. A significantly higher share of rapid growers had definite plans for starting a new firm. The aim to be independent or to develop own ideas and visions are the most common reasons why Swedes start their own firms (Johannisson & Lindmark, 1996). The fact that the respondents in the survey already run a firm leads to the conclusion that the independence motive is not particularly strong in influencing the plans on starting additional firms. It is more likely that the opportunity given to *develop new ideas* is the main reason for planning to start additional firms. This interpretation suggests that rapid growers



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have a stronger drive for developing new ideas. This is a reasonable explanation for the fact that a larger share of rapid growers have plans for starting additional firms.

**Table 5.C. Share of entrepreneurs running, having started and having acquired one or more additional firms.**

	<i>Slow growers</i> (%)	<i>Rapid growers</i> (%)	<i>Significance</i>
Runs	19.4	22.4	.45
Started	18.6	21.6	.53
Started last three years	7.3	9.7	.35
Acquired	3.2	.7	N/A <sup>25</sup> .
Acquired last three years	1.2	.7	N/A.
Definite plans of starting new firm	4.6	13.4	.00025
Serial entrepreneur (has previously started firm but no longer runs it)	9.0	15.2	.040

### 5.0.0 Parent company, acquisitions and divestments

Rapid growers are subsidiaries to the same extent as slow growers. Approximately 20% of the firms in both categories are owned by a parent company (Table 5.4). It is possible for a subsidiary to grow (a) by having resources transferred from the company group or (b) by reorganising the group. If this was the case, small firms that are subsidiaries could grow substantially simply from administrative activities not corresponding to any real organic growth. It could be suspected that many rapid growers are subsidiaries, not really growing organically at the rate reported here. This does not seem to be the case. Administrative growth activities do not appear to have a major impact on the growth of the studied firms. A vast majority of rapid growers are independent companies, and the share that are independent is almost equal among rapid and slow growers. Moreover, when growth rates of subsidiaries and independent firms

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<sup>25</sup> The significance level is only reliable when the expected number of cases in all cells exceeds five. This is not the case here.

were compared, there were no statistically significant differences in sales or employment growth rates.

Various ownership transactions could affect the growth rates of the firms studied. It is possible to increase sales and employment by merging with other firms but also to decrease sales and loose employees by divesting. Rapid growers have not grown by acquiring and integrating other firms to any larger extent than slow growers. Instead, internal, organic expansion is equally common for both categories of firms. Approximately 10% of the firms in the sample have merged with other firms during the studied period.

It would not have been surprising if rapid growers had to a less extent divested during the studied period. This is however not the case, as approximately 10% of the studied firms of both categories have divested.

Are different ownership transactions complementary, so that someone who starts an additional firm does not establish subsidiaries or merge with another firm; or are some people involved in all these activities? Table 5.5 shows that almost 40% of rapid growers either run multiple firms; have acquired and integrated another firm; or control and manage subsidiaries; but only 9% are involved in two or more of these activities. The figures for slow growers are significantly lower. From this it can be concluded that alternatives to organically expanding a single firm are more common among rapid growers, and that the various possible ways in which this can be done are, to large extent, complementary.

In all, ownership is very dynamic among small firms. A large share of the firms are involved in the start-up of subsidiaries, acquiring firms, undertaking divestments, etc. just as are larger firms. The traditional view of one person running and expanding a single firm is inappropriate for many of the firms in the present study, which supports the view held by Scott & Rosa (1996).

There are some obvious differences between rapid growers and slow growers. In particular the start-up of additional firms as subsidiaries, and serial entrepreneurship is more common in the rapid-growth subsample, suggesting two things. First, that rapid growers are more entrepreneurial and second, that the start-up of more than one firm in itself is a viable expansion strategy.

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**Table 5.D. Share of firms that are subsidiaries, have merged with other firms, or have divested.**

	<i>Slow growers (%)</i>	<i>Rapid growers (%)</i>	<i>Significance</i>
Is subsidiary	19.5	20.9	.71
Having acquired and integrated other firms	8.7	13.4	.10
Divested	7.9	12.7	.09

**Table 5.E. Share of firms owning subsidiaries, running multiple firms or having merged.**

	<i>Slow growers (%)</i>	<i>Rapid growers (%)</i>	<i>Significance</i>
Not involved in any of these	64.2	51.5	
Involved in one activity	3.0	39.6	
Involved in two or more activities	5.9	9.0	.026

### **5.0 = Strategic orientation =**

It is possible for a small firm to apply a number of different growth strategies. Customer bases and/or products could be up-dated and new geographical markets may be sought. But it is also possible for a small firm to grow by expanding its sales of established products through established marketing channels.

A number of questions were asked about customer structure, exports, suppliers, and products and services. The purpose of these questions was to determine if rapid-growth firms used different strategies than those of slow-growth firms. The major results from the analysis are that rapid growers had larger sales to their three largest customers but purchased less from their three largest suppliers. A larger share of sales were derived from products developed during the last three years, which suggests that they are more product innovative and change oriented. Their market strategy was also more innovative and renewal oriented in that a significantly higher proportion of sales came from new customers. These results are shown in Table 5.6.

There is reason to assume that these differences could be industry specific, retail firms having a different customer structure and less control over the development of products and services. However, industry separate analyses tend to show the same pattern.

The conclusion to be drawn from this analysis is that rapid growers are more change oriented and innovative towards both customers and products. To be successful, a small firm must be flexible and innovative in a dynamic environment (Miller, 1987b), and able to adapt to new technology and new customer demands. This appears to be a successful strategy for growth. These results could be interpreted as that rapid growers have a more entrepreneurial strategy and thus to greater extent seek new opportunities. That there is this relationship between an entrepreneurial strategic orientation and growth is supported by earlier research (Brown, 1996, cf. Section 5.6) and also between the more specific dimensions investigated here and growth. Smallbone et al. (1995) found that few high growth firms were simply "pulled along" by market trends. Rather, rapid-growth firms typically showed substantial change in either (or both) their products produced and their markets served. These were the most important variables differentiating high growth firms from slow-growth firms, which by and large supports the findings of the present study.

It may seem surprising that the rapid growers sell a larger share to their largest customers instead of having a wide customer base. However, earlier research has revealed that sales to large customers with high quality specification demands, which already at early stages make extreme demands on products, service and deliveries, have a positive impact on growth, since it forces the firm to upgrade its activities (e.g. Ahrens, 1992; Karlsson, Larsson & Wiklund, 1992). The combination of exchanging customers while selling more to their major customers suggests that the rapid growers are more dependent on a smaller number of customers at any one given time but as time passes, they become less dependent. For such a strategy to be successful, it is necessary to choose the right customers. If the customers' sales increase, so will the sales of the supplier. The rapid growers seem to be able to carry out this strategy successfully. It is not the case that the high growth firms grow passively by increasing sales to existing customers, on the contrary, they actively search for new customers who increase their purchases and can therefore grow together with the customers.

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The supplier base appears to be wider for the rapid growers. A reasonable interpretation of this is that firms using more suppliers become more flexible, which facilitates the renewal of products and customers.

**Table 5.F. Customers, products and suppliers.**

	<i>Slow growers</i>	<i>Rapid growers</i>	<i>Standardised difference</i>
Sales to three largest customers	2.7	3.2	-.33
Exports	1.8	2.1	-.24
Sales to old customers	4.6	4.0	.44
Sales of old products	4.9	4.4	.34
Purchase from three largest suppliers	3.9	3.5	.30

*Note:* These variables are measured on a six point scale from "less than 5%" = 1 to "more than 95%" = 6.

## **5.0 = Attitudes =**

The first set of attitudes to be investigated was the importance of different goals. A total of 18 different goals were investigated (Table 5.7). None of the differences were large enough to be interesting, i.e. they did not meet the .25 criterion. Particularly noticeable is that no significant differences appeared for the importance of sales growth and employment growth. Both sub-samples ranked employment growth as the second least important goal, whereas sales growth was given a slightly higher ranking among rapid growers. Overall, the groups show little difference with the survival of crises and product quality as the most important goals and the attainment of a societal position and employment growth as the least important. The conclusion to be drawn from this is that the goals differ little between the two groups at the aggregate level applied here. It is still possible that rapid growers have a more positive growth attitude, since growth may be the means to attain other goals (rather than a goal in itself).

An issue which is closely related to goals has to do with the small business managers' favoured work-tasks. It is likely that more time can be spent on some work-tasks if the firm is small and that more time can be spent on other work-tasks if the firm grows and becomes larger. De-

pending on which tasks the entrepreneur favours, this could affect growth motivation.

In order to identify their favoured work-tasks, respondents were asked how much time they would like to spend on different tasks if they had the freedom to choose (Table 5.8). Important differences were obtained for two items. Rapid growers would prefer to spend more time on board work and the development of strategies. Both these items are of a long-term nature. Woo, Cooper, Dunkelberg, Daellenbach & Dennis (1989) found that new firms that spent more time on planning also achieved higher growth rates, and interpreted this as that planning firms have an increased ability to develop their operations in a successful way. Moreover, a manager is likely to spend more time on this forward planning in a large firm which could affect the manager's growth motivation.

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**Table 5.G. The importance of different goals.**

	<i>Slow growers</i>	<i>Rapid growers</i>	<i>Standardised difference</i>
Product quality	4.46	4.36	.17
Survival of crises	4.36	4.50	-.19
Control and surveillance of operations	4.16	4.22	-.08
Work with favourite work-tasks	4.05	4.17	-.14
Firm's independence from customers, suppliers and lenders	3.97	4.06	-.09
Being creative	3.82	3.84	-.02
Employees' employment conditions	3.81	3.93	-.17
Profitability	3.78	3.86	-.09
Standard of living	3.58	3.39	.23
Self-fulfilment through work	3.41	3.51	-.11
To work independently	3.32	3.29	.05
To reap the fruits of my own work	3.22	3.23	-.01
Time for family and leisure	3.21	3.19	.01
Increased sales	3.18	3.29	-.13
To make products that improve the lives of others	3.09	3.02	.08
Attainment of a social position	2.76	2.66	.10
Increased number of employees	2.07	2.20	-.18
Management of others	1.83	1.76	.12

*Note:* The variables are measured on a five point scale from "rather unimportant" = 1 to "extremely important" = 5. They are ranked so that the most important goal is first, and the least important goal is last within the slow-growth category.

**Table 5.H. Desired amount of time to be spent on different work-tasks.**

	<i>Slow growers</i>	<i>Rapid growers</i>	<i>Standardised difference</i>
Contacts with existing customers	3.4	3.4	.04
Development of new products	3.2	3.2	.06
Administration and finance	2.2	2.3	-.11
Sales	3.3	3.4	-.08
Performance auditing	2.9	2.9	-.05
Board work	2.1	2.4	-.31
Market plans	2.7	2.7	.0
Calculating bids	2.2	2.4	-.22
Personnel management	2.8	2.9	-.15
Production	2.3	2.2	.05
Purchasing	2.2	2.1	.12
Development of strategies	3.6	3.8	-.29
Development of new customers	3.7	3.9	-.21
Bank relations	2.0	2.1	-.13
Own education and training	3.1	3.2	-.15

*Note:* These variables are measured on a scale ranging from "as little time as possible" = 1 till "as much time as possible" =5

The final assessment of attitudes concerns the expected consequences of growth (Table 5.9). To measure these variables, respondents were asked how a doubling of the number of employees, regardless of whether this would be desirable or possible, would affect each of ten different areas. A five-point scale, ranging from much more negative to much more positive, was used for this measurement. Only the ability to survive crises met the .25 criterion. Thus, we are not dealing with any distinct differences. However, all differences except one show the same direction, suggesting that at a global level rapid growers make a more positive judgement of the consequences of a doubling of present size. It is highly unlikely that such a consistent result could be produced by mere chance. Attention should be given to the global difference rather than single



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variables. The general conclusion to be drawn is that rapid growers, as a group, expect more positive consequences of growth.

**Table 5.I. Expected consequences of the doubling of the firm's size.**

	<i>Slow growers</i>	<i>Rapid growers</i>	<i>Standardised difference</i>
Would the owner-manager have to work more or less hours	2.9	3.0	-.06
Would he or she be able to spend more or less time on favoured work-tasks	3.1	3.1	-.05
Would employees enjoy work more or less	2.6	2.7	-.03
Would his or her income and other disposable economic benefits increase or decrease	3.8	3.9	-.05
Would his or her ability to survey and control operations increase or decrease	2.6	2.5	.05
Would the firm's independence in relation to customers, suppliers and lenders increase or decrease	3.2	3.4	-.14
Would it be easier or more difficult for the firm to survive a crises	2.5	2.8	-.25
Would it be easier or more difficult for the firm to maintain the quality of products and services	2.9	3.0	-.04
Would it be easier or more difficult to manage the company	2.6	2.6	-.03
Would the value of the company increase or decrease	4.2	4.3	-.09

*Note:* Expected consequences of growth is measured on a 5-point scale, 1 indicating a strongly negative and 5 a strongly positive attitude.

## **5.0 = Resources of the firm =**

### *5.0.0 Personnel resources of the organisation*

Rapid growers have larger management teams and a larger number of university graduates (Table 5.10). The higher the number of graduates within the firm, the higher the overall level of competence. Larger management teams imply that more people are involved in the decision making process. Weinzimmer (1997) also found that there was a correlation between management team size and growth rates in small firms. It is possible that there is a relation between these two. A firm that has more university graduates has more people that could be involved in important decision making. It should be noted, however, that the number of university graduates and management team size correlate with firm size. As we have already seen, the average size of the rapid growers exceeds the size of the slow growers. When management size and number of university graduates are divided by present size, the differences are not significant. Thus, the differences concerning these variables may be a size effect rather than a growth effect and should perhaps not be stressed as causes of growth. No matter which is the case, the larger management teams and number of university graduates suggest that rapid growers have larger pools of resources at the time of the interview. It may also reflect a greater ability and willingness of the entrepreneur to rely on others for decision making. This has been stressed by others as essential to achieve considerable organisational growth (cf. Weinzimmer, 1997).

Rapid growers had somewhat larger boards, however, the difference did not meet the .25 criterion. The number of external board members was approximately the same in both sub-samples. This suggests that the board's influence on growth is limited, at least at the aggregate level and when comparatively crude measurement is applied, as in the present research.

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**Table 5.J. Number of persons of different types.**

	<i>Slow growers</i>	<i>Rapid growers</i>	<i>Standardised difference</i>
Number of board members	3.6 persons	3.9 persons	-.21
Number of external board members	.9 persons	.9 persons	-.01
Management team size	2.6 persons	3.4 persons	-.34
Number of university graduates	3.0 persons	7.0 persons	-.25
Management team size divided by present size	.13	.14	-.12
Number of university graduates divided by present size	.15	.23	-.17

#### *5.0.0 Capital availability and ownership*

Capital availability, or rather the lack of capital in expanding small firms, is often discussed in the general debate concerning small firms. The common view is that if more capital was made available to small firms, more firms would be able to expand, and the expansion of the growing firms would increase. It is difficult to obtain any objective measures concerning if the capital available for small firms is sufficient, since it may be that the demand does not exceed the supply. The important issue is whether there is a discrepancy between capital supply and demand. For this reason, the subjective measure "capital availability satisfaction" is used in the present study. No differences could be discerned between the rapid growers and slow growers in the sample regarding capital availability satisfaction. The variable distribution was similar in both sub-samples, approximately 30% chose one of the three alternatives indicating that they were more dissatisfied than satisfied with capital availability (Table 5.11).

Two opposite relationships between capital and growth are conceivable. First, capital shortage reduces potential growth. Should this be the case, rapid growers would be more satisfied than slow growers, since they apparently to a greater extent, have already secured the necessary capital. Second, since rapid growers need more capital for expansion, their actual capital needs would be higher. Thus, it could be expected that they would perceive greater difficulties in raising the necessary

amount of capital. However, none of these relationships are confirmed by the present study. Whether this is because no such relationship exists; or that the two possible effects nullify each other is impossible to determine.

It should be noted that the report is based upon the entrepreneurs' subjective perception which could be regarded as a relevant measure of whether a gap exists between capital supply and demand. This in combination with the fact that only 30% are more dissatisfied than satisfied suggests that capital shortage is not a major factor hampering growth.

**Table 5.K. Capital availability.**

	<i>Slow growers</i>	<i>Rapid growers</i>	<i>Standardised difference</i>
Capital availability satisfaction over last three years	4.8	4.7	.09

*Note:* This variable is measured on a seven point scale from "a major barrier to our development" = 1 to "quite satisfactory for our development" = 7.

One reason why small firms may experience capital shortage is that their sources of capital are limited to loans and that they are unwilling to raise new capital through selling equity to new investors. For these firms, total ownership control is more important than additional expansion capital. It can be seen that a significantly larger share of rapid growers have added new owners during the three years of the study. Nearly one fourth of the rapid growers have been subject to new ownership acquisitions (Table 5.12).

**Table 5.L. Share of firms having added new owners during the last three years.**

	<i>Slow growers</i>	<i>Rapid growers</i>	<i>Significance</i>
New owner	1.1%	24.2%	.00034

Table 5.13 reveals that the ownership dispersion is higher among rapid growers. In particular, a larger share of firms are controlled by two or

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more partners. Moreover, private investors, often referred to as "business angels", appear more important than venture capitalists.

The ownership dispersion questions were concerned with the present situation at the time of the study, as opposed to changes that had taken place over the last three years. Therefore, it is impossible to determine which categories of new owners have entered during the three year period. Since the ownership of rapid growers to larger extent is dispersed to business angels and partners it is probable that equity has been sold to these categories.

**Table 5.M. Share of firms owned by different types of owners.**

	<i>Slow growers</i>	<i>Rapid growers</i>	<i>Significance</i>
Manager and family	79.3%	82.4%	.50
Partners outside the family	31.4%	43.8%	.03
Other employees outside the family	6.4%	1.1%	.23
Venture capital firms etc.	1.4%	4.5%	.06
Other outside private investors	5.3%	12.2%	.02
Other (usually parent company)	21.8%	16.7%	.28

*5.0.0 The entrepreneur's network*

The utilisation of resources from the entrepreneur's network was measured in terms of how important different potential resources outside the firm are for decision making (Table 5.14). Not surprisingly, customers and employees are the most important, whilst public support agencies such as regional development funds are least important for both groups. Differences are not very marked and do not seem to occur in any systematic fashion. The only variable that deviates from the above is "contacts with the Chamber of Commerce" which are considered significantly more important by slow growers. This finding is not easily interpreted. It could be expected that export oriented firms would rely more on the Chamber of Commerce, but earlier findings indicate that rapid growers are more export oriented (cf. Table 5.6), which contradicts this assumption.

**Table 5.N. The importance of network contacts in decision making.**

	<i>Slow growers</i>	<i>Rapid growers</i>	<i>Standardised difference</i>
Chartered accountant	3.7	3.6	.15
Bank contact etc.	2.8	2.8	.04
Chamber of Commerce and employer organisation	2.2	1.8	.32
Customers	4.3	4.4	-.04
Suppliers	3.7	3.6	.17
Employees	4.3	4.4	-.05
Spouse, family	3.6	3.4	.14
Board (excluding family)	3.8	3.9	-.09
Consultants	2.4	2.4	.00
Lawyers	2.4	2.5	-.07
Regional development fund and similar	1.4	1.4	-.02
Other business managers	3.3	3.0	.18

*Note:* These variables are measured on a 6-point scale from "No contact" = 0 to "Very important" = 5.

### 5.0.0 Resources of the entrepreneur

A much higher share of rapid growers are responsible for starting their own firms, and a smaller share are "inheritors" (Table 5.15). Those having acquired the firm, and employed managers are approximately equal in the two sub-samples. The level of initiative it takes to start a firm is, of course, much higher than that if inheriting one. Major reasons for starting firms are the opportunity for independence and the possibility to develop one's own ideas (Johannisson & Lindmark, 1996). The inheritor, on the other hand, can only maintain ideas and visions developed by someone else, usually a parent. Therefore, it is not unlikely that those who establish new firms have more of an entrepreneurial drive, which can explain why a larger share of rapid growers have started their own firms. Previous research also suggests that the experience ob-

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tained from this start-up process can be invaluable in the later stages of development (Davidsson, 1989). This interpretation suggests that the rapid growers possess and exercise personal characteristics and qualities which have an important influence on the subsequent growth of the firm.

**Table 5.O. How the respondent became manager of the firm.**

	<i>Slow growers</i>	<i>Rapid growers</i>	<i>Significance</i>
Inherited	16.6%	6.0%	.002
Bought	25.3%	23.1%	.61
Started	35.1%	51.5%	.0005
Employed	26.6%	26.1%	.43

### *5.0.0 Experience and education*

Earlier research has suggested that a variety of other experiences can be important in gaining personal abilities that can enhance growth. The management of a small firm throughout its growth process demands many different skills and deep and substantial knowledge. According to earlier research, entrepreneurial role models; management experience; large firm experience; rapid-growth experience, and industry experience can all be important for firm growth. In the analysis applied here, none of these variables differentiate between rapid growers and slow growers.

The necessary skills could also, theoretically be gained from formal academic education. However, no differences could be identified concerning the length or content of education and training between the two groups.

### *5.0.0 Gender, ethnicity and age*

The final type of resources of the entrepreneur being assessed are concerned with inherent resources, i.e. gender, ethnicity and age, which could affect the ability to grow a small firm. Earlier research has suggested that women and immigrants are assumed to have roles in society

that could effect their ability to manage rapid-growth firms (cf. Storey, 1994b and his references for an extensive discussion on this topic). These views are not supported by this study. The share of immigrants and women managing rapid-growth firms and slow-growth firms is almost identical: 6% women and 8% immigrants in both samples.

From a resource perspective, it could be hypothesised that older small firm managers should have more relevant knowledge, which would enhance their ability to grow their firms. However, other researchers have presented other types of arguments contradicting this hypothesis. Davidsson (1989) argues that younger people have a larger desire and requirement for money and that expansion could increase incomes. According to Foley (1984), motivation declines with age. Thus, small business managers with increasing age should be less growth motivated, and their firms should grow to a lesser extent. Khan (1986) stresses that work capacity is important for small firm success and that working capacity decreases with the age of the manager which influences growth rates.

In the present sample, rapid growers are significantly younger than slow growers which contradicts the resource hypothesis (Table 5.16). However, when each of the suggested arguments for a negative relationship between growth and age were tested, none could be supported.

It is hardly surprising that age and present job tenure factors are highly correlated and that rapid growers are, on average, less tenured. Miller & Toulouse (1986) suggested that more tenured small business managers were less flexible than those less tenured and that flexibility, in turn, had a positive influence on performance and growth. As stated above, rapid growers were more flexible regarding new customers and products. Thus, it is probable that age has a negative influence on flexibility which can explain why rapid growers, on average, are younger and less tenured. It should be noted that the sample only contains firms that have survived the three year period. It may very well be the case that younger entrepreneurs fail more often and that there is a positive relationship between survival and age. Since failing firms are excluded from the sample, this question cannot be answered here. Yet, there is nothing in the present study to support that the experience which age brings has an impact on growth. It should be noted that even though rapid growers are younger, a larger share of them are serial entrepreneurs.



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**Table 5.P. Age of managers and tenure in present position.**

	<i>Slow growers</i>	<i>Rapid growers</i>	<i>Standardised difference</i>
Age	49 years	45 years	.43
Tenure	10 years	8 years	.30

In summary: the analysis of the relationship between various types of resources of the firm and the entrepreneur on the one hand; and the rapid grower/slow grower on the other show that relatively few resource variables included in this study discriminate rapid growers from slow growers. It is therefore reasonable to assume the relationship to be weak between a large set of resource variables and growth in other analyses. However, it is possible that more resource variables have an indirect effect on growth through EO as suggested in the research model.

## **5.0 = Perceived environment =**

According to the population ecology view, the environment is the major determinant of firm development, and internal factors such as strategy, resources and motivation have a minor influence (cf. Section 2.6.2). It is difficult to obtain anything other than crude objective environmental measures on the individual firm level. It is therefore common to use subjective measures of environment when studying individual firms (Brown, 1996; Covin et al., 1990; Merz et al., 1994; Miller, 1983a; Miller & Toulouse, 1986).

Ten questions relating to the three environmental dimensions of dynamism, heterogeneity and hostility were posed (Table 5.17). Another seven questions concerned changes during the last three years along these dimensions (Table 5.18). Environmental dynamism refers to the amount and unpredictability of change in customer preferences, production or service technologies, and methods of competition in the firm's principle industry. Heterogeneity is evidenced by the differences in competitive tactics, customer preferences, product lines, channels of distribution etc. throughout the firm's respective markets. These differences are only significant to the extent that they require different marketing, production and administrative practices and approaches. Hostility is manifested by price, product, technological or distribution com-

petition, or unfavourable demographic trends (e.g. decreasing markets) (Miller, 1987a).

For the environmental dimensions, only the technology dynamism item meets the .25 criterion, rapid growers perceiving that the industrial technology is changing more often. Apart from this, differences are fairly small and are not consistent throughout the three dimensions.

**Table 5.Q. Environmental dynamism, heterogeneity and hostility.**

	<i>Slow growers</i>	<i>Rapid growers</i>	<i>Standardised difference</i>
Market dynamism	3.1	3.4	-.15
Product dynamism	3.0	3.2	-.11
Competition dynamism	3.3	3.6	-.22
Demand dynamism	3.2	3.1	.10
Technological dynamism	3.2	3.6	-.26
Heterogeneity	3.7	3.8	-.06
Survival hostility	3.5	3.7	-.13
Price hostility	4.2	4.1	.06
Quality hostility	3.4	3.5	-.08
Market hostility	4.3	4.1	.15

*Note:* Perceived environment characteristics are measured on 7-point opposite statements scales, 1 indicating a very low degree and 7 a very high degree of the environmental dimension.

Turning to the environmental change variables, the findings regarding the dynamism of technology correspond to dynamism changes during the three years. Rapid growers perceive that the industry innovation rate has increased to a much greater extent than slow growers. The greatest difference concerning perceived environmental changes is that rapid growers consider expansion opportunities in their industry to be much more positive than do slow growers. In general, rapid growers perceive the environment as becoming more dynamic than do the slow growers, whereas differences along the other dimensions do not show a clear pattern.

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These results conform nicely to the results above, where it was found that rapid growers developed more new products and seized more new opportunities. At the aggregate level when comparing groups of firms, the perception of the environment corresponds to the strategic orientation of the firm. Rapid growers have a more entrepreneurial strategic orientation and perceive their environment as demanding both more product innovations as well as offering more growth opportunities.

It is interesting to note that there are larger differences among the change variables than the static variables. It is possible to speculate that this could be because firms with more of an entrepreneurial orientation to larger extent aim at environments which allow greater growth opportunities. That is, they have moved into more dynamic environments during the last three years. A contradictory interpretation is also possible. It may be that growth is "pulled along" by the environment. During any given time period, environmental changes may lead to changes in size.

**Table 5.R. Change in environmental dynamism, heterogeneity and hostility during the last three years.**

	<i>Slow growers</i>	<i>Rapid growers</i>	<i>Standardised difference</i>
Change of industry expansion opportunities	4.0	4.8	-.49
Change of industry innovation rate	4.4	4.7	-.34
Change of industry research activities	4.4	4.6	-.17
Change of marketing heterogeneity	4.3	4.4	-.06
Change in the predictability of competitors' market activities	4.0	4.0	.0
Change in the aggressiveness of competitors' market activities	4.5	4.3	.23
Change in the range of competitors' market activities	4.2	4.4	-.23

*Note:* Changes in perceived environment characteristics are measured on 7-point opposite statements scales, 1 indicating a large decrease and 7 a large increase.

## **5.0 = Discussion and interpretation of results =**

The fundamental question posed in this chapter is whether there are differences between firms that exhibit rapid growth and those that do not. The answer to this question is undoubtedly yes. However, these differences are not particularly great according to the standardised difference measure. Equally interesting is the absence of differences where such could be expected.

Differences do not seem to appear at random, or to be caused by forces outside the control of the firms. Rapid growers do not, for instance, grow more because existing customers increase their demand for existing products. Rather, rapid growers adapt their production in order to enter new markets, and the manager possesses some important entrepreneurial qualities.

Rapid growers use a strategy more directed towards flexibility and change. They are more aware of new market opportunities and/or have a better ability to react to new opportunities by changing customer bases and product ranges. They tend to sell a larger share of their production to their large customers and thus can grow together with them. Another important strategic aspect is growth through subsidiaries.

Overall, there seems to be an association between different aspects of entrepreneurship, and growth. Variables that, in different ways, relate to the firm's entrepreneurial orientation such as product innovation; perception of business opportunity; willingness to sell equity; future growth aspirations, and new establishments, distinguish rapid growers from slow growers. This appears to be a general and consistent finding. In the following two chapters, causal analyses will be performed in line with the research model previously developed. The firm's degree of entrepreneurial strategic orientation is anticipated as being strongly associated with growth and performance in this model. The findings in this chapter support the relevance of using entrepreneurial orientation in the model.

Start-up activities of all types: serial entrepreneurship; having started the firm; start-up of subsidiaries, and plans to start new firms in the future are seen more often among rapid growers. Consequently, at least at the aggregate, start-up and subsequent growth seem to be driven by similar processes.

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Rapid growers have grown more rapidly during the past and have higher growth aspirations for the future. Even though all companies experience periods of stagnation sometime during their development, this indicates that the entrepreneurial drive and ability is maintained throughout longer periods of time.

It would seem logical that small firms should start and grow subsidiaries *instead* of growing their original firm. These alternative growth patterns would then compensate for a lack of growth in the original firm. However, results point in the opposite direction. Rapidly growing firms boost their growth by starting and growing subsidiaries and additional independent firms.

When a small firm grows, the small business manager has to assume a partly new role involving more professional management techniques in which board work and strategic development are important components. It is important that the business manager has the will and ability to adapt to these changes. It is likely that rapid-growth managers possess this will and ability, since they seem to be more interested in board work and strategic development.

Perceived capital availability was similar for the two groups. Rapid growers overcame the problem of increased need of capital by selling equity. In other words, they were more inclined to relinquish ownership control in order to facilitate expansion.

That the differences were small regarding experience and education may come as a surprise considering the findings from other studies. It seems that rapid growers do not have higher levels of education and experience, but to a larger extent use qualified subordinates, while at the same time involving more people in decision making through the use of larger management teams. By doing this, the total competence level may become higher and better utilised.

Most rapid growers do not have growth as their main goal. The goal set is quite similar for the two groups. This indicates that rapid growers may see growth as a means to attain other goals, whereas other firms may consider it possible to reach these goals in other ways.

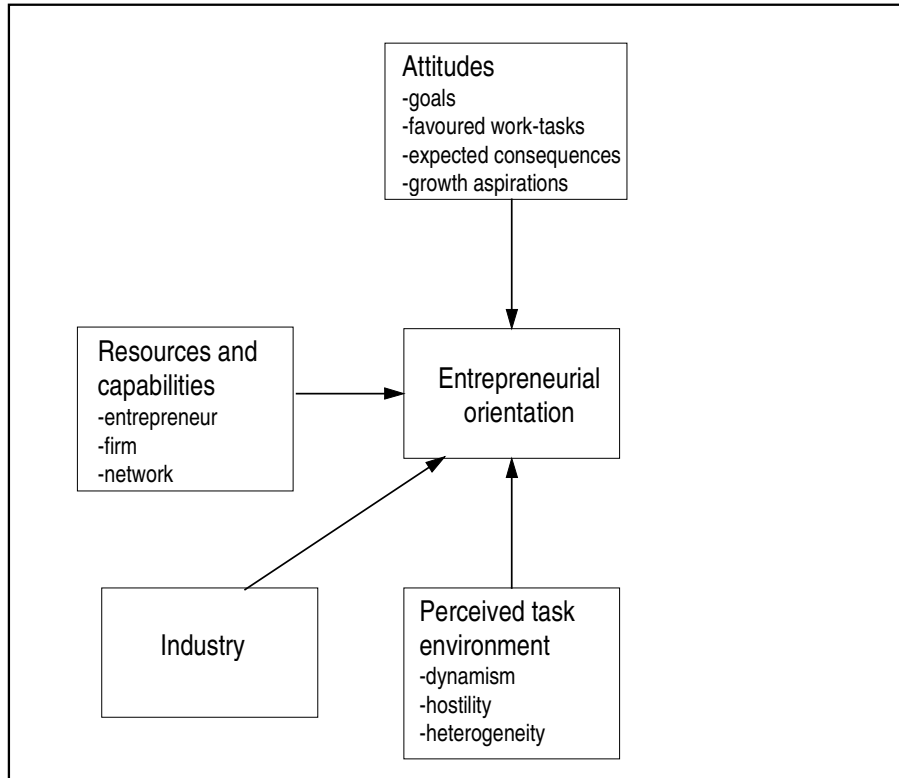
## **6 Determinants of entrepreneurial orientation**

### **6.0= Introduction=**

#### *6.0.0 Models tested*

The research model presented earlier integrates three different theoretical perspectives in the research into small firm growth, each giving rise to theoretical constructs of the model (cf. Section 2.8 and 3.8). The primary causal part of the model concerns the effects of attitudes; resources and capabilities; industry; and perceived environment on EO as shown in Figure 6.1. In this chapter, the association between these constructs will be examined according to the proposed model.

It is interesting to investigate the explanatory power of each of these constructs separately to find out how well the theoretical perspectives can explain the data at hand. To test the full conceptual model, the constructs must be combined into one joint model. In the first stage of the analysis, variables relating to each of the constructs are used in separate models as predictors of EO. In doing so, the separate contribution from each of the theoretical constructs can be determined. In the second step of the analysis, the predictor variables from the earlier analyses are combined in one model. In this way, the joint predictive ability of all constructs is estimated. Furthermore, the relative impact of variables from different constructs may be compared, and the most important factors contributing to EO be established.



**Figure 6.A. Research model to be tested: the influence of industry; perceived environment; resources and capabilities; and attitudes on EO.**

Previous studies have suggested various variables relating to the constructs to be important, and it is within the scope of this research to determine which of these variables are the most decisive. Because of this, broad arrays of variables have been included in each of the theoretical constructs. Rather than summarising earlier findings and how different variables are expected to influence EO in one place, references are continuously made throughout the following sub-sections of the chapter in connection to each construct under study.

References are made to two types of empirical studies; those dealing with correlates of EO, and those researching antecedents of growth and performance. As declared in the theoretical chapters, and illustrated by the model, the assumption made here is that the effect of all independ-

ent variables on growth/performance is mediated through entrepreneurial orientation. Thus, variables that, in previous studies, have been found to be antecedents of growth and performance are in this study assumed to influence EO. In other words, no discrimination is here made between variables that have previously been found to influence EO, and those found to influence growth and performance. Both these types of variables are assumed to contribute to EO. The view held here is that the reason why a direct association has been found between any one particular variable and outcomes in previous research, is because the structural relationship (i.e. the mediation through EO) has not been included in the empirical study. Whether the assumption that all effects on growth are mediated through EO is, or is not viable, will be tested in the next chapter.

There are some major reasons for excluding variables that have received attention in other research from this study. First, some variables do not correspond to the theoretical constructs of the model, which, for instance, could include other dimensions of strategy such as strategic breadth. Second, some variables are excluded because they cannot be measured by the methodological approach of this research. Some variables are too complex or complicated to measure in telephone interviews or mailed questionnaires, whereas other variables are process oriented or measurements of change which can not be captured in this study. The third reason for excluding variables is that very lengthy questionnaires are likely to receive low response rates. It is therefore important only to include variables judged a priori to be the most relevant. Variables that are plausible explanations to small firm growth and performance, but have no theoretical foundation is a fourth reason for exclusion. One example of such a variable could be prior growth as an explanation for further growth.

Stepwise multiple linear regression is used for data analysis, where only the most important predictors remain in the regression equation. In the stepwise procedure, the computer determines which of the entered variables should be included in the regression equation according to specified prerequisites. This is a data driven method running the risk of capitalising on chance variation and obtaining spurious results, in particular if explained variance is low. The full model is tested, however, using forced entry of the variables from the previous analyses. In this way, the risk of overestimating particular relationships is diminished.



### 6.0.0 Analyses performed

If not stated otherwise, analyses will be performed as follows:

- *Factor analysis.* In some instances, explorative factor analysis will be used to reduce the number of variables and increase measurement reliability. Principal component extraction is used, and factors with eigenvalues larger than one are extracted<sup>26</sup>. The original factor solution is rotated using Varimax rotation.
- *Index summation.* In order to retain as much information as possible from original questions, items given high loadings on particular factors in the factor analysis will be summed to indices approximately corresponding to the factors. The reliability of these indices is tested using Cronbach's Alpha test.
- *Multiple linear regression.* Stepwise multiple linear regression is used to test the different sub-models. A variable is entered if the probability of its F-value is below .05 and removed if the probability of its F-value is above .10. To test the combined model, forced entry of independent variables is utilised.  $\beta$ -values reported in the tables refer to standardised regression coefficients. Pairwise deletion of missing values is applied<sup>27</sup>.

## 6.0& Entrepreneurial orientation, the dependent= variable=

Miller (1983a) as well as Lumpkin & Dess (1996) suggest that EO is a combined construct encompassing a number of dimensions of decision making styles and practices. Miller stresses that the dimension of proactiveness, risk taking and innovativeness together make up the EO construct. Lumpkin & Dess (1996) argue that these should be treated as separate dimensions of EO. Not only firms exhibiting high levels along

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<sup>26</sup> Strictly speaking is principal component analysis not equivalent to factor analysis. Principal components are exact linear combinations of manifest indicators whereas factors in factor analysis are corrected for (hypothetical) measurement error included in manifest indicators. Hence, extraction of components would be a more correct term than extraction of factors. However, for our purposes, the terms will be used interchangeably.

<sup>27</sup> The number of cases in the analyses varies since not all respondents responded to all questions (internal non-responses). The response figures reported in the tables (min.= n=xxx) refer to the number of respondents to the individual item with the lowest response rate in that particular analysis.

all three dimensions should be regarded as entrepreneurial. Firms' pursuit of opportunity vary depending on their organisational and environmental conditions.

The two empirical studies known to the author that make use of both the measurement instrument developed by Miller (1983a) and report reliability for the whole construct, have shown that the alignment of the three dimensions is high, with construct reliability of .74 and .75 (Miller, 1983a; Zahra & Covin, 1995). Studies using the revised measurement instrument developed by Covin & Slevin (1986; 1989) show even higher reliability (Brown, 1996; Covin & Slevin, 1986; 1989; 1990; Covin et al., 1990). Thus, it may well be true that from a theoretical standpoint, EO is made up of separate dimensions as suggested by Lumpkin and Dess, even though the measurement of the variables in empirical studies suggests that EO could be used as a combined construct.

In this study, the original scale developed by Miller (1983a) was used and questions were translated into Swedish. The second column of Table 6.1 exhibits the results from a reliability test. It is evident that Alpha values are below results from previous studies which are depicted on the right hand side of the table. A factor analysis reveals three underlying dimensions as suggested by Miller and Lumpkin and Dess (Table 6.2). However, one of the proactiveness items loads on the risk taking factor. The interpretation of the reliability test and the factor analysis is that EO is multidimensional rather than one construct, and that measurement of the dimensions is thus not completely satisfactory. From a theoretical viewpoint it would appear appropriate to regard EO as a combination of separate dimensions. However, when this choice is made, it is important that the measurement of each of the three dimensions is reliable.

**Table 6.A. Reliability test of original scale for innovativeness, proactiveness, risk taking and EO, compared to previous studies.**

	<i>Present study</i>	<i>(Miller (1983a))</i>	<i>Miller (1987b)</i>	<i>Zahra &amp; Co- vin (1995)</i>	<i>Merz et al. (1994)</i>
Risk taking (2 items)	.45	.91	.80	not reported	not reported
Proactiveness (3 items)	.52	.81	.67	not reported	.63
Innovativeness (3 items)	.62	.77	not reported	not reported	.65
Original entire EO	.64	.74	not reported	.75	not reported

**Table 6.B. Factor analysis of EO.**

	<i>Factor 1</i>	<i>Factor 2</i>	<i>Factor 3</i>
Risk taking 1		.72	
Risk taking 2		.71	
Proactiveness1			.90
Proactiveness2			.72
Proactiveness3		.62	
Innovativeness 1	.68		
Innovativeness 2	.80		
Innovativeness 3	.74		

*Note:* Cumulative explained variance=58%. Values below .5 are suppressed.

Lumpkin & Dess (1997) hold that the proactiveness item loading on the risk taking factor in the present analysis is, in fact, concerned with competitive aggressiveness rather than proactiveness and thus is a separate dimension. Furthermore, they find no relationship between competitive aggressiveness and performance. In light of this, it seems unproblematic to drop this item, which increases the Alpha value for proactiveness quite substantially (Table 6.3). It is also possible to increase the reliability of innovativeness by dropping one item. If this is done, the index reaches approximately the same reliability as reported by Merz

et al. (1994) and comes closer to the values of the other reviewed studies.

Risk taking consists of only two items, and it is thus impossible to determine the reliability should one of the items be deleted. To increase measurement reliability of the combined EO construct, the item with the lowest correlation with proactiveness and innovativeness is deleted. Having done this, a measurement scale for EO consisting of five items instead of the original eight can be constructed. As can be seen in Table 6.3, the reliability of the EO index does not increase. However, since each of the separate dimensions is more reliable, it may be argued that the overall measurement instrument also is better. Furthermore, it is relatively easy to increase the reliability of an index by adding more items (Van de Ven & Ferry, 1980).

In order to avoid problems which could arise from the fact that the original measurement instrument is not used, analyses were also run with the original measurement instrument of EO as dependent variable and results were compared<sup>28</sup>. To make the text more readable, these results are not reported here.

It is difficult to determine why the reliability of the measures of the scale were lower in the present study. One explanation could be that there are cultural differences between North America, where the other studies have been carried out, and Sweden. There is some support for this view. In a cross-country validation of Covin and Slevin's scale, the Alpha value was higher among English speaking Canadians than among French speakers (Knight, 1997). Another reason may be that the translation was not perfect. In addition, the low Alpha values may be a result of the fact that some of the questions had reversed scaling and that the questions were not asked consecutively. If the latter is the case, then it suggests that the reliability in previous research is artificially high, rather than that the present figures are low.

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<sup>28</sup> The major difference when the original measure was used as dependent variable is that explained variance changes somewhat in the sub-models. In some instances it increases and on other it decreases. As a result, some additional independent variables are either included or excluded. Explained variance in the full model decreases by 4 per cent.

**Table 6.C. Reliability test of the revised scale for innovativeness, proactiveness, risk taking and EO.**

	<i>Revised scale</i>
Risk taking (1 item)	.N/A
Proactiveness (2 items)	.64
Innovativeness (2 items)	.65
Revised EO measure	.64

In order that parametric statistical tests of significance of independent variables (t-test) and the stepwise significance criterion for the inclusion or removal of variables (F-test) should be valid in regression analysis, the dependent variable needs to have a normal distribution. The kurtosis and skewness measures for the revised EO index were well below the requirements suggested by Barnett & Lewis (1984) which allows the use of parametric statistical tests of significance<sup>29</sup>.

## **6.0 = Attitude model =**

### *6.0.0 Independent variables and expected relationships<sup>30</sup>*

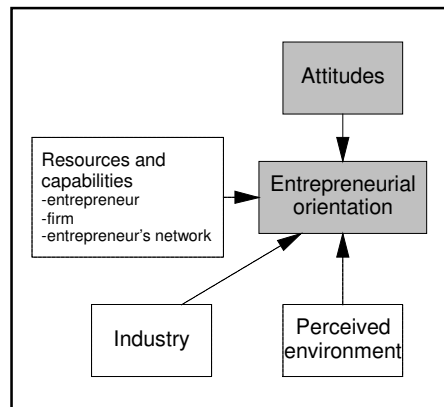
The attitude sub-model is displayed in the figure below (Figure 6.2). The approach here is similar to that proposed by Miner (1990), i.e. there needs to be a fit between organisational variables and motivation, the basic assumption being that the motivational patterns of the manager influences the EO of the firm.

Four sets of attitude variables are used in this study. These are goals (affective responses), favoured work-tasks (affective responses), expected consequences of growth (cognitive responses) and growth aspirations (behavioural responses). These four sets of variables taken together are the manifestation of the overall attitudes under study. See Section 3.2

<sup>29</sup> They recommend kurtosis below 3.98 and skewness below .40. The figures for the entrepreneurial orientation measure are -.11 and -.03.

<sup>30</sup> The three questionnaires can be found in Appendix 2. A list of all the variables in the analysis, the theoretical construct they are connected to, and the questionnaire items used for their measurement is presented in Appendix 3.

for the definition of different responses and how attitudes are a product of cognitive, affective and behavioural response.



**Figure 6.B. Attitude sub-model to be tested: the influence of attitudes on EO.**

#### 6.0.0.0 Goals

It has been argued in previous chapters that the entrepreneur has a decisive influence over the direction of his or her firm. The goals of the entrepreneur are likely to influence the firm's strategic orientation. Others have found that the personal goals of the entrepreneur are important for the development and growth of the business (Bird, 1988; Naffziger et al., 1994). The latter authors suggest that the personal goals of the entrepreneur have an influence on the strategy of the firm, mediated through the decision to behave entrepreneurially. If expanding the firm is a primary goal of the entrepreneur, a growth oriented strategy could be expected. Other goals may also be important motivation factors for growth and performance. The desire for profitability may provide, in some cases, the major incentive for choosing a strategic orientation that maximises the economic performance of the firm, whereas those who value spending more time with their families may refrain from expanding their firms.

A total of eighteen questions were asked to determine the importance of different goals. To reduce the number of variables, and to increase measurement reliability, an exploratory factor analysis was run. The factor analysis extracted six factors, explaining 60% of the variance of the original variables. To retain as much information as possible from

the original items, those with high loadings on particular factors were summed to indices. The reliability of these indices was tested. The result of the factor analysis and the reliability test is displayed in Table 6.4.

The Cronbach's Alpha values are not completely satisfactory according to conventional criteria (Nunnally, 1967). He recommends that values should be higher than .7. However, in explorative research, values as low as .5 can be accepted. It is also possible to assess what is a suitable Cronbach's Alpha value based on other criteria. Van de Ven & Ferry (1980) stress that two factors have to be taken into consideration. The first is the number of indicators used to measure the variable. A larger number of indicators should give a higher Alpha value, everything else being equal. The breadth of the measured construct is also important. If a broad construct, i.e. a concept that has many facets, is to be measured, the difference between the indicators needs to be larger to capture the different facets, and a lower Alpha value could therefore be expected. If a narrow concept is measured, indicators can be fairly similar which should result in a higher Alpha value. Therefore, they find it difficult to give any definite recommendations as to what is an acceptable Alpha value.

Generally, the variables studied here have not previously been factor analysed. It could be argued that this research is therefore explorative and that Cronbach's Alpha values down to .5 should be accepted. Furthermore, following Van de Ven & Ferry's (1980) line of reasoning, the derived factors are broad, which calls for the acceptance of relatively low values. The general rule used here, is that Alpha values down to .5 are acceptable for the summation of indices.

The two factors which did not fulfil the .5 criterion are not used in this analysis<sup>31</sup>. It is interesting to note that the two growth items loaded on the same factor, but had a relatively low Alpha-value. This indicates that although related, having both employment and sales growth as defined goals, are, to some extent, separate dimensions. However, since growth is central to the study, the sales and employment growth items are added as separate variables to the equation.

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<sup>31</sup> The analysis was rerun excluding the items loading on factor 5 and 6 one at a time. The factor structure was exactly the same for all these analyses and loadings changed only marginally.

All items loading on the first factor refer to goals related to the firm, rather than the individual. A high score on these items indicates that the respondent values the independence and profitability of the firm, and that the firm is able to maintain the quality of its products and its reputation. This guarantees a stable development of the firm. This factor is labelled *stability*. The items of the second factor concern the individual. Respondents scoring high in these items see the firm as an outlet of personal goals. The firm is an outlet for their creative energy and these individuals are therefore likely to enjoy their work. Hence, the second factor is labelled *creativity*. The third factor has to do with the advantages that could be gained from the firm. Respondents that score high on these items are motivated by the fact that the firm allows them a high standard of living, that they have enough leisure time, and that they, rather than others, are rewarded for their work. This factor is labelled *personal benefits* since it concerns how their relationship to the firm affects their private lives. The fourth factor has to do with power and influence. Respondents that score high on these items are motivated by the fact that they can exercise power over others, and no other can control them. Furthermore, the firm is also seen as a vehicle to gain societal influence. Accordingly, this factor has been labelled *power*.



*determinants of entrepreneurial orientation*

**Table 6.D. The entrepreneur's goals. Factor analysis, reliability test and expected effect on EO.**

	<i>Factor 1</i> <i>Stability</i> ( $\alpha=.70$ )	<i>Factor 2</i> <i>Creativ-</i> <i>ity</i> ( $\alpha=.70$ )	<i>Factor 3</i> <i>Personal</i> <i>benefits</i> ( $\alpha=.52$ )	<i>Factor 4</i> <i>Power</i> ( $\alpha=.50$ )	<i>Factor 5</i> <i>Growth</i> ( $\alpha=.46$ )	<i>Factor 6</i> <i>(unnamed)</i> ( $\alpha=.40$ )
<i>Expected relationship with EO</i>	-	+	-	+	+	
Standard of living			.74			
Being creative		.84				
Work with favourite work-tasks		.82				
Profitability	.50					
Employees' employment conditions						
Control and surveillance over operations	.59					
Increased sales					.73	
Survival of crises	.74					
Self-fulfilment through work		.60				
Firm's independence from customers, suppliers and lenders	.62					
Product quality	.61					
Increased number of employees					.78	
To make products that improve the lives of others						.73
Time for family and leisure			.50			.68
To reap the fruits of my own work			.68			
Gain a social position				.71		
To work independently				.71		
Management of others				.56		

*Note:* Cumulative explained variance=60%. Values below .5 are suppressed. Only variables for which values are displayed are used to calculate the indices.

Clearly, creativity is anticipated to have a positive influence on entrepreneurial orientation. Individuals having creative goals are likely to be innovative and strive to develop new products. Conceptually, the creativity variable corresponds nicely to Miner's (1990) task motivation construct "a desire to introduce innovative solutions", which was signifi-

cantly much higher among high-growth entrepreneurs than entrepreneurs in general. Those having growth as a definite goal are also likely to adopt an entrepreneurial, growth oriented strategy.

The expected relationship between personal benefits and EO is somewhat more complicated to determine. Kets de Vries (1977) argues that entrepreneurship is driven by psychological factors, rather than the possibility of financial gains. When differentiating entrepreneurs from family firms (Glueck, 1980), it was found that in family firms the needs of the family would override those of the firm when in conflict, whereas the entrepreneurs were mainly concerned with the growth and development of his or her firm. Hence, it could be expected that personal benefits could have a negative influence on EO.

Power is expected to be positively associated with EO. Need for power has had a positive influence on entrepreneurship in psychological studies (Winter, 1973). Schumpeter (1934) stressed that some entrepreneurs want to become influential and create empires for themselves. Having stability as a goal can be seen as a defensive attitude, and this can have a negative effect on EO.

#### **6.0.0.0 Favoured work-tasks**

A question that is relatively closely related to the entrepreneur's goals has to do with their interest in performing various work-tasks in the firm, i.e. *favoured work-tasks*. A small firm manager must, inevitably, perform a range of different work-tasks. If, and as the firm grows, more time will be spent on managing personnel, and less time spent on operations. The motivation to expand the firm is likely to be influenced by whether the entrepreneur will be able to spend more or less time with the work-tasks he or she prefers the most. Just as in the case with goals, favoured work-tasks are treated as affective response attitude variables.

It is possible that a person interested in operational work-tasks such as the production and development of new products would not like managing a large firm as much, since much more of his or her time must be spent on personnel management and similar work-tasks which are removed from production. A person interested in the management of personnel and the development of strategies would on the other hand be more likely to enjoy managing a larger firm, since the management function is more defined and developed. This shows that growth motivation can depend on which work-tasks a person prefers. This view is

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given some support from the literature. Delmar (1996a) established a significant effect of favoured work-tasks on growth motivation.

Fourteen questions were asked concerning favoured work-tasks. Respondents were asked how much time they would like to spend on each of these work-tasks. To reduce the number of variables a similar factor analysis as the above was conducted resulting in four factors, explaining 57% of the variation of the original variables. The result of this factor analysis and the Cronbach's Alpha test is displayed in Table 6.5.

**Table 6.E. Favoured work-tasks of the entrepreneur. Factor analysis, reliability test and the anticipated effect on EO.**

	<i>Factor 1 Strategy (<math>\alpha=.67</math>)</i>	<i>Factor 2 Marketing (<math>\alpha=.79</math>)</i>	<i>Factor 3 Production (<math>\alpha=.58</math>)</i>	<i>Factor 4 Accounting (<math>\alpha=.62</math>)</i>
<i>Expected relationship with EO</i>	+	+	-	-
Contacts with existing customers		.84		
Development of new products				
Administration and finance				.69
Sales		.85		
Performance auditing				.66
Board work	.62			
Market plans	.76			
Calculating bids			.62	
Personnel management				
Production			.78	
Purchasing			.68	
Development of strategies	.79			
Development of new customers		.79		
Bank relations				.50
Own education and training				

*Note:* Cumulative explained variance=57%. Values below .5 are suppressed. Only variables for which values are displayed are used to calculate the indices.

As in the previous analysis, Alpha values are not impressive, but satisfactory for explorative research. Respondents scoring high on the items of the first factor are interested in working with long-term issues, developing new general strategies and marketing strategies. The third item of the factor, board work, is also likely to be concerned with strategic, comprehensive, long range issues. Accordingly, this factor is labelled *strategy*. The items of the second factor all have to do with marketing and sales. It is therefore labelled *marketing*. The third factor involves calculating bids, purchasing and production. All these are operational, non-managerial work-tasks and the factor is labelled *production*. The fourth factor, finally, has to do with administrative work-tasks and given the label *accounting*.

A positive relationship could be expected between the strategy variable and entrepreneurial orientation. A person interested in the implementation of new strategies is likely to be aware of changes in the environment, and willing to change the firm's strategy accordingly. Miner (1990) found that high growth entrepreneurs scored higher on the similar motivational construct "a desire to think about the future and anticipate future possibilities" than did other entrepreneurs. Those interested in these work-tasks are probably also more inclined to adopt a growth oriented strategy resulting in the management of increased amounts of resources.

A positive relationship between marketing and entrepreneurial orientation could be expected. Someone interested in working with their existing customers and developing relations with new customers is more likely to be sensitive to new market demands, engage in proactive market driven behaviour, and willing to change product lines. The opposite relationship is anticipated for accounting and production. These are work-tasks that involve routine management and administration of the existing operations of the firm, and are not growth or change oriented.

#### ***6.0.0.0 Expected consequences of growth and growth aspirations***

A possible reason why entrepreneurs do not expand their firms is that they expect the consequences of any such growth to be mainly negative. Reasons stated for not expanding are: a desire to keep full administrative and ownership control, risk of reduced job satisfaction, a concern for the unique atmosphere of the small firm etc. A previously developed meas-

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urement instrument identified eight key areas, which are important for small business managers, and which are likely to be affected by growth; workload, work-tasks, employee well-being, private finances, control, survival of crises, product/service quality and independence (Davidsson, 1989; Delmar, 1996a; Wiklund et al., 1997). This instrument was supplemented by two additional questions. Expected consequences of growth will probably have a positive impact on EO, so that those who mainly expect positive consequences of growth, are more likely to take on a change and growth oriented strategy. The same is true for growth aspirations: higher growth aspirations regarding sales and number of employees is likely to lead to a more entrepreneurial orientation of the firm.

A factor analysis of the expectancy variables, which is displayed together with Cronbach's Alpha reliability test in Table 6.6, reveals 2 factors, which explain 44% of the variance of the original variables. The first factor is difficult to interpret and refers mainly to changes in the characteristics of the firm. It is labelled *firm characteristics*. The other factor is related to expected changes in work conditions for the entrepreneur and is therefore labelled *work conditions*.

#### *6.0.0 Results*

The summed indices together with growth aspirations in terms of employment and sales were entered in the attitude model as independent variables. The result of the regression analysis is displayed in Table 6.7. Adjusted explained variance is moderate, reaching .15. This is hardly surprising, since attitudes represent only one out of four constructs expected to affect EO. Furthermore, the standardised regression coefficients of the included variables are of a non-trivial magnitude, and they are all highly significant.

Two favoured work-tasks, strategy and production, were included in the equation, both with the foreseen signs, whereas accounting and marketing were left out. Three of six goals had an effect on EO, the effect being in the hypothesised direction for all three of them.

Neither the expectancy variables nor the growth aspiration variables were included in the equation.

**Table 6.F. Expected consequences of a doubling of the firm's size.  
Factor analysis, reliability test and expected effect on EO.**

	<i>Factor 1</i> <i>Firm characteristics</i> <i>(<math>\alpha=.70</math>)</i>	<i>Factor 2</i> <i>Work conditions</i> <i>(<math>\alpha=.61</math>)</i>
<i>Expected relationship with EO</i>	+	+
Would he or she have to work more or less hours		
Would he or she be able to spend more or less time on favoured work-tasks		.67
Would employees enjoy work more or less (the original Swedish word for well being also connotes work atmosphere)	.61	
Would his or her income and other disposable economic benefits increase or decrease	.74	
Would his or her ability to survey and control operations increase or decrease		.51
Would the firm's independence in relation to customers, suppliers and lenders increase or decrease	.55	
Would it be easier or more difficult for the firm to survive a crisis	.77	
Would it be easier or more difficult for the firm to maintain the quality of products and services	.62	
Would it be easier or more difficult to manage the company		.54
Would the value of the company increase or decrease	.50	

*Note:* Cumulative explained variance=44%. Values below .5 are suppressed. Only variables for which values are displayed are used to calculate the indices.

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**Table 6.G. Attitude model. Linear regression results for the effect of attitudes on entrepreneurial orientation.**

<i>Variables in the equation</i>	<i>Variables not in the equation</i>	<i>β-values (min. n=400)</i>
<i>Favoured work-tasks</i>		
Strategy		.22***
Production		-.23***
	Marketing	
	Accounting	
<i>Goals</i>		
Creativity		.17***
Sales growth		.11**
	Stability	
	Personal benefits	
	Power	
	Employment growth	
<i>Expected consequences of growth</i>		
	Firm characteristics	
	Work conditions	
<i>Growth aspirations</i>		
	Sales growth	
	Employment growth	
R <sup>2</sup>		.16
Adj. R <sup>2</sup>		.15

*Note:* \*= p< .05; \*\*= p< .01; \*\*\*= p< .001. Pairwise deletion of missing values has been applied.

## **6.0 = Resource model =**

### *6.0.0 Independent variables and expected relationships*

The resource sub-model is displayed in the figure below (Figure 6.3). The general view held here is that a firm with abundant resources, or ac-

cess to resources, is likely to have more of an EO (Covin & Slevin, 1991). Based on the resource based view of the firm, Greene & Brown (1997) hypothesised that small entrepreneurial firms which innovate and grow, would need more abundant human, individual, physical and organisational resources. The following quotation summarises the position taken:

*Entrepreneurial postures tend to be resource-consuming postures. Therefore, an organization's entrepreneurial capacity will be, to some extent, limited by its resource base. Organizations with abundant resources may have a greater capacity than those with sparse resources to engage in entrepreneurial activity. (Covin & Slevin, 1991, p. 15)*

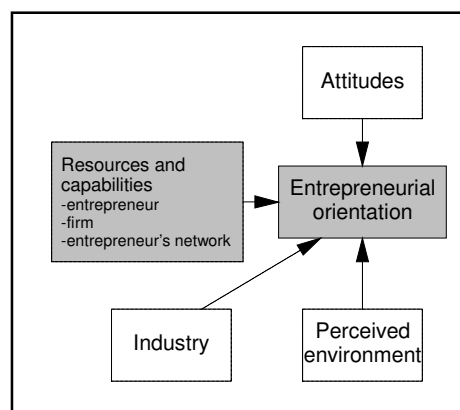


Figure 6.C. Resource sub-model to be tested: the influence of resources on EO.

#### 6.0.0.0 Resources and capabilities of the entrepreneur

Zahra (1993) notes that senior executives' backgrounds and experiences may be important antecedents of a firm's EO, without specifying any of these. In order to isolate variables that may have an influence on EO, guidance can be given from the extensive literature available regarding personal background, experience and small firm growth/performance. This is in line with the assumption stated in Section 6.1.1; that a direct association between resources and growth/performance has been found in previous research is because the mediation through EO has been overlooked.

Undoubtedly, the characteristics of the entrepreneur are the most frequent variables when studying small firm growth and performance.



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Relevant experience is thought to increase the familiarity with various relevant work-tasks, thus making it easier to solve problems and increase the ability of the entrepreneur to perform well. Knowledge of the industry, start-up and management experience, as well as the experience of working in rapidly growing organisations and length of tenure have been important factors in previous studies (Birley & Westhead, 1994; Macrae, 1992; Van de Ven et al., 1984).

The results are, however, not wholly consistent. Miller & Toulouse (1986) found that CEO tenure had a negative influence on performance. One reason for this ambiguity may stem from the fact that whilst acquiring experience, the entrepreneur grows older and that age has a negative effect on performance, which negates the influence given by experience. Other studies have suggested that there is a negative relationship between the age of the entrepreneur and growth orientation (Cragg & King, 1988; Foley, 1984). Foley (1984) suggested that motivation may decrease with age. Another possible explanation is that the work capacity, which is crucial to venture success according to Khan (1986), declines with increasing age. In the separation of age and experience, Davidsson (1989) found a positive contribution from experience but a negative one from age. The levelling of age contra experience is further supported by the rather consistent findings that educated entrepreneurs are more likely to run faster-growing firms than those who are non-educated (Storey, 1994b). Education is a factor which, just as experience, increases the ability of the entrepreneur. However, education is usually attained at a relatively young age, and thus has no negative correlation with age.

To sum up; education and all experience except tenure in present position is expected to enhance entrepreneurial orientation, since age is controlled for. Age is expected to have a negative influence on entrepreneurial orientation.

In what way and how the entrepreneur became the manager of the firm has also been the subject of investigation. Some results indicate that founders tend to be more innovative and growth oriented than non-founders (Begley & Boyd, 1987; Chaganti & Schneer, 1994; Dunkelberg, Cooper, Woo & Dendor Jr, 1987), whereas others hypothesise that founding a business and growing a business are different tasks, and, therefore, founders are likely to be less growth oriented (Willard &

Krueger, 1992). However, no support was found for the latter hypothesis in their empirical study.

The foundation for other important entrepreneurial characteristics are established early in life; factors such as gender, ethnicity, and family role models have all received attention. Previous research has found that males were over-represented in high growth firms (Cooper et al., 1994). Results concerning ethnicity point in different directions. Storey (1994b) found that social marginality stemming from ethnicity had a positive influence on growth, contradicting the findings of Woo et al. (1989) and Cooper et al. (1994). A role model, i.e. having parents that run their own firm, has been shown to be important for people going into self employment, but was not significant for venture performance (Cooper et al., 1994).

Table 6.8 below summarises variables which are likely to influence EO and the direction of the expected relationships.

**Table 6.H. Resources and capabilities of the entrepreneur and expected relationships with EO.**

	<i>Expected relationship</i>
Start-up experience	+
Industry experience	+
Management experience	+
Additional assignments	+
Large firm experience	+
Tenure in present position	?
Experience from rapid-growth firms	+
Age	-
Length of education	+
Management or engineering education	+
Management training	+
Founder	+
Gender (male)	+
Ethnicity (immigrant)	?
Role models	+

*Note:* + indicates a positive relationship, - a negative relationship, and ? that the direction of the relationship is ambiguous.

#### **6.0.0.0 Resources and capabilities of the firm**

Most studies assume that there is only one individual involved in the business (Birley & Westhead, 1990). However, the human resources of a small firm reach beyond those of the entrepreneur. In addition to the abilities of the entrepreneur, the total competency and resources of the workforce are important factors in the overall resources of the firm (Chandler & Hanks, 1994a). The number of employees holding a university degree may serve as a proxy for the overall competence level of the workforce (Birley & Westhead, 1990). The size of the management team is an indication of how well these competencies are utilised. The size of the board of directors is another indication of the human resources that the firm possesses.

For expansion, capital is needed. One restriction to development may be the lack of capital availability. Regarding new ventures, Cooper & Gimeno-Gascon (1992) reported that in six of eight studies reviewed, more capital was associated with better performance. Perceived capital availability and the sale of equity to a new owner are used as indicators of capital availability.

Due to its size, a larger firm possesses a greater amount of resources than a smaller firm. Thus, a positive relationship between size and EO could be expected.

As mentioned earlier, EO could be seen as a decision making style (c.f. Section 3.4.3), therefore the resources employed in *decision making* are of particular interest. If the employees and the board are involved in any decision making process, this is an indication that the entrepreneur utilises more competencies than his or her own in this and a positive relationship between their involvement and EO is expected.

Table 6.9 below summarises variables that are likely to influence EO and the direction of the expected relations.

**Table 6.I. Resources and capabilities of the firm and expected relationships with EO.**

	<i>Expected relationship</i>
Number of employees holding university degrees	+
Management team size	+
Board size	+
Use of board in decision making	+
Use of employees in decision making	+
Capital availability	+
New owner	+
Present size (FTE)	+
Present size (sales)	+
Size compared to competitors	+

*Note:* + indicates a positive relationship, - a negative relationship, and ? that the direction of the relationship is ambiguous.

#### **6.0.0.0 Resources and capabilities of the entrepreneur's network**

Resources such as know-how can be made available to the firm from outside sources (Birley, 1985; Cooper et al., 1994; Donckels & Lambrecht, 1994; Johannisson, 1986; 1990). Active use of external board members with relevant experience and knowledge may be important. Another alternative to the use of internal resources is networking with other people and organisations. Know-how that is not available within the firm could be utilised this way. As mentioned above, EO has to do with decision making, therefore, the use of network resources has been delimited to their importance in decision making in the present study.

Thirteen questions were asked to determine how the respondents made use of their network in their decision making. The factor analysis displayed below (Table 6.10) derived three factors with eigenvalues greater than one, together explaining 52% of the variation of the original variables. To retain as much information as possible from the original items, those with high loadings on particular factors were summed to indices. The reliability of the indices was tested using Cronbach's Alpha.

The first factor, labelled *formal professional advisors*, gets high loadings on items relating to professional organisations possessing specific skills and knowledge. This group of advisors is different from the other two groups in the factor analysis, since the entrepreneur is required to actively approach organisations that are not part of their day-to-day contacts. These organisations could be used for gaining valuable knowledge and information which can increase their knowledge and awareness when making entrepreneurial decisions. Lawyers are, for instance, important when making patent applications for new products. Furthermore, previous research has found that the use of these types of advisors has a positive influence on firm profitability and growth (Robinson, 1982). Thus, the use of formal professional advisors is expected to have a positive influence on EO.

**Table 6.J. Network resources utilised in decision making. Factor analysis, reliability test and expected effect on EO.**

	<i>Factor 1</i> <i>Formal profes-</i> <i>sional advisors</i> <i>(<math>\alpha=.67</math>)</i>	<i>Factor 2</i> <i>Day-to-day</i> <i>advisors</i> <i>(<math>\alpha=.61</math>)</i>	<i>Factor 3</i> <i>Value chain</i> <i>advisors</i> <i>(<math>\alpha=.69</math>)</i>
<i>Expected relationship with EO</i>	+	-	+
Chartered accountant		.75	
Bank contacts etc. and similar		.81	
Chamber of Commerce and employer organisation			
Customers			.81
Suppliers			.71
Employees			.77
Family		.56	
Board (excluding family)			
Consultants	.81		
Lawyers	.79		
Regional development funds and similar	.57		
Other business managers			

*Note:* Cumulative explained variance = 52%. Values below .5 are suppressed. Only variables for which values are displayed are used to calculate the indices.

*Day-to-day advisors*, which is the label given to the second factor, refers to people who probably do not have insight into the operations of the firm and further are unlikely to give advice that facilitates entrepreneurship. It may, at first, seem surprising that having the family as advisor loaded on the same factor as bank contacts and accountants. However, except for the people actively involved in the value chain which make up the third factor, these advisors constitute the day-to-day contacts that an entrepreneur is likely to have. A negative relationship between interest in work-tasks related to accounting and bank contacts was hypothesised above (see Section 6.3.1.2). A similar argument for a negative relationship between day-to day-advisors and EO could be provided; bank

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contacts and accountants are mainly concerned with the administration of current financial resources. At least, to the extent that they are used as a substitute for other advisors, they are likely to have a negative effect on EO.

The third factor, finally, is labelled *value chain advisors* because the items refer to people that are actively involved with the product or service delivered and have an intimate knowledge of products and processes. Being open to, and accepting advice from customers indicates a sensitivity to market demand, which probably reflects a willingness to change products. Advice from suppliers keeps the entrepreneur aware of the development of new technology. By taking advice from employees, it is possible to utilise the employees' own creativity. A positive association is anticipated for this variable.

Table 6.11 below summarises variables related to the resources and capabilities of the entrepreneur's network and their anticipated influence on EO.

**Table 6.K. Resources of the entrepreneur's network and the expected relationships with EO.**

	<i>Expected relationship</i>
Number of external board members	+
Formal professional advisors	+
Day-to day advisors	-
Value chain advisors	+

*Note:* + indicates a positive relationship, - a negative relationship, and ? that the direction of the relationship is ambiguous.

### 6.0.0 Results

The results of the regression results of the resource model are displayed in Table 6.12 below. The adjusted explained variance of .14 should be considered as very modest, given the large number of variables entered into the analysis<sup>32</sup>. It would however still appear that resources have an

<sup>32</sup> As stated earlier in this chapter, the stepwise method faces the risk of capitalising on=

effect on EO and that the proposed model is relevant. Turning to individual variables, the direction of the relationships are all in the expected direction. This gives additional support to the relevance of the model. If variables were entered totally at random, half of them would have signs opposite to those anticipated. The largest standardised regression coefficient is obtained for the day-to-day advisors variable, suggesting that heavy reliance on these sources of advice is associated with a low degree of EO. The magnitude of the standardised regression coefficients for the remaining variables are roughly equal, and it is difficult to determine a reliable rank order.

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chance variation. Considering the large number of candidate variables for the resource model and the small number left in the model, this risk could be considerable. To reduce this risk, separate stepwise regressions were run for each of the resource sub-models, viz. resources of the entrepreneur, the firm and the entrepreneur's network. Only those variables included in each of the sub-analyses were then entered into the full resource model. This reduced the number of independent variables entered into the total resource model to 11. The results from this analysis were however exactly the same - the same seven variables were left in the equation. The four variables eliminated in the total resource model stepwise procedure were rapid growth experience, management training, involvement of employees in decision making (positive signs) and no education above secondary school (negative sign). Thus, these variables also had effects in the expected direction which further validates the model.



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**Table 6.L. Resource model. Linear regression results for the effect of resources on entrepreneurial orientation.**

<i>Variables in the equation</i>	<i>Variables not in the equation</i>	<i>β-values (min. n=422)</i>
<i>The entrepreneur</i>		
Role model		.10*
	Start-up experience	
	Industry experience	
	Management experience	
	Additional assignments	
	Large firm experience	
	Tenure in present position	
	Experience from rapid-growth firms	
	Age	
	Length of education	
	Management or engineering education	
	Management training	
	Founder	
	Gender (male)	
	Ethnicity (immigrant)	
<i>Firm resources</i>		
Present size (FTE)		.14**
Management team size		.16**
Size compared to competitors		.11*
	Number of employees holding university degree	
	Involvement of employees in decision making	
	Capital availability	
	Board size	
	Use of board in decision making	
	New owner	
	Present size (sales)	
<i>Network resources</i>		
Formal professional advisors		.12*
Day-to day advisors		-.21***
Value chain advisors		.11*
	Number of external board members	
R <sup>2</sup>		.16
Adj. R <sup>2</sup>		.14

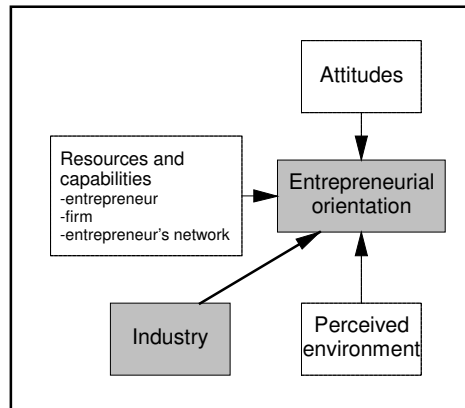
*Note:* \*= p< .05; \*\*= p< .01; \*\*\*= p< .001. Pairwise deletion of missing values has been applied.

## 6.0= Industry model=

### 6.0.0 *Independent variables and expected relationships*

The industry sub-model is displayed in the figure below (Figure 6.4). The relationship between the perceived environment and EO has been extensively researched. Interestingly enough, the association between variables relating to the *objective* industry and EO has not been researched to any great extent. Covin & Slevin (1991) suggest that industry technological sophistication and business life cycle stage affect EO. However, to the knowledge of this author, these relations have not been empirically tested. One rationale for not testing these relationships proposed by Zahra (1993) is that technological sophistication and business life-cycle stage refer to one type of conceptualisation of the environment, whereas environmental dynamism, heterogeneity and hostility refer to another. Therefore, according to Zahra, the researcher should choose either one of the conceptualisations, since the other becomes redundant. This argument is similar to the view held here, in that perceived and objective environment are different concepts. However, that is not to say that they are different conceptualisations of the same environment. No matter the conceptual standpoint, it is, of course, possible to test whether objective measures and subjective measures give the same results, as suggested by Zahra.

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**Figure 6.D. Industry sub-model to be tested: the influence of industry on EO.**

Covin & Slevin (1991) suggest that a disproportionately high share of hi-tech firms have been found to be entrepreneurial due to environmental conditions. Hence, it could be anticipated that firms from the knowledge and research intensive sector would score higher on EO than other firms. Turning to the business life-cycle, there is a relationship between industry growth and business life-cycle stage (Tsai et al., 1991), and growing markets are associated with increased business opportunities. During the studied period, the professional service sector is the only one that has grown. Thus, a positive relationship is likely between the professional service sector and entrepreneurial orientation.

Other industry characteristics have been stressed to influence small firm growth and performance. As mentioned earlier (cf. Section 3.5), the question of *how* they affect outcomes is rarely fully examined. According to the strategic adaptation perspective, a reasonable assumption is that they have an effect on outcomes mediated through EO. Therefore, the relationships between environmental variables and EO are assumed to be in the same direction as those between environment and small firm growth and performance in previous research.

Customer concentration is hypothesised to have a negative influence on EO, as does supplier concentration (Birley & Westhead, 1990). Geographic market dispersion, measured as exports, is expected to positively influence EO (Birley & Westhead, 1990; Davidsson, 1989).

### 6.0.0 Results

As illustrated in Table 6.13 below, explained variance is very low, and therefore, the standardised regression coefficients should be interpreted very carefully. It may be the case that these relationships are spurious. This is supported by the fact that not all relationships are in the assumed direction. For this reason, the results from this analysis will be disregarded, and industry variables will not be included in the total model analysis.

**Table 6.M. Industry model. Linear regression results for the effect of resources on entrepreneurial orientation.**

<i>Variables in the equation</i>	<i>Variables not in the equation</i>	<i>β-values (min. n=432)</i>
Exports		.10*
Labour intensive industry		-.20***
Knowledge intensive industry		-.14**
	Professional services	
	Customer concentration	
	Supplier concentration	
R <sup>2</sup>		.04
Adj. R <sup>2</sup>		.03

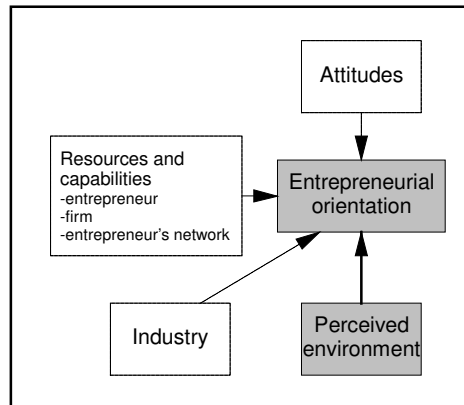
Note: \* = p < .05; \*\* = p < .01; \*\*\* = p < .001. Pairwise deletion of missing values has been applied.

## 6.0 = Perceived environment model =

### 6.0.0 Independent variables and expected relationships

The perceived environment sub-model is shown in the figure below (Figure 6.5). The dimensions of environmental dynamism, hostility and heterogeneity have frequently been used to characterise the environment as perceived by the firm, and to predict strategy (Covin et al., 1990; Dess, Lumpkin & Covin, 1997; Merz et al., 1994; Miller, 1983a; Miller & Toulouse, 1986).

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**Figure 6.E. Perceived environment sub-model to be tested: the influence of the perceived environment on EO.**

To the extent that the relationship between the perceived environment and EO has been empirically tested, a positive relationship between environmental dynamism, heterogeneity and EO has been established. All three dimensions of the perceived environment were positively associated with EO in Zahra's (1991) study. Miller (1983a) discovered that dynamism and heterogeneity had a positive correlation with EO. Miller, Kets de Vries & Toulouse (1986) found positive correlations between each of the separate dimensions of EO, and environmental heterogeneity and dynamism. In another study, results showed that there were positive correlations between all three dimensions of the perceived environment and innovation in both conservative and entrepreneurial firms (Miller & Friesen, 1982). Miller (1987b) found that innovative strategies were positively correlated with environmental dynamism, heterogeneity, 3 out of 4 hostility items and changes in dynamism, heterogeneity and hostility. Khan & Manopichetwattana (1989), established that innovativeness correlated positively with dynamism and heterogeneity. Furthermore, Stevenson & Gumpert (1991) suggests that an entrepreneurial strategic orientation is driven by a rapidly changing environment.

From this it can be hypothesised that environmental dynamism and heterogeneity and changes along these dimensions, all have a positive influence on EO.

Findings regarding the relationship between EO and hostility are mixed. Khan & Manopichetwattana (1989), found a negative correlation between the two, as did Miles et al (1993), whereas Covin & Slevin (1989), Miller (1983a) and Zahra (1991) found the opposite. Thus, it is difficult to hypothesise on whether the relationship between the two is negative or positive.

The scale used for measuring the static environment was translated from Miller & Friesen (1982). The four items measuring heterogeneity were reduced to one, due to limitations of space. The rationale for eliminating the items relating to heterogeneity was the assumption that small firms rarely perceive environmental heterogeneity due to their small size, and because only one item was used in the original scale for measuring increase in heterogeneity. The Cronbach's Alpha values of the perceived environmental variables are reported in Table 6.14. The Alpha value for dynamism is lower than that reported by Miller & Friesen (1982), whereas the hostility value is higher.

The scale used for measuring perceived environmental changes was a direct translation from Miller (1987b). To increase measurement reliability of hostility change, one item was dropped. The corresponding Alpha values for the environmental change variables were not reported by Miller (1987b).

**Table 6.N. Cronbach's Alpha values for perceived environmental dimensions.**

Dynamism	.60
Heterogeneity	N/A
Hostility	.60
Dynamism increase	.60
Heterogeneity increase	N/A
Hostility increase(one item deleted)	.61

### 6.0.0 Results

The adjusted explained variance of .29 indicates that the perceived environment has a substantial influence on EO, and that the proposed model is relevant. The results reveal that dynamism, both in a static and dynamic sense, is the most important determinant of EO. Heterogeneity also has a positive influence on EO, in particular the perceived increase of the variable. Hostility is significant in a negative direction, whereas there is no influence of hostility change. Zahra (1993) suggests that the influence of hostility may be curvilinear rather than linear. When this relationship is tested, the variable becomes insignificant and is omitted from the equation. As reported above, Khan & Manopichetwattana's (1989) results, as well as Miles' et al. (1993) indicate that similar empirical results have appeared in previous studies. Khan & Manopichetwattana (1989) argue that environmental hostility induces the company to "pull in its horns" (p. 605), i.e. to adopt a defensive strategy and avoid any bold or speculative activities. Accordingly, this finding is accepted.

**Table 6.O. Perceived environment model. Linear regression results for the effect of the perceived environment on entrepreneurial orientation.**

<i>Variables in the equation</i>	<i>Variables not in the equation</i>	<i>β-values (min. n=427)</i>
Dynamism		.35***
Heterogeneity		.10*
Hostility		-.12**
Dynamism change		.23**
Heterogeneity change		.17***
	Hostility change	
R <sup>2</sup>		.30
Adj. R <sup>2</sup>		.29

Note: \*= p< .05; \*\*= p< .01; \*\*\*= p< .001. Pairwise deletion of missing values has been applied.

## 6.0 = Combined model =

Variables that have signs in the hypothesised direction, i.e. a positive or negative influence on EO in line with expectations, and were included in the stepwise regressions from the previous sub-model analyses, are added into the full model analysis. The results are displayed in the centre column of Table 6.16.

As anticipated, a larger share of variation is explained when the variables from all the theoretical constructs are combined, than was the case when each construct was analysed separately. Adjusted explained variance reaches .36.

It is also possible to remove those respondents who deviated substantially from the general pattern, and estimate the equations for more representative cases. The prediction of EO was unsuccessful in a total of thirteen cases, equivalent to three per cent of the included sample<sup>33</sup> (a residual of the dependent variable greater than two standard deviations is regarded as unsuccessful). When these cases are excluded, adjusted explained variance increases considerably, by nine per cent to .45, and three more variables become significant. These are: strategy, size, and formal professional advisors. In particular, strategy shows a much higher standardised regression coefficient here. These results are displayed in the right hand column of Table 6.16.

So: what is the point of conducting this alternative analysis? First, the additional analysis reconfirms the relevance of the model; only a few cases deviate substantially from the general pattern and could thus reduce the explanatory power of the model. Second, it is possible to identify the variables that have an important influence on EO for the more typical respondents, when the small proportion of outliers is excluded.

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<sup>33</sup> It is only possible to calculate the standardised residuals for respondents answering all questions. This is why the number of cases decreases by more than 13 when the outliers were removed. Inclusion of only those answering all questions is called listwise deletion of missing data as opposed to pairwise deletion. To check that the increased explained variance was due to the exclusion of outliers and not the switch to listwise deletion of missing data, a separate analysis was run for all the cases answering all questions. With listwise deletion, adjusted explained variance increases slightly by one per cent compared to the pairwise alternative. The same variables were significant, suggesting that results are stable in this regard. It also indicates that the large increase in explained variance when excluding outliers is really due to the exclusion of outliers and not the switch to listwise deletion of missing data.



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The outliers were examined separately. However, it is difficult to establish any typology for them. It could, of course, be that they have misinterpreted the questionnaire. However, this does not seem to be the case as their answers do not appear to be random. It would appear that a common feature is that their tenure in the company has been relatively short, and that they, to a larger extent, consult employees in decision making. Perhaps their knowledge of the firm is limited by the shorter time they have spent with the firm, which could make their answers more unreliable.

Bivariate correlations among independent variables and tests of multi-collinearity were performed. The largest bivariate correlation between two independent variables is .39 between size and management team size, which should be unproblematic according to conventional criteria. When either of the variables is omitted from the regression, the other becomes significant in both analyses. No other bivariate correlation reached beyond .28, and the multi-collinearity test did not reveal that such exists.

Stepwise regression was used for the sub-model analyses whereas forced entry was employed for testing the full model. As mentioned in the beginning of this chapter, the stepwise method may give rise to spurious results. One way of checking this is to see to what extent variables from the separate sub-models are significant in the total model. The weakest results were obtained for the resource model in this respect, only two to four out of seven variables turn out to be significant, depending on the analysis method used. Since the majority of variables from the separate analyses also were significant in the total model, and regression coefficients did not change dramatically, we can conclude with some confidence that the results of the sub-models are relevant and not spurious. The fact that some variables become insignificant in the total model is not methodologically problematic or surprising, since a larger number of variables are included.

Variables from all the included constructs are significant and found to be important<sup>34</sup>. From this, we can conclude that each of the specified theoretical sub-models are relevant and that none of the theoretical constructs concerning attitudes, perceived environment or resources and capabilities can be disregarded in the explanatory analysis of EO.

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<sup>34</sup> **The industry model was already excluded since it was considered unsuccessful, see above.**

Turning to individual variables, the standardised regression coefficients shows that perceived environmental dynamism is far more important than any other. Apart from that, all significant coefficients have similar magnitude, and it is difficult to establish any definite rank order among them. Five variables turn out to be insignificant in both analyses.

Whether or not the firm is a subsidiary was entered as control variable, to check if EO varies between independent firms and subsidiaries. This was not the case. Firm age was also entered as control variable. The reason why this control variable was included, is that it is often argued that as firms become older, they become less entrepreneurial and a negative relationship between firm age and entrepreneurial orientation could therefore be anticipated. No support for this could be found.

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**Table 6.P. Combined model: linear regression results for the combined effect of attitudes, resources and capabilities, and perceived environment on EO. Forced entry of independent variables employed.**

	<i>Pairwise deletion of missing data</i>	<i>Listwise deletion of missing data, outliers eliminated</i>
	<i>β-values (min. n=412)</i>	<i>β-values (n=365)</i>
<i>Attitudes</i>		
Strategy	.08	.14**
Production	-.11*	-.15***
Creativity	.13**	.15***
Sales growth	.09*	.11**
<i>Perceived environment</i>		
Dynamism	.35***	.34***
Heterogeneity	.05	.05
Hostility	-.09*	-.12**
Change dynamism	-.08	-.06
Change heterogeneity	.14***	.15***
<i>Resources</i>		
Size (FTE)	.07	.08*
Management team size	.08	.08
Role model	.06	.03
Size compared to competitors	.10*	.11**
Formal professional advisors	.05	.09*
Day-to day advisors	-.16***	-.15***
Value chain advisors	.08	.01
<i>Control variables</i>		
Subsidiary	.03	.02
Firm age	-.07	-.07
R <sup>2</sup>	.38	.48
Adj. R <sup>2</sup>	.36	.45

Note: \* = p < .05; \*\* = p < .01; \*\*\* = p < .001.

## **6.0= Discussion and interpretation of results=**

### *6.0.0 Introduction*

In this chapter, multiple linear regression was used to estimate the extent to which EO can be explained by variables relating to the theoretical constructs attitudes, resources and capabilities, industry and the perceived industry. In the first stage of the analysis, variables relating to each of the constructs were used in separate models as predictors of EO. In doing so, the separate contribution from each of the theoretical constructs could be determined. In the second step of the analysis, the predictor variables from the earlier analyses were combined in one model. In this way, the joint predictive ability of all constructs was estimated. Furthermore, the relative impact of variables from different constructs may be compared and the most important factors contributing to EO be established.

Earlier research has suggested that some variables influence growth and/or performance. Other researchers have been mainly concerned with finding antecedents of EO. The basic assumption in this chapter was that the effects of all independent variables on growth/performance are mediated through entrepreneurial orientation. Thus, variables that, in previous studies, have been found to be antecedents of growth and performance are, in this study, assumed to influence EO. The reason why a direct association has been found between any one particular variable and growth or performance in previous research, it was argued, is because the structural relationship (i.e. the mediation through EO) has not been included in the empirical study.

In light of the findings, this assumption appears relevant. Variables derived from the small firm growth/performance literature do influence EO, i.e. variables predicting growth/performance in other studies can be used to predict EO. It should be noted, however, that it is premature to conclude that EO also influences subsequent firm outcomes based on the present analyses. The relationship between EO on the one hand, and growth and performance on the other will be assessed in Chapter 7. Whether the full research model is correct and EO is the only antecedent of growth and/or performance or whether other variables have a direct influence on outcomes can only be determined after those analyses are performed.

### *6.0.0 The attitude model*

The attitude model appears relevant in that explained variance is acceptable, and all retained significant relationships are in the predicted direction. The goals and favoured work-tasks of the entrepreneur explain the EO of the firm to a reasonable extent. Having sales growth as a goal appears to be a substantial attitudinal determinant of EO, whereas goals of employment growth do not. In later analyses, the relationship between EO and actual growth will be investigated. It is possible that EO is more closely related to sales than to employment growth. This remains to be analysed.

This result is not completely surprising. Sales growth is more likely to take place before employment growth (Flamholtz, 1986). A firm does not employ people until its business volume has increased. In one way, employment growth can be regarded as the result of sales growth. Thus, a time lag between sales and employment growth can be foreseen, which could affect the results.

Creativity was the other goal that had an effect on EO. People scoring high on this variable find it important to work with favourite work-tasks, being creative and reaching self-fulfilment through their work. These people are likely to be found performing creative work-tasks and working hard with these tasks. This, obviously, must include creative individuals such as inventors. Apparently, these characteristics have a positive influence on the EO of the firm. This conclusion gains some support from earlier research. Khan (1986) found that creativity was the most important variable in determining new venture success.

This indicates that it is work satisfaction and fulfilment that is important for EO, not possible results such as earning more money or obtaining societal influence. This could be an important conclusion for policy makers to note. It seems that non-economic incentives are more important for entrepreneurial orientation than economic ones. Thus, it is presumably unlikely that the prospect of increased economic rewards will substantially increase the entrepreneurial orientation of existing small business managers.

The lack of influence from other goal related variables is somewhat surprising, but can, at least, be partly due to the moderate explanatory power of the attitude model. The theoretical justification for the personal benefits and stability indices was not very strong nor were there

many previous empirical findings in this direction which could explain their relative unimportance.

Neither the expected consequences of growth, nor growth aspirations had any effect on EO. The way in which the expected consequences questions were asked, these variables relate to employment rather than sales growth. This agrees with the findings above in that whether or not employment growth was a defined goal had no effect on EO. Just as for the goal variable, if the association between employment growth and EO is weak, this could explain why there was no effect shown by the expected consequences of growth on EO.

Another interpretation of the lack of any relationship between growth aspirations and EO could be that aspirations have only a limited influence on actual entrepreneurial behaviour. Even though some respondents believed that an increased size could be advantageous, this did not cause them to assume an entrepreneurial, growth oriented strategy. Their growth aspirations could thus be described as “wishful thinking” rather than forceful determinants of intentional behaviour.

Turning to the favoured work-tasks variables, strategy had a positive impact on EO, whereas production had a negative impact; the two remaining variables being unimportant. In a typology suggesting four different types of small business manager roles (Barrow, 1993), artisans represent small business managers occupied with daily production very much being “one of the boys”. Most of their time is being spent on producing a product, or delivering a service. Due to their preoccupation with these work-tasks, artisans have few growth prospects. Strategists on the other hand, represent managers who leave production and routine management work-tasks to their employees in order to concentrate on strategic issues. This is the most desirable type of entrepreneur for the development of a growing business. The findings from the present research give support for this typology; interest in production work-tasks have a negative influence on EO, whilst interest and involvement in strategic work-tasks have a positive influence.

Interest in marketing work-tasks did not influence EO. Market orientation is assumed to be important for entrepreneurial firms (e.g. Miller, 1990; Stevenson & Gumpert, 1991). The findings of this study are therefore somewhat surprising. It should, however, be noted that the variable measures favoured work-tasks of the entrepreneur. The findings suggest that it may be better for the entrepreneur to concentrate on

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strategic work-tasks and leave the marketing to others. Put differently, what is studied here are the favoured work-tasks of the entrepreneur and not the orientation of the firm. Those entrepreneurs not particularly interested in working within marketing may have employees to deal with this, but still be in charge of firms with a market orientation. There is a significant correlation between the number of marketing positions within the firm and EO<sup>35</sup>, which may support this view.

The findings regarding attitudes seem to support the relevance of Miner's (1990) role motivation theory in the entrepreneurial context. The two variables with the largest positive effect on EO come closest to the constructs suggested by Miner in having an effect on small firm growth.

#### *6.0.0 The resource model*

Explained variance for the resources model was almost identical to that of the attitude model. Analysed separately, the two constructs appear equally important in explaining the firms' degree of EO.

If the importance of the three different types of resource variables included in the study are compared - resources and capabilities of the entrepreneur, resources and capabilities of the firm, and resources and capabilities of the entrepreneur's network - it would appear that the resources and capabilities of the entrepreneur are the least important.

It is interesting to note that of the seven variables remaining in the equation, two refer to the mere *quantity* of resources that the firm controls and not the *quality* of these resources, i.e. the number of employees, and the firm's size compared to competitors. From a resource based view, a positive relationship between size and EO could be anticipated, as size should provide access to more abundant resources. However, since the general opinion is that smaller firms are more entrepreneurial than large ones, this result is worthy of some further comment. Smaller firms are often seen as flexible, organic and entrepreneurial, whereas larger firms are hierarchical and bureaucratic (Flamholtz, 1986). It must, however, be born in mind that no firms in this study can be regarded as

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<sup>35</sup> **The correlation between EO and the number of employees in marketing is .32, p<.0005. This is the highest correlation for EO with number of employees in any of the positions investigated. Positions investigated are marketing, quality control, personnel, product development, purchasing, planning, and administration.**

large. The sample consists of small firm with 10 to 50 employees. Thus, the results suggest that somewhat larger, but still small firms, have a more EO than very small firms. To use the life-cycle vocabulary, the larger firms in the sample have not transformed from the entrepreneurial stage to the professionally managed stage (Flamholtz, 1986).

From a dynamic perspective, the "size effect" on EO should not be surprising. If we consider the full research model, it is stressed that EO is an antecedent of growth and performance. The processes leading to growth are likely to have some duration over time, so that entrepreneurial firms grow faster. If firms start out at the same size, entrepreneurial firms reach a larger size after a few years. If EO is measured at this time, it is logical that larger firms exhibit a more entrepreneurial orientation. A correlation test indicates that such is the case; there is a significant correlation between employment and sales growth on the one hand and size on the other, indicating that the larger firms in the sample have grown more rapidly in the past<sup>36</sup>. This supports the relevance of the proposed model.

There seems to be some confusion in the literature regarding growth, which is supposed to be related to entrepreneurship, and size, which is stressed as having a negative association with entrepreneurship. This is, at least partly, due to measurement biases which tend to inflate the growth rates of firms which were small at the beginning of the studied growth period (cf. Section 4.4.3). Using the alternative growth rate measure employed here, together with a sample from a relatively homogenous size-bracket, the findings are the opposite, i.e. larger firms have grown more in the past.

This confusion concerning size and growth may also be a result of other methodological artefacts. By definition, growing firms become larger. If a cohort of firms started in any one year is studied, and if the hypothesis that entrepreneurial firms grow faster is valid, then the larger firms would exhibit higher growth rates and higher levels of entrepreneurship, as they do in the present study. These processes will not be revealed in cross sectional studies. Above all, these findings illustrate that measurement choices are crucial for the results obtained and that these results must always be interpreted in relation to theory.

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<sup>36</sup> **The correlations between size (FTE) on the one hand and sales and employment growth= rates over the past three years on the other are .26 and .25 respectively,  $p < .0005$ .**



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The availability of financial resources does not seem to be important for EO in the way suggested elsewhere (Covin & Slevin, 1991; Greene & Brown, 1997). Neither capital availability nor new owners were included in the model. The variables regarding human resources of the firm were equally unimportant (i.e. the number of employees having a university degree or the involvement of employees in decision making, the size and structure of the board, the use of the board in decision making). It is possible that these relatively crude measures did not reflect the influence of human resources to a sufficient extent. Other measures have been utilised where the associations are stronger (Chandler & Hanks, 1994b).

Turning to the entrepreneur's network, all the three summed indices for network resources were included in the model. Formal professional advisors could be regarded an extension of the contacts with family, employees, suppliers, customers, banks and accountants that most entrepreneurs are likely to have. Previous research has suggested that network diversity is of vital importance (Johannisson, 1990). The use of formal professional advisors allows the entrepreneur access to a more diverse network by introducing advisors having a wide range of specialist competencies. The positive influence that these advisors have on EO supports the view that a wide and diverse network is important for entrepreneurship. Taking advice from day-to-day advisors, on the other hand, had a negative effect on EO. Bankers and accountants as well as family members seem to discourage the entrepreneur from becoming involved in the bold, risky activities that an EO implies. For them, a stable development with a smaller but secure economic return seems more important than the chance of a very successful development - if this also implies higher risks. The influence obtained from customers, suppliers and employees is the opposite. Their advice seem to boost the firm's involvement in innovative, proactive activities.

Taking advice from others in decision making is not, on its own, sufficient to foster an entrepreneurial orientation. There are qualitative differences between different types of advisors. If entrepreneurship is to be encouraged, it seems to be important that small business managers have contacts with and can accept advice from specialist advisors. This finding has implications for future research. Previous research suggests network density to be important. Present results suggest that this is not a sufficient measurement of networks. Some types of contacts seem to

be more important than others, and it is necessary to investigate the different types of contacts.

Only one variable remaining in the regression equation has to do with the personal resources of the entrepreneur - the access to a role model. Variables specifying the type of role models were also entered (mother, father, spouse, child, other relatives) but did not have an effect on EO. Apparently, the most important factor is to have a role model, no matter what. The relative unimportance of other individual-related resource variables could not be inferred to poor measurement. In most cases, established measures have been used. In addition, most of the questions defining these resources, e.g. experience, education and personal background are fairly straightforward. As Storey (1994b) highlights, findings regarding these variables are not consistent in studies of small firm growth. Furthermore, when distinguishing high-growth from low growth ventures, it was found that the only included experience and education variable that was significantly different between these groups was industry experience (Siegel et al., 1993). In the present case, when the resource variables of the entrepreneur "compete" with others, their influence seems to be insignificant. Thus, the preferred interpretation is that these resource variables do not contribute to the firm's EO to any significant extent.

Moreover, the vast majority of variables relating to the entrepreneur's resources are distal from the present situation in that their magnitudes are determined *before* the entrepreneur got into his/her present situation (i.e. role model, industry experience, management experience, large firm experience, experience from rapid-growth firms, length of education, management or engineering education, founder, gender and ethnicity). It is possible that these variables have an effect that is mediated through some of the other variables more proximal to the present situation rather than directly on EO.

#### 6.0.0 *The industry model*

The industry model was not successful. However, when discussing the strategic adaptation perspective, it was stressed that researchers could not agree as to whether it is the objective environment that strategies should be adapted to, or if it is the managers' perception of the environment that is most important (cf. Section 3.5). To the knowledge of this

author, this is the first time that the influence of the objective and perceived environment have been compared in the same study. The low explained variance of the environmental model, and high explained variance of the perceived environmental model suggest that the strategy is adapted to the subjective rather than the objective environment. This should have implications for future research into the prediction of entrepreneurial orientation. These results also suggest that industry and the perceived environment are not different two conceptualisations of the same environment, which challenges Zahra's (1993) hypothesis.

It may be argued that as the sample is not random for the population in the four studied industries (a disproportionate share of rapid growers is selected from each industry), real industry differences are not revealed in the analysis. There may be some truth in that. However, as realised by Birley & Westhead (1990), using this broad definition of industry employed in this, and most other research, the relationship between sector and EO on the individual firm level could be expected to be weak. Small firms are likely to operate within narrow market niches. Regarding the other variables, their relative unimportance remains even when industry separate analyses are performed. Explained variance is equally small: all effects are in the same direction (positive or negative signs of the standardised regression coefficients) and the magnitude of the coefficients is similar to the full sample analysis.

The results suggest that either the employed measures of industry are weak, or that the objective environment has little influence on EO. The preferred interpretation is that, even if better measures were used, still only a small proportion of EO would have been explained. To the extent that industry has an influence on EO, this influence is likely to be mediated through the managers' environmental perception.

This is not to say that industry characteristics are irrelevant for the ultimate dependent variable, growth and performance. That remains to be examined in the subsequent chapter. However, if the hypothesis that small firms operate within narrowly defined market niches is correct, there is little reason to believe that industry should influence the outcomes of small firms. Barkham et al. (1996) found no influence of industry on small firm growth and attributed this finding to the fact that small firms operate within niche markets.

### 6.0.0 *The perceived environment model*

The perceived environmental model must be regarded as successful. Explained variance is high and all variables are in the hypothesised direction, with the possible exception of environmental hostility. This gives support to the strategic adaptation perspective.

Environmental dynamism is the most important variable. This is largely in line with other empirical findings (Miller, 1987b) as well as theoretical arguments. Miller (1990) states that in dynamic and unpredictable markets, firms need to innovate and adapt to rapidly developing market demands. Theoretically, the relationship between a flexible, entrepreneurial strategy and environmental dynamism has been substantially elaborated.

The statement by Khan & Manopichetwattana (1989) about how small firms "pull in their horns" in a hostile environment may be a general finding. It is also possible that small and large firms react differently in hostile environments. The work by Miller and colleagues has been carried out in firms larger than those in the current sample. When small business managers view the environment as hostile, it may prevent them from assuming the bold, risk-taking posture that an EO implies.

Also environmental heterogeneity had a positive association with EO, supporting earlier findings (Miller, 1987b). Even though the firms in the sample are small, at least some of them seem to be in heterogeneous environments which foster EO.

### 6.0.0 *The combined model*

In the separate model analyses, the perceived environmental model reached the highest explained variance. In the total model, variables from this construct, in particular environmental dynamism, had large standardised regression coefficients. At the same time, variables referring to resources controlled by the firm were relatively unimportant. The most important resource variable has to do with the access to resources in the entrepreneur's individual network. This reflects Stevenson's definition of entrepreneurship as: "*The pursuit of opportunity without regard to resources currently controlled*" (Stevenson, 1984, p. 5). According to Stevenson's conceptualisation, the entrepreneurial firm has a market orientation rather than a resource orientation, and is always attuned to environmental changes that could offer business opportunities. In dynamic

environments, there is frequent development and change giving rise to more opportunities.

Stevenson maintains that entrepreneurial firms do not need ownership control over resources, the important thing for them being the access to the use of resources possessed either by the firm, other firms or other individuals. The regression results of the full model in the present study depict firms with an entrepreneurial orientation as being very similar to the entrepreneurial firms envisaged by Stevenson.

Whilst supporting Stevenson's conceptualisation of entrepreneurship regarding the relative unimportance of resources, these findings contradict the conceptualisation concerning resource requirements of entrepreneurial small firms suggested elsewhere (Covin & Slevin, 1991; Greene & Brown, 1997). No support for this was found in the present research. It may, however, be premature to take this as an indication of the relative unimportance of the resource based view of the firm in this research context.

Motivation is not elaborated by Stevenson. Here, findings support Miner's role motivation theory (Miner, 1990; Miner et al., 1989; Miner et al., 1992; Smith & Miner, 1984).

Adjusted explained variance reaches from just over one third to almost half of the total variation in EO. This is a good result for this kind of data, compared to that obtained by most similar studies. However, more than half of the variance in EO remains unexplained. There could be three main explanations for this. First, regression analysis estimates average effects. In other words, a basic assumption in regression analysis is that the importance of all independent variables is equal for all subjects in the study when estimating the dependent variable. This is not necessarily true. Just as there are variations in the independent and dependent variables, there may be variations in the influence that each independent variable has on the dependent variable. In psychological terms, we can say that one level of stimuli does not result in exactly the same response level amongst all individuals. Some individuals' interest in different work-tasks may influence EO somewhat more, whereas perceived environmental circumstances can be more important for others. In particular when attitudinal variables are used, individual differences in the strength of the relationship between independent variables and the dependent variable could be expected.

Second, Alpha values were not particularly high for any of the summed indices indicating that the measurement of these variables is far from perfect. This will inevitably lead to an *underestimation* of the real effects rather than an overestimation, since actual differences are smoothed and variation of the original variables is lost in the index calculation operation. The dependent variable, as well as nine out of the sixteen independent variables were summed indices, which probably makes this "devaluation" effect of actual differences relatively large.

The third explanation has also to do with measurement error, but of another type. The interpretation of the questions differs between subjects; as does their response style. Thus, with self-reported data as used in the present study, response differences may not reflect the real objective differences between respondents and vice versa, and therefore real objective differences may not be revealed by their responses.

Taking these inevitable methodological shortcomings into consideration, the results should be regarded as successful.

A final methodological observation is that, among the variables retained from the sub-model analyses, only three are "hard" objective measures, viz. size, management team size and role model. None of these are significant in the combined model (except for size which is slightly significant in the equation when outliers are removed). All other measures are self-perceptive. This could be a potential restriction in the inference to the objective situation of small firms to the extent that self-perception does not reflect the objective circumstances of the small firm. Whether this is the case or not is impossible to determine from this analysis. However, some attempts have been made to validate self-perceptive measures by asking the same questions to different people within the same organisations (Dess et al., 1997). These authors, using a very small data set of 32 firms, found that EO was significantly much more consistent among different respondents within an organisation than for CEOs across organisations, concluding that differences in responses can be ascribed to the company in which respondents work, rather than the positions they hold.

## 7 Prediction of growth and performance

### 7.0 Introduction

In this chapter, growth and performance are predicted, i.e. the full research model is tested. Analyses are conducted for each ultimate dependent variable - i.e. growth and performance, collectively referred to as *outcomes* - separately. In both these analyses, EO is used as the sole explanatory variable in the first step in order to investigate its unique explanatory power. In the second step, the full research model is tested predicting EO and the outcome variable simultaneously. In this analysis, possible direct effects on the dependent variables of; attitudes, industry, perceived environment, and resources, are investigated. In the third step of the analysis, the model is revised, taking the possible direct relationships not foreseen in the research model into consideration. The final analysis of the chapter comprises a separate assessment of small business owner-managers in order to reveal whether motivation has a stronger impact among this group than small business managers in general.

The direction of the relationships for manifest variables could be expected to resemble those found in Chapter 6. That is, those variables expected to show a positive effect on entrepreneurial orientation (EO) in the multiple regression, can also be expected to have a positive effect on EO, and/or outcomes in the structural models presented in this chapter<sup>37</sup>. As a consequence, the extensive discussion of expected relationships will not be repeated in this chapter.

In all analyses, firms in which the managing director has been replaced during the year studied are excluded. A total of 34 cases (8%) are excluded due to this. This reduces the sample size from 447 to 414. The rationale for this exclusion is that it is difficult to justify the inclusion of

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<sup>37</sup> In Chapter 6 it was stated that the anticipated effects of a number of independent variables on EO were derived from previous empirical findings, concerning their direct effect on actual growth and performance.

predictive constructs directly referring to a particular individual in the model (i.e. attitudes) if this individual has been replaced during the studied period. It seems dubious to attribute outcomes of a firm to an individual who no longer works there. Information about all the variables (except the outcome variables growth and performance) was collected in the 1996 survey. Information concerning the outcome variables was collected during 1997.

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### *7.0.0 Measures and expected relationships<sup>38</sup>*

The relative growth rate between 1996 and 1997 was calculated from the size figures reported during each of the two survey rounds. These growth rates were used to classify the firms into five different growth categories. Firms exhibiting annual employment growth figures of 25% or above were classified as rapid growers as in Chapter 5. Those reporting growth figures between 5 and 25% were considered as slow growers. Size changes between a negative and a positive 5% were considered as non-growth. The same boundaries were used for shrinkage as for growth. In other words, firms exhibiting a shrinkage of 25% or more were categorised as rapid shrinkers and those shrinking 5 to 25% slow shrinkers. In accordance with the logic presented in Chapter 5 (cf. Section 5.1), 5% was added to the boundaries of each sales growth category, compensating for productivity increases and inflation.

The importance of separating organic growth, from growth (or shrinkage) as the result of mergers, acquisitions and divestment has been previously highlighted (cf. Section 4.4.6). The processes causing these two different types of growth may be fundamentally different. In order to examine only the organic growth, sales increases as the result of mergers and acquisitions were subtracted from, and sales losses from divestments were added to, the sales growth measure<sup>39</sup>.

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<sup>38</sup> The three questionnaires can be found in Appendix 2. A list of all the variables in the analysis, the theoretical construct they are connected to, and the questionnaire items used for their measurement is presented in Appendix 3. Descriptive statistics for EO, growth and performance are provided in Appendix 4.

<sup>39</sup> Data concerning employment gains and losses due to mergers, acquisitions and divestments were not available.



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In order to include growth from the entrepreneur's overall business activities, rather than a single firm, growth in subsidiaries and the entrepreneur's other existing firms, together with growth in firms established during the studied period, were added to the sales growth measure.

It is interesting to note that this classification of firms is affected very little by these adjustments. Only eight firms (2%) change category from the one they would be placed in based solely on size changes in the principal firm studied. This would indicate that at least when size changes over such short a time period as one year are studied, any precautions taken to prevent biased growth measures are of little importance<sup>40</sup>. It appears that the problems in conjunction with firm unit analyses of growth as highlighted by Scott & Rosa (1996) may be exaggerated. Although they properly recognise the fact that many entrepreneurs head more than one firm simultaneously, the difference in growth rates in their main firm, and growth rates in their portfolio of firms appears to be small. Few entrepreneurs classified as "non-growth", based on their main firm, turn into "growth entrepreneurs", when their portfolio of firms is assessed.

Two measures of growth compared to competitors were also included. These measures are important since they can supply information as to whether the firms are simply pulled along by market trends, or show growth patterns that deviate substantially from their industry in general. The first measure is concerned with sales growth and the second with market value growth. The latter measure acknowledges that it is possible to replace employees by capital. Furthermore, it is argued that this measure better reflects the "real" value of the firm than do accountancy measures such as assets or net worth.

In all, four different indicators of growth addressing different aspects are utilised, giving the construct a multidimensional nature. The over-reliance on unidimensional growth measures in most previous research has been criticised, and multidimensional measures have been called for (Birley & Westhead, 1990).

The alignment among the four indicators is fairly high, with a Cronbach's Alpha value of .71, each indicator given a factor loading of .7 or above on a single common factor. This suggests that growing firms tend

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<sup>40</sup> In Chapter 5 it was found that a larger number of firms were affected over a three year = period (cf. Section 5.1). =

to grow along all of the four aspects. Outsourcing of production, or replacement of employees by capital investments, which would lead to growth along only one or two dimensions, does not seem to be a common practice among growing small firms. The fact that only one factor was extracted suggests that although growth may be multidimensional from a conceptual standpoint, it appears to be a single construct with different indicators, in the present empirical research.

Turning to the measurement of EO, it is treated as a latent construct with manifest indicators in the PLS analysis, and information from all eight indicators is utilised. In the previous chapter, when EO was used as a composite measure, only five of the indicators were used to compute the EO index.

As in the analysis of EO in the previous chapter, firm age and subsidiary status are used as control variables. Neither was significant in predicting EO, but it is possible that they could have a greater direct influence on growth.

EO is expected to have a positive influence on growth, following the line of reasoning in this dissertation. A negative relationship between firm age and growth can be anticipated. The relationship between subsidiary status and growth is more difficult to foresee. The reason for including the variable is to check for possible growth differences between independent firms and subsidiaries.

#### *7.0.0 Results from the analysis of EO as sole predictor of growth*

EO, together with the control variables, is able to explain 16% of the variance in growth as shown in Table 7.1. Path coefficients illustrate that EO is, by far, the major predictor. As was anticipated, firm age has a slightly negative influence on growth; whereas subsidiaries exhibit somewhat higher growth than do independent firms. In line with the results observed in Chapter 6, the control variables can only explain EO to a very small extent.

Overall, the model fits the data very well. The root mean square covariance between the residuals of the manifest and latent variables, RMS COV (E, U), is .03. The closer to zero, the better the model fits the data. A coefficient above .20 is evidence of an inadequate model, while a coefficient of .02 indicates a superior model (Falk & Miller, 1992).

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The explained variance of 16% is not far below what is commonly reported in other studies of firm growth (cf. Delmar, 1996b), and illustrates that EO has indeed a substantial influence on growth. Still, this figure must be considered as relatively low. There are two main explanations for this. First, explaining differences in growth during one year is a very short time period. If the time frame was extended, explained variance would probably increase. However, it is beyond the scope of this research to investigate if such is the case. Second, it may be that the effect on growth of attitudes, resources, industry and the perceived environment is not completely mediated by EO. Stated differently, it is possible that the direct effects of these constructs on growth should be modelled. This is something which may be investigated, when the full model is tested in the following sub-section.

**Table 7.A. PLS results for the effect of entrepreneurial orientation on growth. Inner model, i.e. the relationships among latent variables.**

<i>Predictor construct</i>	<i>Predicted construct</i>	<i>Path coefficient</i>
Firm age	EO	-.14
Subsidiary	EO	.08
Firm age	Growth	-.15
Subsidiary	Growth	.15
Entrepreneurial orientation	Growth	.30
Explained variance and model fit		
R <sup>2</sup> EO	.03	
R <sup>2</sup> Growth	.16	
RMS Cov (E, U)	.03	

*Note:* Path coefficients are equal to standardised regression coefficients in multiple linear regression analysis. RMS Cov (E, U) measures model fit. The closer to zero, the better the model fits the data.

Turning to individual manifest indicators (Table 7.2), the factor loading on EO is highest for two of the three items relating to proactiveness.

The risk taking item that was dropped in calculating the EO index in Chapter 6 gets by far the lowest loading.

The factor loadings for growth are different from the figures reported above, in that the loadings of all indicators do not reach .7. This is because PLS computes the latent variables in order to maximise the correlation among latent variables, rather than maximising factor communality. This is one example of the direct linkage between data and theory. Latent constructs are determined by their theoretical context, as well as by the indicators themselves (cf. Section 4.10.4 in the method chapter). The sales growth indicator is given a somewhat lower loading than the other indicators. Since all indicators are reflective, no regression weights are reported.

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**Table 7.B. PLS results for the effect of entrepreneurial orientation on growth. Outer model, i.e. regression weights and factor loadings for manifest indicators.**

<i>Manifest variables</i>	<i>Weights</i>	<i>Loadings</i>
Control variables		
Firm age (entered as separate variable)		1.00
Subsidiary (entered as separate variable)		1.00
Entrepreneurial orientation		
Risk taking 1		.24
Risk taking 2		.50
Proactiveness 1		.65
Proactiveness 2		.77
Proactiveness 3		.41
Innovativeness 1		.44
Innovativeness 2		.53
Innovativeness 3		.53
Growth		
Employment growth		.69
Sales growth		.59
Sales growth compared to competitors		.76
Market value growth compared to competitors		.78

### *7.0.0 Predicting growth by the full model*

The main focus of this analysis lies on testing four things:

- The ability of the theoretical constructs in the model to predict growth.
- The ability of the theoretical constructs in the model to explain EO in a growth context, i.e. given that growth is the ultimate dependent variable: to what extent can the model explain EO?

- An estimation of the relative importance of different theoretical constructs in the explanation of growth and EO.
- The possibility of detecting relationships among theoretical constructs not anticipated in the research model, and possibly leading to a revision of the model.

Thus, the major focus is placed on the inner model, i.e. the latent variables and their relationships, and not the relationships between individual indicators and latent variables in the outer model.

Table 7.3 shows the results of the analysis. The explained variance of growth is .13, which is 3% below the results when EO was used as the sole explanatory variable. This is not surprising, given that the totality of relationships in the model is optimised and not only that between EO and growth.

No less than 42% of EO is explained in the model. This confirms the results from Chapter 6; attitudes, industry, perceived environment and resources *do* explain EO to a substantial degree. Moreover, this is equally valid when the ultimate dependent variable is growth.

The path coefficients for the latent constructs predicting EO provide information as to the relative importance of different constructs. Perceived environment stands out as the single most important correlate of EO, whereas the magnitudes of the other path coefficients are fairly similar. All path coefficients reach .10 or above which is given as a lower limit at which they give a relevant empirical contribution to the predicted construct (Falk & Miller, 1992). This suggests that all constructs in the model contribute to EO.

**Table 7.C. PLS results for the effect of entrepreneurial orientation on growth. Inner model, i.e. the relationships among latent variables.**

<i>Predictor construct</i>	<i>Predicted construct</i>	<i>Path coefficient</i>
Attitudes	EO	.13
Industry	EO	-.13
Perceived environment	EO	.44
Entrepreneur's resources	EO	.10
Firm resources	EO	.16
Network resources	EO	.10
Firm age	Growth	-.16
Subsidiary	Growth	.08
Entrepreneurial orientation	Growth	.29
Explained variance and model fit		
R <sup>2</sup> EO	.42	
R <sup>2</sup> Growth	.13	
RMS Cov (E, U)	.06	

*Note:* Path coefficients are equal to standardised regression coefficients in multiple linear regression analysis. RMS Cov (E, U) measures model fit. The closer to zero, the better the model fits the data.

### 7.0.0 Revised model results

The explained variance of 13% is not great and could indicate that the model is miss-specified to some extent. An assessment of the correlation among latent variables suggests some additional direct linkages from explanatory variables to growth. In the process of identifying these direct linkages, it can be seen that the latent construct "perceived environment" is given a different content in relation to growth as compared to its content in relation to EO. This is to say that the linear combination of manifest indicators in relation to the latent construct differs. The regression weight for environmental dynamism is negative in relation to growth, as opposed to positive in relation to EO. At the same time, the

path coefficient for the perceived environment on growth is relatively large. This would indicate that it is perhaps inappropriate to combine all components of the perceived environment into a single construct, since the content of the construct changes depending on whether the correlation with EO, or growth, is maximised. Perceived environment is therefore separated into its separate dimensions, viz. dynamism, heterogeneity, hostility, dynamism increase, heterogeneity increase and hostility increase. The ability for each of these dimensions to predict both EO and growth is thereafter assessed<sup>41</sup>. When this is done, and the additional relevant direct link between attitudes and growth is added, the results become as presented in Table 7.4. The graphical representation of the model is displayed in Figure 7.1.

When direct linkages to growth are added from the separate environmental dimensions, as well as those from attitudes, explained variance increases to 30%. This must be regarded a substantial model improvement, and a satisfactory prediction of growth. EO is the second best predictor of growth, with a path coefficient of .19, which is only surpassed by the environmental dynamism increase variable. Moreover, the path coefficients for all variables except attitudes, increase in environmental dynamism, and environmental hostility, are larger in relation to EO than in relation to growth. This suggests that EO is an important predictor of growth, and that the major effects of explanatory variables on growth are mediated through the firm's degree of EO.

It would therefore appear relevant to include EO in the model, and to mediate the effect of other variables on growth through EO. The fact that 41% of EO is explained, and that the mean explained variance of the two endogenous variables in the model is 36%, is further support for the relevance of the model.

Environmental dynamism shows the largest positive effect on EO and a non-negligible negative effect on growth. This is a surprising finding. A positive effect was expected in both cases. The result cannot be attributed to multicollinearity with other environmental variables such as with increase in environmental dynamism<sup>42</sup>. Rather, this is re-

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<sup>41</sup> Here it would be possible to introduce the original measurement of each of the environmental dimensions instead of the summed indices. This has not been done since the consequence would be that the actual measurement of the variables would change in the revision process.

<sup>42</sup> Multicollinearity diagnosis was utilised in multiple regression, using entrepreneurial orien-



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garded a true negative effect - everything else being equal, firms in dynamic environments grow slower than those in more stable environments. The preferred interpretation of this finding is that a dynamic environment that changes rapidly and is difficult to predict puts greater strategic demands on firms. If they do not have the ability to assume an entrepreneurial strategic orientation, they will be unable to grow in an environment characterised by unpredictability and change.

The negative effect of dynamism, in combination with the large positive effect of dynamism increase, suggests that an environment that becomes more dynamic is positive, but it should not be *too* dynamic, unless the firm has an entrepreneurial strategic orientation. Differently stated, in order for firms to take advantage of opportunities in the environment they need to have an entrepreneurial strategic orientation.

Another reason for the opposite signs in relation to growth may be that the actual questions composing the environmental dynamism increase construct seem to include dimensions of environmental munificence. One question is, for instance, concerned with increased growth opportunities in the industry, which could be seen as an indication of increased munificence rather than dynamism (see question B5a in the mail questionnaire in Appendix 2).

The path coefficient from attitudes on growth is .19, indicating that it is an equally important predictor of growth as is EO. The effect of attitudes on EO is also positive; more precisely .12.

The characteristics of the industry, and all three types of resources, have an effect on EO, but not upon growth.

The importance of the subsidiary control variable disappears as other variables are used in predicting growth, implying that whether a firm is a subsidiary or not does not affect its growth. The negative influence of the age of the firm on growth remains in the revised model, suggesting that younger firms grow more than older firms.

Due to space limitations, the regression weights and factor loadings for manifest indicators are reported in Appendix 5A<sup>43</sup>. The factor load-

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tation and growth as dependent variables respectively, and the six dimensions of the perceived environment as independent variables. Bivariate correlations were calculated. Neither analysis revealed multicollinearity.=

<sup>43</sup> Attitudes and perceived environment are argued to have reflective indicators; however, in Appendix 5, their regression weights are reported, suggesting that the indicators are forma-

ings for all growth indicators are fairly high with a slight drop for sales growth. The lowest loadings on EO is for the risk taking and proactiveness items that were dropped when calculating the EO index in Chapter 6. This implies that not only do these indicators have least in common with the other indicators. This effect remains in the context of the full model when EO and growth are predicted, supporting the decision to drop the items in the previous chapter. The loading for the second and final risk taking indicator is also low, implying that risk taking is the least important dimension of EO in the context of the model.

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tive. This may seem like a contradiction. The logic for this is as follows. The choice had to be made whether all the original items should be used or the indices summed in Chapter 6. If all the original items were used as indicators of one construct, the attitude construct would, for instance, have a total of over 40 indicators. Moreover, their communality would probably be small, since the items were intended to measure different attitudinal dimensions (viz. different types of goals, favoured work-tasks, expected consequences of growth and growth aspirations) which is empirically evident from the fact that they are derived as a total of fourteen factors from three separate factor analyses.

An alternative would then be to use each of these attitudinal dimensions as latent constructs and thus have fourteen different attitudinal constructs, each with a number of manifest indicators. This would have been the preferred solution. However, it is impossible to use a hierarchical structure of latent variables in PLS analysis. As a result, these constructs would have to replace the unified attitude construct which would complicate the model considerably. Furthermore, the main interest was to establish the joint effect of all attitudes (i.e. the path coefficients from attitudes to EO and growth) rather than path coefficients from different dimensions of attitudes. Hence, the decision was made to keep attitudes and perceived environment as coherent constructs. As a consequence of this decision, the summed indices were instead utilised. Conceptually, these indices are viewed as intermediate variables between the manifest indicators and the latent constructs. Furthermore, they refer to different dimensions of attitudes and the perceived environment and together reflect different dimensions of the latent constructs that, taken together, form the construct. Hence, they are treated as formative indicators.

Conceptually, the relationship between manifest indicators and the latent attitude construct, looks like Figure 1, and empirically like Figure 2 in Appendix 5D.

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**Table 7.D. PLS results for the revised model predicting growth. Inner model, i.e. the relationships among latent variables.**

<i>Predictor construct</i>	<i>Predicted construct</i>	<i>Path coefficient</i>
Attitudes	EO	.12
Industry	EO	-.14
Dynamism	EO	.34
Heterogeneity	EO	.07
Hostility	EO	-.07
Dynamism increase	EO	.14
Heterogeneity increase	EO	.11
Hostility increase	EO	-.10
Entrepreneur's resources	EO	.11
Firm resources	EO	.16
Network resources	EO	.11
Firm age	Growth	-.12
Subsidiary	Growth	-.01
Attitudes	Growth	.19
Dynamism	Growth	-.13
Hostility	Growth	-.15
Dynamism increase	Growth	.22
Heterogeneity increase	Growth	.07
Hostility increase	Growth	-.10
Entrepreneurial orientation	Growth	.19
Explained variance and model fit		
R <sup>2</sup> EO	.41	
R <sup>2</sup> Growth	.30	
RMS Cov (E, U)	.06	

*Note:* Path coefficients are equal to standardised regression coefficients in multiple linear regression analysis. RMS Cov (E, U) measures model fit. The closer to zero, the better the model fits the data.

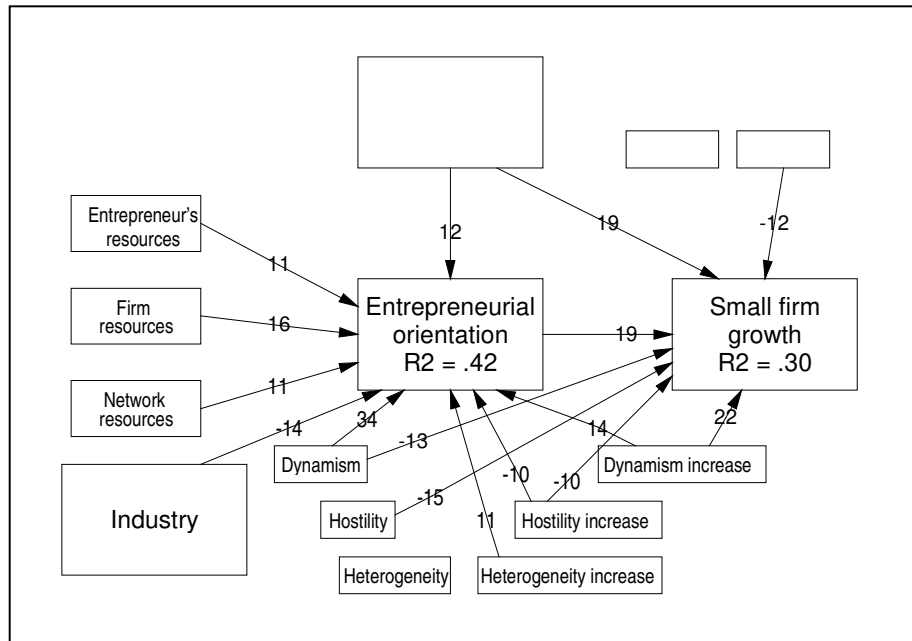


Figure 7.A. Revised research model predicting entrepreneurial orientation and growth, with path coefficients and explained variance indicated. Path coefficients below .10 are suppressed.

## 7.0 = Prediction of small firm performance =

### 7.0.0 Measures and expected relationships

The same model is now used, but exchanging the outcome variable growth with performance. Variables which had a positive or a negative influence on growth are expected to have the same influence on performance.

Three questions relating to financial performance were posed. Gross profits were divided by current year sales in order to calculate gross margin. The reason for this calculation is that gross margin is maintained to be a better measure of "true" economic performance, since it is size-

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neutral. Gross profit, on the other hand, is likely to be leveraged by sales volume, thus giving a bias in favour of larger firms. Profits and cash-flow compared to competitors were also investigated. When assessing performance, comparisons with competing firms in the market reveal important additional information (Birley & Westhead, 1990). The performance construct is based on these three financial performance indicators, together with the four measures of growth from the previous analysis, which gives a relatively broad performance construct.

*7.0.0 Results from the analysis of EO as sole predictor of performance*

Explained variance for performance only reaches .13 when EO and control variables are used as predictors, suggesting that EO considered alone is a better predictor of growth than of performance (Table 7.5). As in the previous analysis, the largest path coefficient is achieved for EO. The influence of firm age is negative, whilst the influence of subsidiary status of .05 should be neglected. Model fit equals the previous analysis. RMS Cov (E, U) reaches .04.

**Table 7.E. PLS results for the effect of entrepreneurial orientation on performance. Inner model, i.e. the relationships among latent variables.**

<i>Predictor construct</i>	<i>Predicted construct</i>	<i>Path coefficient</i>
Firm age	EO	-.14
Subsidiary	EO	.05
Firm age	Performance	-.14
Subsidiary	Performance	.08
Entrepreneurial orientation	Performance	.29
Explained variance and model fit		
R <sup>2</sup> EO	.02	
R <sup>2</sup> Performance	.13	
RMS Cov (E, U)	.04	

*Note:* Path coefficients are equal to standardised regression coefficients in multiple linear regression analysis. RMS Cov (E, U) measures model fit. The closer to zero, the better the model fits the data.

The inner model is displayed in Table 7.6<sup>44</sup>. For the performance construct, gross margin is given a relatively low loading, suggesting that its communality with the construct is low. In other words, gross margin has relatively little in common with the overall performance construct. This is not satisfactory, as gross margin is the only objective measure directly reflecting financial performance.

In order to assess the performance construct in more detail, a separate analysis was carried out for the construct, i.e. the construct was assessed without the condition that the correlation between EO and performance is maximised. The alignment among the seven performance indicators is acceptable with a Cronbach's Alpha value of .70, each indicator being given a factor loading between .50 and .70 on one single common

<sup>44</sup> **Note that the loadings in this table represent the rotated solution that maximises explained variance in the dependent variable rather than factor communality for the "independent" factor.**

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factor. This illustrates the fact that it is not erroneous to use all seven indicators in one construct. In a two factor solution, sales growth, employment growth, and sales growth compared to competitors, load on one factor and the remaining indicators on another, suggesting that growth is not one distinct dimension of performance, and economic performance another. The Alpha values, when indicators are summed into two indices approximately corresponding to the two factors, are .64 and .66 respectively. Hence, it would appear that growth and financial performance may be viewed as one coherent construct, rather than two separate ones. Consequently, all indicators are kept in a single construct even though factor loadings are relatively low when the structural relationship between explanatory variables and performance is maximised.

The loadings of EO are relatively similar to those when growth was predicted. The factor loading on EO is highest for two of the items relating to proactiveness and two of the items relating to innovativeness. Again, the risk taking item dropped when calculating the EO index in Chapter 6 gets the lowest loading.

**Table 7.F. PLS results for the effect of entrepreneurial orientation on performance. Outer model, i.e. regression weights and factor loadings for manifest indicators.**

<i>Manifest variables</i>	<i>Weights</i>	<i>Loadings</i>
Control variables		
Firm age (entered as separate variable)		1.00
Subsidiary (entered as separate variable)		1.00
Entrepreneurial orientation		
Risk taking 1		.19
Risk taking 2		.43
Proactiveness 1		.56
Proactiveness 2		.71
Proactiveness 3		.35
Innovativeness 1		.49
Innovativeness 2		.66
Innovativeness 3		.64
Performance		
Employment growth		.69
Sales growth		.55
Sales growth compared to competitors		.74
Market value growth compared to competitors		.78
Gross margin		.39
Profit compared to competitors		.46
Cash flow compared to competitors		.50

### 7.0.0 Predicting performance by the full model

Table 7.7 exhibits the results obtained from the full model analysis. Explained variance of performance drops to .12 while 39% of EO is explained. Both these numbers are below those which were achieved for the growth model. The path coefficient from EO to performance reaching .28 is also smaller in magnitude than in the previous model.



**Table 7.G. PLS results for the effect of entrepreneurial orientation on performance. Inner model, i.e. the relationships among latent variables.**

<i>Predictor construct</i>	<i>Predicted construct</i>	<i>Path coefficient</i>
Attitudes	EO	.13
Industry	EO	-.14
Perceived environment	EO	.44
Entrepreneur's resources	EO	.04
Firm resources	EO	.13
Network resources	EO	.09
Firm age	Performance	-.15
Subsidiary	Performance	.08
Entrepreneurial orientation	Performance	.28
Explained variance and model fit		
R <sup>2</sup> EO	.39	
R <sup>2</sup> Performance	.12	
RMS Cov (E, U)	.06	

*Note:* Path coefficients are equal to standardised regression coefficients in multiple linear regression analysis. RMS Cov (E, U) measures model fit. The closer to zero, the better the model fits the data.

### *7.0.0 Revised model results*

The revised model results are depicted in Table 7.8 and Figure 7.2 below. Explained variance is similar to the growth model; .40 for EO and .31 for performance. The root mean square covariance between the residuals of the manifest and latent variables, RMS COV (E, U), is .06, which is acceptable.

Regression weights and factor loadings for manifest indicators are reported in Appendix 5B. One important full model result is that the

factor loading for gross margin has increased, and reaches .51 indicating that this objective financial performance indicator has relatively much in common with the overall performance construct.

A direct link from attitudes to performance is added in this revision as well as in the previous one. Direct linkages from environmental dynamism, hostility, and dynamism increase, are also added in both revisions. Two additional direct linkages have been added to the performance model. These are the positive impact of the firm's resources, and the negative impact of increased environmental hostility. The influence of firm age in the growth model disappears in the performance model.

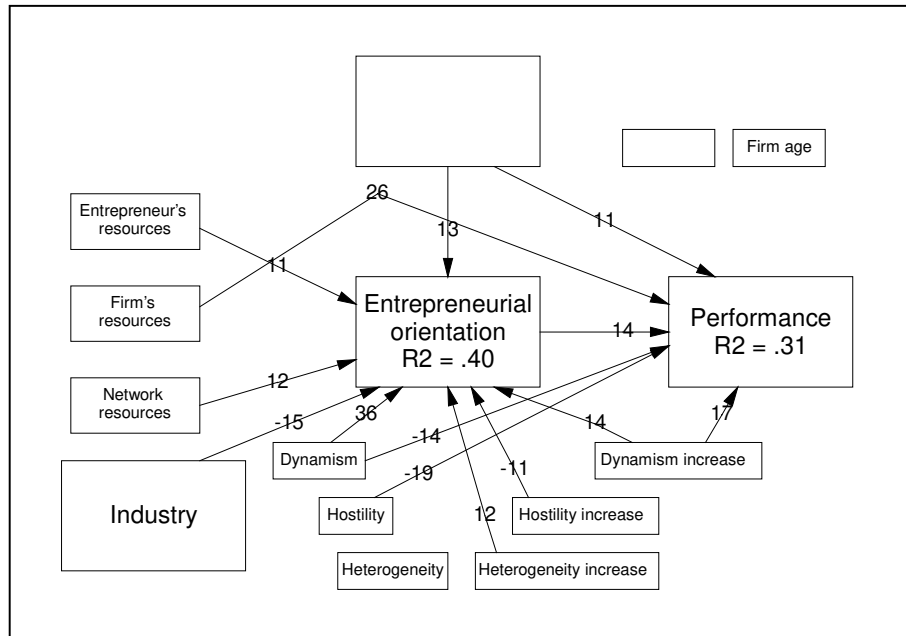
When growth is examined in a performance context, the relative importance of different predictive variables changes, compared to when growth alone is predicted. Firm resources come to the fore, while the importance of attitudes and increased environmental dynamism fade. Among environmental variables, hostility is given the largest coefficient - a negative .19.

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**Table 7.H. PLS results for the revised model predicting performance.  
Inner model, i.e. the relationships among latent variables.**

<i>Predictor construct</i>	<i>Predicted construct</i>	<i>Path coefficient</i>
Attitudes	EO	.13
Industry	EO	-.15
Dynamism	EO	.36
Heterogeneity	EO	.08
Hostility	EO	-.05
Dynamism increase	EO	.14
Heterogeneity increase	EO	.12
Hostility increase	EO	-.11
Entrepreneur's resources	EO	.11
Firm resources	EO	.06
Network resources	EO	.12
Firm age	Performance	-.09
Subsidiary	Performance	-.04
Attitudes	Performance	.11
Dynamism	Performance	-.14
Hostility	Performance	-.19
Dynamism increase	Performance	.17
Firm resources	Performance	.26
Entrepreneurial orientation	Performance	.14
Explained variance and model fit		
R <sup>2</sup> EO	.40	
R <sup>2</sup> Performance	.31	
RMS Cov (E, U)	.06	

*Note:* Path coefficients are equal to standardised regression coefficients in multiple linear regression analysis. RMS Cov (E, U) measures model fit. The closer to zero, the better the model fits the data.



**Figure 7.B. Revised research model predicting entrepreneurial orientation and performance, with path coefficients and explained variance indicated. Path coefficients below .10 are suppressed.**

### 7.0 = Owner-managers: are they different? =

It could be anticipated that motivation could have a stronger impact on outcomes for those individuals who own *and* manage their firms. Miner argues that the role of the entrepreneur is determined by the work-tasks they perform since entrepreneurs are independent from higher level managers (Miner, 1990). A particular motivational system should be associated with success in such a task-system. Miner's view could be particularly pronounced for those small business managers who also own their firms. On the other hand, if the small business manager (i.e. the respondent) is not the owner of the firm, it is possible that the owner(s) may exert power which to some extent limits the scope of manager's role. Therefore, the influence of motivation on actual outcomes may

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well be higher amongst small business managers who have ownership control over their firms.

In order to test this proposition, separate analyses were performed for owner-managers. The cases in which the manager and/or his or her family owned more than 50% of the firm were considered to be owner-managers. A total of 238 cases of 414 (57%) fulfilled this criterion. The revised models from the total sample analyses were utilised for growth and performance respectively, with the exclusion of the subsidiary status variable (for obvious reasons).

The choice was made as to compare owner-managers with the total sample, rather than with non owner-managers, since the aim was to find out whether owner-managers differ from small business managers in general, rather than to compare different types of small business managers with each other<sup>45</sup>.

Starting with the revised growth model, explained variance increases for both constructs (from 42 to 47%, and from 30 to 33% respectively) compared to the total sample analysis. This could, at least partially, be a methodological artefact. Since the number of cases is lesser in the present analysis, it is possible that this increase will partly diminish when adjusting explained variance for degrees of freedom. Furthermore, since a more homogenous group is analysed, increased explained variance can be expected. Turning to the path coefficients in relation to growth, (the path coefficients on EO are not commented upon), the major difference is that environmental hostility has a larger negative influence on growth, (from -15 to -19) and EO a smaller influence, (from .19 to .12). Motivation has a more positive influence; however, the change is minuscule, from .19 to .21. The reduced path coefficient, which is the sum of the direct effect of motivation on growth and its effect mediated through EO, increases to a similar extent; from .21 to .23.

A detailed assessment of the attitude construct shows that the patterns of regression weights for individual manifest indicators is similar regarding their direction and relative magnitude. One notable difference is that the expected consequences of growth regarding firm characteris-

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<sup>45</sup> **The managers who are not majority owners do not constitute one homogenous group. The ownership structure varies considerably. Some of them are, for instance, minority owners, some employed managers. Thus, there is no one suitable group with which to compare the owner-managers.**

tics has a greater importance and reaches .33. The most accentuated difference is, however, is that the goal variable creativity has now the largest influence on motivation, with a regression weight of .60.

Overall, results from this analysis do not support the notion that motivation is considerably more important for managers having ownership control over their firms, than for small business managers in general. Although some minor differences can be seen, similarities appear greater, and there is little reason to regard owner-managers as a special group in this respect.

Applying the same logic and definitions as in the previous analysis, performance was predicted for owner-managers and the results compared to the full sample analysis. Explained variance increased for both constructs (from 40 to 46%, and from 31 to 34% respectively). As in the previous case, this increase should be interpreted carefully due to increased degrees of freedom and greater sample homogeneity.

Path coefficients in relation to performance change to some extent (the path coefficients on EO are not commented upon). It would appear that the influence of motivation on performance is, if anything, *less* among owner-managers; the path coefficient drops considerably, from .15 to .08. The reduced path coefficient is also smaller (.10 compared to .15). This is actually the major difference between the full sample model, and the owner-manager model.

This result is not easily interpreted. However, it may be that there are systematic differences between owner-managers and other managers regarding *motivation levels*, as well as other variables that could contribute to growth and performance. t-tests of the differences between the two groups were performed, which reveal that such is the case. Owner-managers were significantly much more interested in working with operational work-tasks, and significantly much less interested in working with strategic work-tasks. Significant industry and sales volume differences were also found between the two groups.

Thus, it would appear that owner-managers differ from other small business managers in complex ways which may affect many different parts of the model, and may confound the relationship between motivation and outcomes. In the light of this, and the conflicting results regarding the influence of motivation on growth and performance, it would be unwise to conclude that motivation plays a different role for

owner managers than managers in general, in determining small firm outcomes.

## **7.0 = Discussion and interpretation of results =**

### *7.0.0 Introduction*

In this chapter the full research model was tested with PLS analysis. Two different outcome variables were utilised; (a) growth and (b) performance, and the model was estimated for the two outcome variables separately. The analysis was conducted in three steps for each outcome variable. First, EO was used as the sole predictive variable (together with two control variables). As a second step, the full research model was tested. The third step involved model revision, in order to add the direct effects on growth and performance unforeseen in the original research model. Finally, owner-managers were analysed separately in order to ascertain whether the importance of motivation was greater among them, than among small business managers in general.

### *7.0.0 Empirical findings*

Two different outcome variables are predicted applying the same initial model. These initial models are then revised. The similarities and differences between the two models become clearer when the empirical results are assessed in more detail. Based on the revised models, the empirical results of factors contributing to growth and performance can be summarised as follows<sup>46</sup>.

#### *Growth:*

- Small growing firms exhibit an entrepreneurial strategic orientation. In particular, their strategies are directed towards innovation and proactiveness.
- They are often found in environments that are stable, but have become considerably more dynamic during the last few years. Environments are benign rather than hostile.

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<sup>46</sup> **Only those individual indicators that have regression weights of .3 or beyond are included.**

- The entrepreneur's attitudes are important for growth. Attitudinal dimensions that contribute the most to growth are; striving towards sales growth, an interest in being creative in their work, and working with strategic work-tasks. The entrepreneur does not enjoy working with direct operations.
- Younger firms tend to grow more than older firms.
- When examining the factor loadings for the EO items in more detail it becomes evident that "undoing the competitors" is relatively unimportant for growth (factor loading of .35). At the same time, increased environmental dynamism is given a large path coefficient. The preferred interpretation of this is that firms grow because of increased demand in their market niche rather than by taking market shares from competitors.

*Performance:*

- Factors that enhance a small firm's performance include the resources of the firm. Of particular importance is the perception of capital availability, the perceived size compared to competitors, and the size of the management team. An interpretation of perceived size in relation to competitors, is that it is important to be large compared to competitors within the specific market niche in which the firm operates.
- The environment is benign. It has become increasingly dynamic, but is still stable.
- The strategic orientation of the firm is entrepreneurial.
- The entrepreneur strives for sales growth, likes to be creative and to work with strategic as opposed to operational work-tasks.

Conceptually, growth has been argued to be an indication of performance. When growth and other indicators of performance are combined in one construct, the alignment of all dimensions is fairly good. Performance appears to be one homogenous construct judging from its relatively high Alpha value of .70. Employment growth goes hand-in-hand with sales growth, and growth is positively associated with economic performance. This has some important implications:

- Outsourcing does not seem to be very common amongst small firms. If this was the case, sales growth without employment growth would be common. Even though small business managers may find sales



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growth, but not employment growth, desirable, this is not reflected by their growth pattern.

- Growing firms are not just pulled along by the market trends of their principal industry. There is a positive association between a firm's growth rate, and growth compared to competitors.

Growth is generally not a trade-off for economic performance as suggested elsewhere (Lumpkin & Dess, 1996; Zahra, 1991). On the contrary, growing firms generally exhibit better cash-flow and higher profitability.

- The relatively close connection between growth and financial performance has a direct implication for small business managers. Since growth and economic performance are positively related, growth may be a suitable strategy for those small firms wishing to improve their financial returns.

Furthermore, the results reveal that it is possible to predict both constructs in the same model, with the same sets of variables, which gives further support for growth as a relevant manifestation of performance. Explained variance is almost equally high for both EO and the outcome variable in both analyses. However, the pattern in which variables affect growth alone, and growth in the wider performance context, differs.

One implication of this is that it is necessary to understand that growth is not identical with performance, and that measurement of the performance variable is crucial for the results obtained. If we wish to explain performance, and use growth as our proxy for performance, results will be different than if growth and economic performance indicators are used together. When growth is used as the only indicator of performance, attitudinal variables become important at the expense of firm resources.

In the process of revising the models, the direct effects of explanatory constructs on the outcome variables were added. A particularly consistent result is the strong direct effect of the perceived increase in environmental dynamism. This is not completely surprising, as it corresponds to what others have conceptualised. Referring to research on the association between EO and performance, Lumpkin & Dess (1996) claim that performance may be influenced by factors in addition to EO, such as the characteristics of the firm's environment, and top management characteristics.

Their most important proposition in relation to the present research, is that both environmental munificence and EO have independent effects on organisational performance. Their definition of environmental munificence as industry growth rate (p. 158) is similar to the "increased growth opportunities" indicator of the "environmental dynamism increase" construct in the present research. Thus, their proposition is supported by the present findings.

They also hypothesise an interaction effect on performance from EO and variables related to motivation (tolerance for ambiguity and need for achievement). Such interaction effects are difficult to estimate in PLS. The interaction effect between attitudes and EO was tested using multiple linear regression, but none could be found. On the other hand, an independent effect of motivation was found in both models. This suggests that modelling a direct effect of attitudes on performance/growth, may well be more accurate than modelling an interaction effect as proposed by Lumpkin & Dess (1996).

The large contribution from environmental dynamism increase in both models is worthy of some additional comments. Dynamism is, in itself, an indication of change. Dynamism increase is a measure of how this dynamism has changed during the past three years. The relatively crude measures for industry included in the study were not important in predicting growth. Furthermore, they are not correlated with environmental dynamism increase. Thus, it does not seem that the perception of environmental dynamism change depends on any actual objective change within a particular industry as a whole. Instead, environmental changes which are not captured by the static dynamism or industry variables in the models seem to be of importance.

However, it is impossible to directly determine if this perceived environmental change corresponds to more detailed or specific changes in the environment (i.e. changes within a particular market niche), or if the firms have *moved* from one market niche into another, and thereby positioned themselves differently within the industry.

There is a significant positive correlation between environmental scanning and the increase in environmental dynamism<sup>47</sup>. This may be taken as an indication that some firms have the ability to position themselves more favourably in relation to their competitors and customers

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<sup>47</sup> Correlation coefficient = .18,  $p < .0005$

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than do other firms. In other words, findings suggest that firms exhibiting rapid growth and high performance, scan their environments, and move to market niches which are more suitable. This conforms to earlier findings. Storey (1997) found that rapid-growth firms have the ability to be in the right market place at the right time. According to Smallbone et al. (1995), almost all rapid-growth firms had identified and responded to new market opportunities.

Thus, it is probable that environmental dynamism increase can be regarded as a factor that at least some small firms can influence. They seem to have the ability to move from one type of environment to another. The important implication for growth and performance is that they can move into environments that are more dynamic. This shows that firms which grow and perform well respond to both threats and opportunities in their environment with both internal and external targets (cf. Section 2.6.1) even though external responses may be more costly and difficult to pursue. While large firms may have the capacity to influence customers, suppliers and competitors in the environment, small firms appear to focus their external responses on changing from one type of environment to another. On a more general theoretical level, it appears that the perception of environment influences the organisation and its outcomes, but it also seems that the organisation influences its environment.

The association between increase in environmental dynamism and EO is also strong. Particularly the dimension of proactiveness stresses the ability to detect new market opportunities. One way of exploiting new market opportunities is to direct the firm into a more dynamic environment.

When comparing the findings in this chapter with the findings from Chapter 6, one result emerges with some persistency. Firms having an entrepreneurial strategic orientation and growing, are orientated towards opportunities. The following variables have *positive effects* on either EO, growth, or both: a proactive and innovative strategic orientation; an increasingly dynamic environment; the manager strives for sales growth; likes to be creative at work; enjoys strategic work-tasks; is open to and accepts advice from formal professional advisors. *Negative effects* are obtained for: a hostile environment; personal interest in operational work-tasks; reliance on advice from day-to-day contacts.

Again, the definition of the entrepreneurial firm suggested by Stevenson (1984) seems appropriate when describing these firms. However, the label "opportunity-based firms" (Brown, 1998) could be more appropriate, since this phrase gives a clearer definition of those firms which are directed towards opportunities. The opportunity based firm seems to share some features with the adhocracy suggested elsewhere (Miller, 1990; Mintzberg, 1979). Adhocracies are claimed to be flexible, have flexible organisational structures, and a strategy responsive to competitors, customers and market opportunities. A key strategic element for this type of firm is innovation. The manager of an adhocracy can be expected to be flexible and adventurous.

Not only is there a consistency in the characteristics of opportunity based firms along a number of dimensions (i.e. strategic orientation, perception of environmental dynamism, attitudes and relative unimportance of resources) but it would appear that opportunity based firms also grow more.

When studying the performance of small firms, the picture is somewhat more complex. Resources in terms of perceived capital availability, management size and perceived size compared to competitors are influential. Even so, the characteristics of the opportunity based firm still have some influence on the overall picture, although these are less pronounced. Well performing firms may possibly be described as being both resource and opportunity oriented firms.

#### *7.0.0 Some theoretical and methodological reflections*

All theoretical constructs, with the exception of environmental heterogeneity, are relevant predictors of either, or both, endogenous constructs in both models. This justifies the inclusion of attitudes, all three dimensions of resources, industry, perceived environment and EO in the model. More importantly, all the three theoretical perspectives upon which the model is based contribute to prediction, which justifies integrating them into one model.

Considering the fact that the outcome variables predicted (growth and performance) have only been studied during a time frame of one single year, prediction must be considered as successful. Probably, behavioural differences between firms would show increases in variance if longer time periods are studied. Therefore, explained variance and path

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coefficients are likely to grow. Zahra (1991) found that the association between EO and performance was stronger with a two-year lag between the collection of EO and performance data, than with a one-year lag as applied in this study.

Thus, results show that it is possible to derive a limited number of theoretical constructs from basic theory and use them as latent variables in empirical research. Compared to entering all the manifest variables independently, three major advantages are achieved:

- Manifest indicators are given a theoretical content. Management team size becomes, for instance, part of the firm's resources.
- The number of variables in the model is reduced, and it is therefore easier to estimate the relative importance of different *types* of variables, i.e. the relative importance of different latent constructs.
- The link between theory and empirical findings become directly evident from the results.

The structural modelling capabilities of PLS facilitates the theoretically correct placement of EO as a mediating variable between the primary explanatory variables and the outcome variable. If, for example, multiple linear regression was utilised instead, all variables must be entered as independent of each other, something which may be difficult to justify conceptually.

The findings support the notion that to explain small firm growth and performance, explanatory variables from multiple levels are needed. Constructs relating to the entrepreneur (attitudes), the strategy of the firm, (entrepreneurial orientation) and the perceived environment, (environmental dynamism increase) are important explanatory factors.

Conceptually, direct effects of resource and attitude variables on firm outcomes seem improbable. Unless resources are utilised, and motivation converted into action, outcomes will not be affected. The preferred interpretation of these direct linkages is that, although EO captures important strategic dimensions, it does not *fully* capture all the strategic dimensions that influence performance. This is particularly clear in the prediction of performance, where a relatively large direct effect of resources on performance was found. If other strategic dimensions, such as high quality or low costs were included, the link between strategy and outcomes would probably have been even stronger, whilst the direct effects of attitudes and resources would decrease or disappear completely.

Furthermore, as noted before (cf. Section 3.4.3), EO is a relatively ambiguous concept. Its link to actual entrepreneurial behaviour is unclear. The association between EO and actual entrepreneurial behaviour will be elaborated in Chapter 8.

Direct linkages between environment and outcomes are more easily accepted from a conceptual standpoint. It may be that particular market niches have inherently larger performance and growth opportunities. Consequently, firms in these niches grow more, and perform better (everything else being equal) as suggested by the revised models.

In most research up to date, the present conditions of the environment are used to predict growth or performance. This research utilises variables that reflect both the present environment, and changes in the environment. One important implication is that changes in the environment appear relatively more important than does the present environment in predicting firm outcomes. Thus, future research may benefit from shifting its focus from studying present conditions of the firm's environment, to more carefully investigating environmental changes. This may be particularly valuable when a strategic adaptation approach is applied since this approach emphasises adaptation to environmental changes.

Perhaps the most important methodological finding is that self-perceptive variables can be used to predict actual outcomes. Considering that the time frame is only one year, the findings must be regarded as giving strong support for this. Future research will reveal if better prediction is achieved over longer time frames. The most logical conclusion must be that self-perception reflects factual circumstances. Most likely, self-perception of strategic orientation reflects actual strategic orientation, and the perception of increased growth opportunities reflects actual increased growth opportunities. If this was not the case, why else would all associations with the dependent variables be strong and in the expected direction? We can therefore assume with some confidence that the self-perception of strategic orientation and environment are indications of actual strategic orientation and environment.

The findings suggest a causal influence of EO on performance, supporting such an assumption. Yet, further research is needed to validate this conclusion. Of particular importance is to extend the study over more than one year to establish the persistence of the EO-performance relationship. It is probable but not certain that an entrepreneurial ori-

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entation pays off more over longer time periods. Before giving resolute advice to small firms concerning suitable strategic choices, more evidence needs to be collected.

## **8 Entrepreneurial orientation and entrepreneurial behaviour**

### **8.0 = Introduction =**

In this chapter, a different type of dependent variable is assessed, viz. entrepreneurial behaviour. This gives the analysis a slightly different orientation compared to the previous chapters, in the sense that the main concern is not growth or performance.

As mentioned previously, EO is a somewhat ambiguous concept that is conceptually problematic, since it measures self-perceived strategic orientation (cf. Sections 3.4.3 and 7.5.3). The Miller/Covin & Slevin scale is relevant only if it reflects the actions taken by the firm. If EO is linked to action, then the construct should be able to predict subsequent entrepreneurial behaviour. Firms with more of an EO should behave more entrepreneurially than firms with less of an EO. This could be seen as an abductive way of testing the significance of EO. If EO is not related to entrepreneurial behaviour there would be little support for the claim that EO should influence performance. Hence, there is reason to investigate the relationship between EO and entrepreneurial behaviour in greater detail.

Entrepreneurial behaviour can be used to evaluate EO. But entrepreneurial behaviour is interesting in itself. Particularly in relation to one of the prime concepts under study: namely growth. Growth is sometimes assumed to be synonymous with entrepreneurial behaviour, i.e. firms that grow are entrepreneurial firms. This is a proposition which needs to be empirically assessed.

The purpose of this chapter is thus twofold; (a) to establish the extent to which EO leads to actual entrepreneurial behaviour and (b) to find out if growth and other indications of entrepreneurial behaviour are associated with each other. In order to do this, the model predicting growth and performance is utilised. The only alteration of the model is that entrepreneurial behaviour replaces growth and performance as the ultimate dependent variable. As in the analyses in the previous chapter,



EO, together with the two control variables firm age, and subsidiary status, is first used to predict entrepreneurial behaviour. Then the full model is tested, and finally this model is revised to better fit the data at hand.

## **8.0= Definition and operationalisation of= entrepreneurial behaviour and its link to= growth=**

Growing firms have been said to exhibit entrepreneurial behaviour (Bird, 1989) and growth has been seen as a direct proxy for entrepreneurial behaviour (Davidsson, 1989; Naffziger et al., 1994). Section 3.7 emphasised that an alternative to defining performance as growth is to test whether growth and performance are related. A similar argument could be provided for the study of entrepreneurial behaviour as that for performance; it is better to empirically test to what extent growth is associated with other manifestations of entrepreneurial behaviour than to define entrepreneurial behaviour as growth. Firms are likely to exhibit many different manifestations of entrepreneurial behaviour. Taken together, multiple aspects give a more complete description of the entrepreneurial behaviour of a firm than does growth alone. Therefore, the alignment for indicators of growth and other manifestations of entrepreneurial behaviour is tested in the present research.

It may be helpful to initially define what firm behaviour are to be considered as entrepreneurial. Entrepreneurial behaviour is regarded an operationalisation of behaviour associated with "taking advantage of opportunity by novel combinations of resources in ways which have impact on the market". Much along the same line of reasoning, Lumpkin & Dess (1996) view new entry as being the essential entrepreneurial behaviour. This involves entering a new market or the development of a new product as well as launching a new venture.

In the previous section on EO (Section 3.4.3), several authors made reference to entrepreneurial behaviour when they in reality studied EO. Yet, their *conceptualisations* of entrepreneurial behaviour can be relevant. Hence, Miller's (1983a) definition of entrepreneurship as actions relating to risk-taking, innovation and proactiveness can be considered as a possible definition of entrepreneurial behaviour.

Gartner (1993) holds that entrepreneurship has to do with the formation of new organisations. Davidsson (1989) agrees with Gartner in that the choice of starting a new firm is entrepreneurial, but argues that making the choice of growing an existing business is equally an indication of entrepreneurial behaviour. In addition, he sees product development and geographic market dispersion as indications of entrepreneurial behaviour.

Taken together, these suggested operationalisations point to a number of actions that can be regarded as entrepreneurial, i.e. the development of new products and markets, proactive behaviour, risk-taking, start-up of new organisations and the growth of an existing organisation. Referring back to the definition of entrepreneurship, innovation in terms of the development of new products, is behaviour that relates to novel combinations of resources, as does the start-up of new organisations. Growth is associated both with taking advantage of opportunity and impact on the market place. Market dispersion and entry into new markets are actions most closely connected to impact on the market place. Proactive behaviour has to do with novelty, i.e. introducing new combinations to the market place ahead of competitors. Finally, risky behaviour, is most closely connected with taking advantage of opportunity in the sense that it reflects the judgement of what is an opportunity.

Just as for performance, a larger number of aspects of entrepreneurial behaviour allow a more comprehensive description of the constructs than do fewer. Therefore, behaviour related to the above are considered as entrepreneurial. This definition comes close to the definition put forward by Barbara Bird, although her definition is not further operationalised:

*Entrepreneurial behavior is opportunistic, value-driven, value-adding, risk-accepting, creative activity where ideas take the form of organizational birth, growth, or transformation (Bird, 1989, pp. 5-6)*

Just as in the definition proposed in this dissertation, a range of behaviour with different manifestations apply here.

## **8.0= Prediction of entrepreneurial behaviour=**

### *8.0.0 Measures and expected relationships<sup>48</sup>*

Drawing on the definitions of entrepreneurial behaviour suggested above, five types of variables were regarded as manifestations of entrepreneurial behaviour. The first three groups of variables relate to behaviour corresponding to the three dimensions of entrepreneurial orientation, i.e. risky, proactive and innovative behaviours. The fourth group is concerned with the establishment of new organisations, i.e. start-ups of subsidiaries or additional independent firms. The fifth group, finally, is growth. Together, these five dimensions capture a wide range of behaviour commonly held to be entrepreneurial.

The five dimensions of entrepreneurial behaviour are measured as follows. Innovation is defined in broad terms. A total of eight questions were asked regarding innovative behaviour. Activities relating to the targeting of new market segments, new geographic markets, new marketing practices, changes of product lines, development of new products, or the establishment of new organisational forms are all regarded as innovative behaviour. This broad view is well in line with Miller's (1983a) "product-market innovation" and Schumpeter's (1934) definition of innovation. One question each was asked about risky and proactive behaviour. Whether the firm had started a subsidiary or the entrepreneur had started an independent firm were indicators of the establishment of new organisations. The four indicators of growth were retained from the analyses in Chapter 7. The questions relating to risky, proactive and innovative behaviour are original, developed in collaboration with two colleagues. All questions were previously used in a large sample of firms (Brown & Davidsson, 1998).

Entrepreneurial behaviour is given an Alpha value of .75, and factor loadings between .31 and .66 in a single-factor solution. This suggests that the five included dimensions of entrepreneurial behaviour can be viewed as one compound construct.

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<sup>48</sup> The three questionnaires can be found in Appendix 2. A list of all the variables in the analysis, the theoretical construct they are connected to, and the questionnaire items used for their measurement is presented in Appendix 3.=

8.0.0 Results from the analysis of EO as sole predictor of entrepreneurial behaviour

Not surprisingly, EO is a better predictor of entrepreneurial behaviour than growth and performance. No less than 27% is explained by this variable together with the controls, and the model fits the data well, as exhibited in Table 8.1. This supports the view that a strategic orientation characterised by entrepreneurship leads to entrepreneurial behaviour during the subsequent year. Subsidiary status has also some effect on entrepreneurial behaviour, subsidiaries being more entrepreneurial, whereas the influence of firm age is negative. This conforms to the findings for the prediction of growth and performance.

**Table 8.A. PLS results for the effect of entrepreneurial orientation on entrepreneurial behaviour. Inner model, i.e. relationships among latent variables.**

<i>Predictor construct</i>	<i>Predicted construct</i>	<i>Path coefficient</i>
Firm age	EO	-13
Subsidiary	EO	6
Firm age	Entrepreneurial behaviour	-14
Subsidiary	Entrepreneurial behaviour	15
Entrepreneurial orientation	Entrepreneurial behaviour	45
Explained variance and model fit		
R <sup>2</sup> EO	02	
R <sup>2</sup> Entrepreneurial behaviour	27	
RMS Cov (E, U)	04	

*Note:* Path coefficients are equal to standardised regression coefficients in multiple linear regression analysis. RMS Cov (E, U) measures model fit. The closer to zero, the better the model fits the data.

The factor loadings for the individual indicators are reported in Table 8.2. Loadings for the EO indicators are similar to those obtained when growth and performance were predicted; loadings are highest for the

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same two proactiveness items and lowest for the same risk taking item. The entrepreneurial behaviour loadings are not very high, suggesting relatively low communality and that it may be possible to split the construct into sub-constructs.

Just as for performance, a separate analysis, where the entrepreneurial behaviour construct is taken out of the model context, was performed. Measurement reliability is relatively high for the combined construct. Cronbach's Alpha reaches .75 if the indicators are summed to an index. Since measurement reliability is high and the purpose is to predict entrepreneurial behaviour as opposed to sub-constructs, the decision was taken to keep the entrepreneurial behaviour construct and all indicators in the analyses. A separate factor analysis was also performed which derived four factors. When the Alpha values were calculated for the indicators approximately corresponding to each of the factors, Alpha values ranged from .39 to .72.

Returning to Table 8.2, the two start-up indicators get low loadings, which possibly could be attributed to very skewed distribution deviating from the more normal distribution of other variables. Only a small fraction of the firms in the study have started new firms during the studied year.

The loading pattern for the four growth indicators does not deviate substantially from other indicators. This, in combination with the high Alpha value, suggests that the alignment along growth and other dimensions of entrepreneurial behaviour is relatively high. As a result, it seems appropriate to view growth as one of a range of possible entrepreneurial behaviours. It also shows that growth and other manifestations of entrepreneurial behaviour accompany each other. Firms that are entrepreneurial along one dimension also tend to be entrepreneurial along other dimensions.

**Table 8.B. PLS results for the effect of entrepreneurial orientation on entrepreneurial behaviour. Outer model, i.e. regression weights and factor loadings for manifest indicators.**

<i>Manifest variables</i>	<i>Weights</i>	<i>Loadings</i>
<i>Control variables</i>		
Firm age		1.00
Subsidiary		1.00
<i>Entrepreneurial orientation</i>		
Risk taking 1		.17
Risk taking 2		.47
Proactiveness1		.62
Proactiveness2		.75
Proactiveness3		.36
Innovativeness 1		.44
Innovativeness 2		.60
Innovativeness 3		.59
<i>Entrepreneurial behaviour</i>		
New customers		.43
New marketing practices		.39
New product mix		.59
New product on sale		.64
New product under development.		.54
Risk taking		.49
Proactiveness		.56
New operating procedures		.38
New organisation		.36
Employment growth		.42
Sales growth		.36
Sales growth compared to competitors		.48
Market value growth compared to competitors		.54
Subsidiary start-up		.37
Additional firm start-up		.28
Export volume to new geographical market		.40

### *8.0.0 Predicting entrepreneurial behaviour by the full model*

The purpose of this analysis is exactly the same as when growth and performance were outcome variables, i.e. to test:

- The ability of the theoretical constructs in the model to predict entrepreneurial behaviour.
- The ability of the theoretical constructs in the model to explain EO in an entrepreneurial behaviour context, i.e. given that entrepreneur-

rial behaviour is the ultimate dependent variable: to what extent can the model explain EO?

- An estimation of the relative importance of different theoretical constructs in the explanation of entrepreneurial behaviour and EO.
- The possibility of detecting relationships among theoretical constructs not anticipated in the research model, and possibly leading to a revision of the model.

Table 8.3 shows the results from the full model analysis. The explained variance of growth decreases by 1% compared to the earlier analysis down to 26% while 39% of EO is explained. Path coefficients are similar to those when growth was predicted, the major difference being that the association between EO and entrepreneurial behaviour is stronger.

Regression weights and factor loadings for manifest indicators are reported in Appendix 5C.

#### *8.0.0 Revised model results*

The revised model depicted below in Table 8.4 and Figure 8.1 is almost equally good at predicting entrepreneurial behaviour and EO. Explained variance reaches .43 for entrepreneurial behaviour and .42 for EO. Hence, the predictive ability of the research model is better for entrepreneurial behaviour outcomes than growth and performance outcomes.

When the model is revised, an interesting difference as to when growth was predicted emerges. The importance of the personal qualities of the entrepreneur become more accentuated. Not only is there a stronger direct influence of attitudes on entrepreneurial behaviour but there is also a direct link from the entrepreneur's resources. Fewer environmental variables have a direct influence on entrepreneurial behaviour. Apart from this, path coefficients are roughly the same regarding sign and rank order.

**Table 8.C. PLS results for the effect of entrepreneurial orientation on entrepreneurial behaviour. Inner model, i.e. relationships among latent variables.**

<i>Predictor construct</i>	<i>Predicted construct</i>	<i>Path coefficient</i>
Attitudes	EO	.13
Industry	EO	-.14
Perceived environment	EO	.44
Entrepreneur's resources	EO	.04
Firm resources	EO	.13
Network resources	EO	.09
Firm age	Entrepreneurial behaviour	-.14
Subsidiary	Entrepreneurial behaviour	.15
Entrepreneurial orientation	Entrepreneurial behaviour	.44
Explained variance and model fit		
R <sup>2</sup> EO	.39	
R <sup>2</sup> Entrepreneurial behaviour	.26	
RMS Cov (E, U)	.06	

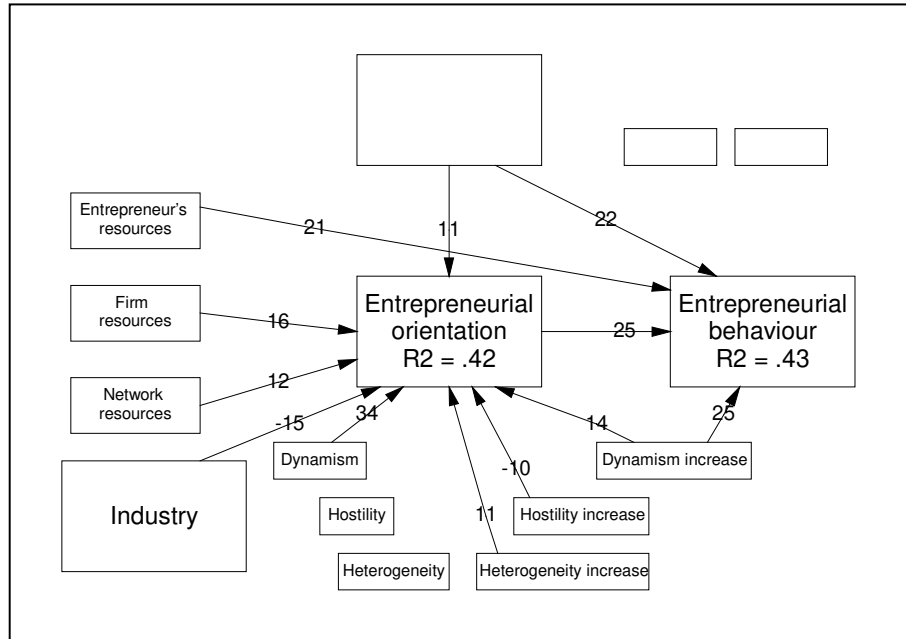
*Note:* Path coefficients are equal to standardised regression coefficients in multiple linear regression analysis. RMS Cov (E, U) measures model fit. The closer to zero, the better the model fits the data.



**Table 8.D. PLS results for the revised model predicting entrepreneurial behaviour. Inner model, i.e. relationships among latent variables.**

<i>Predictor construct</i>	<i>Predicted construct</i>	<i>Path coefficient</i>
Attitudes	EO	.11
Industry	EO	-.15
Dynamism	EO	.34
Heterogeneity	EO	.08
Hostility	EO	-.08
Dynamism change	EO	.14
Heterogeneity change	EO	.11
Hostility change	EO	-.10
Entrepreneur's resources	EO	.05
Firm resources	EO	.16
Network resources	EO	.12
Firm age	Entrepreneurial behaviour	-.06
Subsidiary	Entrepreneurial behaviour	.04
Attitudes	Entrepreneurial behaviour	.22
Dynamism change	Entrepreneurial behaviour	.25
Entrepreneur's resources	Entrepreneurial behaviour	.21
Entrepreneurial orientation	Entrepreneurial behaviour	.25
Explained variance and model fit		
R2 EO	.42	
R2 Entrepreneurial behaviour	.43	
RMS Cov (E, U)	.06	

*Note:* Path coefficients are equal to standardised regression coefficients in multiple linear regression analysis. RMS Cov (E, U) measures model fit. The closer to zero, the better the model fits the data.



**Figure 8.A. Revised research model predicting entrepreneurial orientation and entrepreneurial behaviour with path coefficients and explained variance indicated. Path coefficients below .10 are suppressed.**

## 8.0 = Discussion and interpretation of results =

The purpose of this chapter was: (a) to establish the extent to which EO leads to actual entrepreneurial behaviour and (b) to find out whether growth and other indications of entrepreneurial behaviour are associated with each other. In order to do so, the model predicting growth and performance was utilised; entrepreneurial behaviour replacing growth and performance as the ultimate dependent variable.

Starting with the evaluation of the research model, explained variance is higher when entrepreneurial behaviour is predicted, than when growth and performance are predicted. The path coefficient from EO is larger and only three direct linkages are added when the model is revised.

The strong link between EO and entrepreneurial behaviour is hardly surprising. It could be expected that an entrepreneurial strategic orientation also leads to actual entrepreneurial behaviour. On the other hand, this finding has two important implications:

- Measurement of the firm's strategic orientation is based on the self-perception of the entrepreneur. Findings validate that this self-perception reflects the objective strategic orientation of the firm - if we assume that the respondents' perception of their own behaviour is unbiased. Those firms that have more of an entrepreneurial orientation also engage in more entrepreneurial action.
- Although strongly related, EO and entrepreneurial behaviour are not the same concept. This is illustrated by the fact that EO alone "only" explains 27% of entrepreneurial behaviour, and that other constructs give important predictive contributions. As suggested here and elsewhere (Lumpkin & Dess, 1996), EO is clearly separate from entrepreneurial behaviour both conceptually and empirically, and the two concepts should not be confused.

Just what is EO then? Zahra's (1991) argument that Miller's scale measures disposition towards, rather than actual involvement in entrepreneurial activity, should be taken seriously and could be extended. Based on the present results, it can be suggested that EO comprises two components; one that is action-oriented, resulting in actual entrepreneurial behaviour. This component may be labelled strategic action. The other component does not have any strong link to entrepreneurial behaviour. Rather, it reflects the mental orientation or "way-of-thinking" (Melin & Hellgren, 1993) of the small business manager; a way-of-thinking which is not necessarily reflected in action. The fact that EO involves these "softer" characteristics that are not converted into action probably contributes to the reduction of the explanatory power of the EO-performance and EO-growth relationships in the preceding chapter.

Entrepreneurial behaviour is a relatively homogenous construct with an Alpha value of .75. Firms that, for example, are innovative and develop new products also reorganise more often, start new subsidiaries or new independent firms to a larger extent, and are more proactive. Although Lumpkin & Dess (1996) from a conceptual standpoint, hold that not only firms that exhibit high levels in all dimensions should be regarded entrepreneurial, it seems that entrepreneurial behaviour is one coherent type of behaviour, with many different but co-ordinated

manifestations. This supports Miller's notion that entrepreneurial firms are entrepreneurial along a number of dimensions simultaneously (Miller, 1983a).

Turning now to the specific association between entrepreneurial behaviour and growth, it appears that growth and other manifestations of entrepreneurial behaviour go together, supporting the claim that growing firms are also entrepreneurial firms. Further, the same model can be used to explain growth, as well as growth in the wider entrepreneurial behaviour context. This, in itself, is an important finding.

However, entrepreneurial behaviour comprises a number of different aspects, growth being only one of these aspects. This is illustrated by the fact that although the same basic research model can be used to explain both growth and entrepreneurial behaviour, revisions lead the final models in somewhat different directions.

To illustrate the difference in results achieved depending on whether growth is our only proxy for entrepreneurial behaviour, or the multidimensional construct is utilised, the characteristics of firms that grow and show entrepreneurial behaviour are summarised below.

*Entrepreneurial behaviour:*

- Small firms tend to engage in entrepreneurial action when they have an entrepreneurial strategic orientation, proactiveness and innovativeness being key strategic dimensions.
- The environments they reside in have become more dynamic.
- The entrepreneur generally strives for sales growth, likes to be creative at work and work with strategic work-tasks as opposed to operational ones.
- He or she tends to be young, to have a long education, and to be the founder of the business.

*Growth:*

- Small growing firms exhibit an entrepreneurial strategic orientation. In particular, their strategies are directed towards innovation and proactiveness.
- They are found in environments that are stable, but have become considerably more dynamic over the last few years. Environments are benign rather than hostile.

*entrepreneurial orientation and entrepreneurial behaviour*

- The entrepreneur's attitudes are important for growth. Attitudinal dimensions that contribute the most to growth are; striving towards sales growth, an interest in being creative in their work, and working with strategic work-tasks. The entrepreneur does not enjoy working with direct operations.
- Younger firms tend to grow more than older firms.
- When examining the factor loadings for the EO items in more detail it is evident that "undoing the competitors" is relatively unimportant for growth (factor loading of .35). At the same time, increased environmental dynamism is given a large path coefficient. The preferred interpretation of this is that firms grow because of increased demand in their market niche rather than by taking market shares from competitors.

This tells us that growth is indeed an important manifestation of entrepreneurial behaviour, but they are not one and the same. The measurement of the entrepreneurial behaviour variable has large influence on the explanatory model. If growth is our only proxy for entrepreneurial behaviour, results are different than if a larger set of variables reflecting multiple aspects of entrepreneurial behaviour are utilised.

In addition to the empirical findings of the characteristics of firms which exhibit entrepreneurial behaviour, two methodological findings can be emphasised:

- Entrepreneurial behaviour and growth are not one and the same. Researchers aiming to define entrepreneurial behaviour should recognise this, and use multi-item measurement of entrepreneurial behaviour.
- The measurement of EO is useful, but far from perfect. A measurement instrument that more clearly reflects strategic action would probably increase the explanatory power of EO. Since an entrepreneurial strategy seems critical for the performance of small firms, it is essential that such a measurement instrument is developed.

Entrepreneurship is often assumed to be something inherently good, something firms should strive for. Therefore, it is essential to examine the connection between entrepreneurship and success. Although EO is starting to become an established concept together with and defined by a well-known measurement instrument, it is a relatively vague concept. The application of measures more clearly aimed at capturing the entre-

preneurial dimensions of a firm's strategic actions would probably reinforce the empirical relationship between entrepreneurship and success. The development of such a measurement instrument is a major challenge for researchers in the field.

## 9 Conclusions and implications

### 9.0 Introduction

As stated in the first few sentences of this dissertation, the research presented here has its origin in two basic questions. Why is it that some small firms perform well and grow, while others do not? Does entrepreneurship play a role in this process? The actual research questions were specified as follows:

- Is it possible to identify crucial factors that enhance or restrict small firm growth and performance?
- If so, which are these factors?
- In what pattern do these factors affect growth and performance, i.e. how should small firm growth and performance be modelled?
- What is the relationship between entrepreneurship on the one hand and small firm growth and performance on the other?

To answer these questions, a controlled sample of small firms was studied in order to establish if they differed systematically in any other ways than those of growth and performance. Therefore, the differences along a multitude of dimensions between small firms exhibiting different growth patterns and performance levels were studied.

This chapter provides a summary of the most important empirical and theoretical findings. Implications for practitioners and policy makers are provided on the basis of these findings. The theoretical framework is assessed and further developed, covering an overall assessment of the usefulness of the utilised theoretical perspectives, a modification of the research model and an extension of Stevenson's conceptualisation of entrepreneurship. These modifications draw on the findings, but in a relatively loose manner. Other insights acquired during the process of writing this dissertation are utilised to further the discussion. Finally, limitations of the present study and suggestions for future research are discussed.

## 9.0 = A summary of the empirical findings =

### 9.0.0 Characteristics of small growing firms

*Findings in relation to research question 1a: is it possible to identify crucial factors that enhance or restrict small firm growth?*

Small firm growth is not a (totally) haphazard process. There are three empirical arguments in support of this statement. First, in causal analysis, firm growth is given an acceptable prediction by a limited number of theoretically derived variables. That is to say, other factors than mere chance can explain small firm growth. Second, similar results are obtained when historic growth is analysed in Chapter 5 and when subsequent growth is predicted in Chapter 7. Third, a large proportion of those firms categorised as rapid growers in the 1993 to 1996 period still remained in this category in 1997<sup>49</sup>.

*Findings in relation to research question 2a: if so, which are these factors?*

In Chapter 5, differences between firms exhibiting rapid growth in the past and other firms, were analysed. In Chapter 7, longitudinal data from 1996 and 1997 were used to predict growth. Many of the findings from the two chapters are similar which reinforces them, corroborates their validity and reduces the risk of obtaining results that are merely methodological artefacts. The most important and consistent findings from these two chapters that deserve special mention are as follows:

- Growing firms have a strategic orientation that can be summarised as entrepreneurial.
- The firm's perceived environment is of great importance to growth. Of particular importance is change in environmental dynamism. Small firms that face an environment with increasing dynamism tend to grow faster.
- Aiming for growing market niches seems to be more important for growth than taking market shares from competitors. Put differently, it seems more important to position the firm in market niches where

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<sup>49</sup> The chance that a rapid growth firm in the 1993 to 1996 period would remain a rapid growth firm in the subsequent year is almost 5 times greater than the chance that a non-rapid growth firm during the 1993 to 1996 period would become a rapid growth firm in the subsequent year ( $p < .00001$ ).



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customer demand is increasing than to pursue a strategy aimed at confronting the competition.

- Managers of rapid-growth small firms like working with strategic work-tasks.
- Younger firms tend to grow faster than older firms.
- Growth through portfolios of firms does not seem an alternative to growing a single firm. On the contrary, entrepreneurs heading rapidly growing firms tend more often to start subsidiaries and independent new firms and to grow these firms. Thus, portfolio entrepreneurship boosts growth.
- Subsidiary status is unimportant to growth. Small firms that are subsidiaries in company groups grow neither faster nor slower than those that are independent.
- Resources seem to be of relatively little importance to growth. This finding is equally consistent and valid regardless of whether the individual resources of the entrepreneur, the firm, or resources that are obtainable through the entrepreneur's network are studied.
- Growth aspirations in terms of employees and the expected consequences of employment growth are attitudinal dimensions of relatively little importance to actual growth.

Other findings are not equally as clear in both chapters. This is not surprising, considering that growth during different time periods is studied and that analysis methods differ. However, in many cases, strong findings from the causal PLS analysis in Chapter 7 (subsequent growth) are given some support in weaker tendencies in the same direction in Chapter 5 (past growth). Results of particular interest are:

- There is a difference between attitudes towards sales and employment growth. Positive attitudes in relation to sales growth have a positive impact on actual growth, whereas attitudes towards employment growth are relatively unimportant.
- The small business managers' attitudes to their work seem more important for growth than their attitudes to possible benefits they can derive from their work. That is, the importance of, for instance, achieving a good standard of living, or self-fulfilment through work have no association with growth. On the other hand, to be creative at work, and work with strategic work-tasks, has a positive influence on

growth, while the preference of working with operational work-tasks has a negative influence.

### 9.0.0 Characteristics of small firms that perform well

*Findings in relation to research question 1b: is it possible to identify crucial factors that enhance or restrict small firm performance?*

The research model predicting growth was almost exactly equally successful at predicting performance. Although this is the only analysis concerned with performance while those concerning growth were more extensive (only one chapter is concerned with performance, whereas two deal with growth), there is little reason to believe that results are spurious. As for growth, performance is given an acceptable prediction by a limited number of theoretically derived variables in causal analysis. That is, other factors than mere chance explain performance. Thus, it is relatively safe to conclude that it is possible to identify crucial factors that enhance or restrict small firm performance.

*Findings in relation to research question 2b: if so, which are these factors?*

Based on the analysis of Chapter 7, the following statements can be made with some confidence about small firms that exhibit high performance:

- Capital availability appears to enhance performance. Well performing small firms feel that they have easier access to capital needed for expansion.
- These firms perceive their own firms to be larger than their competitors, indicating that it is important to be large compared to competitors within the specific market niche in which the firm operates.
- Management team size has an effect on performance. Well performing firms have larger management teams.
- The strategic orientation of the firm is entrepreneurial.
- Aiming for growing market niches seems to be more important for growth than taking market shares from competitors. Put differently, it seems more important to position the firm in market niches where customer demand is increasing than to pursue a strategy aimed at confronting the competition.

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- The firm's perceived environment is of great importance to performance. Generally, the environment is benign. It has become increasingly dynamic, but is still stable. Of particular importance is change in environmental dynamism. Small firms that face environments with increasing dynamism tend to perform better.
- Entrepreneurs of high-performing firms strive for sales growth, like to be creative at work, and to work with strategic work-tasks as opposed to operational ones.

#### *9.0.0 Growth and performance: are they one and the same?*

It is interesting to note the similarities and differences among firms that grow and perform well. Assessing first the factors that contribute to growth and performance; i.e. attitudes, strategic orientation and environment. These factors largely influence both performance and growth in the same way. The major difference lies in resources, where the resources of the firm have an influence on performance, but not on growth.

Turning to the constructs for measuring growth and performance, it would appear that growth can serve as a proxy for performance. The alignment among growth and other manifestations of performance is satisfactory. Both these concepts should be viewed as multi-aspect constructs manifested in a number of different ways.

As a consequence, the objective cannot be to obtain a total alignment along different dimensions (i.e. a Cronbach's Alpha value of 1.0). In addition, it is necessary to capture a variety of different dimensions of performance. That is, it is better to measure *other aspects* of performance *together with* growth. This is illustrated by the fact that the same theoretical model can be used to predict both constructs, but the relative importance of different explanatory constructs in the model differs.

Another implication of these results is that financial performance and growth are closely associated. Thus, growth seems to be an appropriate strategy for small firms to enhance their financial performance.

### *9.0.0 Modelling small firm growth and performance*

*Findings in relation to research question 3: in what pattern do these factors affect growth and performance, i.e. how should small firm growth and performance be modelled?*

The research model was derived from theory. When confronted with the data, it turned out to be, on the whole, appropriate, although some modifications were suggested as a result of the analyses. In light of the findings, the research model can be further refined. These modifications of the model, which also acknowledge the possibility of feed-back, are presented in Section 9.4.1. However, it is possible to evaluate the modelling of the present research model, which is done here.

The findings support the notion that in order to explain small firm growth and performance, explanatory variables from multiple levels are needed. Constructs relating to the entrepreneur (attitudes), the strategy of the firm (entrepreneurial orientation) and the perceived environment (environmental dynamism increase) are important explanatory factors.

The placement of EO as a mediating variable between the primary explanatory variables and the outcome variables appears conceptually relevant. However, direct effects from the firm's resources, attitudes, and the perceived environment were suggested by the PLS analyses. Conceptually, direct effects from resource and attitude variables on firm outcomes seem unlikely. Unless resources are put into use and motivation is converted into action, outcomes will not be affected. The preferred interpretation of these direct linkages is that, although EO captures important strategic dimensions, it does not fully capture all the strategic dimensions that influence performance. This is particularly obvious in the prediction of performance, where a relatively large direct effect from resources on performance was found. If other strategic dimensions, such as high quality or low costs were included, the link between strategy and outcomes would probably have been even stronger while the direct effects from attitudes and resources would decrease or disappear completely.

Direct linkages between environment and outcomes are more easily accepted from a conceptual standpoint. It may be that particular market niches have inherently larger performance and growth opportunities. Consequently, firms in these niches grow more and perform better, everything else being equal, as suggested by the revised models.

### *9.0.0 Entrepreneurial orientation, entrepreneurial behaviour, and growth*

*Findings in relation to research question 4: what is the relationship between entrepreneurship on the one hand and small firm growth and performance on the other?*

Management theory suggests that strategic choices influence performance. Previous research regards entrepreneurial dimensions of strategy to be of great importance in general, and furthermore that an entrepreneurial strategy has a great impact on performance.

EO was used to reflect the entrepreneurial dimensions of strategy, and an established measurement scale was utilised. The measurement scale was hypothesised to reflect the small business manager's strategic orientation, reflecting the willingness of a firm to engage in entrepreneurial behaviour. Moreover, in small firms, the strategic orientation of the manager is likely to be equal to the strategic orientation of the firm. In accordance with the majority of previous research, EO is argued to consist of three separate dimensions; risk-taking, proactiveness and innovation.

Based on the relationship between EO and entrepreneurial behaviour, it can be suggested that EO comprises two components. One component is action-oriented resulting in actual entrepreneurial behaviour. This component may be labelled strategic action. The other component does not have any strong link to entrepreneurial behaviour. Rather, it reflects the mental orientation or "way-of-thinking" of the small business manager, not necessarily adopted.

The fact that EO involves these "softer" characteristics that are not converted into action probably contributes to reducing the explanatory power of the EO-performance and EO-growth relationships. Regardless of this, EO and the way it is measured in this research, has a substantial influence on growth and performance. The application of a measurement instrument more clearly aimed at capturing the entrepreneurial dimensions of a firm's strategic action would probably strengthen the empirical relationship between entrepreneurship on the one hand, and growth and performance on the other.

Thus, there is a link between entrepreneurship on the one hand and growth and performance on the other in the sense that an entrepreneurial strategic orientation influences growth and performance. But there

is also another connection between entrepreneurship and growth. It would appear that growth and other manifestations of entrepreneurial behaviour are closely associated, supporting the claim that growing firms are also entrepreneurial firms. Furthermore, the same model can be used to explain growth, as well as growth in the wider entrepreneurial behaviour context. This, in itself, is an important finding.

However, entrepreneurial behaviour comprises a number of different aspects, growth being only one of these aspects. This is illustrated by the fact that although the same basic research model can be used to explain both growth and entrepreneurial behaviour, revisions lead the final models in somewhat different directions.

This tells us that growth is indeed an important manifestation of entrepreneurial behaviour, but they are not one and the same. The measurement of the entrepreneurial behaviour variable has a large influence on the explanatory model. If growth is our only proxy for entrepreneurial behaviour, results obtained are different than if a larger set of variables reflecting multiple aspects of entrepreneurial behaviour are utilised.

### *9.0.0 Overall findings*

To some extent, the empirical findings are those expected in light of the theories employed. In other words, these empirical findings confirm what is hypothesised by theory. This may seem a somewhat bleak finding. However, it points to one of the important roles of research - either to dismiss or to confirm our beliefs. There is a radical difference between believing in something and providing scientific evidence as proof.

There are a number of findings that challenge the employed theories. This is, for instance, illustrated by the revisions of the research model in Chapter 7. Other results refine what was anticipated at the outset. An example of this may be that changes in the environment appear to be relatively more important than the present environment, in predicting firm outcomes.

Moreover, in the process of determining the relative importance of theoretical constructs in predicting small firms growth, some theoretical suggestions are given larger support than others. If the relative importance given to theoretical constructs had been different and the model

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revised in other ways, the conclusions drawn at the more general level would change, resulting in a different "broad picture".

Looking at the broader picture, we can now return to our two initial questions. Why is it that some small firms perform well and grow while others do not? Does entrepreneurship play a role in this process?

We can conclude with some confidence that growing firms are entrepreneurial and opportunity based. They detect and take advantage of opportunities. This is reflected in the attitudes of the entrepreneur, the strategic orientation of the firm, and the characteristics of the environment in which the firm operates. The environment can supply the firm with opportunities, which are created in a dynamic environment that firms with an entrepreneurial orientation can take advantage of (Stevenson & Gumpert, 1991). This answers the question of how they are able to recognise and take advantage of opportunity. But this statement immediately begs the question posed by Bull & Willard (1993). Why do some individuals and firms choose to pursue opportunities while others do not? The best available explanation lies in the attitudes of the entrepreneur, viz. the desire to be creative at work, and to strive for sales growth.

When studying the performance of small firms, the picture is somewhat more complex. Here, resources in terms of perceived capital availability, management size and perceived size compared to competitors are influential. Even so, the characteristics of the opportunity based firm has some, although a less pronounced influence. Well performing firms could possibly be described as being both resource and opportunity oriented firms. This definition has some interesting theoretical implications in relation to Stevenson's conceptualisation of entrepreneurship, further developed in Section 9.4.2.

Turning now to the question of the role of entrepreneurship in small firm growth and performance. It would appear that entrepreneurship plays a role in two different ways. First, growing and well performing firms tend to have an entrepreneurial strategic orientation, taking advantage of opportunity. Second, growing firms exhibit entrepreneurial behaviour across a wide range of aspects.

## **9.0= Theoretical findings and implications=**

### *9.0.0 Evaluation of the research model*

The point of departure for this research was that small firm growth and performance are complex phenomena. In order to deal with this complexity, two research strategies have been utilised in parallel. The first has to do with allowing complexity into the picture. This was done by employing a multi-disciplinary theoretical frame of reference, utilising different levels of analysis (i.e. individual, firm and environment) and studying a large number of variables relating to the different levels of analysis and theoretical perspectives. Complex relationships among variables were allowed for by introducing structural modelling (i.e. PLS).

The second research strategy is concerned with controlling complexity. In order to do this, the sample was stratified by three different criteria. In addition, the large number of variables were treated as manifest indicators of a limited number of theoretical constructs at a higher level of abstraction. Furthermore, the empirical analyses in Chapters 5, 6 and 7 ranged from the relatively simple to the more complex. I will attempt to evaluate the relevance of the combination of these two research strategies, based mainly on the findings from Chapter 7, where the full research model was tested.

To large extent, findings from the three empirical chapters support each other which reinforces them, corroborates their validity and reduces the risk of achieving results that are merely methodological artefacts.

All theoretical constructs with the exception of environmental heterogeneity were relevant predictors of either EO, or actual outcomes, or both, when small firm growth and performance was predicted in Chapter 7. This justifies the inclusion of the theoretical constructs; attitudes, all three dimensions of resources, industry, the perceived environment and EO in the research model. It also illustrates that it is both possible and of value to abstract a large number of manifest variables into theoretical constructs. A limited number of abstract, theoretical constructs can be given an empirical content and successfully used to predict growth and performance. To say that entrepreneurial strategic orientation, attitudes, and increased environmental dynamism contribute to



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growth and performance is more meaningful than providing a long array of the manifest variables these constructs are grounded in.

Possibly of more importance is that all three theoretical perspectives upon which the model is based contribute to prediction, which justifies their integration into one model. It also shows that variables on the individual, firm and environmental levels can contribute to the prediction. Thus, no category of variables represent epi-phenomena which can be ignored in the prediction of small firm growth and performance.

A great number of largely untested conceptual models exist in the entrepreneurship field. The approach taken here allows a direct link between empirical findings and theoretical model. This includes the link between observational variables and theoretical constructs as well as the causal structure among variables.

#### *9.0.0 Implications for the theoretical perspectives in the model*

The research model was derived from a general theoretical model that, in turn, was based on the integration of three different theoretical perspectives. In light of the empirical findings, it is possible to assess the applicability of these three perspectives in the context of small firm growth and performance.

Overall, resources could not be seen as particularly important in predicting growth as anticipated by Penrose and others. In this dissertation, resources have been *conceptualised* in accordance with the resource based view of the firm but *operationalised* in accordance with more traditional entrepreneurship literature, largely based on the socio-demographic characteristics of the entrepreneur. In this respect, the categorisation put forward by Greene et al. (1997) was followed in identifying relevant resource dimensions (cf. Section 3.3). The resource based view emphasises resources which are heterogeneous across firms and difficult to create, substitute or imitate. A criticism is that resources, in this sense, have not been sufficiently operationalised (Miller & Shamsie, 1996, p. 521). This may be due to the qualitative nature of the type of resources often claimed to be important (e.g. reputation, subtle creative abilities, collaborative skills and relationship management).

Whether the apparent lack of importance of resources is due to weak operationalisation/measurement of resources, or the lack of importance of the resources based view in this research context is impossible to de-

termine. A third and additional possible explanation for the relative unimportance of resources may be that it is their combination, i.e. the firm's *capabilities*, that are important, not the resources per se. If they are combined in innovative ways, they could contribute to growth and performance. Resources are basic inputs to the production process, whereas capabilities refer to the capacity for a co-ordinated set of resources to perform certain tasks or activities. It may be better to focus on the capabilities of the firm as suggested by Baden-Fuller (1995) instead of the resources as such.

The preferred interpretation is that to focus on resources is not the best way of advancing our understanding of small firm growth and performance. Capabilities should instead be investigated more carefully. If resources, as conceptualised by the resource based view, are to have a place in entrepreneurship research, efforts must be devoted to operationalising the resource based view properly in this research context, in terms of identifying the relevant capabilities derived from these resources. So far, this has not been done to a sufficient extent. In light of this, it would appear unwise to integrate both resources and capabilities into one construct, as was done in the research model.

Identifying and operationalising critical capabilities that influence small firm growth and performance is indeed no easy task. Efforts in this direction have, so far, been limited in the resource based literature (Miller & Shamsie, 1996).

Turning to psychological theory, the time and energy devoted to certain tasks (e.g. growing a firm), are dependent on the individual's motivation to perform these tasks. According to Kanfer & Ackerman (1989) performance is jointly determined by motivation, ability, and task characteristics. It would appear that firm growth and performance are better explained by motivational variables than by ability variables. Researchers need to gather information on variables that are important to the phenomenon studied, rather than those that are easy to access. Experience, education, gender, age and similar areas are individual ability factors that have been frequently researched, probably because they are easily accessible and measured (Cooper, 1995). There is little support to show that they are important to small firm growth and performance. Instead, a shift towards motivation is required. The present findings confirm the relevance to study motivation in terms of attitudes. This is an interesting finding from a methodological standpoint. The

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well recognised measurement instrument developed by Miner (Miner Sentence Completion Scale - Form T, see Miner, 1980; 1990; Miner et al., 1989; 1992; 1994) is extensive and difficult to use when motivation is only one of many areas investigated. Hence, the attitudes studied here can provide a feasible alternative in those situations.

Turning then to the third theoretical perspective - strategic adaptation - it is evident that perception of environment is the most important construct in explaining to what extent a firm has an entrepreneurial strategic orientation, as well as in predicting growth and performance. Its success in predicting actual outcomes is taken as evidence that self-perception is anchored in the real environment.

Changes in the environment appear relatively more important than does the present environment in predicting firm outcomes. Thus, future research may benefit from shifting its focus from studying present conditions of the firm's environment, to more carefully investigating environmental changes. This may be particularly valuable when a strategic adaptation approach is applied since this approach emphasises adaptation to environmental changes.

In the original theoretical model, a uni-directional link from environment to strategy was hypothesised. No association between environment and outcomes in terms of growth or performance was foreseen. Findings suggest that this model was too simplistic. This is not totally surprising given that the actual relationships between these three constructs have been frequently debated in organisation theory (cf. Scott, 1992).

The findings suggest that environment has a direct influence on entrepreneurial orientation, as well as on growth and performance. Pfeffer & Salancik (1978) provide a simple and elegant argument for the likelihood of such a relationship. The environment cannot affect *actions* taken by a firm unless perceived by the managers. However, important elements of the environment may be invisible and unperceived to decision makers. These elements do not affect the actions taken by the firm but can still affect its *outcomes*. Thus, environment affects both firm actions and outcomes directly.

To this line of reasoning could be added that firms may perceive certain elements of the environment, but not have the ability or desire to change their actions accordingly. In these cases, the environment will

have a direct effect on organisational outcomes regardless of whether it is perceived by the firm or not.

It also appears that the firm affects its environment in the sense suggested by Child (1972), i.e. that firms, to some extent, are able to move from one type of environment to another. The accurate modelling of this would be that at any given time, the firm's strategic orientation and outcomes are affected by the environment, but over time the firm is able to move to another environment, thereby changing its environment. As a result, the image the researcher gets of the relationship between environment and firm strategy is dependent on the research design. If a cross section "snapshot" design is used, the influence will be uni-directional from environment to strategy, but if a longitudinal design is used, the relationship will be, to some extent, bi-directional.

The strategic adaptation perspective contributes greatly to our understanding of small firm growth and performance, but it could be advisable to model the relationships between environment, strategy and outcomes in a more complex way.

#### *9.0.0 Contribution to the field of small firm growth and performance, and entrepreneurship in general*

When identifying directions for research in the entrepreneurship area, Low & MacMillan (1988) identify six challenges which researchers have to accept. They also give recommendations as to how each of these challenges may be approached. First, research needs a specific, clearly stated explanatory purpose. Second, the strategic perspective should be specified, the assumptions clearly stated and a variety of theoretical perspectives applied. Third, the focus should be on explaining entrepreneurial phenomena, rather than merely documenting them which is achieved through a contextual and process-oriented research. Fourth, studies should be multilevel, examining more than one of the levels of the individual, group, organisation, industry and society. Fifth, longer time frames than cross sectional "snapshots" are called for. Finally, formal, causal models have to be developed where hypotheses are tested. To establish causal linkages among variables, longitudinal studies are necessary.

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If not all, at least most of these challenges have been accepted in the present research to an acceptable extent. Consequently, the findings will probably be relevant and meaningful to the research field in general.

The above challenges and recommendations are concerned with research design rather than suitable theories. This is symptomatic for the entrepreneurship research field in general. A striking feature of entrepreneurship research is that there are few coherent, established theories to relate to. There are instead a number of different, sometimes incompatible conceptualisations.

In order to assess the theoretical findings and contribution of the model developed in the present research, it may be helpful to commence with a definition of what a theory of entrepreneurship could be, and how the suggested research model meets the criteria of the definition. Amit defines a theory of entrepreneurship the following way:

*A theory of entrepreneurship is defined here as a verifiable and logically coherent formulation of relationships; or underlying principles that either explain entrepreneurship, predict entrepreneurial activity and performance (e.g. characterize conditions that are likely to lead to new profit opportunities and to the formation of new enterprises) or provide normative guidance (i.e. prescribe the right action in particular circumstances). (Amit, 1995, p. 125)*

Although the research model does not cover all the areas suggested by Amit, it is indeed a verifiable formulation of relationships that predict performance. Thus, it can be seen as a theory covering a specific area of entrepreneurship.

Although the research model may be relevant, and an important contribution to the research field, it is by no means perfect. The model was developed at the outset of the study. Based on the results and experience acquired during the research process, it is capable of further refinement and development. This is done in the following section

In addition to this, it is also possible to further develop theory in another way. It is possible to use the findings concerning which factors influence growth and performance in order to develop the conceptualisation of entrepreneurship as proposed by Stevenson (Stevenson, 1984; Stevenson & Gumpert, 1991; Stevenson & Jarillo, 1986; 1990). This is also done in the following section.

## **9.0= Theoretical extension and development=**

### *9.0.0 Revision of the research model*

The above section, evaluating the theoretical perspectives, reveals some weaknesses of the research model, and possible revisions (cf. Section 9.3.2). The empirical analyses in Chapter 7 also suggest alterations (cf. Figures 7.1 and 7.2). The model revised according to these suggestions is presented in Figure 9.1 below. Resources and capabilities need to be separated and it should be recognised that strategy should be based on capabilities rather than resources. However, the capabilities of the firm are derived from its resources. Depending on the managerial capacity to integrate resources, different capabilities can be obtained from the same resource stock. This is illustrated in the model by the two causally linked constructs; resources and capabilities.

conclusions and implications

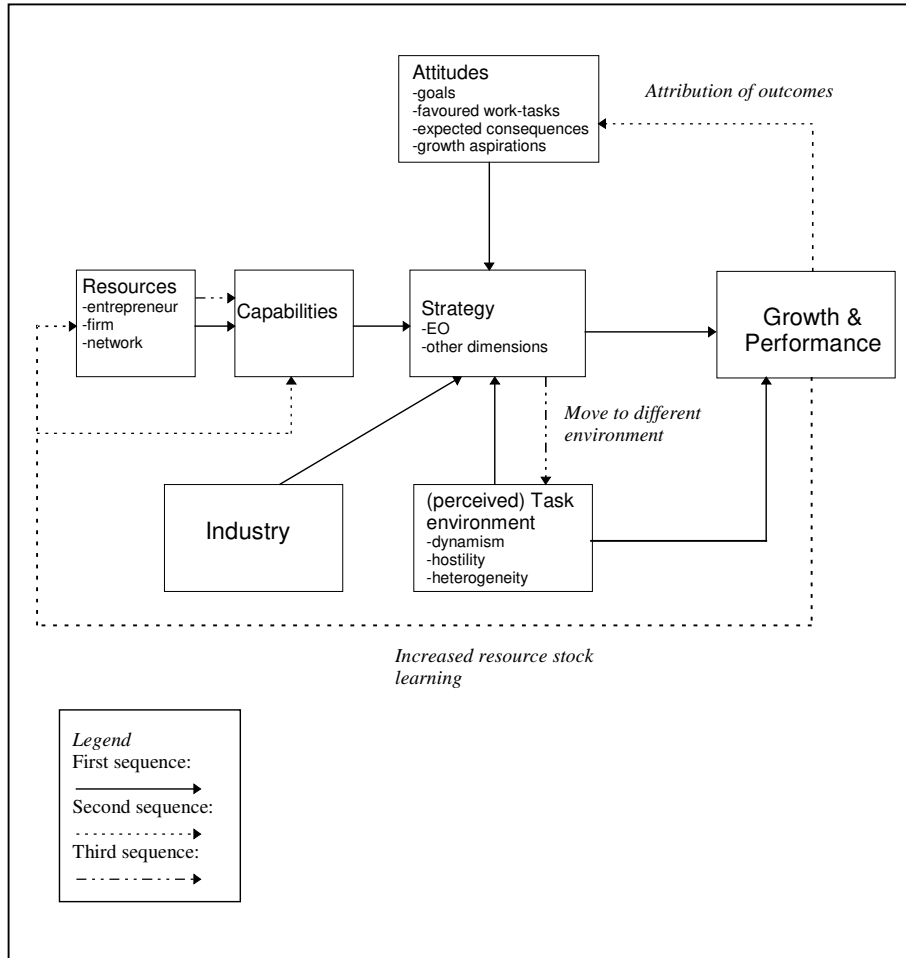


Figure 9.A. The revised research model.

Although the EO construct reflects important aspects of strategy, other dimensions of strategy may be also important (cf. Section 7.5.3). Rather than assuming direct effects from capabilities and attitudes on outcomes, other dimensions of strategy should be included in addition to EO, for instance those dimensions more directly linked to entrepreneurial strategic action. A direct effect from task environment on outcomes in terms of growth and performance could be foreseen whether perceived by the firm or not. This is illustrated by the direct arrow from task environment to outcomes in the model.

When a time factor is emphasised in the model, some feedback loops are added. The possibility of bi-directional links between strategy and environment, when the development of a firm was studied over a longer period of time was mentioned in the previous section. This is not the only foreseeable bi-directional link over time. Outcomes during one period of time will probably affect other parts of the model during subsequent periods.

An attempt was made to illustrate how time can affect different parts of the model by introducing sequential recursive relationships. In the first sequence, outcomes in terms of growth and performance is the dependent variable. The model is very similar to the original research model, the only alterations being the separation of resources and capabilities, an extension of the strategy dimension, and the direct effect from task environment on outcomes. During the second sequence, outcomes affect attitudes, resources and capabilities. During the third sequence, changes in attitudes and capabilities affect strategy which, in turn, may affect outcomes and redirect the firm into another environment.

Desire for feedback on performance is regarded as one important aspect of the motivational pattern of an entrepreneur (Miner, 1990). Attribution of successful outcomes to his or her own efforts (internal attribution), and attribution of unsuccessful outcomes to changeable causes (unstable attribution), tend to augment persistency and intensity in entrepreneurial motivation (Bellu, 1993; Bellu & Sherman, 1995). Thus, outcomes during the first sequence and how they are attributed are likely to have an effect on the subsequent attitudes of the entrepreneur during the second sequence.

Growth and performance will have a direct effect on the subsequent stock of internal resources that the firm possesses. Profits can be reinvested into the firm, and employment growth leads to an increased resource base. However, outcomes may also have a direct effect on firm capabilities in subsequent sequences because of the learning process. Trial and error strategies, and a gradual commitment of resources based on experience of previous outcomes is sometimes considered to be a key feature of entrepreneurship (Stevenson, 1984; Stevenson & Gumpert, 1991). Entrepreneurial firms learn from past experience which enables them to expand their capabilities.



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Outcomes may affect resources, capabilities and attitudes during the second sequence. Changes in these three dimensions may, in turn, lead to a change in the firm's strategic orientation during the third sequence. As a result of changed strategic orientation, growth and performance may either increase or decrease. The firm may also choose to move into a different environment which is the reason for a causal arrow from strategy to task environment. Thus, it is argued that although outcomes affect strategy, this influence is indirect, through resources, capabilities and attitudes, and not direct.

The extent to which outcomes affect subsequent resources, capabilities and attitudes is an empirical question. It is possible to measure these variables repeatedly to find out how much they change and whether their possible changes depend on previous outcomes or not.

This model gives a more "true" reflection of the factors contributing to growth and performance and acknowledges the fact that growth and performance influence subsequent resources, capabilities and attitudes. On the other hand, it is more complex and more difficult to apply to empirical research. Therefore, the choice has to be made as to whether to utilise this more complex model, or the original one that could more easily be applied to empirical research. The choice must be based on the access to information. If information is scarce, the original research model may still be the preferred choice in empirical research.

#### *9.0.0 Extension of Stevenson's conceptualisation of entrepreneurship*

This dissertation draws, in part, on Stevenson's conceptualisation of the "heart of entrepreneurship" and the link between entrepreneurship and performance, and finds relatively strong support for this conceptualisation. In the light of the empirical findings it is now possible to assess, extend and revise Stevenson's propositions (Stevenson, 1984; Stevenson & Gumpert, 1991; Stevenson & Jarillo, 1986; 1990).

Stevenson maintains that firms can be classified according to their degree of administrative/ resource or entrepreneurial/ opportunity orientation. At the entrepreneurial/opportunity end of the spectrum are the promoter firms, while at the administrative/resource end are the trustee firms. Implicit in this view is whether the firm has an *outward focus* on perceiving opportunities in the environment (entrepreneurial/

opportunity focus) as promoters; or an *inward focus* on resources currently controlled (administrative/ resource focus) as trustees. Thus, the dichotomy between trustees at one end of the spectrum and promoters at the other is equivalent to the distinction between firms with an outward focus, and those with an inward focus.

Stevenson describes these two types of firms by categorising management behaviour into six key dimensions; strategic orientation, commitment to opportunity, resource commitment, control over resources, organisational systems and compensation policy. There is some problem with Stevenson's definition of the strategic orientation of promoters, since it is delimited to the perception, and not pursuit of opportunity. The consequences of this delimitation are discussed below.

Pursuit of opportunity is a key feature of Stevenson's definition of entrepreneurship. As Stevenson rightfully recognises, in order for a firm to perceive a situation as an opportunity, this opportunity must represent a desired future state, and the individual must believe it possible to reach this state. However, there is a gap between the promoters' strategic orientation towards perception of opportunities in this view and Stevenson's own definition of entrepreneurship. While the definition of entrepreneurship emphasises actual *pursuit* of opportunity, Stevenson argues that promoters have a strategic orientation towards *perception* of opportunity. Perception of opportunity does not necessarily imply pursuit of opportunity. This is an important notion since it has consequences for what should be considered the opposite of an opportunity orientation.

I would suggest that an opportunity orientation implies a focus on perceiving *and* pursuing opportunities, not only perceiving them. Emphasising *pursuit* of opportunity in the definition of strategic orientation, gives that the opposite *is not* a resource orientation. Rather, the opposite of pursuing opportunity is not pursuing opportunity, i.e. an inactive strategic orientation. At one end of the spectrum are firms that detect and pursue opportunities, and at the other end are firms that can possibly detect opportunities but do not take advantage of them. Thus, the opposite of an opportunity orientation is not a resource orientation, but rather an inactive orientation.

To use a metaphor; some people are at the station where the "opportunity train" stops at the right time; they see the train arrive, and get on it. They are the ones that pursue the "opportunity ride". Those

### *conclusions and implications*

that miss the train may either be too late, be at the station on time but miss the train's arrival, or decide not to get on it.

Turning now to the other end of the spectrum and the trustees which focus on resources currently controlled. Stevenson argues that their inward focus on resources stands in opposition to entrepreneurship and opportunity orientation. An inward strategic orientation, focusing on resources complies with the resource based view of the firm (cf. Section 2.4.1). The inward focus of the resource based view does not stand in opposition to an opportunity orientation. By combining existing resources in new and innovative ways firms are able to take advantage of opportunity.

Moreover, as Hamel & Prahalad, 1990) point out, distinctive core competencies can be used in many different ways to *create* new opportunities which can be exploited. This is an important addition to Stevenson's view that opportunities are detected in the environment. Opportunities may equally well be created inside the firm, possibly as a result of some new innovation. Furthermore, a strong resource base can provide the capacity to take advantage of an opportunity. If a new opportunity, e.g. the development of some new technology, is recognised, the firm that has the knowledge and skills to incorporate this new technology into its existing resource base has a greater chance of succeeding than the firm that does not possess such knowledge and skills. In order to build and nurture a strong resource base that facilitates the successful pursuit of opportunity, a focus on resources may very well be consistent with an opportunity orientation.

Furthermore, the other characteristics claimed to belong to the trustee type of firm do not necessarily always follow an internal focus. It may well be possible for a firm to have an inward focus, but still have an action orientation etc. which is a characteristic claimed to conflict with a resource orientation.

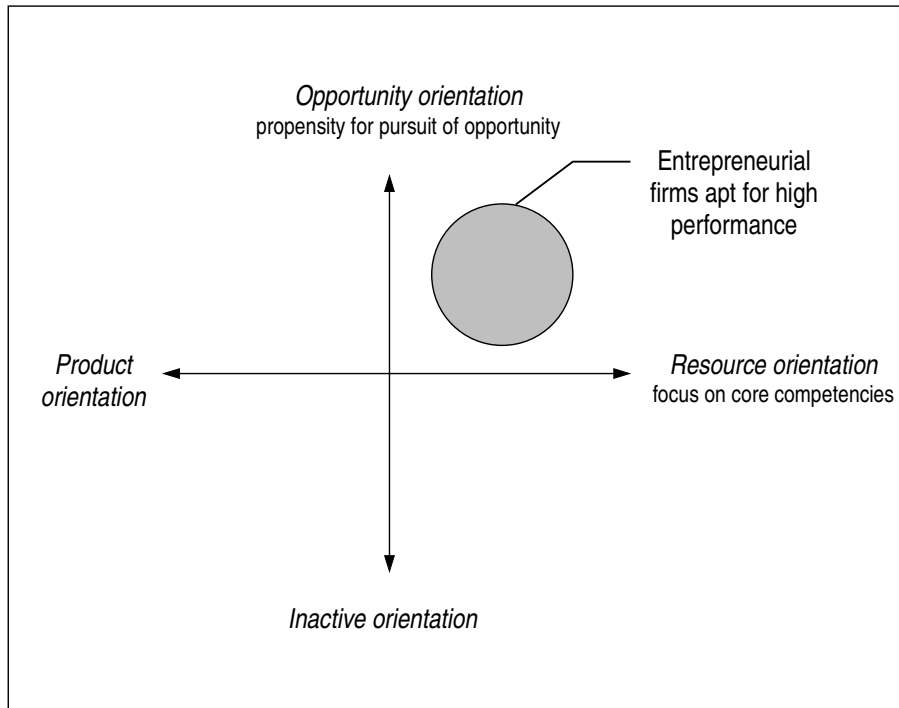
The opposite of a resource focus would be a focus on *contemporary products* (Hamel & Prahalad, 1990). Contemporary products represent the current combination of resources provided by the firm to the market which is only one out of many possible combinations of resources. A firm with a focus on products instead of resources does not have the same ability to reorganise its resources in order to pursue developing opportunities.

Although not clearly stated, it is implicit in Stevenson's argument that entrepreneurship is something firms should strive for, and that promoters perform better and grow more than do trustees. However, an outward focus on opportunities can be exaggerated, and lead to negative consequences for the firm. Too much of an outward focus may lead to neglect of the firm's operations leading to deterioration of the firm's core competencies. Furthermore, a firm that constantly jumps from one opportunity to the other can be accused of being unreliable and a "gambler". A firm that relies on resources supplied by others has to be involved in collaborative agreements. If such trust-based collaborations are only of short duration, and the firm leaves these when new opportunities arise, it may be difficult to establish new and maintain necessary contacts with other firms. Customer loyalty, a factor which is becoming increasingly important for the success of firms, is difficult to create and maintain under such circumstances.

Thus, drawing on resource based theory, it is suggested that opportunity orientation and resource orientation comprise two separate dimensions, rather than opposite ends of the same scale. There is no contradiction between a focus on resources and a focus on opportunities. Small firms need to combine important aspects of both the inward and outward focus - i.e. combine the opportunity and resource orientation - in order to be entrepreneurial and achieve sustained high performance.

With my definition of entrepreneurship as *taking advantage of opportunity by novel combinations of resources in ways which have impact on the market* (cf. Section 1.1.) it is evident that firms with a focus on resources are more likely to combine their resources in novel ways, thus creating opportunities, whilst firms with an opportunity orientation are more likely to perceive and pursue opportunities in the environment. In order for a small firm to be successful, it has to implement a strategic orientation that combines these two dimensions of entrepreneurship.

The two dimensions of opportunity and resource orientation are depicted in Figure 9.2. The ideal position of small firms which aim at high performance is marked in the diagram as a combination of opportunity and resource orientation.



**Figure 9.B. Characteristics of successful entrepreneurship in terms of a firm's opportunity and resource orientation.**

### **9.0 = Implications for small business managers =**

A consistent finding is that small business managers themselves, and the choices they make, are crucial to the development of their firms. The possibility to influence the destiny of their firms should be encouraging for small business managers. The growth and performance of their firms is not the result of deterministic forces outside the control of the small firm. On the contrary, growth and performance are largely influenced by conscious decisions made by the small business manager. It is therefore possible for the small business manager to take such actions that will allow the company to expand and perform better. Moreover, in broad terms, motivation seems to be more important than any personal abilities. It seems that "what I want" has a larger influence on actual outcomes than "what I know".

For a small business manager, survival of potential crises is, of course, of the utmost importance as illustrated by the findings in the present re-

search (cf. Section 5.4). Therefore, it is important to stress that a common misunderstanding among practitioners is that a firm that grows and becomes larger should have greater difficulties in surviving a crisis. Research indicates the opposite (e.g. Storey, 1994b). Larger firms have "buffers" and can survive longer during a sales downturn. It is also easier for a larger firm to divest resources such as machinery or employees and survive on a smaller scale. Thus, a small business manager, who feels that survival is an important goal, may consider growth as a suitable survival strategy. Furthermore, factors contributing to growth also contribute to survival, reinforcing the fact that growth and survival are closely associated. Renewal of the customer base and new products are, for instance, stressed as central for survival, as well as growth (Storey, 1994b). Findings also suggest that financial performance and growth are closely related, and that larger and expanding firms perform better than smaller firms. As a consequence, a small business manager who wishes to improve financial performance may consider expanding his or her firm.

These are forceful arguments in favour of why small business managers should strive for growth. Then, if growth - or for that matter improved performance - is the aim, what actions should be taken to achieve this? Based on the findings and Figure 7.2 in the previous section, it is possible to provide some concrete advice about suitable strategies in order for a small firm to enhance its growth and performance. First of all, it is important to be flexible and have a strategic orientation towards opportunities. Products and customers have to be changed and renewed, preferably ahead of competitors. To do this, small business managers need to free themselves from the institutional thinking that tends to develop within any industry (Greenwood & Hinings, 1996). Ideas, values and beliefs within an industry tend to streamline organisation and management. Organisations conform to expectations of suitable organisation and management in order to gain legitimacy. To enhance growth and performance, small business managers need to be strong enough to resist such pressures towards conformity and instead search for innovative alternatives.

The environment of the firm - possibly as defined by industry or sector - is not unchangeable and firms within all sectors can achieve high growth. The crux of the matter is in positioning the firm favourably in relation to competitors and customers. Of particular importance is the ability to move to environments where demand increases and the rate of

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technological renewal is high. For firms that utilise the SWOT-analysis it may be profitable to mainly focus on the opportunity dimension, matching it against internal capabilities, and more actively pursue new opportunities.

The significance of the general development of the firm's market niche, and the importance of detecting new business opportunities indicates the importance of external information. Keeping updated regarding business opportunities probably does *not* involve access to all possible sources of information. Instead, the interpretation of available information may be of greater importance. It is a matter of being in a state of mind where information is interpreted as to whether it offers a new opportunity or not. The daily newspaper may be a sufficient source of business opportunity for many small firms, provided that is read "in the right way". The important factor is to match these opportunities with the firm's core competencies in order to determine whether it is a suitable opportunity or not. If it is, the opportunity should be pursued.

A small, rapidly growing and profitable small firm that I recently visited may serve as an example of how this could be carried out. This small firm operates in the chemical industry. The entrepreneur realised that the food industry was subject to an increased demand for a relatively new type of synthetic non-alcoholic beverage. He also realised that his firm's core competencies of mixing chemicals, filling and labelling bottles and distribute these products to supermarkets were equally well suited for this new opportunity as for their existing products. By starting to produce these new synthetic non-alcoholic beverages, the firm was able to pursue a new business opportunity based on its existing competencies. This can perhaps serve as a general illustration of some of the key strategic issues which can determine the success of a small firm.

Many small business managers have a concern for the qualities of small scale, and this concern is justifiable (Wiklund et al., 1997). Some research suggests that on issues such as comradeship, involvement and job satisfaction, employees and people in general think highly of small firms (Curran, Kitching, Abbott & Mills, 1993). Even more impressive evidence for the advantages of small scale is presented in the classical study by Barker & Gump (1964, cf. also their extensive references to other studies). Therefore, the small firm owner-manager may have a real reason to be concerned about the atmosphere of his or her firm when faced with expansion opportunities. This concern may be a recurrent

conflict for many small business owner-managers. It is therefore essential that small business managers are able to organise the expanding firm in such a way that these small scale valuable qualities are not lost in the expansion process.

## 9.0 = Implications for policy making =

Recently, many groups in society have shown an increasing interest in the growth and performance of small firms in order to combat unemployment problems as well as to create new competitive companies and renew the economy. The direct effects of policy measures taken to stimulate growth and encourage performance were not investigated in this study, since the purpose was not to evaluate the effects of these. Based on the findings, however, two types of recommendations can be made. The first examines which *groups to direct specific measures towards, in order to achieve growth*, while the other addresses which *types of general measures* could be taken.

Let us start with the identification of different groups of firms, in order to assess suitable policies for these. The empirical findings from this research suggest that growth and performance are the results of conscious decisions taken by the entrepreneur. One implication of this is that "softer" qualities of the small firm, such as strategic orientation and the entrepreneur's attitudes, are more important than "hard" facts such as capital availability and the economic sector.

Firms showing different growth rates and performance levels can be found in any industry. It would not appear to be an advisable strategy to try to identify potential "winners" based solely on SIC-codes, even though there are some significant industry differences in their perception of the environment<sup>50</sup>. Rather, perception of the environment varies considerably within industries. This is probably since small firms usually operate within narrow market niches (cf. Barkham et al., 1996; Smallbone et al., 1995; Storey, 1994b). A better strategy to identify these firms may be to ask them if, and how, they perceive their environment has changed.

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<sup>50</sup> **As an example, on average the knowledge intensive industry perceived the environment to have become significantly more dynamic during the last three years than did the labour intensive industry**



### *conclusions and implications*

The relative unimportance of personal abilities of the entrepreneur, such as experience and education, together with the relative unimportance of the educational level of employees, point to the difficulty in picking potential growing firms based on such criteria. Instead, motivation appears more important for actual growth. A combination of an inventor and a strategist seems like the archetype for a growth-oriented entrepreneur.

Some thought should also be given to the relative unimportance of capital availability. Results suggest that a vastly increased supply of capital to small firms as an individual activity would not lead to the creation of a large number of new jobs.

The present findings can possibly provide some guidance in the design of policy measures for different groups of small firms. So far there has been an overemphasis on implementing support programmes that provide small firms with increased resources such as risk capital or aim at increasing the ability for small firms to grow, including training programmes for small business managers and tax incentives. Implicit in most supportive programmes is the assumption that given these resources and abilities, small firms will grow. However, this view disregards the importance of the "softer" qualities. Figure 9.3 is an attempt to categorise small firms along two dimensions; ability and resources available for growth is one dimension, and growth motivation the other. Depending on their position along these two dimensions, four types of small firms are identified.

Abilities, resources etc.	Yes	Unused potential	Actual growth
	No	No prospect	Ambitions
		No	Yes
		Growth motivation	

**Figure 9.C. Four types of firms in relation to their ability and motivation to grow.**

- Starting with the firms in the upper right quadrant, which possess both the necessary abilities and resources, *and* the motivation for growth, these are the ones that exhibit *actual growth*. Appropriate policy measures for this group would probably mainly involve easing and simplification of operations, such as reducing red tape.
- In the upper left quadrant are the firms which have an *unused potential* since they, if they were motivated, have the ability and resources to expand. A relatively large proportion of all small firms are probably in this situation. The goals of society (e.g. the creation of new jobs) do not necessarily correspond to the goals of individual entrepreneurs. In order to align these goals, it is important to ask questions such as: "which goals can a particular small firm achieve by - for example - employing more people?". In the light of these and other findings, survival has a high priority among small business managers, and larger size fosters survival. It could therefore be effective to make entrepreneurs aware of this fact. This could be an activity which increased the priority of growth. Knowledge about the fact that growth and economic performance are closely related may also encourage growth. Local initiatives may be particularly successful in this group, since growth motivation may be influenced locally. A sense of civil responsibility and belief in a prosperous future can be created at the

### *conclusions and implications*

local level. Such factors may influence the growth motivation of entrepreneurs.

- Firms striving for growth but lacking certain skills, capital, or other abilities and resources can be said to have *ambitions*. These firms are situated in the lower right quadrant. Most of the present political stimulation measures for small firms assume that the majority of small firms belong in this category. Prevalent advice and financial support services are probably most effective in relation to this group, provided they are appropriately designed.
- Finally, firms in the fourth category neither have motivation nor abilities or resources for growth, and thus have *no prospect* for growth. All firms are not suited for expansion. Due to limited management abilities, these firms may actually perform better if they remain on a smaller scale. However, this group has still an important role to play in society by creating employment etc. These firms are probably better off if left out of any small firm policies aimed at expansion, since such probably have little or no effect among this group. However, this group would probably also benefit from a positive macro-economic development, as mentioned below.

In relation to the figure, most small firm policies are designed under the assumption that the majority of small firms are situated in the lower right quadrant, i.e. as if they belonged to the "ambitions" category. If they were only given access to more resources and abilities - it is argued - they would grow and become larger. However, policy makers must be aware of that there are different types of small firms with different needs.

Turning now to the recommendations for which types of general measures should be taken, it seems that relatively few factors influencing growth and performance can be affected by general policy measures. However, considering the large influence of environmental variables on growth and performance, general policies should probably be aimed at creating a more munificent environment. Growth opportunities is an area which can be affected by policy measures. Keeping in mind that the majority of small firms operate in the private service and retail sectors in the domestic market, measures aimed at increasing domestic, *consumer* demand are likely to be the most effective. This could involve measures

to increase the purchasing-power of consumers, such as reduction in income tax, or VAT.

## **9.0 = Limitations =**

### *9.0.0 Introduction*

Any study inevitably has limitations. The "perfect study" has never been, and never will be, carried out. The limitations of any study will vary depending on the deliberate and unconscious choices taken. Choosing *to do* something implies choosing *not to do* something else.

I will attempt to realistically assess the limitations of the present study, due to the choices being made. Limitations can be of different types, and three categories of limitations were identified:

- General limitations concerning the relevance of chosen models and how far-reaching conclusions can be drawn from the findings.
- Limitations due to the chosen analysis and data collection methods.
- Limitations due to choices that, in hindsight, may appear less appropriate.

### *9.0.0 A scientific realism view of general limitations*

At first, it may be surprising to realise that the greatest limitation of all is that the findings are not derived from the factual reality! All the analyses were carried out based on simplifications, or models of reality. There is nothing strange or unusual about this fact, as science is usually conducted in this way.

The important issue is if the models used compose realistic and relevant reflections of those phenomena they purport to describe and explain (McKelvey, 1997). This issue of realism and relevance can be divided into two different parts:

- Have the appropriate simplifications been made, i.e. are all the important factors included in the model and those of less importance excluded, or have the most important factors been overlooked?
- Have the simplifications been too substantial, i.e. have simplifications been made to such a degree that the models distort reality? Do

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the models simplify reality to such an extent so that they no longer represent the phenomena they purport to describe and explain?

Scientific realism gives little specific guidance as to how these issues should be determined, and there are no general principles (Miller, 1983b). However, Miller's three criteria as to what is a suitable model in social science may be used as tentative guidelines:

- A sufficient number of explanatory factors need to be identified and included in the model. One way of assessing if this is the case or not, may be to examine explained variance. If explained variance is high, this would suggest that a sufficient number of factors have been included. If explained variance is low, on the other hand, this may indicate that other factors should have been included. Average explained variance reaches 36% both when performance and growth are predicted in the full research model. Technical explanations as to why explained variance is not higher has been commented upon in previous chapters (cf. Sections 6.8.6 and 7.5.3), and will be further developed below. The more general explanation as to why more variance is not accounted for lies in the fact that the indirect method of data collection (questionnaire data), in combination with the chosen analysis methods, considerably reduces explanatory power. The limitations of data collection do not allow the inclusion of all important and interesting explanatory factors in the empirical study. Information concerning actual actions taken would have been of particular value. Instead, proxies for actual behaviour have been used. In relation to most other research in the field, this may not be a problem. However, it obviously is a limitation. Finally, the element of chance cannot be neglected. Unforeseen situational factors have such a large influence that more accurate prediction is difficult.
- Explanations need to be "deep", i.e. to reach sufficiently far back in the causal chain. If a causal factor is identified but is likely to be a result of an underlying factor without which the phenomenon would not arise, then the first factor must be considered as insufficient. To some extent, the answer to this contradicts the answer to the previous question. Explanatory factors very far back in the causal chain could, for instance, include the personality of the entrepreneur, or the prevailing overall macroeconomic conditions. The choice was made to instead focus on variables relatively close to behaviour in the causal chain, e.g. goals instead of psychogenic needs (cf. Section 2.7.2),

since they probably provide better explanations to the outcomes of individual firms. This choice is a limitation. Nevertheless, there is reason to believe that the explanatory power (concerning variation in the development of individual firms) would have *decreased* considerably had deeper explanatory factors been used. This would involve simplifications that would distort the model in its relation to reality.

- Explanatory factors must be necessary to bring about the phenomenon. The chosen analysis methods facilitate the establishment of the relative importance of different explanatory factors. In the analysis process, those parts of the model contributing to explanation, and those which are superfluous are empirically estimated. The industry construct is generally of little importance and may be dispensable in "bringing about the phenomenon". None of the other categories of variables seem to represent epi-phenomena that can be disregarded in the prediction of small firm growth and performance.

To summarise, it would appear that there are some limitations concerning the construction of the models. However, the models utilised would seem to compose realistic and relevant reflections of the phenomena they purport to describe and explain.

#### 9.0.0 *Limitations inherent in the research approach*

Considering that the basic approach chosen was a longitudinal survey, which in itself has trade-offs (cf. Section 4.3), and the chosen analysis methods, there are a number of unavoidable limitations:

- Both multiple linear regression and PLS estimate *average* and *linear* effects. In other words, a basic assumption is that the importance of any particular independent variables is equal for all subjects in the study, when estimating the dependent variable, and that differences between subjects concerning independent variables are reflected in proportional differences in the dependent variable. This is not necessarily true, as noted by others (McKelvey, 1997; Miller & Friesen, 1984). Substantial growth, or exceptional economic returns, are highly unusual, but very interesting phenomena. It is possible that firms exhibiting these characteristics may differ from other firms in relatively complex ways, conflicting the assumptions of linear and average relationships between variables. McKelvey suggests some alternative analysis methods that, unfortunately, are not used in social sci-

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ences. My knowledge of these alternatives is unfortunately lacking, but they could well be equally or even more suitable in the present research context.

- Independent variables are, as the term indicates, assumed to be independent from each other. This may also be too presumptuous. It is possible that different factors contribute to small firm growth and performance within different contexts, i.e. that particular variables and magnitudes of variables tend to cluster together in the form of configurations (cf. Section 2.5.1). Thus, it is possible that a number of configurations which could lead to higher growth rates and superior performance can exist. An alternative would then have been to study the possibility of growth/performance configurations, rather than the individual variables contributing to growth and performance. However, also in the case of configurations does the literature provide little guidance concerning appropriate research design (even though configurations have been empirically studied, cf. Miller & Friesen, 1984)
- The one-year time lag between the collection of information regarding independent and dependent variables is relatively short. Probably, behavioural differences between firms would show increases in variance if longer time periods were studied. Therefore, explained variance and path coefficients are likely to increase. Zahra (1991) found that the association between EO and performance was more pronounced when using a two-year time lag between the collection of EO and performance data, than with a one-year time lag, as used in this study. A longer time frame could therefore have been preferred. However, the temporal extension of the empirical study conflicts with the temporal demands on finalising this dissertation. This study will be continued, but that is beyond the scope of this dissertation.
- Only proxies for actual behaviour have been used. The most obvious limitation is that of the measurement of entrepreneurial strategic orientation, EO. However, it would have been difficult to obtain direct measurements without immense efforts, e.g. direct observation of behaviour.

### 9.0.0 Limitations due to choices

In addition to the limitations because of the choices of data collection and analysis methods, there are some choices that, in hindsight, may appear less appropriate. By this I mean that if I was to conduct the same study again, some things may very well have been done differently:

- Recognition, creation, and pursuit of opportunity; all appear to be important, particularly in order to explain variation in growth rates. These areas were not explicitly investigated, but rather, all those findings concerning opportunities are implicitly inferred from a range of variables - collectively indicating an opportunity orientation - influencing growth. If the study should be repeated, those variables clearly aimed at reflecting how small firms deal with opportunities would have been included.
- It was argued above that a focus on resources is not the best way to advance our understanding of small firm growth and performance. Instead, capabilities should be investigated more carefully. It appeared unwise to integrate both resources and capabilities into one construct, as was done in the research model. In hindsight, efforts should have been concentrated on identifying and operationalising critical capabilities that influence small firm growth and performance.
- Many measures are self-perceptive. The validation of the extent to which these measures reflect actual circumstances was carried out indirectly. The fact that they predicted actual outcomes was taken as evidence of their reflection of factual circumstances. A feasible alternative would have been to validate self-perception by having more than one respondent from each firm. Although this could have been more expensive and reduce response rates, it could have been done for part of the sample and/or part of the questionnaires.
- Expected consequences of growth were measured in terms of employees, i.e. the expected consequences reflected the small business manager's attitudes towards doubling the number of *employees*. These variables showed no relationship with growth or performance outcomes. Employment growth is probably a consequence of sales growth and it could therefore be anticipated that growth aspirations in terms of *sales* may better reflect the small business managers' attitudes towards growth.



### *conclusions and implications*

- The study is -intentionally - very broad in its scope. However, a considerable number of variables, particularly from the mail questionnaire, were not used in the analyses. This space could have been used for better measurement of the included variables. In addition to the measurement of capabilities and opportunities mentioned previously, more careful measurement of "network" variables, and the contribution from other persons working in the firm, e.g. the management team, seems to be of particular value.

### **9.0= Some methodological remarks=**

Research design must be adapted to the research questions posed. Cross sectional designs are particularly ill-suited for studies where growth is the dependent variable (this argument was further developed in Section 4.4.4). To use a cross sectional design and then admit in the last paragraph that longitudinal designs are needed in future research is just not good enough. The present research shows that it is possible to gather information directly from small firms in a survey running for at least two years. The fact that the bulk of non-responses occurred during the first year study and that 96% of the remaining respondents agreed to participate the following year gives hope that it could be possible to extend this and other studies with some additional years.

Growth and performance are multi-faceted empirical phenomena. It is therefore necessary to use multiple indicators for each of these phenomena in order to reflect their full scope. A feasible research approach to such multi-faceted phenomena is to model them as latent constructs with a range of manifest indicators.

The use of latent variables has two additional and possibly more important implications:

- The number of variables can be reduced in empirical research without omitting information due to the manifest/latent structure.
- The relationship between theory and empirical findings is directly evident from the output of the analysis.

Others have shown that the use of absolute growth measures yield different explanatory models than do relative growth measures (Delmar, 1996b). The present research illustrates that the actual modelling of the growth process also affects the growth measure and thus the empirical results (cf. Section 4.4.3). Researchers have to be explicit about whether

growth should be modelled as a quantum leap, incrementally, or as an exponential function. The incremental model employed in the present research is recommended for longer time frames.

A related methodological - or possibly logical - issue, concerns the relationship between size and growth. A negative relationship is often found between size and growth rate among small firms, i.e. very small firms grow more rapidly than larger small firms (cf. Storey, 1994b). To me this appears to be self-contradictory, and an example of the "regression to the mean" phenomenon. The vast majority of firms start at a very small scale. Over time, the firms that grow more, become larger than those that grow less. Even though it is possible that larger firms will exhibit lower growth rates during a particular (and relatively short) time frame, this does not overthrow the fact that they have overall grown faster. The problem is that size is used for calculating growth (i.e. size change). Such calculations tend to bias growth figures in favour of the smaller firms (cf. Section 4.4.3). This is to say that the growth rate of larger firms during a random time frame is devaluated in relation to smaller firms because they have grown faster in the past. Thus, any results concerning the possible influence of size on growth should be interpreted with great care, as any results will depend heavily upon the researcher's choices in terms of growth measurement and the length of the studied time period, as well as the previous growth of the firms.

In any survey design where data is self-reported by the respondents it is important to distinguish between objective measures (e.g. size) and self-perceived measures (e.g. competitive pressure). The present research suggests that self-perception (e.g. EO ) can indeed predict objective outcomes (e.g. performance) supporting that self-perception reflects objective circumstances. However, it is recommended that self-perceived measures are validated to the greatest extent possible, in particular when self-perceived variables are used for prediction of other self-perceived variables. Two routes are possible:

- More than one respondent can be used from each firm and the two or more answers can be compared.
- It is also possible to compare self-perception to objective measures for the same variables to check their coherence.

## **9.0= Prospects for future research=**

The careful reader may already have noted some possibilities for future research on the basis of the previous sections. This section contains some explicit suggestions for future research related to research method and theory as well as empirical issues. I hope these suggestions will encourage others to conduct studies in order to advance our knowledge of entrepreneurship and small firms and possibly confirm, refine, or dispute the propositions made in this dissertation.

The present research indicates that it is *possible* to conduct longitudinal survey research on small firms. However, the time frame of one year is relatively short. Behavioural differences do not have the time to develop considerably during one year resulting in less than optimal prediction. Future research needs longer time frames, preferably annual surveys over five to ten years. Such longitudinal survey studies may well be complemented with longitudinal case studies in a small number of firms. These case studies can be used to challenge and/or to confirm the findings from the survey study as well as to investigate areas that are less well suited for survey research. Typical and atypical cases can be selected in order to test and develop the general models.

As noted several times previously, the use of latent variables and structural modelling has some advantages over the more traditional quantitative methods making the case for PLS. If more well developed theories are employed with the purpose of testing a specific model, for instance the one developed here, SEM may be preferred rather than PLS (cf. Section 4.10.4 for comments on SEM).

This dissertation may be seen as an explicit empirical step in the study of successful entrepreneurship, in terms of a firm's opportunity and resource orientation (cf. Figure 9.2), possibly referred to as "the opportunity based firm" (Brown, 1998). Further empirical research and conceptualisations in this area is needed. The term opportunity based firm is an interpretation of the relationships between many theoretical constructs, viz. environment, attitudes, strategy and outcomes. One fruitful way to further study the relationships between these constructs and delineate the opportunity based firm from other types of firms may be in terms of configurations, in particular when the causal direction between variables is undecided (Miller, 1990; Miller & Friesen, 1984). Some guidance about the characteristics of the opportunity based con-

figuration may be provided from the adhocracy notion, with the important addition of the opportunity dimension.

It would be particularly interesting to study the sustainability of the opportunity based configuration. To what extent do opportunity based firms remain this way; how and why do they change, and if they change, as what type of firms do they end up?

A related question has to do with windows of opportunity, how they are recognised as an opportunity and how long they are open. At the present state, such issues may be best investigated with a case study approach. A methodological issue connected to this is how these windows of opportunity are formally analysed, as discontinuous events or as continuous variables. Further work also needs to be carried out in operationalising opportunities.

Due to the generality of the research model, it would appear that it could be used for these purposes. The choice must be made as to either use the more complex revised model, or the original one which can more easily be applied to empirical research.

Finally, entrepreneurship is often assumed to be something inherently good, something firms should strive for. This view gets support from the present findings. However, it is essential to further examine the connection between entrepreneurship and success. Although EO is starting to become an established concept accompanied by a well-known measurement instrument, it is a relatively vague concept. The application of measures more clearly aimed at capturing the entrepreneurial dimensions of a firm's strategic actions would probably strengthen the empirical relationship between entrepreneurship and success. The development of such a measurement instrument is a major challenge for researchers in the field.

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# Appendix 1

## Review of research on small firm growth and performance

Author(s)	Performance/growth measure	Strategy	Motivation (personality)	Resources	Environment	Other
<b>Bamford, Dean &amp; McDougall (1997)</b>	Sales growth	Strategic breadth		Initial capital	Munificence, dynamism, competitive intensity	Firm age
<b>Barkham (1994)</b>	Sales, assets, employment		Need for achievement (nAch), need for power (nPower)	Education, work skills, knowledge of customers, # founders	Sector, location	
<b>Barkham, Gudgin, Hart &amp; Hanvey (1996)</b>	Sales growth, employment growth, asset growth, profit growth	Product diversity, marketing, price, process development	Growth motivation	Age of manager, experience, # owners, time, member of organisation, size, sales force, external capital, investments	Demand, location, industry	
<b>Begley (1995)</b>	Sales growth		Type A behaviour, risk-taking propensity, nAch, ambiguity tolerance, Locus of control (LOC),	Revenues, # employees, sales, founder, education, company tenure, previously started business, industry experience	Sector	Firm age

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Author(s)	Performance/growth measure	Strategy	Motivation (personality)	Resources	Environment	Other
<b>Birley &amp; Westhead (1990)</b>	Sales, profits, # employees	Planning, diversity of product base		Ownership structure, training,	Industry structure, location, diversity and location of customer and supplier base, diversity and size of competition	Structure, firm age, sales revenue dependency
<b>Bloodgood (1996)</b>	Sales growth, profitability	Internationalisation, low cost, product differentiation, market differentiation, innovation		International exposure of mgmnt team, leverage	Industry growth rate, industry profitability	
<b>Boone, de Brabander &amp; van Witte-loostuijn (1996)</b>	Cash flow on assets, ROA, gross profit margin	Product differentiation, low cost		Firm size, tenure, liquid resources not committed to liabilities		
<b>Box, White &amp; Barr (1994)</b>	Employment growth	scanning intensity	nAch, LOC	Education, age at founding, # start-ups, mgmnt tenure, industry experience	Industry dynamics	
<b>Brown (1996)</b>	Employment growth, sales growth	Entrepreneurial orientation	Self-efficacy		Munificence, hostility	
<b>Brush &amp; Chaganti (1997)</b>	Cash flow, employment growth, satisfaction	Focused cost leadership, focused differentiation, planning, reporting	Commitment, attitude towards entrepreneurship	Owner/manager background, education and experience, founding team size, staff skills	Industry growth rate, hostility	Incorporation status
<b>Chaganti &amp; Schmeer (1994)</b>	profitability, sales	Cost efficiency, customisation, quality		Firm size, perceived operations strengths, experience	Industry	Formalisation, planning, specialisation, entry mode, firm age

Author(s)	Performance/growth measure	Strategy	Motivation (personality)	Resources	Environment	Other
Chandler & Hanks (1994)	Perceived change in market share, perceived change in cash flow, sales growth, sales, earnings, net worth			Resources based competencies, entrepreneurial competence, managerial competence	Quality of the opportunity	
Chandler (1996)	Earnings, sales, sales growth, market share growth			Experience, skills/abilities, similarity to previous employment	Industry, task environment, similarity	Firm age
Chaston & Mangles (1997)				Capabilities (identifying and exploiting market niche, financial resources, managing product devt., HRM, TQM, productivity, IT-based systems)		
Chrisman & Leslie (1989)	Sales growth, profit growth			Use of consultants		
Cooper, Gimeno-Gascon & Woo (1994)	Failure, survival, growth			Education, gender, race, parents, experience, use of advisors, partners, capital,	Industry	
Covin & Slevin (1989)	Perceived financial performance	Entrepreneurial orientation			Hostility	Organisational organicity
Covin & Slevin (1990)	Perceived financial performance	Entrepreneurial orientation			Life cycle stage	Organisational organicity
Covin & Covin (1990)	Perceived financial performance	Competitive aggressiveness			Technological sophistication, hostility	

appendix 1

Author(s)	Performance/growth measure	Strategy	Motivation (personality)	Resources	Environment	Other
<b>Covin, Slevin &amp; Covin (1990)</b>	Perceived financial performance	Advertising, efficiency and quality concerns, industry awareness, product-related issues, planning-related activities, customer support, long-term financial orientation, external independence, strategic posture		External financing		
<b>Cragg &amp; King (1988)</b>	Sales growth, profits/sales, profits	Planning, new products	Growth willingness, seeks job satisfaction, wants to earn money, growth relative to job satisfaction, money relative to job satisfaction	Company age, # managers, # marketing/sales staff, # employees, sales revenues, o/m works at desk or machinery, age		Legal form
<b>Davidsson (1989)</b>	Sales and employment growth		nAch, LOC	Industry experience, mgmnt experience, # start-ups, founder, education, mgmnt training, age, firm size	industry growth, # population density, university access, market dispersion, type of customers, customer concentration, ave. firm size in industry, capital needs for start-up in industry	Firm age

Author(s)	Performance/growth measure	Strategy	Motivation (personality)	Resources	Environment	Other
<b>Donckels &amp; Lambrecht (1994)</b>	Growth (no details)			Organisational network		
<b>Donckels &amp; Lambrecht (1997)</b>	Growth (no details)			Training, tenure, firm size, training, use of consultants, university contacts	Sector, market, location, crime, staff availability, government problems, business accessibility	Family business
<b>Doutriaux (1992)</b>	Sales growth			Founding team size, age, experience, equity, initial size and profits	# competitors	
<b>Duane &amp; Hitt (1997)</b>	Profitability	Low-cost, quality, time-based, first-mover, second-mover, parity with competitors, R&D expenditure				
<b>Fombrun &amp; Wally (1989)</b>	Margin, sales per employee, sales growth	Low cost, quality, product development, risk taking, product diversity		Size	Industry	Structure, privately held
<b>Hansen (1995)</b>	Wage growth			Network		
<b>Harrison &amp; Mason (1997)</b>	Employment, employment growth, product diversification			Network		
<b>Heeley (1997)</b>	Sales growth	R&D expenditure		Knowledge acquisition, knowledge dissemination		

appendix 1

Author(s)	Performance/growth measure	Strategy	Motivation (personality)	Resources	Environment	Other
Katila (1997)	Innovative output, likelihood of radical innovation, sales growth	R&D expenditure		R&D partners		
Kazanjian & Drazin (1989)	Sales growth			Firm size		Firm age
Kazanjian & Drazin (1990)	Sales growth					Organisation structure
Kolvereid (1992)	Growth aspiration	Dependence on single product	Need for independence, status, nAch, welfare	Education, experience, taxes, sales, # employees, previous growth	Industry, distance to customers, export, # customers, # competitors, opportunity	
Lau & Snell (1996)	Employment growth					Organisation structure
Macrae (1992)	Size	R&D, products	Entrepreneurial drive, motivation	Founder, education, sex, age, mngmt experience, mngmt training, attendance at conferences, mngmt skills, mngmt activities, co-operation	Market state, influence of EC, barriers to growth, suppliers, customers	
McDougall, Robinson Jr & DeNisi (1992)	ROI, market share growth	Products, price, customer service, vertical integration, brand/name ID			Industry structure, customers	
McDougall, Covin, Robinson & Herron (1994)	Sales growth	Strategic breadth			Industry growth	

Author(s)	Performance/growth measure	Strategy	Motivation (personality)	Resources	Environment	Other
<b>McGee, Dowling &amp; Megginson (1995)</b>	Sales growth	Co-operation in marketing, R&D and manufacturing, marketing differentiation, technical differentiation, cost leadership		Management experience, assets		Firm age
<b>McMahon &amp; Davies (1994)</b>	Sales growth, employment growth, net profit growth, net margin, sales per employee, net profit per employee	Financial analysis practices, financial reporting practices				
<b>Merz, Weber &amp; Laetz (1994)</b>	Sales growth, sales variability	Planning, control, proactiveness, innovativeness			Dynamism, heterogeneity, hostility	Decentralisation, specialisation
<b>Miller &amp; Toulouse (1988)</b>	long run profitability and sales growth compared to industry average	Innovative differentiation, R&D, innovation, marketing differentiation, cost leadership, futurity, explicitness, analysis, proactiveness, risk taking	LOC	CEO tenure, CEO flexibility		Organisation structure
<b>Miner, Smith &amp; Bracker (1989)</b>	Sales growth		MSCS Form T: self achievement, avoiding risk, feedback of results, future orientation			



appendix 1

Author(s)	Performance/growth measure	Strategy	Motivation (personality)	Resources	Environment	Other
Miner (1990)	Employment growth		MSCS Form T: self achievement, risk avoidance, feedback of results, personal innovation, future orientation			
Namen & Slevin (1993)	Perceived financial performance	Entrepreneurial orientation, mission strategy			Turbulence	
Olson & Kolvereid (1994)	Growth and profitability	Cost leadership, differentiation				Stage of development (firm age)
Olson & Bokor (1995)	Sales growth	Planning, innovation				
Orpen (1994)	Perceived financial performance	Planning, scanning				
Pelham & Wilson (1996)	Growth, new product success and profitability	Market orientation, innovation, low cost			Dynamism, competitive intensity	Organisation structure
Perry, Meredith & Cunningham (1988)	Sales growth		Social credibility of growth, willingness to use external financing, nAch, LOC,	% equity in initial capital, % profits reinvested, experience with mentors, # previous start-ups, experience		Examples of growth within industry
Petrakis (1997)	Sales growth	Management of technology change	Risk taking, profit motive	Adaptability, financial gap, labour market, access to public commodities and information	Type of customers	
Roper (1997a)	Sales and employment growth	Innovation		Firm size	Country	

Author(s)	Performance/growth measure	Strategy	Motivation (personality)	Resources	Environment	Other
<b>Roper (1997b)</b>	Sales growth, employment growth, return on assets, profit per employee, return on sales, sales/assets	New product lines, new or modified product, new export market, new quality certification, new MIS/MAS, recruitment, control				Work standardisation
<b>Rosa, Carter &amp; Hamilton (1996)</b>	# employees, employment growth, sales, assets			Gender, age, # children, , partner, # owners, capital, network, experience, education, sub-contracting	Sector	Firm age
<b>Sandberg &amp; Hofer (1987)</b>	Profitability	Focus, differentiation		Experience, # start-ups, age, education		Industry development stage, industry structure, industry equilibrium, barriers to entry, industry

appendix 1

Author(s)	Performance/growth measure	Strategy	Motivation (personality)	Resources	Environment	Other
<b>Schwartz, Teach &amp; Miglani (1997)</b>	Sales growth	Cost leadership, differentiation, diversification, divestment, planning, low price, innovation, internal growth, acquisition of firm or technology, JV, market development, market focus, market penetration, product development, TQM, new technology, uniqueness				
<b>Shrader &amp; Simon (1997)</b>	Sales growth, profitability	Strategic breadth, products, brand ID		Capital source, proprietary knowledge, technical/marketing expertise, firm size		Venture origin, firm age
<b>Siegel, Siegel &amp; MacMillan (1993)</b>	Sales growth	Products, planning orientation		Financing, management focus, start-up team background		
<b>Smallbone, Leigh &amp; North (1995)</b>	Growth (no details), profitability	Management of products and markets, production system		# managers, time to manage, ownership change		

Author(s)	Performance/growth measure	Strategy	Motivation (personality)	Resources	Environment	Other
<b>Smart &amp; Co-nant (1994)</b>	Overall store performance, sales growth, sales per employee, net income cost containment, cash flow management, sales per square foot	Entrepreneurial orientation		Marketing competency		
<b>Smith &amp; Miner (1984)</b>	Growth (no details)		MCS Form T: self achievement, avoiding risk, feedback of results, future orientation			
<b>Solymosy (1997)</b>	Satisfaction (no details)		Economic necessity, independence, achievement, opportunity, job satisfaction, career security, wealth, social status,			
<b>Tsai, Mac-Millan &amp; Low (1991)</b>	ROI, market share growth	quality, price, promotion expenditure, capacity			Life cycle stage, number of customers, market growth, market share of large customers, dependence of largest competitor	

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Author(s)	Performance/growth measure	Strategy	Motivation (personality)	Resources	Environment	Other
Van de Ven, Hudson & Schroeder (1984)	Growth (no details), independence, perceived performance	Risk orientation, business idea, following program planning model, planning activities, proactiveness, standardisation of procedures	Commitment	Education, experience, average tenure of personnel, education of personnel, specialisation, # persons in command, board of directors, time allocation, communication frequency		
Weinzimmer (1997)	Sales growth			Top mngmt team size, top mngmt team age, Top mngmt team heterogeneity,		
Wijewardena & Cooray (1995)	Sales growth	Advertisement, R&D expenditure		Capital, size, skilled workers,	Exports, competition, industry	
Wiklund, Davidsson, Delmar & Aronsson (1997)	Growth aspirations		Expected consequences of growth			
Zahra (1996)	sales growth, market share growth, profitability	Technology strategy		Firm size		Venture origin, firm age

Note: Abbreviations are explained the first time they are used in the Table (e.g. need for achievement (nAch)). The explicitness of studied variables varies considerably. The term "no details" is used when no explanation is given to the kind of variables studied.

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## Appendix 2

# Questionnaires

### *Appendix 2.A. Translation of telephone interview 1*

#### Support information

Company name (if other than above): _____	
CEO name _____	Alt. no: _____
Call back _____	<input type="checkbox"/> Introduction read to CEO
Interview started at _____	

**READ:** My name is NN from Jönköping International Business School. I would like to talk to the CEO of (company name).

(If the person hesitates) The person in charge of the company.

**If the CEO is not available:**

What is the name of the CEO? When can I call back

**When in contact with the respondent:**

**READ:** My name is XX from Jönköping International Business School. I work as an interviewer for a research project on small firms. We sent you a letter about this survey. Did you receive it?

(If not; improvise a short summary of the content of the letter)

**READ:** As we wrote in the letter, your company is part of the random sample of firms. It is important for the research project that everyone who is able to participate participates in the interview. It takes about 15 minutes. Is it possible for you to answer the questions now?

**Of the respondent hesitates or refuses.**

Can I call you back tomorrow (or some other time) instead? At what time?  
AND/OR

The survey is important for enhancing the knowledge of small firms. You can contribute to improve the knowledge of small firms by participating in the interview.  
AND/OR

Your answers are confidential and no one can trace you or your company.

Fill in after the interview

Your name: \_\_\_\_\_

Date of the interview: \_\_\_\_\_

Time: \_\_\_\_\_

Number of calls: \_\_\_\_\_

**Non-response reasons :**

Refusal       Phone no. unknown       No contact despite 15 calls

Not available until: \_\_\_\_/\_\_\_\_/\_\_\_\_       Discontinued

Interview interrupted       Other, what? \_\_\_\_\_

**After yes, start interview**

**READ:** Then we can start the interview. To begin with I will ask questions about the firm and its development. (If you hesitate about the respondent's name). But first - your name:

Respondent's name (CEO): \_\_\_\_\_

1. The first question concerns your line of business. Is the firm mainly goods-produces, service producer or a trade firm?

The firm is primarily:       Goods-producing  
    Service producing **Go to 3!**  
    Trade firm **Go to 3!**

2. (If goods-producing) How large share of your sales is generated by products you develop in-house?

Less than 5%      5-25%      25-50%      50-75%      75-95%      over 95%  
                                                                                                   

3. Do you primarily sell your products to other firms or consumers?

Almost exclusively consumers **Go to 5!**  
 Mixed  
 Almost exclusively other firms

4. Try to estimate approximately how many per cent of your turnover is generated from your three largest customers? (Many companies in one group=one company)

Less than 5%      5-25%      25-50%      50-75%      75-95%      over 95%



**14.** Has the firm's sales development been satisfactory or dissatisfactory over the last three years? (Wait for answer) Rather xx or very xx?

Very satisfactory <input type="checkbox"/>	Relatively satisfactory <input type="checkbox"/>	Neither nor <input type="checkbox"/>	Relatively unsatisfactory <input type="checkbox"/>	Very unsatisfactory <input type="checkbox"/>
--	--	--	--	--

**15.** Has the firm's profitability been satisfactory or dissatisfactory over the last three years? (Wait for answer) Rather xx or very xx?

Very satisfactory <input type="checkbox"/>	Relatively satisfactory <input type="checkbox"/>	Neither nor <input type="checkbox"/>	Relatively unsatisfactory <input type="checkbox"/>	Very unsatisfactory <input type="checkbox"/>
--	--	--	--	--

**16.** Have your own salary and financial pay-off been satisfactory or dissatisfactory over the last three years? (Wait for answer) Rather xx or very xx?

Very satisfactory <input type="checkbox"/>	Relatively satisfactory <input type="checkbox"/>	Neither nor <input type="checkbox"/>	Relatively unsatisfactory <input type="checkbox"/>	Very unsatisfactory <input type="checkbox"/>
--	--	--	--	--

**17.** Do you sell anything other than products or services e.g. (read alternatives):

- Licenses
- Patents
- Franchising contracts
- Other, what? \_\_\_\_\_
- No **Go to 19!**

**18.** Approximately what share of your sales is generated from licenses/patents/franchising contracts/other? (OBS! Choose appropriate words)

Approximately \_\_\_\_\_%

**19.** Do you remember what your the firm was founded?

Yes, 19\_\_\_\_\_  No

**20.** Do you know the number of founders? (Active founders, not persons employed at founding)

Yes, \_\_\_\_\_ persons  No

**21.** Have you started, inherited or bought the business or are you employed as CEO? (inherited covers purchase from family member)



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Inherited    bought    started    Em-  
 ployed    Other,  
 what? \_\_\_\_\_

**22. How many persons are on the board? (Not union members or secretary)**

\_\_\_\_\_ persons

**23. Are there any other persons in addition to owners and owner families? (Wait for answer, if yes) How many?**

no    yes, \_\_\_\_\_ persons

**24. Does the firm have a management team or equivalent? (Not board) (wait for answer, if yes) How many persons are in the management team?**

no    yes, \_\_\_\_\_ persons

**25. Does anyone if the firm have a higher education? (wait for answer, if yes) Approximately how many persons? (At least two years of full time studies)**

no    yes, \_\_\_\_\_ persons

I will now turn to the future and the size of the firm.

**26. Let's imagine that over the next 5 years your firm grows until it reaches about 25 per cent more employees than today, and generates profits that are reasonable considering its size. Would you consider such a development mainly positive or mainly negative? (Wait for answer) Somewhat, rather strongly, or very strongly XX?**

Very strongly positive	Rather strongly positive	Somewhat positive	Neutral	Somewhat negative	Rather strongly negative	Very strongly negative
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**27. Let's imagine instead that the firm over the next 5 years grows to twice its present size in number of employees and generates profits that are reasonable considering its size. Would you consider such a development mainly positive or mainly negative? (Wait for answer) Somewhat, rather strongly, or very strongly XX?**

Very strongly positive	Rather strongly positive	Somewhat positive	Neutral	Somewhat negative	Rather strongly negative	Very strongly negative
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**28. If the firm develops the way you would like it to, how many employees and how large sales would the firm have 5 years ahead? Disregard possible inflation.**

a) Sales:

Approximately \_\_\_\_\_MSEK

b) No. Of employees: \_\_\_\_\_ Approximately \_\_\_\_\_ persons

**29.** Try to imagine that your firm already has twice as many employees as today, regardless of whether or not you consider such a development likely or worth striving for. Of course, running a firm of that size would be different in many respects. I will now ask some questions concerning **what you think your situation would be like** if the firm was twice as big.

a) The first question concerns work-load. Do you think that you, being the manager, would have to work more, less or as much as today? (Wait for answer) Somewhat xx or considerably xx?

Considerably more <input type="checkbox"/>	Somewhat more <input type="checkbox"/>	No change <input type="checkbox"/>	Somewhat less <input type="checkbox"/>	Considerably less <input type="checkbox"/>
---	---	---------------------------------------	---	---

b) Do you think your work-tasks would be different so that you would devote a larger or lesser share of your time at work, as compared with the present, to the work-tasks you like best? (Wait for answer) Somewhat xx or considerably xx?

Considerably larger <input type="checkbox"/>	Somewhat larger <input type="checkbox"/>	No change <input type="checkbox"/>	Somewhat lesser <input type="checkbox"/>	Considerably lesser <input type="checkbox"/>
---	---	---------------------------------------	---	---

c) Do you think your employees would experience a greater or lesser sense of well-being at work, if the firm was twice as big? (Wait for answer) Somewhat xx or considerably xx?

Considerably greater <input type="checkbox"/>	Somewhat greater <input type="checkbox"/>	No change <input type="checkbox"/>	Somewhat lesser <input type="checkbox"/>	Considerably lesser <input type="checkbox"/>
--	--	---------------------------------------	---	---

d) Do you think that you personally would get more, less, or the same amount of "income" and other economic benefits? (Wait for answer) Somewhat xx or considerably xx?

Considerably more <input type="checkbox"/>	Somewhat more <input type="checkbox"/>	No change <input type="checkbox"/>	Somewhat less <input type="checkbox"/>	Considerably less <input type="checkbox"/>
---	---	---------------------------------------	---	---

e) As regards your possibility of keeping full control and surveillance over the firm's operations, do you think they would be greater or lesser or unchanged? (Wait for answer) Somewhat xx or considerably xx?

Considerably greater <input type="checkbox"/>	Somewhat greater <input type="checkbox"/>	No change <input type="checkbox"/>	Somewhat lesser <input type="checkbox"/>	Considerably lesser <input type="checkbox"/>
--	--	---------------------------------------	---	---

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f) Do you think you would experience more or less independence in your relations to customers, suppliers and lenders? (Wait for answer) Somewhat xx or considerably xx?(If the respondent thinks the effects are different for different categories, try to get his or her idea if in which direction the "total" independence would be influenced)

Considerably more <input type="checkbox"/>	Somewhat more <input type="checkbox"/>	No change <input type="checkbox"/>	Somewhat less <input type="checkbox"/>	Considerably less <input type="checkbox"/>
---	---	---------------------------------------	---	---

g) Do you think it would be easier or more difficult for the firm to survive a severe crises if it was twice as big? (Wait for answer) Somewhat xx or considerably xx?

Considerably easier <input type="checkbox"/>	Somewhat easier <input type="checkbox"/>	No change <input type="checkbox"/>	Somewhat more difficult <input type="checkbox"/>	Considerably more difficult <input type="checkbox"/>
---	---	---------------------------------------	---	---

h) Do you think it would be easier or more difficult to keep high quality of products and services if the firm was twice as big? (Wait for answer) Somewhat xx or considerably xx?

Considerably easier <input type="checkbox"/>	Somewhat easier <input type="checkbox"/>	No change <input type="checkbox"/>	Somewhat more difficult <input type="checkbox"/>	Considerably more difficult <input type="checkbox"/>
---	---	---------------------------------------	---	---

i) Do you think it would be easier or more difficult to manage a twice as big firm? (Wait for answer) Somewhat xx or considerably xx?

Considerably easier <input type="checkbox"/>	Somewhat easier <input type="checkbox"/>	No change <input type="checkbox"/>	Somewhat more difficult <input type="checkbox"/>	Considerably more difficult <input type="checkbox"/>
---	---	---------------------------------------	---	---

j) Do you think that the firm would be worth more or less if sold if it was double as big? (Wait for answer) Somewhat xx or considerably xx?

Considerably more <input type="checkbox"/>	Somewhat more <input type="checkbox"/>	No change <input type="checkbox"/>	Somewhat less <input type="checkbox"/>	Considerably less <input type="checkbox"/>
---	---	---------------------------------------	---	---

I will now change to a different type of questions. They concern your firm and possible ownership ties to other firms, i.e., if your firm is part of a company group, if you have acquired other firms or started other firms.

**30. Does another firm own your firm?**

No **Go to 31!**

<input type="checkbox"/> Yes	a) Since what year?	19_____
------------------------------	---------------------	---------

	b) What is the name of the parent company?	_____	
<b>31. Does your firm own another firm?</b>			
<input type="checkbox"/> No <b>Go to 32!</b>			
<input type="checkbox"/> Yes	I would then like to ask some questions about the firm(s) your firm owns		
	a) How many other firms does your firm own?	_____ firms	
	b) Were any of these founded by your firm? (If yes) how many?	<input type="checkbox"/> no	<input type="checkbox"/> yes, _____ firms
	c) (if yes) were any of these founded started during the last three years? (If yes) how many?	<input type="checkbox"/> no	<input type="checkbox"/> yes, _____ firms
	d) Have your firm acquired any firm? (If yes) how many?	<input type="checkbox"/> no	<input type="checkbox"/> yes, _____ firms
	e) (if yes) was any acquired during the last three years? (If yes) how many?	<input type="checkbox"/> no	<input type="checkbox"/> yes, _____ firms
	f) How large do you think the sales will be from this/these firms this year?	_____ MSEK	
	g) Approximately how large were the sales from this/these firms three years ago?	_____ MSEK	

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<b>32. Have you acquired any firm during the last three years that has been integrated into your own operations?</b>		
<input type="checkbox"/> No <b>Go to 33!</b>		
<input type="checkbox"/> Yes	a) How much would you estimate your sales have increased due to this?	_____ MSEK
<b>33. Have you divested part of your operations during the last three years?</b> <input type="checkbox"/> No <input type="checkbox"/> Yes		
<b>34. Do you personally own and run any additional firm?</b>		
<input type="checkbox"/> No <b>Go to 35!</b>		
<input type="checkbox"/> Yes	I would then like to ask some questions about the firm(s) you run	
	a) How many other firms do you run?	_____ firms
	b) Have you founded any of these firms? (If yes) how many?	<input type="checkbox"/> no <input type="checkbox"/> yes, _____ firms
	c) (if yes) were any of these founded started during the last three years? (If yes) how many?	<input type="checkbox"/> no <input type="checkbox"/> yes, _____ firms
	d) Have you acquired any firm? (If yes) how many?	<input type="checkbox"/> no <input type="checkbox"/> yes, _____ firms
	e) (if yes) Did you acquire any during the last three years? (If yes) how many?	<input type="checkbox"/> no <input type="checkbox"/> yes, _____ firms
	f) How large do you think the sales will be from this/these firms this year?	_____ MSEK

g) Approximately how large were the sales from this/these firms three years ago?	_____ MSEK
--	------------

**35.** Have you personally been involved in starting a business you **no longer run**?(wait for answer, if yes) How many

- No  
 Yes, \_\_\_\_\_ firms

**36.** Are you at present associated with any other firm that you do **not** personally run? (wait for answer, if yes) In what role? (OBS! More than one alternative possible! Read all)

- No  
 As advisor/consultant  
 As board member  
 As employee  
 As co-owner  
 Other, what?  
\_\_\_\_\_

**37.** Are you at present considering starting a new firm? (Wait for answer, if yes) Are you having definite plans or vague thoughts?

- No  
 Yes, vague thoughts  
 Yes, definitely

**38.** Has anyone in your family ever started a firm they have been managing?

- No    Parents    siblings    Spouse    Child    Brother in law etc.

**39.** Have you ever worked as manager for longer than a year in another firm or organisation? (wait for answer, if yes) How many different firms or organisations?

- No **Go to 42!**  
 Yes, \_\_\_\_\_ firms/organisations

**40.** (If yes) Approximately how many persons have you managed at one point of time during previous employment?

Approximately \_\_\_\_\_ persons

**41.** Have you ever worked as a manager in a rapid growth firm? (Annual sales growth of at least 20%)

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No                       Yes                       Don't know/hesitant

**42.** Have you in any previous employment acquired knowledge from your present industry (wait for answer, if yes) Limited experience or extensive experience?

No     Yes limited experience     Yes extensive experience

Finally I want to ask some questions about your personal background

**43.** What year did you become managing director for the firm?

19\_\_\_\_\_

**44.** What year were you born?

19\_\_\_\_\_

**45.** Were you born in Sweden?

Yes                       No

**46.** (Sex OBS! Don't ask!)

Male                       Female

**47.** Which is your highest level of completed education?

Primary <input type="checkbox"/>	practical secondary ed. <input type="checkbox"/>	Theoretical secondary ed. business, eng., science <input type="checkbox"/>	Theoretical secondary ed. other <input type="checkbox"/>	University diploma <input type="checkbox"/>	University degree business <input type="checkbox"/>	University degree other <input type="checkbox"/>
Primary (old system) <input type="checkbox"/>	Secondary (old system) <input type="checkbox"/>		<input type="checkbox"/> Other _____			

**48.** Have you in addition to these taken any business or management courses? (wait for answer, if yes) Have you taken few or many courses or a full education? (Explain that full education is equivalent to secondary or one year university studies)

No     One/few courses     Many courses     Full education

**Read:** This was the last question. Before closing this call I would of course like to thank you for spending the time to answer all the questions Before hanging up I want to ask you for an additional favour. As written in the letter, we will send you a mail

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questionnaire. We would appreciate if you could fill it out. This should take 15 to 20 minutes. Is it possible for you to find the time to do this?

**If the respondent hesitates or is negative:** Use your persuasive skills!

**Read:** You will receive the questionnaire in the mail within the next few days. Please fill it out A.S.A.P. Once again - Thank you!

Will respondent participate?

No, definitely not

Hesitant

Yes

**OBS!** Don't forget to fill out the information of the front page!



appendix 2

Appendix 2.B. Translation of mail questionnaire

**Firm growth**  
**A research project at**  
**Jönköping International Business School**

*OBS! Read this before filling out the questionnaire.*

This is the follow-up questionnaire to the telephone interview that was carried out a few days ago. The questionnaire contains questions about the firm, the industry and your view of enterprise. The word "Firm" refers to the same firm as in the telephone interview.

The questionnaire may look substantial but does not take long time to fill out, in most cases approximately 20 minutes. Your answers are confidential. All your answers are anonymous.

Don't think too long about the questions. If a question is difficult to answer try to answer it as best you can. An uncertain answer is better than no answer at all!

Thank you!

Johan Wiklund

Project leader

Jönköping International Business School

P.O. Box 1026

551 11 Jönköping

Tel: 036/15 64 92

Would you like a summary of the results of the study?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
---	---------------------------------	--------------------------------

**Part A. Advice**

**1** Among other things, managing a firm means coming up with new idea, gathering information, and making decisions. In doing this, it is sometimes required that various advisors within and outside the firm be contacted. Some examples of such advisors are given below. Please mark how important you consider each of them to be as a source of ideas and advice when making important decisions! OBS! Tick one box on each line!

	<i>Very great impor- tance</i>	<i>Rather great im- portance</i>	<i>nei- ther/nor</i>	<i>Rather little importance</i>	<i>Very little impor- tance</i>	<i>No such contact</i>
a) Chartered account- ant	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Bank contact etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Chamber of Com- merce and em- ployer organisation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Customers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Suppliers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f) Employees	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g) Spouse, family	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h) Board (excluding family)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i) Consultants	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
j) Lawyers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
k) Regional develop- ment fund and similar	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
l) Other business managers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
m) Other, who, what?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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**Part B. Planning and control**

2 Firms plan and control their own operations, market development, and the actions of competitors to varying extent. Below are some examples of areas where planning and control is possible Please indicate to what extent your firm utilises different types of planning or control in these areas. OBS! Tick one box on each line!

	<i>Very often</i>	<i>Often</i>	<i>Sometimes</i>	<i>Rarely</i>	<i>Never</i>
a) Long term forecasting of sales	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Long term forecasting of the nature of markets	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Explicit tracking of the policies and tactics of competitors	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Special market research studies	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Strategies for long term development	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f) Planning of long term investments	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g) Forecasting technology in our industry	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h) Routine gathering of opinions from clients	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Part C. Strategy and decision making**

3 Every question contains two statements about how a firm or a manager views different situations. Please tick the number indicating your opinion concerning your firm. Alternative 4 indicates that both statements are equally valid. OBS! Tick one number on each line!			
a) In decision making	Broad experience is most important	1-7	Specialist knowledge most important
b) When new managers are appointed we typically	Recruit outside people	1-7	Promote inside people
c) Advice and suggestions from the board	Are of crucial importance when important decisions are made	1-7	Have little importance on decision making
d) When decisions are made	Choices among strategic alternatives are made quickly and without precision as time pressures are often substantial	1-7	Much thought enter into key decisions
e) Important decisions that can either be made by me or an employee	Are usually made by the employee	1-7	Are usually made by myself
f) Important decisions are usually made	By me alone	1-7	Together with employees
g) Owing to the nature of the environment	It is best to explore it gradually via timid, incremental behaviour	1-7	Bold wide-ranging acts are viewed as useful and common practice
h) Our firm	Has a strong proclivity to low risk projects (with normal and certain rates of return)	1-7	Has a strong proclivity for high risk projects (with chances of very high returns)
i) In our firm	There is a strong tendency to follow competitors in introducing new things and ideas	1-7	We always try to be ahead of competitors in product novelty or speed of innovation and usually succeed
j) Our firm is characterised by the fact that	We favour the tried and true	1-7	We are growth, innovation, and development oriented
k) Our relationship to our competitors is characterised by the fact that	We try to co-operate and co-exist with competitors	1-7	We pursue a tough "undo-the-competitors" philosophy
l) The price of our products or services is	High compared to our competitors	1-7	Low compared to our competitors
m) The size of our firm is	Larger than our competitors	1-7	Smaller than our most important competitors
n) The products or services we market	Are largely developed in-house	1-7	Are based on ideas developed by others
o) Our firm prefers to mainly deal with	Customers and suppliers in the vicinity	1-7	Customers and suppliers throughout the globe
p) We market our products to	A wide variety of customers	1-7	A well defined type of customers
q) We market	A wide range of different products or services	1-7	Products or services within a narrow scope

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r) In our firm	There is a very strong emphasis on R&D, technological leadership and innovation	1-7	There is a strong emphasis on the marketing of true and tried products or services
s) During the past 3 years our firm has marketed, excluding mere minor variations	No new lines of products or services in past 3 years	1-7	A very large number of new lines of products in past 3 years
t) During the past 3 years our firm has marketed, excluding mere minor variations	Changes in product lines have been dramatic (e.g., changing from mechanical to electric circulators)	1-7	Changes in product lines have been of a minor nature (e.g., putting in towel with the soap)
u) The availability of capital has during the past 3 years	Insufficient and a great impediment for our development	1-7	Fully satisfactory for the firm's development

**Part D. The industry and its changes**

In this section we ask you to reflect upon the principal industry of your firm. The first questions concern your views of the industry, while the next section concerns changes that may have taken place in the industry during the past 3 years.

<b>4</b> The below questions concern the principal industry of your firm. Please tick the number that best corresponds to your opinion.			
a) To keep up with the markets and competitors	<i>Our firm must rarely change its marketing practices</i>	1-7	<i>Our firm must change its marketing practices extremely frequently (e.g., semi-annually)</i>
b) The rate at which products/services are getting obsolete in the industry	<i>Is very high (as in some fashion goods and semiconductors)</i>	1-7	<i>Is very slow (e.g., basic metal like copper)</i>
c) Actions of competitors are	<i>Quite easy to predict</i>	1-7	<i>Unpredictable</i>
d) Demand and consumer tastes	<i>Are fairly easy to forecast (e.g., for milk companies)</i>	1-7	<i>Are almost unpredictable (e.g., high fashion goods)</i>
e) The production/service technology	<i>Changes often and in a major way (e.g., advanced electronic components)</i>	1-7	<i>Is not subject to very much change and is well established (e.g., in steel production)</i>
f) The nature of competition	<i>Is about the same for all our products</i>	1-7	<i>Varies a great deal from one line to another</i>
g) The environment	<i>Provides very little threat to survival</i>	1-7	<i>Causes a great deal of threat to the survival of our firm</i>
h) Tough prices competition	<i>Is a very substantial threat</i>	1-7	<i>Is not a great threat</i>
i) Competition in product quality or novelty	<i>Is a very substantial threat</i>	1-7	<i>Is not a great threat</i>
j) Dwindling markets for products	<i>Is a very substantial threat</i>	1-7	<i>Is not a great threat</i>

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5 These questions are concerned with changes that may have taken place in your principal industry during the past 3 years. Please tick the number indicating your opinion of your firm. Alternative 4 indicates that no changes have occurred			
a)	Growth opportunities in the environment	<i>Have decreased dramatically</i>	1-7 <i>Have increased dramatically</i>
b)	Rate of innovation of new operating processes and new products or services in our principal industry	<i>Rate has dramatically increased</i>	1-7 <i>Rate has fallen dramatically</i>
c)	Research and development activity in our principal industry	<i>Has substantially increased</i>	1-7 <i>Has fallen off greatly</i>
d)	Needed diversity in our production processes and marketing tactics to cater to different customers	<i>Diversity has dramatically decreased over last 3 years</i>	1-7 <i>Diversity has dramatically increased</i>
e)	The number of potential customers in our principal industry	<i>Has substantial increased</i>	1-7 <i>Has fallen off greatly</i>
f)	Sales development during the last three years has been	<i>Considerably much more positive amongst our competitors</i>	1-7 <i>Considerably much better in our company than among our competitors</i>
g)	Marketing activities of our key competitors	<i>Have become far less predictable</i>	1-7 <i>Have become far more predictable</i>
h)	Marketing activities of our key competitors	<i>Have become far more hostile</i>	1-7 <i>Have become far more hostile</i>
i)	Marketing activities of our key competitors	<i>Now affect our firm in many more areas (pricing, marketing, delivery, service, production, quality, etc.)</i>	1-7 <i>Now affect our firm in far fewer areas</i>

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**Part E. The organisation structure**

6 There are many different work-tasks to be completed in a firm. A varying amount of time can be spent on each of these. Some suggestions of different work-tasks are given below. Approximately how many positions are devoted to each of these in your firm. OBS! Tick <u>one</u> box on each line.					
	<i>none</i>	<i>Max. one half-time</i>	<i>Max. one half-time</i>	<i>Max. two half-time</i>	<i>More than two full-time</i>
a) Marketing/sales	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Quality management	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Personnel	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Purchasing and inventory	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Production planning	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f) Product development	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g) Administration and finance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Part F. The manager's interests**

In this section we ask questions about what you value in your role as a small business manager. The first questions are concerned with factors which may determine whether or not you are satisfied as a manager, followed by some questions about how much time you would like to spend on various work-tasks.

7 Many things may influence whether or not a small business manager is satisfied with his/her situation or not. Some suggestions concerning this are given below. Please indicate how important each of the below factors are to you.					
	<i>Rather unimportant</i>	<i>Not very important</i>	<i>Rather important</i>	<i>Very important</i>	<i>Extremely important</i>
a) That the firm makes possible a high standard of living for me and my family, in financial terms	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) To provide an outlet for my creativity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) To be able to work with the kind of tasks I like best	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) That the firm yields high profits	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) That my employees have a feeling of well-being and are motivated	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f) To be able to control and survey the firm's operations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g) That the firm's sales increase	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h) That the firm is stable and can survive a crises	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i) The possibility of self fulfilment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
j) That the firm is not overly dependent on a small number of customers, suppliers or lenders	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
k) That the firm's products and services are of high quality	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
l) That the number of employees in the firm increases	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
m) To provide products or services that improve the lives of others	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
n) TO have enough time left for family and leisure activities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
o) To reap the fruits from my own work	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
p) To gain a position in society	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
q) To work independently and be independent from bosses	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
r) To manage other people	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



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<p>§ A small business manager carries out different work-tasks and it may be difficult to find the time to carry them all out to the preferred extent. If you <u>could choose</u>, how much time would you like to spend on each of the work-tasks below?</p>					
	<i>As little time as possible</i>	<i>Little time</i>	<i>Relatively much time</i>	<i>Much time</i>	<i>As much time as possible</i>
a) Contacts with existing customers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Development of new products	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Administration and finance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Sales	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Performance auditing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f) Board work	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g) Market plans	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h) Calculating bids	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i) Personnel management	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
j) Production	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
k) Purchasing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
l) Development of strategies	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
m) Development of new customers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
n) Bank relations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
o) Own education	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Part G. Ownership**

**9** Here is a question about ownership: How large a share of the firm is owned by each of the categories below? (OBS! If there are shares with different voting power: state share of capital; NOT voting power!)

- a) Yourself and your family Approximately \_\_\_\_\_%
  - b) Partner(s) outside family Approximately \_\_\_\_\_%
  - c) Other employees, not family Approximately \_\_\_\_\_%
  - d) Venture Capital firms and similar Approximately \_\_\_\_\_%
  - e) Other individuals, not working in the firm Approximately \_\_\_\_\_%
  - f) Other (who/what?) \_\_\_\_\_ Approximately \_\_\_\_\_%
- SUM \_\_\_\_\_ 100 %

**10** Has your firm added any new owner during the past 3 years? If so, approximately how large share of the capital has been sold to a new owner?

- No
- Yes, approximately \_\_\_\_\_% of the ownership capital has been sold during the last three years

**11** If you would need more capital, would it then be a good or a bad idea to sell equity to a new owner?

- Very bad
- Relatively bad
- Neither/nor
- Relatively good
- Very good

**12** Over the past three years, has your firm on average generated?

- Large profits
- Small profits
- Neither/nor
- Small loss
- Large loss

<b>13</b> May we contact you again approximately a year from now to make a short (appr. 10 min.) telephone follow-up?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
---	---------------------------------	--------------------------------

This was the final question. Once again THANK YOU for your participation. I would finally like to ask you to glance through the questionnaire once more, checking that you have not forgotten to answer any questions. When you have answered all the questions you can/want to, please put the questionnaire in the return envelope and return it as soon as possible OBS! No stamp is needed.

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Appendix 2.C. Translation of telephone interview 2

Support information

Company name (if other than above): _____	
CEO name _____	Alt. no: _____
Call back _____	<input type="checkbox"/> Introduction read to CEO
Interview started at _____	

**READ:** My name is NN from Jönköping International Business School. I would like to talk to NN. (if the person has left the firm) Whoever replaced him or her.

**If the CEO is not available:**

(if new CEO - What is the name of the CEO?) When can I call back

**When in contact with the respondent:**

**READ:** My name is NN from Jönköping International Business School. You (or the name of the predecessor) participated in a telephone interview a year ago. We asked if we could contact you again for a short follow-up a year later. The interview takes 5.10 minutes. Is it possible for you to answer the question now?

**If the respondent hesitates or refuses.**

Try persuasion according to previous instruction.

Fill in after the interview

Your name: \_\_\_\_\_

Date of the interview: \_\_\_\_\_

Time: \_\_\_\_\_

Number of calls: \_\_\_\_\_

**Non-response reasons :**

<input type="checkbox"/> Refusal	<input type="checkbox"/> Phone no. unknown	<input type="checkbox"/> No contact despite 15 calls
<input type="checkbox"/> Not available until: ____/____	<input type="checkbox"/> Discontinued	
<input type="checkbox"/> Interview interrupted	<input type="checkbox"/> Other, what? _____	

After yes, start interview

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**READ:** Then we can start the interview. I will mainly ask questions about changes that may have taken place since the previous interview a year ago. (If the CEO has been replaced and you hesitate about the respondent's name). But first - your name:

Respondent's name (CEO): \_\_\_\_\_

**1** Approximately how many employees does the firm have today if we include owners who work for the company? (Wait for answer) are any of the employed on a part-time or seasonal basis? (if so let the respondent estimate the corresponding number of FTE)

Totally approximately \_\_\_\_\_ employees

Equivalent to approximately \_\_\_\_\_ FTE

**2** Approximately how many employees did the firm have one year ago? (Wait for answer) Corresponding to what number of FTE?

Totally approximately \_\_\_\_\_ employees

Equivalent to approximately \_\_\_\_\_ FTE

**3** How large do you expect your sales will be this year?

Approximately \_\_\_\_\_ MSEK

**4** Approximately how large were your sales last year? That is according to the financial statement of 1996?

Approximately \_\_\_\_\_ MSEK

I will now ask some questions concerning your firm and possible ownership ties to other firms, i.e., if your firm is part of a company group, if you have acquired other firms or started other firms.

**5** Does another firm own your firm?

No **Go to 6!**

Yes

a) Since what year?

19 \_\_\_\_\_

b) What is the name of the parent company?

\_\_\_\_\_

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<b>6 Does your firm own another firm?</b>			
<input type="checkbox"/> No <b>Go to 7!</b>			
<input type="checkbox"/> Yes	I would then like to ask some questions about the firm(s) your firm owns		
	a) How many other firms does your firm own?	_____ firms	
	b) Were any of these founded by your firm? (If yes) how many?	<input type="checkbox"/> no	<input type="checkbox"/> yes, _____ firms
	c) (if yes) were any of these founded started during the last twelve months? (If yes) how many?	<input type="checkbox"/> no	<input type="checkbox"/> yes, _____ firms
	d) Have your firm acquired any firm? (If yes) how many?	<input type="checkbox"/> no	<input type="checkbox"/> yes, _____ firms
	e) (if yes) was any acquired during the last twelve months? (If yes) how many?	<input type="checkbox"/> no	<input type="checkbox"/> yes, _____ firms
	f) How large do you think the sales will be from this/these firms this year?	_____ MSEK	
	g) Approximately how large were the sales from this/these firms last year?	_____ MSEK	
<b>7 Have you acquired any firm during the twelve months that has been integrated into your own operations?</b>			
<input type="checkbox"/> No <b>Go to 8!</b>			
<input type="checkbox"/> Yes	a) How much would you estimate your sales have increased due to this?	_____ MSEK	
<b>8 Have you divested part of your operations during the past twelve months?</b>			
<input type="checkbox"/> No <input type="checkbox"/> Yes			
<b>9 Have you personally been involved in starting a new firm during the past 12 months?</b>			
<input type="checkbox"/> No <input type="checkbox"/> Yes, _____ firms			

**10** Are you at present on the board of any firm you do not control yourself? (wait for answer, if yes) How many boards?

<input type="checkbox"/> No	<input type="checkbox"/> Yes, _____ firms
-----------------------------	---

**11** Are you at present considering starting a new firm? (Wait for answer, if yes) Are your having definite plans or vague thoughts?

- No
- Yes, vague thoughts
- Yes, definitely

I will now ask some questions about possible changes that may have taken place **since the previous interview** approximately a your ago.

<b>12</b> If we disregard any subsidiaries, have you established operations on any new location during the past 12 months (e.g. office, sales office) (if yes) how many?	<input type="checkbox"/> No <input type="checkbox"/> Yes, _____ locations
--	--

<b>13</b> Have you started exporting your products or services to any new foreign country?	<input type="checkbox"/> No <b>Go to 14!</b> <input type="checkbox"/> Yes ==>	How large do you estimate your sales will be to these new countries this year?	_____ MSEK
--	--	--	------------

<b>14</b> Have you during the past 12 months started marketing your products to new customers?	<input type="checkbox"/> No <b>Go to 15!</b> <input type="checkbox"/> Yes ==>
--	--

Are these customers similar to the ones you already serve or are they different? Somewhat xx or very xx?			
Very similar <input type="checkbox"/>	Relatively similar <input type="checkbox"/>	Relatively different <input type="checkbox"/>	Very different <input type="checkbox"/>

<b>15</b> Have you changed the ways in which you market your products?	<input type="checkbox"/> No <b>Go to 16!</b> <input type="checkbox"/> Yes ==>
--	--

Are these changes large or small? (wait for answer) Relatively xx or very xx?			
Very small <input type="checkbox"/>	Relatively small <input type="checkbox"/>	Relatively large <input type="checkbox"/>	Very large <input type="checkbox"/>

<b>16</b> Have you over the past 12 months changed your line of products or in other ways changes what you offer the customers?	<input type="checkbox"/> No <b>Go to 17!</b> <input type="checkbox"/> Yes ==>
---	--

Are these changes large or small? (wait for answer) Relatively xx or very xx?			
Very small <input type="checkbox"/>	Relatively small <input type="checkbox"/>	Relatively large <input type="checkbox"/>	Very large <input type="checkbox"/>

<b>17</b> Have you developed any new product or service that you now offer your customers?	<input type="checkbox"/> No <b>Go to 18!</b> <input type="checkbox"/> Yes ==>
--	--

Have you invested great or small amounts of resources in this development? (wait

appendix 2

for answer) Relatively xx or very xx?			
Very small <input type="checkbox"/>	Relatively small <input type="checkbox"/>	Relatively great <input type="checkbox"/>	Very great <input type="checkbox"/>

<b>18</b> Have you initiated the development of any product or service or similar that you do not yet offer to the market?	<input type="checkbox"/> No <b>Go to 19!</b> <input type="checkbox"/> Yes ==>
--	--

Have you invested great or small amounts of resources in this development? (wait for answer) Relatively xx or very xx?

Very small <input type="checkbox"/>	Relatively small <input type="checkbox"/>	Relatively great <input type="checkbox"/>	Very great <input type="checkbox"/>
--	--	--	--

<b>19</b> Have you over the past 12 months invested in any development project that involves risk-taking?	<input type="checkbox"/> No <b>Go to 20!</b> <input type="checkbox"/> Yes ==>
---	--

Does this involve taking large or small risks? (wait for answer) Relatively xx or very xx?

Very small <input type="checkbox"/>	Relatively small <input type="checkbox"/>	Relatively large <input type="checkbox"/>	Very large <input type="checkbox"/>
--	--	--	--

<b>20</b> Have you introduced any new product, service, or idea with the particular purpose of being ahead of your competitors?	<input type="checkbox"/> No <b>Go to 21!</b> <input type="checkbox"/> Yes ==>
---	--

Have you been successful or unsuccessful in these introductions? (wait for answer) Relatively xx or very xx?

Very unsuccessful <input type="checkbox"/>	Relatively unsuccessful <input type="checkbox"/>	Relatively successful <input type="checkbox"/>	Very successful <input type="checkbox"/>
---	---	---	---

<b>21</b> If we instead turn to internal changes within the firm, have you during the past 12 months changed your ways of operating?	<input type="checkbox"/> No <b>Go to 22!</b> <input type="checkbox"/> Yes ==>
--	--

Are these changes large or small? (wait for answer) Relatively xx or very xx?

Very small <input type="checkbox"/>	Relatively small <input type="checkbox"/>	Relatively large <input type="checkbox"/>	Very large <input type="checkbox"/>
--	--	--	--

<b>22</b> Have you reorganised the firm?	<input type="checkbox"/> No <b>Go to 23!</b> <input type="checkbox"/> Yes ==>
--	--

Are these reorganisations large or small? (wait for answer) Relatively xx or very xx?

Very small <input type="checkbox"/>	Relatively small <input type="checkbox"/>	Relatively large <input type="checkbox"/>	Very large <input type="checkbox"/>
--	--	--	--

**23** Was your firm operating at a profit or a loss last year, i.e. according to the financial statement of 1996? (wait for answer) Approximately how large was the xx? (if the respondent is having difficulties answering the question because of different measures, suggest operating profit or ask them to propose whatever measure they use since we are mainly concerned with changes from 1996 to 1997)

Profit approximately \_\_\_\_\_ MSEK

Loss approximately \_\_\_\_\_ MSEK

**24** Do you estimate that your firm will operate at a profit or at a loss this year? (wait for answer) Approximately how large do you expect the xx to be?

Profit approximately \_\_\_\_\_ MSEK

Loss approximately \_\_\_\_\_ MSEK

I would finally want you to compare the financial results of your firm to that of your competitors (if the respondent hesitates concerning the time frame - this past year)

<b>25</b> Are your profits larger or smaller than those of your competitors?					
Much smaller <input type="checkbox"/>	Somewhat smaller <input type="checkbox"/>	Equal <input type="checkbox"/>	Somewhat larger <input type="checkbox"/>	Much larger <input type="checkbox"/>	Don't know <input type="checkbox"/>
<b>26</b> Has your sales development been more positive or negative than that of your competitors?					
Much more negative <input type="checkbox"/>	Somewhat more negative <input type="checkbox"/>	Equal <input type="checkbox"/>	Somewhat more positive <input type="checkbox"/>	Much more positive <input type="checkbox"/>	Don't know <input type="checkbox"/>
<b>27</b> Has your cash-flow been more positive or negative than that of your competitors? (or liquidity if the respondent hesitates about cash-flow)					
Much more negative <input type="checkbox"/>	Somewhat more negative <input type="checkbox"/>	Equal <input type="checkbox"/>	Somewhat more positive <input type="checkbox"/>	Much more positive <input type="checkbox"/>	Don't know <input type="checkbox"/>
<b>28</b> Has the market value of your firm increase more or less than that of your competitors?					
Much less <input type="checkbox"/>	Somewhat less <input type="checkbox"/>	Equal <input type="checkbox"/>	Somewhat more <input type="checkbox"/>	Much more <input type="checkbox"/>	Don't know <input type="checkbox"/>

**Read:** This was the last question. Before closing this call I would of course like to **thank** you for spending the time to answer all the questions Before hanging up I want to ask you if we may contact you again approximately a year from now to make a similar telephone follow-up?

**If the respondent hesitates or is negative:** Use your pervasive skills!

**Read:** Once again - Thank you!

Will respondent participate?

No, definitely not       Hesitant       Yes



## Appendix 3. Variables used in the study.

*Note:* The letter T in front of the number of the indicators refers to indicator's position in the first telephone interview, B refers to the mail questionnaire and TT refers to the second telephone interview.

Latent construct	Variable	Indicator(s)
<b>Attitudes</b> <i>Goals</i>	Creativity	B7b Being creative B7c Work with favourite work-tasks B7i Self-fulfilment through work
	Personal benefits	B7a Standard of living B7n Time for family and leisure B7o To reap the fruits of my own work
	Stability	B7d Profitability B7f Control and surveillance over operations B7h Survival of crises B7j Firm's independence from customers, suppliers and lenders B7k Product quality
	Power	B7p Gain a social position B7q To work independently B7r Management of others
	Sales growth	B7g Increased sales
	Employment growth	B7l Increased number of employees
	<i>Favoured work-tasks</i>	Strategy
Marketing		B8a Contacts with existing customers B8d Sales B8m Development of new customers
Production		B8h Calculating bids B8j Production B8k Purchasing
Accounting		B8c Administration and finance B8e Performance auditing B8n Bank relations

Latent construct	Variable	Indicator(s)
<i>Expected consequences of growth</i>	Work conditions	T29b Would he or she be able to spend more or less time on favoured work-tasks T29e Would his or her ability to survey and control operations increase or decrease T29i Would it be easier or more difficult to manage the company
	Firm characteristics	T29c Would employees enjoy work more or less (the original Swedish word for well being also connotes work atmosphere) T29d Would his or her income and other disposable economic benefits increase or decrease T29f Would the firm's independence in relation to customers, suppliers and lenders increase or decrease T29g Would it be easier or more difficult for the firm to survive a crisis T29h Would it be easier or more difficult for the firm to maintain the quality of products and services T29j Would the value of the company increase or decrease
<i>Growth aspirations</i>	Sales growth	Computed from T28a
	Employment growth	Computed from T28b

Latent construct	Variable	Indicator(s)
<b>Resources and capabilities of the entrepreneur</b>	Start-up experience	T35 Experience of starting other firm
	Additional assignments	T36 Involvement in other firm
	Role model	T38 Entrepreneurial experience in family
	Management experience	T39 Management position in previous employment
	Large firm experience	T40 Max. nr of subordinates
	Experience from rapid growth firms	T41 Previous employment in rapid growth firm
	Industry experience	T42 Previous employment in the same industry

appendix 3.

Latent construct	Variable	Indicator(s)
	Tenure in present position	T43 CEO Tenure
	Age	T44 Birth year
	Ethnicity (immigrant)	T45 Born in Sweden
	Gender (male)	T46 Gender
	Length of education	T47 Education
	Management or engineering education	T47 Education
	Management training	T48 Management training
	Founder	T21 Founder

Latent construct	Variable	Indicator(s)
<b>Resources and capabilities of the firm</b>	Present size (FTE)	T10 Number of employees 1996
	Management team size	T24 Nr of persons on management team
	Size compared to competitors	B3m Perceived size compared to competitors
	Number of employees that hold university degree	T25 Number of employees that hold university degree
	Involvement of employees in decision making	B3e Involvement of employees in decision making
	Capital availability	B3u Capital availability
	Board size	T22 Nr of board members
	Use of board in decision making	B3c Use of board in decision making
	New owner	B10 Has the firm sold equity to new owner during the past 3 years
	Present size (sales)	T12 Sales 1996

Latent construct	Variable	Indicator(s)
Resources and capabilities of the entrepreneur's network	Formal professional advisors	B1i Consultants  B1j Lawyers B1k Regional development funds and similar
	Day-to-day advisors	B1a Chartered accountant B1b Bank clerk and similar B1g Family
	Value chain advisors	B1d Customers B1e Suppliers B1f Employees
	Number of external board members	B3 Number of external board members

Latent construct	Variable	Indicator(s)
Perceived environment	Dynamism	B4a Market dynamism  B4b Product dynamism B4c Competition dynamism B4d Demand dynamism B4e Technological dynamism
	Heterogeneity	B4f Marketing heterogeneity
	Hostility	B4g Survival hostility B4h Price hostility B4i Quality hostility B4j Market hostility
	Dynamism change	B5a Change of industry expansion opportunities B5b Change of industry innovation rate B5c Change of industry research activities
	Heterogeneity change	B5d Change of marketing heterogeneity
	Hostility change	B5g Change in the predictability of competitors' market activities B5h Change in the aggressiveness of competitors' market activities

appendix 3.

Latent construct	Variable	Indicator(s)
Industry	Exports	T5 Exports
	Labour intensive industry	Data register
	Knowledge intensive industry	Data register
	Professional services	Data register
	Customer concentration	T4 Customer concentration
	Supplier concentration	T8 Supplier concentration

Latent construct	Variable	Indicator(s)
Entrepreneurial orientation	Risk-taking	B3g Risk-taking 1
		B3h Risk-taking 2
	Proactivity	B3i Proactivity 1
		B3j Proactivity 2
		B3k Proactivity 3
	Innovativeness	B3r Innovativeness 1
		B3s Innovativeness 2
		B3t Innovativeness 3

Latent construct	Variable	Indicator(s)
Growth	Employment growth	Computed from TT1 number of employees 1997 and T10 number of employees 1996
	Sales growth	Computed from TT3 sales 1997 and T12 sales 1996; TT6f sales in subsidiaries 1997 and g sales in subsidiaries 1996; TT7a mergers, TT8a divestments
	Sales growth compared to competitors	TT26 Sales growth compared to competitors
	Market value growth compared to competitors	TT28 Market value growth compared to competitors

<b>Latent construct</b>	<b>Variable</b>	<b>Indicator(s)</b>
<b>Performance</b>	Growth	<p>Computed from TT1 number of employees 1997 and T10 number of employees 1996</p> <p>Computed from TT3 sales 1997 and T12 sales 1996; TT6f sales in subsidiaries 1997 and g sales in subsidiaries 1997; TT7a mergers, TT8a divestments</p> <p>TT26 Sales growth compared to competitors</p> <p>TT28 Market value growth compared to competitors</p>
	Economic performance	<p>Gross margin computed from TT24 sales or losses 1997 and TT3 sales 1997</p> <p>TT25 Profit compared to competitors</p> <p>T27 Cash-flow compared to competitors</p>

appendix 3.

Latent construct	Variable	Indicator(s)
Entrepreneurial behaviour	Innovation	TT13 Export volume to new geographical market TT14 New customers TT15 New marketing practices TT16 New product mix TT17 New product on sale TT18 New product under development. TT21 New operating procedures TT22 New organisation
	Risk taking	TT19 Risk taking
	Proactiveness	TT20 Proactiveness
	Growth	Computed from TT1 number of employees 1997 and T10 number of employees 1996 Computed from TT3 sales 1997 and T12 sales 1996; TT6f sales in subsidiaries 1997 and g sales in subsidiaries 1997; TT7a mergers, TT8a divestments TT26 Sales growth compared to competitors TT28 Market value growth compared to competitors
	Start-up	TT6c Subsidiary start-up TT9 Additional firm start-up
Control variables	Firm age	Computed from T19 year of founding
	Subsidiary status	TT5 Subsidiary status

## Appendix 4. Descriptive statistics for key constructs.

### *Entrepreneurial orientation*

**Table 1. Relative frequency of the responding firms' degree of risk-taking, proactiveness, and innovativeness. From lower to higher, left to right.**

<i>Value</i>	1	2	3	4	5	6	7
Risk taking 1	14.6	20.6	19.7	26.0	8.3	7.8	2.9
Risk taking 2	11.6	23.5	24.6	29.5	7.9	2.2	.7
proactiveness 1	.6	3.5	15.1	17.5	23.0	11.3	27.8
Proactiveness 2	2.8	9.0	14.2	26.6	18.1	21.0	8.3
Proactiveness 3	7.0	15.4	24.1	29.4	15.6	6.1	2.4
Innovativeness 1	19.9	31.1	19.3	17.5	7.0	3.9	1.3
Innovativeness 2	20.5	28.2	16.2	15.1	10.7	7.6	1.7
Innovativeness 3	14.8	21.6	12.2	18.5	17.2	11.3	4.4

### *Growth*

**Table 2. Annual growth rate, relative frequency 1996-97**

	<i>Rapid shrinkage</i>	<i>Slow shrinkage</i>	<i>No change</i>	<i>Slow growth</i>	<i>Rapid growth</i>
Growth rates employment	4.9	13.0	49.2	26.5	6.3
Growth rates sales	3.9	14.3	47.5	26.6	7.7



appendix 4.

**Table 2. Growth rate compared to competitors, relative frequency  
1996-97**

	<i>Much slower</i>	<i>Somewhat slower</i>	<i>Neither/nor</i>	<i>Somewhat faster</i>	<i>Much faster</i>
Sales growth compared to competitors	1.1	4.3	42.1	35.9	16.6
Market value growth compared to competitors	1.1	6.3	27.6	46.6	18.3

*Economic performance*

**Economic performance compared to competitors, relative frequency  
1996-97**

	<i>Much slower</i>	<i>Somewhat slower</i>	<i>Neither/nor</i>	<i>Somewhat faster</i>	<i>Much faster</i>
Profits compared to competitors	5.6	13.5	32.0	34.7	14.3
Cash-flow compared to competitors	3.5	7.3	28.2	39.0	22.0

**Gross margin 1997**

	<i>Mean</i>	<i>S.D.</i>	<i>Min.</i>	<i>Max.</i>
gross margin	6%	.06	-.22	.34

## Appendix 5. Details from the PLS analyses

*Appendix 5A. Prediction of growth. Outer model, i.e. regressions weights and factor loadings for manifest indicators.*

Manifest variables	Weights	Loadings
Control variables		
1. Firm age		100
2. Subsidiary status		100
<b>ATTITUDES</b>		
1. Expected consequences of growth		
2. Firm characteristics	21	
3. Work conditions	-18	
4. Growth aspirations		
5. Sales growth	30	
6. Employment growth	-15	
<b>Goals</b>		
1. Stability	-2	
2. Creativity	39	
3. Personal benefits	-17	
4. Power	-4	
5. Sales growth	48	
6. Employment growth	9	
<b>Favoured work-tasks</b>		
1. Strategy	32	
2. Marketing	3	
3. Production	-50	
4. Accounting	8	
<b>Industry</b>		
1. Exports	50	
2. Labour intensive industry	73	

appendix 5.

<b>Manifest variables</b>	<b>Weights</b>	<b>Loadings</b>
3. Knowledge intensive industry	43	
4. Customer concentration	56	
5. Professional services	31	
6. Supplier concentration	26	
7. Perceived environment		
8. Dynamism		100
9. Heterogeneity		100
10. Hostility		100
11. Change dynamism		100
12. Change heterogeneity		100
13. Change hostility		100
<b>RESOURCES</b>		
<b>Resources of the entrepreneur</b>		
1. Start up experience	1	
2. Role models	36	
3. Industry experience	-23	
4. Management experience	36	
5. Additional assignments	-15	
6. Large firm experience	-10	
7. Tenure in present position	13	
8. Experience from rapid growth firms	26	
9. Age	-8	
10. Length of education	63	
11. Management or engineering education)	12	
12. Management training	36	
13. Founder	39	
14. Gender (male)	35	
15. Ethnicity (immigrant)	-12	
<b>Firm resources</b>		
1. Present size (FTE)	25	
2. Management team size	40	
3. Size compared to competitors	31	
4. Number of employees that hold university degree	9	
5. Use of employees in decision making (sign?)	-35	
6. Capital availability	-33	
7. Board size	9	

<b>Manifest variables</b>	<b>Weights</b>	<b>Loadings</b>
8. Use of board in decision making	-39	
9. New owner	16	
10. Present size (sales)	8	
<b>Network resources</b>		
1. Formal professional advisors	67	
2. Day-to day advisors	-83	
3. Value chain advisors	49	
4. Number of external board members	-16	
<b>Entrepreneurial orientation</b>		
1. Risk taking 1		21
2. Risk taking 2		45
3. Proactiveness1		55
4. Proactiveness2		71
5. Proactiveness3		35
6. Innovativeness 1		50
7. Innovativeness 2		65
8. Innovativeness 3		63
<b>Growth</b>		
1. Employment growth		70
2. Sales growth		61
3. Sales growth compared to competitors		76
4. Value growth compared to competitors		77

appendix 5.

*Appendix 5B. Prediction of performance. Outer model, i.e. regressions weights and factor loadings for manifest indicators.*

<b>Manifest variables</b>	<b>Weights</b>	<b>Loadings</b>
<b>Control variables</b>		
1. Firm age		100
2. Subsidiary status		100
<b>ATTITUDES</b>		
<b>Expected consequences of growth</b>		
1. Firm characteristics	26	
2. Work conditions	-17	
<i>Growth aspirations</i>		
1. Sales growth	22	
2. Employment growth	-16	
<b>Goals</b>		
1. Stability	2	
2. Creativity	40	
3. Personal benefits	-21	
4. Power	-3	
5. Sales growth	40	
6. Employment growth	14	
<b>Favoured work-tasks</b>		
1. Strategy	38	
2. Marketing	6	
3. Production	-52	
4. Accounting	8	
<b>Industry</b>		
1. Exports	50	
2. Labour intensive industry	73	
3. Knowledge intensive industry	45	
4. Customer concentration	55	
5. Professional services	33	
6. Supplier concentration	27	
<b>Perceived environment</b>		
1. Dynamism		
2. Heterogeneity		

<b>Manifest variables</b>	<b>Weights</b>	<b>Loadings</b>
3. Hostility		
4. Change dynamism		
5. Change heterogeneity		
6. Change hostility		
<b>RESOURCES</b>		
<b>Resources of the entrepreneur</b>		
1. Start up experience	2	
2. Role models	37	
3. Industry experience	-23	
4. Management experience	36	
5. Additional assignments	-15	
6. Large firm experience	-9	
7. Tenure in present position	13	
8. Experience from rapid growth firms	25	
9. Age	-7	
10. Length of education	65	
11. Management or engineering education)	12	
12. Management training	36	
13. Founder	37	
14. Gender (male)	35	
15. Ethnicity (immigrant)	-14	
<b>Firm resources</b>		
1. Present size (FTE)	2	
2. Management team size	42	
3. Size compared to competitors	40	
4. Number of employees that hold university degree	7	
5. Use of employees in decision making (sign?)	-22	
6. Capital availability	52	
7. Board size	5	
8. Use of board in decision making	-28	
9. New owner	18	
10. Present size (sales)	8	
<b>Network resources</b>		
1. Formal professional advisors	58	
2. Day-to day advisors	-75	
3. Value chain advisors	67	

appendix 5.

<b>Manifest variables</b>	<b>Weights</b>	<b>Loadings</b>
4. Number of external board members	-23	
<b>Entrepreneurial orientation</b>		
1. Risk taking 1		19
2. Risk taking 2		43
3. Proactiveness1		56
4. Proactiveness2		71
5. Proactiveness3		34
6. Innovativeness 1		49
7. Innovativeness 2		66
8. Innovativeness 3		64
<b>Performance</b>		
1. Employment growth		62
2. Sales growth		44
3. Sales growth compared to competitors (tt26)		68
4. Value growth compared to competitors (tt28)		75
5. Gross margin		51
6. Profits compared to competitors		63
7. Cash flow compared to competitors		64

*Appendix 5C. Prediction of entrepreneurial behaviour. Outer model, i.e. regressions weights and factor loadings for manifest indicators.*

<b>Manifest variables</b>	<b>Weights</b>	<b>Loadings</b>
<b>Control variables</b>		
1. Firm age		100
2. Subsidiary status		100
<b>ATTITUDES</b>		
<i>Expected consequences of growth</i>		
1. Firm characteristics	12	
2. Work conditions	-15	
<b>Growth aspirations</b>		
1. Sales growth	46	
2. Employment growth	-21	
<b>Goals</b>		
1. Stability	-6	
2. Creativity	30	
3. Personal benefits	-21	
4. Power	-1	
5. Sales growth	31	
6. Employment growth	7	
<b>Favoured work-tasks</b>		
1. Strategy	44	
2. Marketing	13	
3. Production	-44	
4. Accounting	-3	
<b>Industry</b>		
1. Exports	50	
2. Labour intensive industry	72	
3. Knowledge intensive industry	44	
4. Customer concentration	55	
5. Professional services	32	
6. Supplier concentration	27	
<b>Perceived environment</b>		
1. Dynamism		



appendix 5.

<b>Manifest variables</b>	<b>Weights</b>	<b>Loadings</b>
2. Heterogeneity		
3. Hostility		
4. Change dynamism		
5. Change heterogeneity		
6. Change hostility		
<b>RESOURCES</b>		
<b>Resources of the entrepreneur</b>		
1. Start up experience	19	
2. Role models	28	
3. Industry experience	-3	
4. Management experience	14	
5. Additional assignments	4	
6. Large firm experience	18	
7. Tenure in present position	18	
8. Experience from rapid growth firms	33	
9. Age	-35	
10. Length of education	57	
11. Management or engineering education)	8	
12. Management training	20	
13. Founder	32	
14. Gender (male)	-2	
15. Ethnicity (immigrant)	1	
<b>Firm resources</b>		
1. Present size (FTE)	25	
2. Management team size	41	
3. Size compared to competitors	31	
4. Number of employees that hold university degree	9	
5. Use of employees in decision making (sign?)	-35	
6. Capital availability	-33	
7. Board size	9	
8. Use of board in decision making	-38	
9. New owner	16	
10. Present size (sales)	7	
<b>Network resources</b>		
1. Formal professional advisors	66	
2. Day-to day advisors	-83	

<b>Manifest variables</b>	<b>Weights</b>	<b>Loadings</b>
3. Value chain advisors	51	
4. Number of external board members	-17	
<b><i>Entrepreneurial orientation</i></b>		
1. Risk taking 1		18
2. Risk taking 2		44
3. Proactiveness1		55
4. Proactiveness2		71
5. Proactiveness3		34
6. Innovativeness 1		49
7. Innovativeness 2		67
8. Innovativeness 3		64
<b><i>Entrepreneurial behaviour</i></b>		
1. New customers (tt14)		43
2. Marketing (tt15)		37
3. Product mix (tt16)		59
4. New product on sale (tt17)		64
5. New product under devt. (tt18)		54
6. Risk taking (tt19)		49
7. Proactiveness (tt20)		56
8. New operating procedur (tt21)		40
9. New organisation (tt22)		37
10. Employment growth		41
11. Sales growth		36
12. Sales growth compared to competitors (tt26)		47
13. Value growth compared to competitors (tt28)		53
14. Start-up of new subsidiary (tt 6c)		38
15. Start-up of new independent firm (tt9)		27
16. Sales from new export markets (tt13b)		42

appendix 5.

Appendix 5D. Example of the relationship between manifest indicators and latent constructs.

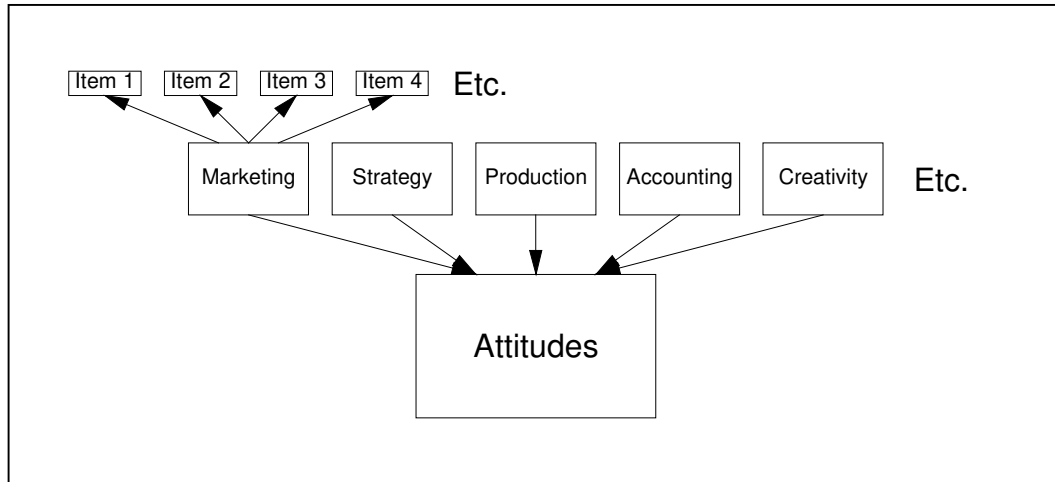


Figure 1. Conceptual relationship between manifest indicators and the latent attitude construct.

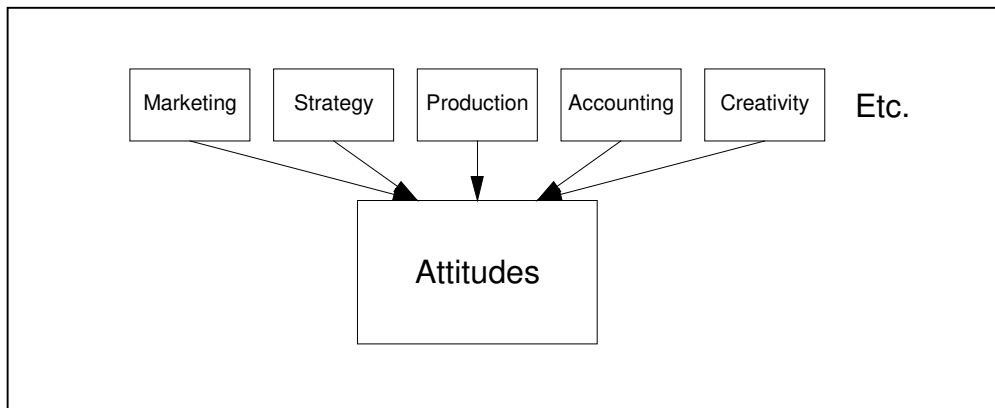


Figure 2. Empirical relationship between manifest indicators and the latent attitude construct.