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**INFLUENCES ON SMALL FIRM GROWTH RATES IN
GHANA**

S. A. DZOTEFE

DBA

2008

INFLUENCES ON SMALL FIRM GROWTH RATES IN GHANA

Factors which influence small firm growth rates and which are important in distinguishing rapid-growth small firms from slow-growth small firms

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INFLUENCES ON SMALL FIRM GROWTH RATES IN GHANA

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ABSTRACT

Although the development of small businesses is generally considered important for income generation and job creation, there has been relatively little research in developing countries such as Ghana on understanding why some small firms succeed and grow rapidly while others do not in. This thesis investigates the influences on small firm growth rates in Ghana using data from a random sample of 252 manufacturing and services firms from the database of the Association of Ghana Industries.

The general hypothesis is that, growth is a function of the characteristics of the entrepreneur; characteristics of the firm; strategic factors; environmental factors; and cultural factors. Consequently, the research tests 36 hypotheses drawn from the five main categories of variables using the turnover and the employment growth measures. It also uses logistic regression analysis to isolate significant factors differentiating rapid-growth firms from slow-growth firms.

Overall, the research finds strong evidence which suggests that, perception of a market opportunity; university education; multiple founders; entrepreneurs with marketing skills; workforce training; new product development; presence of a clear vision and mission statement; majority non-family members in management and membership of professional or business associations were associated with rapid-growth firms.

Factors which were significant in discriminating between rapid-growth and slow-growth firms but were more likely to be associated with slow-growth firms included threat of unemployment or actual unemployment as a motivation for starting a business; production skills; legal form (limited liability companies); access to external equity (post-formation); exporting; access to public or external aid; unionization and frequent management meetings.

Keywords:

- Business Administration
- Small businesses
- Small and medium enterprises
- Rapid-growth firms
- Slow-growth firms
- Entrepreneurship
- Motivation
- Characteristics of the entrepreneur
- Firm characteristics
- Business strategy
- Environmental factors
- Cultural factors.

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DEDICATION

This thesis is dedicated to the loving memory of my father and mother who taught me the virtues of hard work and perseverance.

1 INTRODUCTION

1.1 Background

The introductory chapter of this thesis provides a rationale for embarking upon this research and hence for the relevance of the research. The chapter begins by stating the aims of the research followed by a discussion of the importance of small businesses in economic development especially, regarding income generation and job creation, making specific references to the studies of Staley and Morse (1965), Birch (1979, 1987) and others. It highlights the precarious economic situation of Sub-Saharan Africa in countries like Ghana and makes a case for identifying small businesses with growth potential which can contribute significantly to the economic development of the continent. The chapter also reviews the challenges of Small Firm Research and postulates key research questions. Finally, it provides a general outline for the whole thesis.

1.2 Purpose of the Research

The main aims of this thesis are to: (1) understand why some small firms succeed and grow while others do not; and (2) determine the characteristics which distinguish rapid-growth small firms from slow-growth firms in the manufacturing and services sectors in Ghana. This thesis will seek to shed light on these two main issues with special focus on the situation in Ghana, a developing nation in Sub-Saharan Africa. Ghana was chosen because it is a stable and relatively less corrupt economy in Sub-Saharan Africa with established institutions *i.e.* a lot of the elements conducive to growth. If there are clear lessons and conclusions, Ghana is more likely, compared to other countries in the sub-region, to provide far more fertile ground for application of them.

1.3 The Importance of Small Business Research and Small Firm Growth

In 1965, Staley and Morse documented one of the first studies on SMEs in which they highlighted the important contributions that small enterprises make towards economic development. Since then, other researchers have tried to determine contributions of SMEs to economic development especially via job creation (Alley, 1993 and Meeks, 1993). For Curran *et al.* (1986), small businesses are economically important in every free enterprise industrial society. The focus on the small firm is a very important one, as research from developing countries has shown that these firms are of great and increasing importance to economic development (Baldwin & Picot, 1995; Birch, 1979, Storey, 1994). This interest has generated a need for systematic knowledge about entrepreneurship and small firms.

Small and new businesses often have been claimed to have a great impact on new job creation. In a seminal work, Birch (1979, 1987) concluded, based on his research in 1979, that 8 out of 10 new jobs in America, in the 1970s, had been created by firms with fewer than 100 employees. However, this conclusion was heavily criticised by Armington and Odle (1982) who suggested that Birch had not controlled for the fact that many new or small establishments, owned by large firms, play an important role in generating jobs. Dunne *et al.* (1989) also criticised Birch (1979) on the basis that many of the jobs created in his study were also quickly destroyed because of the high failure rates among small enterprises. Harrison (1997) criticised Birch for not emphasizing that most employment was created by a tiny proportion of firms, *i.e.* fast growing firms.

Despite these criticisms, subsequent research reveals that small businesses are still recognised for their ability to create jobs and generate income. Barkham *et al.* (1996)

posit that small business growth is important for generating wealth and jobs. Evanson (1995) posits that small businesses account for 50% of GDP in most economies, both developed and under-developed.

The importance of SMEs in job creation has also been recognised in developing countries such as Ghana. It is estimated that SMEs employ 22% of the adult population in developing countries (Daniel and Fisseha, 1992, Daniels and Ngwira, 1993, Fisseha and McPherson, 1991). Steel and Webster (1991) noted that the small enterprise sector in Ghana accounts for about 85% of manufacturing employment, the majority of which were micro-enterprises defined as those with less than 10 employees.

Another major reason for the interest generated in small firms is their effectiveness in developing new economic systems. Often, new ideas and innovations are created by small firms that grow rapidly and sometimes create new industries or radically change existing ones. For example, Microsoft started off as a very small entity based on individual innovations but grew so rapidly that it transformed the computer industry. Other noteworthy examples include Apple, eBay, Google and YouTube. Small firm growth is driven by entrepreneurship which is important for the creation of wealth and employment. This eventually culminates in economic growth.

The job creation claim of small businesses has attracted significant theoretical and empirical research probably because many economies (including those of Sub-Saharan Africa) are confronted with a serious problem of unemployment. Small businesses are perceived to be the solution to unemployment and poverty reduction especially in Sub-Saharan Africa. It is therefore a major research issue when it is observed that contrary to

expectation, the majority of small firms hardly grow. Some grow a little, but very few of them exhibit substantial growth (Storey, 1996, 1997).

Kirchoff (1994) argues that only a few newly-founded small businesses grow. Biggs *et al.* (1999) found that only about 10% of micro-enterprises (*i.e.* those with fewer than 10 employees) in Sub-Saharan Africa ever grow up to a size where they could employ more than 50 workers. Storey (1994) posits that from a cohort of newly established firms in the UK, the fastest growing 4% will create 50% of the employment in the group over a decade.

In a study conducted in the European Economic Community, Storey and Johnson (1987) observed that in 12 years, less than 10% of firms created at the start of the period had grown beyond 20 workers and less than 1% had surpassed 100 workers. An OECD study (1999) also revealed that, out of the SMEs with between 20 and 500 employees (between 10 and 500 for Quebec) at the start of the period, firms that had doubled their employment represented between 2% and 10% of the surviving firms.

Additional studies confirm the fact that few small businesses actually grow. They include studies in Germany, Greece and Sweden by Julien (2000), Ireland by O'Farrel (1984), the United States by Dunkelberg and Cooper (1982), Canada by McMullan and Vespar (1987) and in selected regions of the United Kingdom, by Gallagher and Miller (1991). It is therefore important and relevant for researchers to focus theoretical and empirical research on rapidly growing small businesses.

1.4 Relevance of Small Firm Growth Studies to Developing Countries

Sub-Saharan Africa remains the poorest region in the World. The World Bank Report [2000] - *Can Africa Claim the 21st Century?* – points out that, the average income *per capita* of Sub-Saharan Africa (excluding South Africa) averaged US\$315 in 1997 compared to US\$970 in East Asia and US\$3,940 in Latin America. The region's total income was no more than that of Belgium. The average output of a country was merely equivalent to that of a town of 60,000 in a rich country. For Biggs and Shah (1999), poverty reduction in Sub-Saharan Africa can only come about through a significant expansion in private sector activity and substantial improvements in productivity.

Many developing economies especially in Sub-Saharan African have high unemployment and very slow economic growth. Increasingly, it is now apparent that, to solve these problems, encouraging entrepreneurship as well as the development and growth of small businesses is important. Consequently, from a situation where small firms were treated with relative disinterest, we find ourselves at the other extreme where SME development is given a lot of prominence.

For example, over a five-year period, the World Bank Group approved over US\$10 billion in SME support programs including US\$1.5 billion in 2002 (World Bank, 2002). The European Bank for Reconstruction and Development (EBRD) in collaboration with the G-7 is committing a total of US\$480 million as funding for the Russian Small Business Fund Project which extends to 2010. The project will provide short- and medium-term financing to micro-and small enterprises as well as contributing to the institutional capacity-building of the Russian financial sector. Capacity-building will be

through training and technical cooperation with those banks that opt to develop long term capacity to provide financing to small and micro-enterprises (EBRD-PED, 2003). Many development partners in Africa including the UK's DFID (Department for International Development), DANIDA (Danish International Development Agency), and seco (Swiss Economic Cooperation) are donating considerable funds to promote small business development in Sub-Saharan Africa.

For small businesses to play a meaningful role in the economic development of Sub-Saharan Africa and in other developing countries, there is a need to identify and support, and not to hinder, those businesses with the most growth potential ("dynamic capitalists"). These have the capabilities to restructure the economy and generate new jobs in the long run.

1.5 Challenges of Small Firm Research

There are five main problems that complicate, and thus limit the validity of research in small businesses. The first problem relates to the difficulty of defining small businesses. The issue of defining small businesses affects small business research by making it difficult for the researcher to be able to accurately segregate businesses into small or big business categories for the purposes of the research. Differences in definitions also lead to the selection of different subjects for the research. This issue is covered in Section 3.3.2 (Definition of SME) in this thesis.

The second problem is the absence of an accurate database on small businesses. The problem of definition extends to the compilation of data on small businesses. For example, if a "small business" is defined as one having employees of 500 or less, then a

set of data can be compiled. The tricky question is, “what of a business with 501 employees?” Is it really accurate to say that this is a big business and should not be included in the data set for small businesses? There is also the issue of differences in magnitude *i.e.* 500 employees versus 1 employee being both classified as small firms.

A related issue of concern in developing reliable data on small businesses is that they change category easily. If for example, the hypothetical business of 501 employees loses two workers the following year without replacing them, then with the definition suggested, it would now qualify to be classified as a small business and should be added to the data set. The credibility of the database is very much compromised by the frequent movements into and out of the category of small businesses as with most definitions. The credibility of the database on small businesses is again undermined by the fact that some big businesses could be made up of smaller individual businesses. They compete as small businesses although they are not captured in the database.

The third major problem is the record-keeping attitudes of SME owners/managers. All research methods involve the collection and analysis of data. The collection and analysis of existing data is always important to validate even the primary data that is collected in the process of research. Small businesses in general do not always have the habit of routinely recording their daily transactions for several reasons.

In the first place, most of them do not have the relevant skills or tools to accurately capture data on their operations. They often lack a good management information system. Secondly, they have a tendency not to keep proper records of their operations as a way of ensuring that their competitors or other interested stakeholders (*e.g.* tax

authorities) do not have access to information on their actual performance. Thirdly, most small businesses do not have a good corporate governance culture. Many limited liability small businesses do not really consider themselves responsible for reporting their operations to a Board of Directors, as one will expect with big companies. They tend to be family-owned and reporting and discussion of the business' operations takes place informally. This attitude of small businesses has a negative impact on researching them.

The fourth problem impacting small business research relates to the difficulty of accessing small businesses. Obtaining access to small businesses for research is a challenging task. Small business owners generally are very busy people who work for long hours because they do not delegate sufficiently. They work under a lot of pressure and tend to devote a lot of time to their businesses to ensure their success. They are often not receptive to requests that distract them from their businesses. Small business owners also do not appreciate the value or relevance of research to their operations and therefore shy away from participating in them or providing requested information. According to Curran and Blackburn (2001), this attitude of small business owners exerts considerable pressure on researchers to explain and emphasize the usefulness of the research in order to obtain relevant data.

The final problem is the issue of harnessing the multiple skills required for small business research. Curran and Blackburn (2001: p8) argue that "small business research is not a discipline in a conventional academic sense". This is because, to them, all the major social science disciplines such as anthropology, economics, psychology, sociology, geography, politics as well as even history and accountancy have been used

at one time or another to explore how small enterprises function. Research involving a single discipline is obviously easier than that which cuts across several disciplines. Cross-disciplinary research, such as small business research, seeks to bring together concepts and theories of multiple social science disciplines and therefore requires an appreciable knowledge of the subject matter by the researcher.

Two factors pose an even bigger challenge to the small business researcher in Sub-Saharan Africa. These are the low level of formal education possessed by most African small business owners/managers and to a greater degree, the lack of credible databases on small businesses. The low formal education levels of African small business owners/managers deprive them of the relevant skills they need to keep written records of their activities. The tendency is to rely heavily on their memory. In addition, due to the lack of understanding of what research is and the fear that information on their businesses may fall into the hands of their competitors, or tax authorities, many of them shy away from providing accurate information to anyone outside their family circles. This makes it difficult for the researcher to obtain reliable information.

The work of the researcher is made more difficult by the absence of institutional data on small businesses. In Ghana, for instance, no institution is tasked with the duty of compiling data on small businesses. Also, there are no bodies regulating or supervising the activities of small businesses, hence secondary data is virtually non-existent. The only option for researchers is to collect data from primary sources which itself is difficult because of the unwillingness of the typical African small business owner/manager to divulge information. This research relied solely on primary data

collected from the small businesses in the sample and efforts made to mitigate challenges of data collection.

1.6 Research Approach

This thesis focuses on the growth of individual small firms and is grounded on the literature on Entrepreneurship. The thesis will not cover population ecology models that are concerned with the death and survival of populations of organizations. It will also not cover regional economic studies which seek to compare aggregate growth performance of small firms in different locations.

The underlying premise held in this thesis is that, entrepreneurs of small businesses have substantial discretion to exercise choice in the decisions of their firms, and in so doing, influence their firms' growth. The destiny of the firm is therefore not entirely determined by the characteristics of the environment or other factors outside of its control. In order to attain certain levels of growth, entrepreneurs and managers may choose to pursue goals that are not economically rational. Firms may also perform at sub-optimal levels depending on the personal goals of the manager. Consequently, the profit maximization motive that is central to economic theory may not be totally applicable to small firms.

Small firms have a relatively simple organizational structure that is greatly influenced by the entrepreneur's vision. Consequently, the firm and the entrepreneur merge into one identity. Typically, in a new and/or very small firm, the entrepreneur has a direct and crucial influence on actions of the firm. He or she is singularly responsible for important decisions and actions. For Mintzberg (1984), everything revolves around

the entrepreneur. The firm's goals are his goals. This is not so in large firms where many more people are involved in the decision-making process. According to Stanworth and Grey (1991), as a 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.

Consequently, in small firm research, considerable emphasis is placed on the entrepreneur (*i.e.* entrepreneurship research) whereas large firms are studied by strategy researchers who mainly focus on the organization. As firms become larger, the individual influence of the entrepreneur diminishes. The tendency is to seek more professional management. The influence of the individual is, in most cases, an inverse function of firm size. A major question confronting most researchers is at what size does the organization become more interesting than the entrepreneur and vice versa? This is difficult to establish. Consequently, a preferred option is to focus on both the individual and the organization in small firm research.

In this thesis, variables from different levels of analysis will be used as recommended by Low and MacMillan (1988) as well as by Zahra (1993a). These variables relate to the entrepreneur, the firm, strategic factors, environmental and cultural factors. Due to their small size, small firms are less able to cope with environmental impacts. This makes it imperative to consider environmental factors in small firm research as well.

1.7 Research Contribution

Although the development of a new private sector is generally considered important for economic transition (EBRD, 2003), there has been relatively little research on entrepreneurship development and small business growth in Sub-Saharan Africa. The frequently cited literature on small firm growth in Sub-Saharan Africa are the qualitative surveys of entrepreneurs in Botswana, Kenya, Malawi, Swaziland and Zimbabwe conducted by Liedholm and Mead (1999) and the study on the determinants of growth of small businesses by McPherson (1996) conducted in Botswana, Lesotho, Swaziland, Zimbabwe and two townships in South Africa. These studies covered mainly Eastern and Southern Africa.

In Sub-Saharan Africa, the dominant players in the private sector are the small business owners and managers. Consequently, the development of the private sector as a means of reducing poverty very much hinges on African entrepreneurship development and small business growth. To achieve laudable economic development goals, African governments, Development Partners (“DP”), local as well as International Financial Institutions (“IFIs”) are seeking to develop and implement policies that promote small business development and growth. In view of limited financial resources, to be efficient and effective, these policies should be targeted at those entrepreneurs and small businesses which have the greatest potential to grow, for it is these that will create employment opportunities and generate income to reduce poverty. Overall, this research contributes to the identification of small businesses with rapid growth potential in Sub-Saharan Africa.

Currently, very little is known about the determinants of small firm growth in Sub-Saharan Africa, including Ghana. This research sheds some light on small firm growth in Ghana, a country in Western Africa. It helps to narrow the literature gap on small firm growth in Sub-Saharan Africa by providing empirical evidence that contributes to a broader understanding of factors influencing growth rates in Ghana and possibly other Sub-Saharan African countries. This research is multi-disciplinary and reflects various disciplines including economics, finance, psychology and sociology. Curran and Blackburn (2001) emphasize that small business research is multi-disciplinary.

It is expected that results of this research will contribute to small business development by assisting small business owner/managers to focus their efforts on the most important factors influencing firm growth. It is also expected that Development Partners, Government and other institutions will use the findings to design and implement efficient policies that will promote small firm growth in Sub-Saharan Africa and possibly other developing countries.

1.8 General Hypotheses and Research Questions

The general hypothesis of this thesis is that, the characteristics of the entrepreneur; the characteristics of the firm; strategic factors; environmental factors; and cultural factors influence growth of small businesses. The general hypothesis is illustrated in Figure 1.1 below.

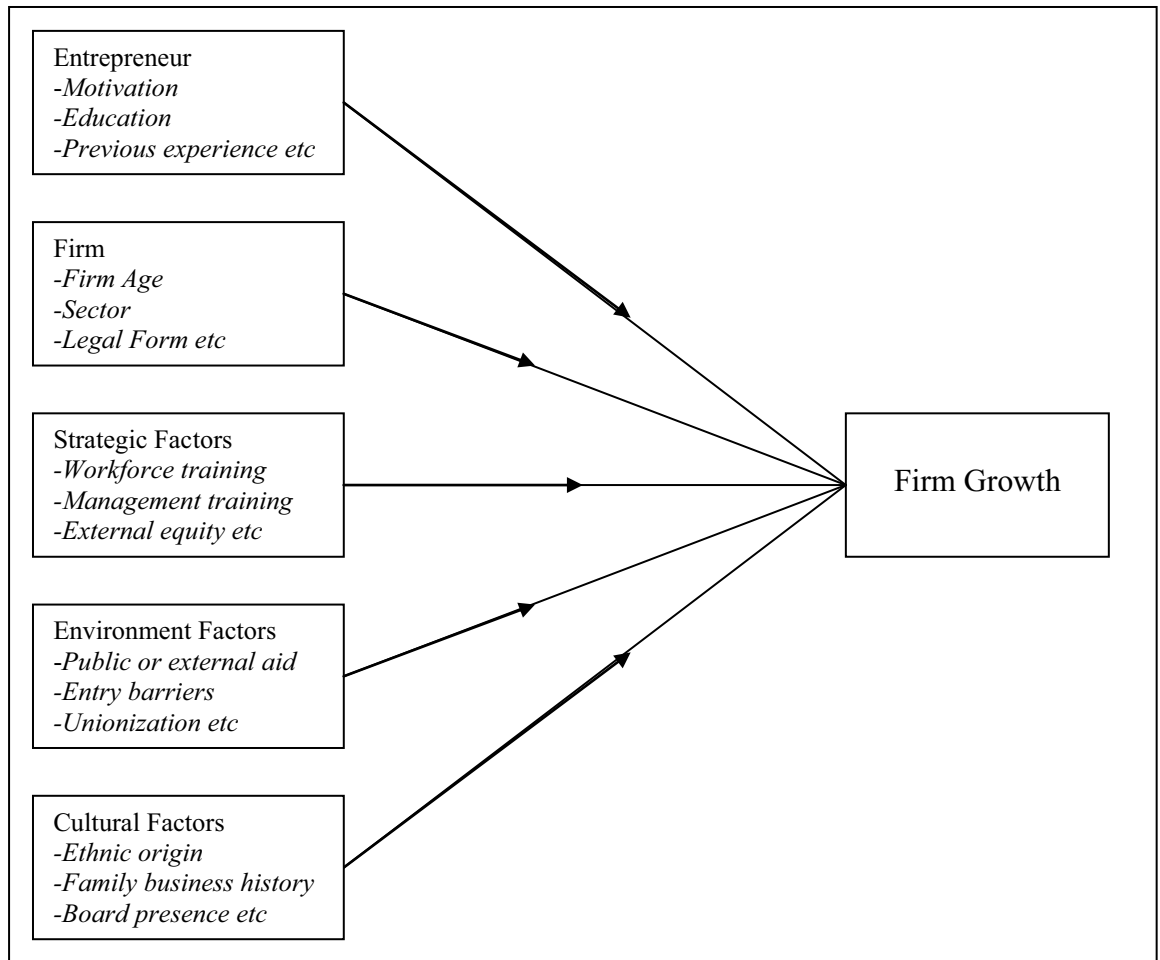


Figure 1.1. Illustration of General Hypothesis

The research sought to answer six main research questions:

- a) What entrepreneurial characteristics discriminate between rapid-growth and slow-growth small businesses in Ghana?
- b) What firm characteristics discriminate between rapid-growth and slow-growth small businesses in Ghana?
- c) What strategic factors discriminate between rapid-growth and slow-growth small business growth in Ghana?
- d) What environmental factors discriminate between rapid-growth and slow-growth small businesses in Ghana?

- e) What cultural factors discriminate between rapid-growth and slow-growth small business in Ghana?
- f) Overall, what key factors are important for growth among small businesses in Ghana?

To satisfactorily answer these six questions, and hence the broader questions stated on page 1, 36 hypotheses were tested. The hypotheses were derived from variables expected to influence growth and grouped into five main categories. These were:

- Characteristics of the entrepreneur;
- Characteristics of the firm;
- Strategic factors;
- Environmental factors; and
- Cultural factors.

Seven hypotheses were associated with the characteristics of the entrepreneur; five with the characteristics of the firm; nine with strategic factors; six with environmental factors and the remaining nine with cultural factors.

1.9 Overview of Methodology

This research is grounded in the scientific realism approach to scientific knowledge. The study is not about describing and investigating qualitative differences in small firm growth that would have placed it in the interpretative scientific paradigm. The research adopts a deductive reasoning method (working from the more general to the more specific) and begins by looking at relevant theories on small firm growth based on which hypotheses are developed to be tested. Questionnaires are then used to collect

observations to test and either confirm or deny the hypotheses and consequently, the underlying theories.

This research is explanatory and not exploratory. Unlike exploratory research where the focus is on gaining insights and familiarity with the subject area for more rigorous investigations later, this research is actually testing hypotheses and seeking to analyse and explain why some small businesses grow rapidly while others grow slowly. The research aims to understand the phenomenon of small firm growth by determining relationships between rapid firm growth and various factors perceived to influence growth. Consequently, it is based on quantitative research.

The research adopted a structured questionnaire survey as the most appropriate methodology, given considerations of time, cost and the difficulty of collecting data from small businesses in Ghana. The structured questionnaire survey facilitated the collection of data on a range of variables expected to influence small business growth rates. To ensure the quality of the data, the questionnaire was first pre-tested on ten small firms outside of the selected sample and revised to include feedback from the preliminary respondents.

To obtain data for analysis, the research selected a random sample of 252 small businesses covering manufacturing and services sectors from a population of 393 small businesses from the database of the Association of Ghana Industries (AGI) using stratified random sampling. The sample was restricted to the Greater Accra region due to cost and time considerations. The MS Excel random function was used to randomly select companies from each data sub-group to be included in the sample.

The time period covered for this study was six years (*i.e.* 2000 to 2005 to yield 5 data points) based on the feedback from the preliminary testing of the questionnaire. The general conclusion from the pilot testing was that, due to poor recording-keeping, most small businesses could not provide data on their activities beyond five years. There was relatively high employee turnover making it even more difficult to obtain additional information from relevant individuals.

For data collection, introductory telephone calls and e-mail messages (to those who had reliable e-mail services) were first made to the respondents in the sample followed by personal contact to deliver the questionnaire. The introductory telephone calls and emails explained the purpose of the research and its use for academic purposes only. It was also used to assure them of the confidentiality of the information they were providing.

The data collection approach adopted was to facilitate a good response from the respondents by explaining the essence of the study to them and reassuring them of the confidentiality of their responses. It was found that many small businesses owners were reluctant to provide information about their businesses for fear that it might fall into the hands of their competitors or tax authorities.

Slow-growth and rapid-growth firms were classified using the turnover and employment growth measures and based on the firms' average annual growth rates. Slow-growth firms were coded 0 while rapid-growth firms were coded 1. For the turnover growth measure, turnover figures were converted to real 2000 figures using the

Gross Domestic Deflator for Ghana. The cut-off point used to classify the firms into slow-growth and rapid-growth firms was 25% in both cases.

The data was analyzed using several tools. Descriptive analysis was used to understand the data. The single-variable Mann-Whitney test and Chi-Square test of significance were used to test the hypotheses. The tests were test of association and not to of causality. It is important to note that since the study was cross-sectional, it is more difficult to validate some causal effects. Mann-Whitney test was applied to non-normal distributed data while the Chi-Square test was applied to categorical data. The multi-variable logistic regression was further used to identify key discriminating variables between rapid-growth and slow-growth small businesses in a multi-variable setting.

For the hypotheses testing using the single variable Mann-Whitney test, the association with either rapid-growth or slow-growth was determined by reviewing the relative magnitude of the Median Rank between rapid-growth and slow-growth firms for the variables representing the hypotheses. For the hypotheses testing using the single variable Chi-Square test, the association with rapid-growth or slow-growth was determined by computing the Odds Ratio for significant variables representing the hypotheses.

If the Odds Ratios of the variables are greater than 1, it implies they are associated with rapid-growth firms, while Odds Ratios less than 1 are associated with slow-growth firms. For the multi-variable tests, logistic regression was first applied on sub-models comprising of each category of variables; secondly, by models comprising of a

combination of all variables; and finally by models comprising only of the significant variables identified in the single variable tests.

1.10 Brief Summary of Findings

The research concludes that rapidly growing small firms in Ghana are those that are started because the entrepreneurs perceive a market opportunity. These entrepreneurs identify and take advantage of market opportunities. Entrepreneurs of rapidly growing firms in Ghana are more likely to be university graduates suggesting that entrepreneurial skills especially marketing skills may be enhanced through higher education. The research found marketing skills to be associated with rapidly growing firms.

The research found that rapidly growing firms in Ghana were more likely to be those firms with multiple founders, supporting the premise that such a team provides the firm with access to greater resources. They were also more likely to be those that provide training to their work force and produce for the domestic market instead of trying to export to the competitive international markets. Rapidly growing firms in Ghana also appear to be those with a clear vision and mission statement.

The empirical findings in this research affirm credence to the importance of non-family members in management. Rapidly growing small firms in Ghana were more likely to be associated with those that had non-family members in the majority in management. They were also more likely to be those that were members of professional or business associations giving credence to the network theory.

There were also some unexpected but interesting findings. For instance, contrary to established premise, the research found that firms that raised external equity (post-formation) were associated with slow-growth. Small businesses with Non-African entrepreneurs (mostly Lebanese and Indians) in Ghana were more likely to be associated with rapid-growth compared to businesses with African counterparts, mostly Ghanaians. Finally, similar to the findings of access to external equity (post-formation), small businesses that had access to public or external aid were associated with slow-growth. The findings are discussed in detailed in Chapter 9.

1.11 General Outline of the Thesis

This thesis consists of ten chapters. **Chapter one** is the introductory chapter. **Chapter two** presents an overview of the literature on small firm growth and proposes the theoretical framework of the thesis. It starts with a discussion of four theoretical perspectives commonly adopted in small firm growth research. It also discusses Storey (1994)'s framework as well as other research frameworks. These include those of Wiklund (1998), Barringer *et al.* (2005), and Zhang *et al.* (2008). The chapter also reviews the role and importance of entrepreneurship in small business development. The chapter concludes with a theoretical framework and a model for the current research.

Methodology comprising of research philosophy and research methods is discussed in **Chapter three**. The chapter reviews the philosophy of research and discusses the research method as well as data collection and analysis. **Chapter four** discusses the development of hypotheses. 36 hypotheses are discussed supported with relevant theoretical and empirical assumptions as well as appropriate arguments. The hypotheses

cover entrepreneurial characteristics, firm characteristics, strategic factors, cultural factors and environmental factors.

Chapter five discusses in detail, sample selection and variables to be tested. These variables also relate to entrepreneurial characteristics, firm characteristics, strategic factors, environmental factors and cultural factors. Finally, it reviews the questionnaire and measures used linking them to the various hypotheses.

Chapter six begins with a descriptive analysis of the data collected. It also presents preliminary analyses to adopt an appropriate method for calculating growth rate in order to minimize outliers and test the data for normality. **Chapter seven** focuses on hypothesis testing using the turnover growth measure and employment growth measure, and based on single-variable tests of association. It concludes with a summary of the hypotheses that were confirmed by the research.

Chapter eight presents the results of the logistic regression analysis of the data to establish the determinants of growth. The analysis employed both the turnover and employment growth measures. **Chapter nine** discusses in detail the findings of the research and the thesis is concluded in **Chapter ten** with a review of the implications of the research for small business entrepreneurs as well as policy makers and highlights the limitations of the study. The chapter also makes recommendations for future research.

2 GENERAL OVERVIEW OF LITERATURE

2.1 Introduction

Small firm growth research continues to attract scholars from many fields including management, psychology, and economics. In some cases, multi-disciplinary studies have been carried out. Consequently, in seeking to achieve knowledge on small firm growth, it would not be advisable to ignore previous research. This chapter reviews existing literature on small firm growth and develops a theoretical framework for the thesis based on the author's interpretation of the literature.

The multi-disciplinary nature of previous research makes it difficult to classify small firm growth research within traditional disciplines such as strategic management, psychology, sociology, industrial economics or other. There is no unique theory on small firm growth or entrepreneurship in the literature. Instead, previous research studies have been classified based on theoretical perspectives which in themselves comprise of various theories and variables. A perspective is not a theory. It is generally broader and less restrictive than a theory. The perspective is focused on what is observed and is perceived by the researcher.

For example, Lionel Robbins defines Economics as “the science which studies human behaviour as a relationship between ends and scarce means which have alternative uses” Robbins (1935: 16) cited by Pitelis and Runde (2007). For Heshmat (2001), the notions of scarcity and choice are central to economics. Economists including Robbins (1935) and Mankiw (2009) often assume that individuals making business decisions have several options (notions of choice and scarcity) each with its own outcome and the decision maker will select the alternative which gives him or her,

the greatest expected utility. Essentially, the individual is concerned with the efficient use of scarce resources to achieve maximum satisfaction of economic wants. This assumption is the economist's theoretical perspective and is also an assumption underpinning a theory and not a theory. The main advantage of theoretical perspectives is that, they make it possible for the researcher to classify several theories into few theoretical perspectives.

The literature on rapid-growth firms appears to focus on the systematic differences between rapid-growth firms and slow-growth firms and to establish what these differences are. Delmar (1997), who reviewed 55 research articles on firm growth published between 1989 and 1996, concluded that there was very little agreement on the factors affecting growth. Wiklund (1998), after reviewing 68 articles on firm growth and performance, characterised the literature as "highly fragmented".

More recently however, Barringer *et al.* (2005) reviewed 106 articles, book chapters, and books on firm growth and performance from the entrepreneurship, management, and economics literatures between 1997 and 2003 and concluded that the literature was rather rich and mature on rapid-growth firms. They highlighted four major areas on which writers have concentrated. These were founder characteristics; firm attributes; business practices; and human resource management (HRM) practices. To ensure that the present study is based on a solid theoretical foundation with relevance to previous studies, the research framework used is derived after a review of the theoretical perspectives on firm growth as well as some existing frameworks.

This Chapter first reviews four theoretical perspectives associated with firm growth in section 2.2. These are the resource-based perspective, the life-cycle perspective, the strategic adaptation perspective and the motivation perspective. They are premised on previous research on small business growth especially on theories which address resources, environment, strategy and motivation and their relation to growth outcomes. The review of each perspective is concluded with a paragraph on how it is expected to contribute to the present research.

Section 2.3 discusses Storey's research framework. Storey identified three broad components along the lines of the theoretical perspectives discussed in section 2.2 below, comprising of 35 elements which he argued that must be appropriately combined to achieve rapid growth in small firms. The components are the starting resources of the founder (entrepreneur); firm characteristics; and strategic orientation and decisions. Section 2.4 discusses other research frameworks. Essentially, these are also founded on the theoretical perspectives and Storey's framework although new elements have been introduced in some cases.

The chapter discusses cultural factors impacting small firm growth in section 2.5. This component has been singled out for discussion because it is the least well covered in small firm research but it will be included in the present research. Section 2.6 reviews entrepreneurship and small business development. The multidisciplinary nature of small business research and the fact that the present research is on the growth of individual small firms appropriately grounds it in the entrepreneurship domain. The section is meant to underscore the importance of entrepreneurship on small business growth. Sections 2.7 and 2.8 briefly review some theoretical and methodological issues

associated with the study of small firm growth and operationalising growth respectively. Section 2.9 briefly discusses some gaps in the existing literature that the current research will try to address.

In section 2.10, the broad components of variables for this research are developed based on the theoretical perspectives as well as the other small business growth frameworks put forth by Storey (1994), Wiklund (1998), and Barringer *et al.* (2005). The present research consists of five components and 36 elements that are expected to influence small firm growth rates. The five components are the characteristics of the entrepreneur; characteristics of the firm; strategic factors; environmental factors; and cultural factors.

2.2 Theoretical Perspectives

2.2.1 *The Resource-Based Perspective*

The fundamental principle underpinning the resource-based perspective is that the basis for a competitive advantage of a firm stems from the application of the bundle of resources at the firm's disposal (Wernerfelt, 1984). Gottschalk (2007:5) defines resources as "tangible and intangible assets that are tied to the firm over a substantial period of time". A firm's performance is therefore, dictated by the unique combination of resources it has access to, including physical assets and competencies.

The perspective appears to stem from the work of Penrose (1959) and Chandler (1962), among others, that emphasized the importance of resources and its implication for firm performance. For Penrose (1959), the firm as an industrial organisation can be defined by its economic function and it is a collection of resources bound in an

administrative framework. A firm's performance and growth therefore appears to be shaped by the unique combination of resources it has access to (which gives it a competitive advantage) and how well it utilizes these resources based on administrative decisions.

Hofer and Schendel (1978) allude to six key firm resources *i.e.* financial, technological, physical, human, reputation and organizational resources. For Miller and Shamsie (1996), resources must be capable of generating profits or preventing losses and posit that resources that are available to all will not be advantageous to any firm. They suggest that for a firm to be able to attain high levels of performance and sustained competitive advantage and consequently growth, it needs to own resources that are heterogeneous across firms and difficult to create, substitute or imitate. For Barney (2001) and Wade and Hulland (2004), in addition to other attributes, resources should be valuable, rare, and difficult to imitate or substitute.

Not all researchers accept the main view of the resource-based perspective. For Baden-Fuller (1995), for instance, resources are tradable and therefore can be transferred and imitated. Rather, he suggests that a firm's capabilities are more important and the source of its competitive advantage (*i.e.* what they do with the resources). Grant (1991) also suggests that, managers have to select an appropriate strategy in order to ensure the most effective use of the firm's resources and capabilities. Priem and Butler (2001) argue that different resource configurations can generate the same value for firms and thus not advantageous.

A firm's performance and growth appears to depend upon the extent to which its core resources and capabilities are identified and exploited based on the firm's strategy. Consequently, the importance of resources to a firm lies in its ability to use them to achieve results, which in the present research, implies growth. In the resource-based perspective, the environment does not constrain the firm's growth opportunities. Rather, the firm is free to grow provided it has the resources to identify and exploit opportunities.

There are two key limitations to the resource-based perspective in research. First, it is often difficult to define what constitutes resources (Brush *et al.* 1997). Therefore, it is important in research to clearly define resources and provide a rationale for their uniqueness in a study using the resource-based approach. Secondly, it is sometimes difficult to differentiate between variables referring to the resources of the entrepreneur such as education, previous experience and financial capital ("acquired resources") from variables referring to other dimensions of the characteristics of the entrepreneur such as his values, attitudes and personality traits ("innate resources"). Consequently, in using the resource-based approach, it is important to address this difference in the research design.

The most important contribution of the resource-based perspective has been to facilitate a better understanding of the importance of the internal resources of a firm towards growth. In particular, the perspective educates small firms as to how they can employ different resources to improve their performance and growth. It is, however, important to note that, the resource-based perspective alone is insufficient to explain the growth of small firms. Due to their small sizes, small firms are disproportionately

influenced by their environment as was evident in the recent global recession. It is therefore recommended that environmental considerations should be included in the study of small firms.

To conclude, the resource-based perspective contributes to the present research because resource-oriented variables are expected to impact on a firm's growth. This research considers several resources available to the firm that largely fit into some of the key categories postulated by Hofer and Schendel (1978). They include, resources relating to the characteristics of the entrepreneur such as the entrepreneur's motivation, education, previous management experience, work experience, industry specific experience, possession of marketing skills and gender. The research also investigates other resources available to the firm but not directly linked to the characteristics of the entrepreneur. These include the small firm's access to external equity, external or public aid, management's participation in decision making as well as the entrepreneur's and the firm's association with both formal business associations and informal social networks.

Chapter four provides a detailed discussion of the theoretical arguments, theories or the findings of previous research that provide a justification for including and investigating the impact of these resources on firm growth in this research. For example, Watson *et al.* (2003) and Sapienza and Grimm (1997) posit that entrepreneurial skills are enhanced through higher education, implying that, more educated entrepreneurs are expected to be associated with successful and rapidly growing firms. Also, Singer (1995) posits that prior entrepreneurial experience is one of

the consistent predictors of future entrepreneurial performance. These arguments and suggestions are covered in detail in Chapter four.

2.2.2 The Life-Cycle Perspective

Essentially, the life-cycle perspective seeks to describe the development and growth of an organisation by using analogies from biological life and originates from Darwin's evolutionary idea in biology. It assumes that business firms resemble living organisms because they demonstrate a regular pattern of developmental process. The perspective suggests that firms grow, mature, decline, and eventually pass away similar to living organisms.

For Baird and Meshoulam (1988), organisations move from one phase to another because the fit between the organisation and its environment is so inadequate that either, the firm's efficiency and/or effectiveness is seriously impaired, or its survival is threatened. The life-cycle perspective therefore prescribes that the firm's managers must change the organisation's goals, strategies, and strategy implementation approaches to align them to the new set of issues. The life-cycle model appears to emphasize the need for change that growth imposes on the organisation and how this growth impacts other characteristics of the organisation, such as, organisational structure and strategy.

Two frequently-cited organisational life-cycle models in the firm growth literature are by Greiner (1972) and Churchill and Lewis (1983). Greiner (1972) proposed a growth model based on five growth phases (*i.e.* growth through creativity; direction; delegation; coordination; and collaboration) and explained organisational growth as a

predetermined series of evolution (“prolonged periods of growth where no major upheaval occurs in organisation practices”) and revolution (“periods of substantial turmoil in organisation life”). For Greiner, an organisational crisis will occur at the end of each growth phase and the firm’s ability to handle these crises will determine its future. Churchill and Lewis (1983)’s model is based on Greiner's and also describes five stages of growth *i.e.* existence, survival, success, takeoff and, finally, resource maturity. Churchill and Lewis’s model is particularly adapted for the growth of small businesses. It is also more appropriate for high-growth firms because of its focus on crises that accompany growth.

The life-cycle perspective has been criticised by researchers such as Penrose (1959) and Storey (1994). The main criticisms are that the models are deterministic. The perspective appears to assume that firms must go through the same life-cycle stages and in the same sequence which often is not the case. In practice, some firms die quickly after birth while others may remain as mature firms for a long time. Despite the criticisms, the life-cycle perspective contributes towards small business research by underlining the fact that, small firms are not just scaled-down versions of large firms. Instead, small firms have different characteristics from large firms and need to solve different problems.

Although the life-cycle perspective contributes to research on small firm growth in general, further discussion has been curtailed given that it has limited relevance to the present research that focuses on comparing small firms that grow to those that do not grow (*i.e.* it looks at a particular phase of the cycle.). The life-cycle perspective is more

suited to research on the small number of firms that actually grow significantly and pass through different development phases.

2.2.3 The Strategic Adaptation Perspective

The strategic adaptation perspective is based on the assumption that firms that are successful in adapting their strategies to prevailing environmental conditions will achieve higher levels of growth and performance. Low and MacMillan (1988: 142) state that the “strategic adaptation perspective suggests that the key to entrepreneurial success lies in the decisions of the individual entrepreneurs who identify opportunities, develop strategies, assemble resources and take initiatives”. Consequently, the ability to develop and execute effective strategies is critical to the success and growth of any firm based on the strategic adaptation perspective. Unlike the resource-based perspective that focuses on a firm’s internal processes, the strategic adaptation perspective focuses on the firm’s relation with its environment.

Fesser and Willard (1990) suggest that besides resources, the strategy of entrepreneurial firms has an important influence on their subsequent growth. Porter (1980) and Miles and Snow (1978) provide frameworks for studying the relationship between firm strategy and growth. Porter (1980) distinguishes three generic strategies firms may adopt *i.e.* cost leadership, differentiation, and focus strategies. On the other hand, Miles and Snow (1978) used the firm’s response to the environment (*i.e.* adaptation to the environment) to differentiate and propose a classification of firms based on four generic strategies *i.e.* prospectors, defenders, analysers and reactors.

According to Miller and Friesen (1978), firms respond to stimuli they get from their environment by adapting their strategies. Successful firms are those which are able to select appropriate strategies. It implies that in a given environment, some strategies will outperform others in terms of firm growth and performance. For instance, Sandberg and Hofer (1987) suggest that the success of the focus and differentiation strategy is dependent on the industry in which the firm operates. They argue for firms to build their competitive advantage around a unique product or service. For Covin *et al.* (1990), the choice among low cost, differentiation and focussed strategy is dependent on the technology intensity of the sector in which high growth companies operate.

Existing literature acknowledge the impact of the external environment on a firm's strategic decision-making *e.g.* Boyd *et al.* (1993). It also highlights three environmental conditions *i.e.* dynamic environment, hostile environment and environmental heterogeneity, and suggests appropriate strategies that can be adapted under the different environmental conditions. The strategic adaptation perspective suggests that, successful firms are likely to adapt more appropriately to changes in the environment in which they operate while unsuccessful firms will either adapt too often, or too seldom. It is worth noting at this stage that there is a distinction between business strategy *i.e.* how a firm competes within an industry; and corporate strategy *i.e.* where (*e.g.* markets or industries) a firm competes.

Dynamism refers to the changes in an environment due to technological or market shifts. According to Tushman and Anderson (1986), technological shifts create new opportunities for companies to pursue profitability and growth. For Prahalad (1999), dynamism also means that innovation is fast-paced, causing technological obsolescence

among companies that fail to upgrade their products. Dynamic environments are therefore characterised by instability and continuous change. Appropriate strategies for firms operating within dynamic environments include the development of new products or new marketing, production and administrative practices (*i.e.* innovative strategies). Covin and Covin (1990) suggest that in dynamic environments, firms need to be aggressive in their innovation as well as proactive in pursuing emerging market opportunities.

Ali (1994), suggest pioneering strategies by firms in dynamic environments as part of efforts to pre-empt competitor entry. Pioneering strategies include the firm creating a niche market, setting standards that competitors will have to follow, and achieving an uninterrupted or challenged period of time during which it builds brand recognition. Ali (1994) however, alludes to the fact that a pioneering strategy is risky and demands high expenditures in research and development, market development, and customer education. This may not be recovered for a long term even if ever.

A hostile environment is essentially one that creates threats to the firm, either through increased rivalry or decreased demand for the firm's products. Increased hostility may also stem from globalization and the resultant intensity of competition in an industry (Porter, 1986). Hostility in an industry can lead to an unfavourable business climate where firms compete for limited resources or market opportunities (Miller and Friesen, 1984). Hostile environments can result in reduced profits and research and development spending, and compel the firm to revise its priorities and strategies (Covin and Slevin, 1989).

To cope with hostility, the most appropriate strategy is for the firm to diversify into new fields, thereby avoiding direct competition. Direct competition may also be avoided by building customer loyalty through advertising or by tailoring products to the least competitive market segments. A market differentiation strategy is therefore more suited to hostile environments. Miller and Friesen (1983) posit that hostile environments tend to discourage pioneering but encourage incremental innovation.

Heterogeneity relates to the diversity of market segment in which a firm operates (Dess and Beard, 1984). Environmental heterogeneity indicates that there are several different segments of the market with varied characteristics and needs that are being served by the firm. A heterogeneous environment is a complex one with different wants and needs. The complexity might result from the perceived diversity of the needs of the different customer groups that are being served (Miller, 1983; Miller and Friesen, 1982).

In order to cope with environmental heterogeneity, firms need to adopt a broad-based strategy instead of a focussed-strategy. Slater and Narver (1994) posit that in environments where heterogeneity is high, firms are compelled to increase research and development spending and acquire innovative technologies from other industries. Miller (1987) alludes to the fact that, in general, dynamic and heterogeneous environments are responsible for major investments in research and development.

In general, smaller firms are more flexible in adapting to the environment than larger firms that are more complex in structure and organisation. Increasingly, small business researchers are also introducing environmental factors into their analyses.

Many studies now assess the impact of environmental factors such as location or industry on growth and performance. The firm and its environment are no longer seen as separate entities independent of each other. Rather, small firms can perform well and grow by adopting strategies suitable for their environment.

The strategic adaptation perspective is relevant and informs the present research in that it highlights the need for small firms to adopt and pursue a strategy and the flexibility to adapt this strategy to changes in the environment in which they operate. This is essential for their survival and growth. Small businesses are in general more vulnerable to environmental influences than large ones. Storey (1994) corroborates this fact by positing that the smaller a business, the more likely it is for it to go out of business in a recession. This is evidenced by the current recession in most economies. It is worth noting here that, environmental influences are not always a threat to the small businesses. They can also provide the small firm with growth opportunities (Stevenson and Gumpert, 1991).

The present research on the basis of the strategic adaptation perspective investigates certain specific strategic actions that the small firm may take to improve its chances for growth. These include having in place a well documented long—term strategic plan that is reviewed regularly; providing training to the workforce to improve their skills and productivity; exploring export markets to access new and larger markets; introducing new products to meet the needs of clients; and finally, developing an appropriate financial strategy to attract external funding to improve financial resources. Chapter four provides a detailed discussion of the theoretical arguments, theories or the findings

of previous research that provide a justification for including and investigating the impact of these strategic factors on firm growth in this research.

2.2.4 The Motivation Perspective

Motivation is defined as the arousal, direction and persistence of behaviour (Franken, 1994). For Huitt (2001), motivation reflects an internal state or condition (sometimes described as a need, desire, or want) that serves to activate or energize behaviour and give it direction. Huitt (2001) cites various definitions of motivation in the psychology literature to include, internal state or condition that activates behaviour and gives it direction; desire or want that energizes and directs goal-oriented behaviour; and influence of needs and desires on the intensity and direction of behaviour.

Motivation can be “positive” (*i.e.* entail a response which includes enjoyment and optimism about the tasks that one is involved in) or “negative” (*i.e.* undertaking tasks because there will be undesirable outcomes). It can also be intrinsic (*i.e.* performing an act or undertaking a task because it is satisfying or pleasurable in and of itself and/or it satisfies an internal need or desire be it biological, cognitive, emotional, volition, spiritual or moral) or extrinsic (*i.e.* performing an act or undertaking a task to meet external demands or requirements). The motivation perspective is based on the assumption that an individual’s choice of work-tasks and the time and energy devoted to these work-tasks (*e.g.* growing a firm), is dependent on his or her motivation to perform these tasks (Wiklund, 1988).

There are several theories relating to work motivation but can be broadly classified into those that focus on the satisfaction of needs (*e.g.* Maslow's (1954) need hierarchy theory, Herzberg (1966) motivation-hygiene theory, The Hackman-Oldman (1980) job characteristics theory, and McClelland's (1961) achievement motivation theory) and those that focus on a rational cognitive process *i.e.* relate more to human behaviour (*e.g.* Vroom's (1964) expectancy theory). According to Locke and Henne (1986), the underlying difference among the theories is the focus on the different stages of the motivation process. A review of the motivation theories show that Hackman-Oldman (1980), McClelland (1961) and also Vroom's (1964) expectancy theory relate more appropriately to a research on firm growth and are briefly discussed below.

The Hackman-Oldman (1980) job characteristics theory describes the relationship between job characteristics and individual responses to work and specifies the task condition in which individuals are predicted to excel in their work. The theory maintains that job characteristics that satisfy the individual's needs, will lead to beneficial personal and work outcomes. Hackman and Oldman (1980) define the job characteristics as skill variety, task identity, task significance, autonomy, and job feedback.

Hackman and Oldham (1980) also define three possible psychological states of the individual in such an environment. These are the feeling that the work done by the individual is worthwhile, valuable or important; feeling of personal accountability for the results of work being done; and knowledge and understanding of how he or she is performing. For them individuals that experience all these three psychological states will be internally motivated about their work, experience growth and general

satisfaction, work more effectively, deliver quality work performance, and minimize absenteeism from work. Ultimately, this is expected to lead to the firm's success and growth.

McClelland's (1961) achievement motivation theory is perceived to be particularly suitable for the entrepreneurial domain (Locke, 1991; Miner, 1980). McClelland argues that, at any given time, individuals possess competing needs that serve to motivate behaviour when activated *e.g.* achievement, affiliation, power and autonomy. McClelland maintains that individuals with a high need for achievement (nAch) are more likely, than those low in nAch, to engage in activities or tasks that have a high degree of individual responsibility for outcomes, require individual skill and effort, have a moderate degree of risk, and include clear feedback on performance. For McClelland, since entrepreneurial roles are characterised as having a greater degree of these task attributes than other careers, then, it is likely that people high in nAch will be more likely to pursue entrepreneurial jobs than other types of roles. High need for achievement should therefore make people particularly interested in, and able to perform well as entrepreneurs.

Vroom's (1964) expectancy theory seeks to answer the question of why individuals choose certain actions over others. The expectancy theory maintains that a person's motivation to perform a given task depends very much on the extent to which the individual believes his/her achievement will lead to a valued outcome. The expectancy theory suggests that motivation is a combination of three factors. These are expectancy (*i.e.* the belief that the individual is able to complete the task), instrumentality (*i.e.* the belief that if the individual completes certain tasks then he or she will achieve the

outcome), and valence (*i.e.* the value of the perceived outcome). The totality of the three factors determines the motivational strength of an individual to perform a particular task. All things being equal, the individual will choose to pursue the act for which he/she has the highest motivational strength.

Essentially, the motivation theories differ in terms of specificity of variables used in explaining behaviour and the scope of what the theory purports to explain. Consequently, their applicability will depend on the context in which they want to be used. In a complex entrepreneurship context, theories that address general needs and have a wider scope appear to be more appropriate.

To conclude, the motivation perspective is important for the present research because, although the economic motive (*i.e.* people act in ways to maximise their profits), is taken for granted in most economic literature, many researchers have already pointed out that entrepreneurs may have other ambitions with their firms other than maximising profits and/or growth (Kolvereid, 1992; Storey, 1994; Gundry and Welsch, 1997). Moreover, the motivation of an entrepreneur to grow his or her firm may not be based solely on financial expectations. Wiklund *et al.* (1997) maintain that, other expectations have been shown to have larger influence on growth motivation. This study investigates the relationship between “positive” motivation and rapid firm growth which is discussed further in Chapter four.

2.3 Storey's Framework

Storey (1994)'s framework is largely derived from the theoretical perspectives of resources, strategy and environment, and motivations discussed under the literature review in Section 2.2 above. Storey appears to reject the life-cycle perspective because he is not convinced of the value of the stage models. Storey (1994)'s framework identifies three broad components which must be appropriately combined to achieve rapid growth in small firms. The components are the starting resources of the founder (entrepreneur); firm characteristics and strategic orientations and decisions (strategy) and consist of 35 different elements. For Storey (1994), all small firms, including those that are failing, those that experiencing no-growth or the less rapidly growing firms, may have some level of the entrepreneur's characteristics, firm or strategy components. However, growth firms are only found where all the three components combine appropriately.

The elements of Storey (1994)'s three components are presented in Table 2.1 below.

Table 2.1. Elements of Storey's Components

The Entrepreneur/Resources	The Firm	Strategy
1. Motivation	1. Age	1. Workforce training
2. Unemployment	2. Sector	2. Management training
3. Education	3. Legal Form	3. External equity
4. Management experience	4. Location	4. Technological sophistication
5. Number of founders	5. Size	5. Market positioning
6. Prior self-employment	6. Ownership	6. Market adjustments
7. Family history		7. Planning
8. Social marginality		8. New products
9. Functional skills		9. Management recruitment
10. Training		10. State support
11. Age		11. Customer concentration
12. Prior business failure		12. Competition
13. Prior sector experience		13. Information and advice
14. Prior firm size experience		14. Exporting
15. Gender		

Source: Storey (1994)

The elements under the “Entrepreneur/Resources” capture the characteristics of the individual(s) who provide key managerial resources to the small firm. Some entrepreneurs may be exhibiting some of these characteristics even before they start their businesses. Elements under “The Firm” relate mainly to decisions undertaken by the entrepreneur prior to starting the business, even though, it is worth noting that he/she can opt to change some of these decisions once operations begin. Elements under “Strategy” focus on the actual managerial actions undertaken by the entrepreneur once he/she begins operation.

Under the “Entrepreneur/Resources”, Storey (1994) found that education, social marginality, age and prior sector experience each showed significant positive relationship with the growth of the firm while unemployment had a significant negative relationship with firm growth. He also found that management experience, prior self-employment and gender did not have any significant relationship with growth. Storey (1994) cites the concept of social marginality to be more associated with the work of Stanworth and Curran (1976).

Social marginality is essentially where there is a perception of discord between the personal attributes of the individual (*e.g.* physical characteristics, intellectual make-up, social behaviour patterns) and his/her role held in society. Instances of social marginality include discrimination of individuals due to ethnic origin or unorthodox behaviour and personal idiosyncrasies. The hypothesis is that such individuals may respond to social marginality by a determination to demonstrate their skills and expertise, for example, through the growth of successful enterprises.

Under characteristics of “The Firm”, Storey (1994) found that firm age, sector and the firm’s legal form (elements under the characteristics of the firm) had a significant positive relationship with firm growth. For Storey *et al.* (1989), the main strategic factors showing a significant positive relationship with firm growth were technological sophistication, market positioning, new product innovation, management recruitment, state support, information/advice and exporting. They did not find any significant relationship between either technological sophistication or customer concentration and firm growth.

2.4 Other Research Frameworks

Wiklund (1998), after analysing 70 research articles on firm growth published between 1987 and 1997, proposed an integrated research framework for small firm growth comprising of four main components. These are (i) entrepreneurial attitudes; (ii) resources and capabilities of the entrepreneur, firm and the entrepreneur’s network; (iii) industry; and (iv) perceived task environment. Barringer *et al.* (2005) on the other hand, after a quantitative content analysis of 100 randomly selected narrative case studies comprising of equal numbers of rapid-growth and slow-growth firms, advanced a conceptual growth framework comprising of four major characteristics. These are (i) founder characteristics; (ii) firm attributes; (iii) business practices; and (iv) human resources management (HRM) practices.

The key attributes that were significant in differentiating rapid-growth firms from slow-growth firms found by Barringer *et al.* (2005) are shown in bold and summarized in Table 2.2 below:

Table 2.2. Key Attributes that Differentiate Rapid-Growth Firms from Slow-Growth Firms

Characteristics	Attributes
Founder Characteristics	<ol style="list-style-type: none"> 1. College education 2. Entrepreneurial story* 3. Prior industry experience 4. Entrepreneurial experience 5. Social and professional network 6. Firms started by a team
Firm Attributes	<ol style="list-style-type: none"> 7. Commitment to growth 8. Growth-oriented mission 9. Participation in interorganisational relationships 10. Planning 11. Geographic location that facilitate the absorption of knowledge from external sources 12. Higher buyer concentration
Business Practices	<ol style="list-style-type: none"> 13. Add unique value (i.e. creating unique values for customers) 14. Customer knowledge* 15. Product superiority 16. Innovation 17. Advanced technologies 18. Research and development
Human Resources Management Practices	<ol style="list-style-type: none"> 19. Training* 20. Employee development* 21. Financial incentives 22. Stock options 23. Recruitment and selection 24. Geographic labour pool

Key:

Normal font = previously identified variables, but significant in study by Barringer *et al.* (2005).

Bold = Variables found significant in the study by Barringer *et al.* (2005)

* = New variables that emerge from the content analysis of Barringer *et al.* (2005)

Source: Adapted from Barringer *et al.* (2005)

Zhang *et al.* (2008) in their quantitative analysis of the characteristics of rapid-growth firms and their entrepreneurs in China integrated the research frameworks of Wiklund (1998) and Barringer *et al.* (2005) to develop a framework comprising of (i) entrepreneurial attitudes; (ii) firm's resource and capabilities; (iii) entrepreneurial strategy; and (iv) environment. Table 2.3 below presents the key attributes of the research framework developed by Zhang *et al.* (2008) as well those that were observed to be significant differentiators of rapid-growth and slow-growth firms.

Table 2.3. Key Attributes that Differentiate Rapid-Growth Firms from Slow-Growth Firms proposed by Zhang et al. (2008).

Characteristics	Attributes
Entrepreneur Attitudes	<ol style="list-style-type: none"> 1. Relevant industry experience* 2. Higher education (college, master and PHD) 3. Entrepreneurial experience** 4. Age (below 40 years)** 5. Gender 6. Management or engineering
Resources and Capabilities of the Firm	<ol style="list-style-type: none"> 7. Present size (below 50 employees)*** 8. Rate of employees that hold university degrees (0.3)** 9. Involvement of employees in decision making 10. Growth-oriented vision and mission*** 11. Formal professional cooperation 12. Day-to-day advisors cooperation** 13. Creating unique value for customers 14. Product superiority* 15. Innovation*
Perceived Environment	<ol style="list-style-type: none"> 16. Dynamism* 17. Hostility** 18. Heterogeneity*
Entrepreneurial Strategy	<ol style="list-style-type: none"> 19. Risk-taking 20. Proclivity* 21. Innovativeness

Note: * implies that attributes were only significant at $p < 0.10$;
 ** implies that attributes were significant at $p < 0.05$;
 *** implies that attributes were significant at $p < 0.01$.

Source: Adapted from Zhang et al. (2008)

Liedholm and Mead (1999) analyzing survey data from Botswana, Kenya, Malawi, Swaziland and Zimbabwe concluded that location, composition of activities, labour force characteristics and gender of the entrepreneur are important determinants of firm survival and growth. Similarly, McPherson (1996), using data from five countries in southern Africa namely Botswana, Lesotho, Swaziland, Zimbabwe and two townships in South Africa, concluded that the level of human capital, location, sector and gender are important determinants of growth.

2.5 Cultural Factors impacting Firm Growth Rates

Although there have been numerous studies on small business growth, few of them focused on the cultural factors impinging on entrepreneurship development and small business growth. The relationship between culture and economic development has traditionally been abandoned to the anthropologists, sociologists and psychologists. Indeed, culture also has a role to play in understanding small business development.

Harrison (1997) defines culture as “a set of values and attitudes that guide the actions of individuals and the interaction of people within a society”. He defines “values” as ideas or norms of behaviour to which a society attaches importance, and “attitudes” as ways in which people learn to respond to facts, circumstances and issues. For Lewis (1955), cultural factors impact on entrepreneurship as well as on the broader issue of the appropriate socio-political environment for growth. He argues that economic growth depends on people’s attitudes to work, to wealth, to thrift, to having children, to invention, to strangers, to adventure, and so on. For him, these attitudes flow from deep springs in the human mind”. Lewis believed that religion, for instance, impacts on monetary habits, risk-taking, honesty and rationality – all related to development.

Entrepreneurs from specific ethnic communities have always been a part of the business landscape of most countries in the world. Entrepreneurship has emerged in specific groups along ethnic, religious or other sub-cultural lines. Examples include the Jews in medieval Europe; Marwaris, Jains, and Chettiars in India, Hokkiens/Fukiens in China, the Medici merchants in Italy, as well as in recent times, the Tan, Lee, Ng and Gan clans in Singapore (Iyer 1999; Kotkin 1993; Landa 1981). Indeed, the Protestant

Ethic enunciated by Weber (1952) was based on the rise of a religious worldview that was perceived to be more conducive to capitalism, making Weber one of the first scholars to examine the relationship between culture and economic development.

For Myrdal (1968), cultural factors are the principal obstacles to modernization. Not only do they get in the way of entrepreneurial activity, but they permeate, rigidify and dominate the political, economic and social dimensions of a nation. He argues that even in their economic choices, people are conditioned by the community in which they live.

In Ghana, the “Kwahus” and “Ashantis” belong to tribes that are perceived to be more entrepreneurial because many of them own successful businesses. Also, the Lebanese and Indian communities in Ghana own some very successful businesses. It is therefore apparent that inclusion of cultural factors in studies investigating the factors that affect small business growth could be promising.

2.6 Entrepreneurship and Small Business Development

There is a wide diversity of definitions of entrepreneurship but no real agreement on what is or what it is not (Carter and Jones-Evans, 2000). For Knight (1921), entrepreneurs try to predict and act upon change within markets. They bear the uncertainty of market dynamics and are also expected to perform fundamental managerial functions such as direction and control. For Schumpeter (1934, 1954), entrepreneurship is synonymous with innovation, creativity and risk-taking. Penrose (1963) sees entrepreneurship as recognising opportunities within economic systems. For Kirzner (1979), the entrepreneur is one who recognises and acts upon market opportunities.

Entrepreneurship involves exploiting opportunities within a market. Entrepreneurs bear risk while pursuing opportunities and are often associated with creativity and innovation. Although entrepreneurs may perform managerial functions as part of their activities, routine management of a business or an operation is not considered to be entrepreneurship. Entrepreneurship is however an ongoing activity. Individuals can also be “entrepreneurial” within organisations, often referred to as “Intrapreneurship”.

2.6.1 Theories of Entrepreneurship

In general, entrepreneurial activity is explained by either individual psychological attributes (McClelland, 1961; Chell *et al*, 1991) or by economic factors based on the interaction of supply and demand (Casson, 1995). Existing theories on entrepreneurship can be located on an environment-to-individual continuum and seek to explain the extent to which the extreme factors of environment and individual attributes influence entrepreneurship (Manimala, 1991; Koh, 1996).

Economic theories on entrepreneurship emphasize the environmental perspective in which entrepreneurial activity results from disequilibrium in supply and demand (Kirzner, 1973; Casson, 1982; 1995). The entrepreneur is perceived to be the one who identifies and acts upon opportunities in the market place performing essentially the role of an arbiter and facilitating the movement of the market to equilibrium (Kirzner 1979).

At the other end of the continuum are the psychological theories that focus on individual traits such as risk-taking, achievement, autonomy, optimism and self-efficacy (McClelland, 1961). The most popular perceptions of entrepreneurs are associated with their key roles of risk-takers and innovators. For Caird (1990), effective entrepreneurs

are risk-takers. Stevenson and Gumpert (1992) postulate that, entrepreneurs focus first on opportunities without initially considering resources, structure or strategy. Drucker (1997), on the other hand, argues that successful entrepreneurs are those who carefully assess the risks they have to contend with and take appropriate measures to minimize them.

Certain behaviours, skills and attributes are associated with entrepreneurs. Gibb (1996, 1999) highlights positive behaviour traits among entrepreneurs as opportunity seeking, creative problem-solving and coping with uncertainty. Entrepreneurial skills include problem-solving, negotiation and decision making while attributes consist of self-confidence, achievement orientation, versatility and resourcefulness. Starbuck (1965)'s perception of effective entrepreneurs is that they are quick learners, who use both negative and positive feedback to improve their businesses. For McClelland (1961), the "achievement motivation" - that is, the desire to achieve purely for the sake of achieving - is of critical importance to successful entrepreneurship.

Entrepreneurship has also been accounted for by cultural and sociological theories. Cultural theories link religion and entrepreneurship. These theorists focus on the role which certain ideologies such as the Protestant ethic plays in entrepreneurship development (Weber, 1930). As mentioned in Section 2.5, for Weber, religion, norms, and values, behaviour and economic developments are all interconnected. Weber believed that the cultural context in Western Europe in the eighteenth and nineteenth centuries played a significant role in the rise of capitalism there, while other cultural contexts such as Confucianism, Buddhism, and Islam either supported or hindered similar developments in Asia.

Staley and Morse (1965) argued that only a relatively small proportion of artisans in India commanded the talent and motivation to become successful entrepreneurs because they were bound by traditional norms, values and obligations. Cultural factors such as Chinese “values” and modes of social organisation are now portrayed to explain why Chinese businessmen have been successful in developing corporate businesses and, in so doing, have been acknowledged as successful entrepreneurs. These cultural factors are seen to have greatly accounted for the rapid development of East and South East Asian countries.

Blundel and Smith (2001) argue that, probably, the diversity and, sometimes, contradictory theories of entrepreneurship can be attributed to their having been developed in different academic disciplines such as economics, sociology and psychology. Current approaches to understanding the nature of entrepreneurship reject the exclusive trait theory, in favour of an integrated social-psychological approach (Chell *et al*; 1991). The entrepreneur is no longer merely the heroic, risk-taking, money-making individual. Entrepreneurship now extends to social entrepreneurs who in addition to making profits and good returns are equally concerned about the social impact of their operations. They work to ensure that society as a whole also benefits from their operations.

Research which focuses solely on individual traits is now, more than ever, being challenged by those who regard entrepreneurship as a phenomenon which is strongly socially embedded (Granovetter, 1985; Jones and Conway, 2000). Entrepreneurship goes beyond the small business owner-manager sector with which it has traditionally been linked. Now, there can be entrepreneurial behaviour in large organisations and in

many other facets of life including sporting, not just business. Even increasingly, most sports are being perceived as businesses. Leadbeater (1997) and Thompson (1998) allude to the growing attention being paid to social, civic and artistic entrepreneurs.

Entrepreneurship is also now generally perceived to imply a growth orientation. Therefore, a small business owner who wants to remain small is excluded from the category of an entrepreneur. Some commentators even now argue that initiatives that are really not different or unique, because they are replications of similar ones that exist elsewhere, should not be considered as entrepreneurial (Thompson, 1998). One may however argue that the fact that a small business owner wishes to remain small or an individual is replicating a business concept that already exists somewhere does not mean that these individuals are not making valuable contributions to economic development. Entrepreneurs may still be happy even though they are owner/managers of slow-growth small firms. Therefore, they should still be regarded as entrepreneurs in the context of sustainable economic development.

2.6.2 Factors Motivating the Establishment of Small Businesses

Researchers argue that the key factors motivating the establishment and possible growth of small businesses are economic and social/psychological. Proponents of the economic factor argue that individuals invest in small businesses in order to maximise the present value of their wealth. An individual will invest in a small business primarily because it is seen as the “most profitable” at the time. However, over the years, small business researchers such as Hamilton (1987) and Shane *et al*, (1991) have found that social/psychological factors also immensely motivate small business ownership.

Independence and recognition that have no bearing onto the traditional view of wealth maximization stand out as two important factors.

Hamilton (1987) conducted a study on the motivations of selected New Zealand businesses and found that 33% of those surveyed were motivated by a need for independence. In this study, 40% of those surveyed said they were motivated by the desire to make the most of a commercial opportunity, while 10% were motivated by the desire to create wealth. 8% of those surveyed were motivated by the desire to avoid unemployment.

Shane *et al*, (1991) conducted a study on the motivations for starting a business in Britain, New Zealand and Norway and found a range of factors. However, the most important factors were those of recognition and independence. Recognition concerned the desire of business owners to achieve a higher position in society and/or be respected by friends. Independence to most business owners related to their desire to control their own time, the desire to have greater flexibility in personal and family life and the desire to have adequate freedom to be innovative and creative in their approach to work.

The fact that, sometimes, independence or recognition are the key motives in establishing new businesses is economically irrational and may account for why some small businesses do not experience rapid growth. Stanworth and Curran (1976) postulated “rational” reasons for the independence motivation. They argued that investing in small businesses for independence or recognition is a response to social marginality. Using data from the Bolton Report (1971), they postulated that small business owners usually have low levels of formal education and therefore are unable to

take advantage of successful career structures in large businesses. Consequently, they build careers for themselves by owning and managing small businesses. Stanworth and Curran's assertion appears to suggest that education may not be associated with growth.

Another important consideration in understanding the motivation for establishing small businesses is the family business factor. Family businesses dominate the small business sector with most operated by and/or employing at least one family member. Johns *et al*; (1989) found that 82% of manufacturing small firms and 77% of non-manufacturing small firms that had been established over a twenty-year period, were still controlled by either the firm's founders or members of their families. Sometimes, individuals are motivated to establish small businesses so as to guarantee employment for family members. The family motivation factor is strengthened by the fact that individuals who already have family background in business are most likely to start their own businesses. However, so long as they make acceptable profits to be sustainable, these individuals may not be interested in growing the businesses.

2.7 Theoretical and Methodological Issues in the Study of Small Firm Growth

Storey (1994) posits that despite the importance of employment generated in rapidly growing small firms, theoretical and empirical understanding of their characteristics remains somewhat superficial. He notes in particular the limitations of the stage models used to explain small firm growth. He also notes the fact that the bulk of studies have been conducted independently of each other. Often the studies seek merely to address specific issues of interest to the researcher which makes their comparability with other studies very difficult. Cooper (1995) argues for better theoretical frameworks and more theory-driven empirical research on small business growth.

Firm growth, following from the work of Penrose (1959), is a phenomenon that either refers to (i) an increase in amount (*e.g.* growth in output, export or sales) or (ii) an increase in size or improvement in quality resulting from a process of development similar to natural biological processes. Current literature is dominated by three main methodological issues on firm growth especially, on small firm growth. The first methodological issue concerns measurement of growth. There are different measures of growth used in the existing literature. Delmar (1997) and Weinzimmer *et al.* (1998) posit that the diversity of measures used in organisational growth studies inhibits researchers' ability to accumulate knowledge and compare results.

Delmar *et al.* (2003) cites for instance, studies that measure growth in terms of absolute sales over five years (*e.g.* Dunne and Hughes, 1996; Merz and Sauber, 1995) and those that measure growth in terms of relative employment growth over a three-year period (*e.g.* Zahra, 1993b; Donckels and Lambrecht (1995)). They suggest that comparison between studies is impossible or at best misleading when the time frame or the growth indicator differ.

Delmar *et al.* (2003) argue that for a more comprehensive study of the issue of firm growth, researchers need to recognise the different measures used. However, more importantly, they advocate for recognition of the fact that firms grow in different ways. Also, the patterns of growth over time could vary significantly and have different causes. Consequently, firm growth research should not only focus on why firms growth but also how they grow.

The second issue is the theoretical framework. For Wiklund (1998), the theory of the research, in many studies is not explicitly stated. He suggests that there is limited use of theory in studies while, the development of theory is also limited. For Wiklund (1998), additional concerns regarding the theoretical framework are the fact that previous research studies lack a clear definition and clarification of concepts; previous knowledge is not adequately integrated into research models; samples are usually small; response rates are low and data collection is cross-sectional.

The third issue is the general lack of longitudinal studies in small firm growth research. Growth is a process that happens over time and ideally, needs to be studied over time. Davidsson *et al.* (2006) suggest that even if growth is perceived merely as change in amounts, the fact that this change occurs over time cannot be ignored. They therefore recommend that firm growth should be studied longitudinally, in the sense that, assessment of the predictors of growth should precede the assessment of the outcome *i.e.* the change in size. Cooper (1995) suggests that longitudinal studies are particularly important in providing insight into the founding variables that influence later performance.

Following the literature review, it was observed that a large proportion of studies on firm growth are survey-based. Survey data are the best alternative for data collection on attitudes, perceptions, strategies, resources *etc* from a large number of cases. The limitation with surveys is that studies tend to be cross-sectional. This is because; data is collected at one point in time.

In this study, an attempt has been made to address some of the methodological issues discussed. For instance, Section 2.10 discusses the development of the present research framework which integrates the theoretical perspectives with other existing research frameworks in an attempt to build on and accumulate knowledge that will have significant practical value. In addition, Chapter four provides an in-depth discussion of the theoretical arguments and theories underpinning the research. The research was however, cross-sectional and not longitudinal, and survey based given considerations of time, cost and the challenges of obtaining information from small firms in Ghana.

2.8 Operationalising Growth

2.8.1 Growth Indicators

Over the years, researchers have used many different indicators of growth. These can essentially be classified into three different categories *i.e.* subjective, specific and general indicators. Subjective indicators involve measurement on a scale of an individual's satisfaction with growth outcomes. An example is the scale developed by Gupta and Govarinrandja (1984). The limitation of this growth indicator is the fact that individuals differ in their level of satisfaction even on the same objective outcome levels. Consequently, the measure is only weakly correlated with actual growth and is therefore inappropriate as a proxy for actual outcomes (Chandler and Hanks, 1993).

Subjective indicators are advantageous or useful when the researcher is trying to establish how growth outcomes influence the subsequent behaviour of the firm. Frequently, decisions made and actions taken by firms will depend on how previous performance is perceived rather than the objective outcome *per se*.

Specific indicators were first suggested by Bolton (1971) and typically involve, for example, the number of vehicles for transportation companies (*e.g.* taxi or car rental companies) or the number of seats for restaurants and movie theatres. Specific measures are suitable and recommended for within-industry analysis where firms exhibiting similar characteristics are compared (Davidsson *et al.* 2006). The disadvantage of specific indicators is that they cannot be used for comparisons across industries and find limited applications in most cases.

General objective measures are the most frequently used in research. The key indicators are sales, employment, assets, physical output, market share and profits (Delmar, 1997, Ardishvili *et al.* 1998). The market share indicator is unique in that it measures how much a firm has grown in relation to its competitors. However, Davidsson *et al.* (2006) are less supportive of the market share as a measure of growth especially in small firm research. They argue that, the term “market” in market share calculations could be ambiguous. In addition, for small firms, differences in market share could be irrelevant, while comparing market shares for firms operating in different markets is indefensible.

Hoy *et al.* (1992) and Ardishvili *et al.* (1998), remark that a consensus has been reached among researchers that sales, is the preferred growth measure. This is affirmed by Delmar *et al.* (2003). The preference for sales as a growth indicator is because, it is relatively easily accessible, it is applicable to virtually all sorts of firms, and is relatively insensitive to capital intensity. For Davidsson and Wiklund (2000), sales is an appropriate indicator across various conceptualizations of the firm while Barkham *et*

al., (1996) and Hubbard and Bromilay (1995) maintain that sales growth is the most common performance indicator favoured by entrepreneurs themselves.

Flamholtz (1986) and Delmar (1997) argue that the growth process in a firm is likely to be driven by the demand for more of its products and services consequently, sales are likely to increase. Increase in sales may call for the acquisition of additional resources such as employees or machinery. A firm can also increase its sales by outsourcing the increased business volume, in which case, it will not even need to acquire additional machinery and labour. Sales growth is therefore the most appropriate objective growth. However, the measure may be sensitive to inflation and currency rates consequently, it is therefore essential that in unstable economies, sales growth should be adjusted for inflation in order to arrive at the real rate.

Employment growth is another important aspect of growth and is prominent in times of high unemployment where the general interest is in creating employment (Schreyer, 1999); or if the focus of interest is on the managerial implications of growth (Greiner, 1972; Churchill and Lewis, 1983). It is worth noting that, it is possible to replace employees with capital investments. If this is done, then the firm may increase sales and assets but decrease or at least maintain employment. In other words, there will be an inverse relationship between capital investment and employment. Other shortcomings of employment as a growth measure include, the fact that the number of employees is affected by labour productivity increases, and the firm's decision to make or buy products.

Delmar *et al.* (2003) highlight the shortcomings of the market share and total asset measures which results in their limited applicability in research. They argue that indicators such as market share can only be compared within industries for firms with a similar product range, while using total asset value as an indicator is very much related to the capital intensity of the industry and subject to changes over time. Weinzimmer *et al.* (1998) suggests that measuring growth in terms of assets could be problematic in the service sector due to the difficulty of valuing intangible assets which could be very important for a firm in the service sector. The issue of valuing intangible assets is not limited to only the service sector. In reality, it applies to all sectors. Accounting differences, as well as lease financing could also pose problems when one measures growth in terms of assets.

For Bruneel *et al.* (2009), whether a firm grows in sales and/or employment depends on the strategy pursued. They argue that sales growth is as a result of the firm focussing on a product strategy, while employment growth is as a result of the firm focussing on a technology strategy. They suggest that firms that adopt a hybrid strategy comprising of a product strategy and a technology strategy will experience growth in sales and employment. In this research, both the turnover and employment growth measures were used given that the objective is to identify overall factors that distinguish between rapid-growth and slow-growth firms.

2.8.2 Growth Measures

There are two basic approaches to measuring growth - absolute growth and relative growth. Absolute growth measures the actual difference in firm size from one observation to another. Relative growth measures the relative change in size, in other

words, the change in size is related to the initial size of the firm. Relative growth is typically obtained by dividing the absolute growth by the initial size of the firm.

Formally, absolute growth and relative growth can be represented as follows:

Let G_{abs} = Absolute firm growth

G_{rel} = Relative firm growth

S_i = Initial size of the firm

S_f = Final size of the firm

Then

$$G_{abs} = S_f - S_i$$

$$G_{rel} = G_{abs} / S_i$$

Both absolute growth and relative growth approaches suffer from the problem of the effect of initial size on firm growth. Delmar (1997), Storey (1994) and Weinzimmer *et al.* (1998) allude to the fact that initial firm size is typically positively associated with absolute growth but has a negative association with relative growth rate. Although Birch (1987) and Bangma *et al.* (1997) tried to resolve the problems of absolute and relative growth measures by calculating compound measures containing elements of both types of measures, the compound measure is more difficult to conceptualize since it is impossible to state the dimension it seeks to measure. It measures neither growth in terms of value nor as a percentage. The problem of size affecting growth appears to be best solved by using both relative growth and absolute growth simultaneously.

There are two basic mechanisms underlying the growth of a firm. A firm can grow organically by expanding its present business activities. It is also possible for the firm to expand by acquiring resources – external growth. The implications of these two types of growth on research findings will be different and therefore need to be properly delineated when interpreting results of the analysis. Delmar *et al.* (2003) posit that the distinction between organic growth and growth by acquiring resources has been widely ignored in previous research. They argue that this distinction is critical especially if the main interest of the research is at the societal level because acquisition based growth in itself does not lead to a net addition to the economy.

For Penrose (1959) and Levie (1997), the distinction between organic growth and acquired growth requires further scrutiny because the drivers and effects of the two forms of growth are likely to result in different managerial implications in firm-level studies. Ideally, studies should be designed in such a way that acquired growth can be separated from organic growth. In general, organic growth is relevant from an entrepreneurship perspective concerned with the creation of value and combination of resources, while total growth is important from a management perspective, since total resources and activities are of greater relevance regardless of how they became part of the firm.

2.9 Review of Gaps in the Literature

The literature review on small firm growth discussed above confirms that several empirical studies are multi-disciplinary and reflect the background and preferences of individual researchers. Often, studies lack a thorough discussion of the theoretical assumptions supporting the inclusion of variables. Cooper (1995) and Van der Werf

(1989) posit that most works on the subject suffer from the absence of defined theoretical frameworks.

In addition, as mentioned in Chapter 1, the most frequently cited literature on small firm growth in Sub-Saharan Africa is the qualitative survey of entrepreneurs in Botswana, Kenya, Malawi, Swaziland and Zimbabwe conducted by Liedholm and Mead (1999) and the study on the determinants of growth of small businesses by McPherson (1996) conducted in Botswana, Lesotho, Swaziland, Zimbabwe and two townships in South Africa. These studies covered mainly Eastern and Southern Africa. Literature on small firm growth in Sub-Saharan Africa, in general, and West Africa in particular, appears to be limited.

This research seeks to narrow the literature on small firm growth in Sub-Saharan Africa by providing empirical evidence which contributes to a broader understanding of factors influencing growth rates in Ghana and possibly other Sub-Saharan African countries. The current research achieves this objective by developing a new integrated framework based on previous research achievements that also includes environmental and cultural factors. It presents a discussion of the arguments, theories and previous research underpinning the various variables and hypotheses used in the research to respond to the concerns of Cooper (1995) and Van der Werf (1989). In addition, this research investigates small firm growth variables in Ghana, presumably one of the first such studies in West Africa.

The research sought to answer six main research questions:

- a) What entrepreneurial characteristics discriminate between rapid-growth and slow-growth small businesses in Ghana?
- b) What firm characteristics discriminate between rapid-growth and slow-growth small businesses in Ghana?
- c) What strategic factors discriminate between rapid-growth and slow-growth small business growth in Ghana?
- d) What environmental factors discriminate between rapid-growth and slow-growth small businesses in Ghana?
- e) What cultural factors discriminate between rapid-growth and slow-growth small business in Ghana?
- f) Overall, what key factors are important for growth among small businesses in Ghana?

2.10 Development of the Present Research Framework

The current research framework seeks to integrate the theoretical perspectives with the work done by Storey (1994), Wiklund (1998), Barringer *et al.* (2005) and Zhang *et al.* (2008) in order to further understand small business growth in developing countries. Already, many studies on this subject employ a wide range of variables, related to two or more constructs. Consequently, integration of the various perspectives has already been demonstrated in empirical research. The literature review of the theoretical perspectives in Section 2.2 above, amply demonstrates the existence of suitable theories on individual perspectives. What is most needed to further research on small firm growth and performance is to obtain different insights from the perspectives and integrate them in a meaningful manner. The key to this appears to be a proper

understanding of their basic assumptions, their limitations and the compatibility of different theories.

Gartner *et al.* (1992) argue that there is no need for the development of new theories on firm growth. Instead existing theories can be used. Researchers such as Baden-Fuller (1995), recommend the integration of the strategic adaptation perspective with the resource-based perspective to get a fuller view of the operations of the firm since each individual perspective will only provide one view-point. However, these two perspectives focus on the firm itself and actions that it undertakes, and not individuals. Consequently, integrating the motivation perspective becomes important because it focuses more on the individuals and seeks to explain why they take the actions they do. The analysis of growth is therefore undertaken at two levels. Ultimately, entrepreneurial strategy becomes the mediator through which the three perspectives impact on growth as depicted in the illustration presented in Figure. 2.1 on the next page.

Entrepreneurial strategy in this context simply refers to decisions and actions by the entrepreneur of a small business. As already highlighted in Section 1.6, small firms have a relatively simple organizational structure that is greatly influenced by the entrepreneur's vision. Consequently, the firm and the entrepreneur merge into one identity with the entrepreneur having a direct and critical influence on the actions of the firm. This is not the situation with large firms where many more people are involved in the decision-making process. Consequently, the focus is more on the firm's strategy. The mediating role of entrepreneurial strategy therefore gives prominence to the decisions and actions of the entrepreneur on the subsequent growth of the small firm.

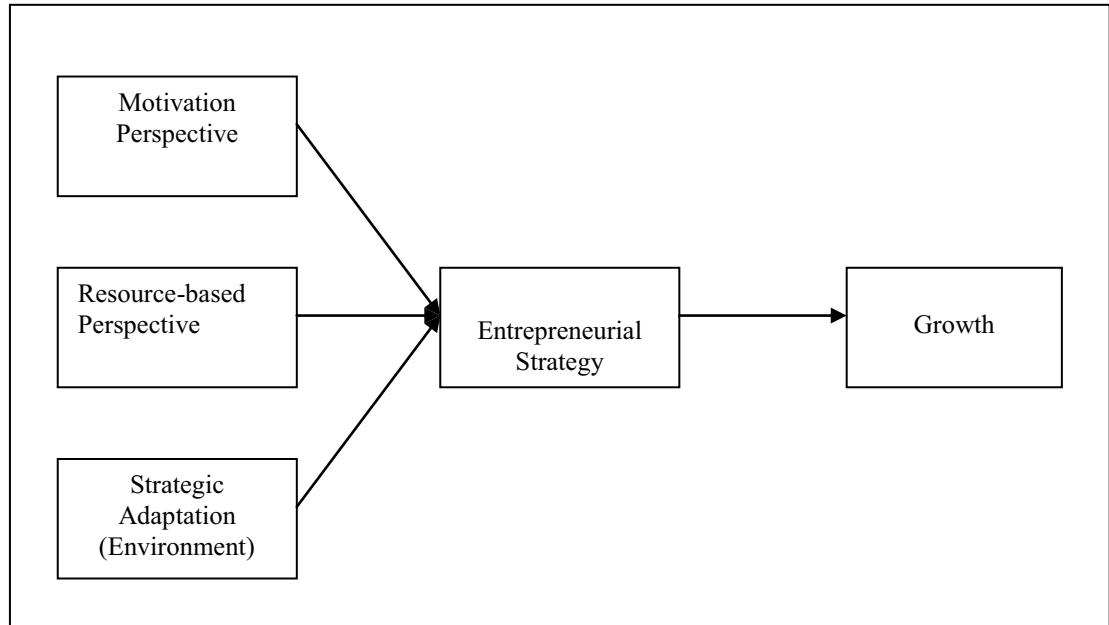


Figure 2.1. Illustration of an Integration of Resource-based, Strategic Adaptation and the Motivation Perspectives.

Source: Author

It is appropriate at this stage to highlight the distinction between business strategy and corporate strategy. Strategy is essentially what a company or firm does to sustain and grow its business value into the future. There are two forms of strategy. The first is corporate strategy *i.e.* where the firm competes. For Krishnan (2005), corporate strategy refers to decisions regarding what businesses a firm should enter into, what businesses to retain in the portfolio, and those that it should exit from. In corporate strategy, the focus is on the selection and development of the markets (or industries) in which a firm competes. This is often achieved through (i) a diversification approach which occurs when a firm enters a new industry or market, or (ii) vertical integration which occurs when the firm takes on activities that were previously done by others on its behalf.

The second form of strategy is business strategy *i.e.* how a firm competes in a market or an industry. Krishnan (2005) posits that business strategy focuses on how the firm can achieve competitive advantage on a sustained basis. There are two generic routes to competitive advantage following from the work of Porter (1980). These are through the firm being the lowest cost producer, or through differentiation and a price premium. Hill and Jones (1998), allude to four generic building blocks or drivers of competitive advantage. These are superior efficiency, superior quality, superior innovation, and superior responsiveness to customers.

For Krishnan (2005), firms achieve the building blocks or drivers of competitive advantage through the creation of distinctive competencies, which are in turn, built through the availability or presence of resources and capabilities. Krishnan posits that resources especially tangible ones like buildings, plant and machinery as well as intangible ones like brands, patents and technological know-how are created by the deliberate actions of the firms. Capabilities are the firm's skill in coordinating its resources and using them productively. The business strategy adopted by firms therefore stems from the deliberate actions they undertake to create resources and capabilities.

As already discussed, for small firms, there is often no distinction between the actions of the entrepreneur and those of the firm. Consequently, the firm's ability to be competitive and grow or expand into new markets depends on the decisions and action of the entrepreneur. The mediating role of entrepreneurial strategy is therefore critical.

Figure 2.1 above provides an overview of the factors contributing to firm growth and the relationship among them, based on empirical research. The illustration also uses variables from multiple levels of analysis and places all these in one theoretical framework. Entrepreneurial strategy is manifested in specific actions and decisions by the entrepreneur in the course of managing the small firm.

Figure 2.2 below presents the proposed research model. It is based on five components i.e. characteristics of the entrepreneur, characteristics of the firm, strategic factors, environmental factors and finally cultural factors. Each component consists of several elements (originating from the theoretical perspectives) that vary in their potential positive or negative influence on firm growth. The elements in individual components may originate from multiple theoretical perspectives. For example, the elements included under the characteristics of the entrepreneur emanate from the motivation and resource-based perspective. The elements influence firm growth individually and jointly. Consequently, the analysis of this research will investigate both the individual and joint influences of the elements on firm growth.

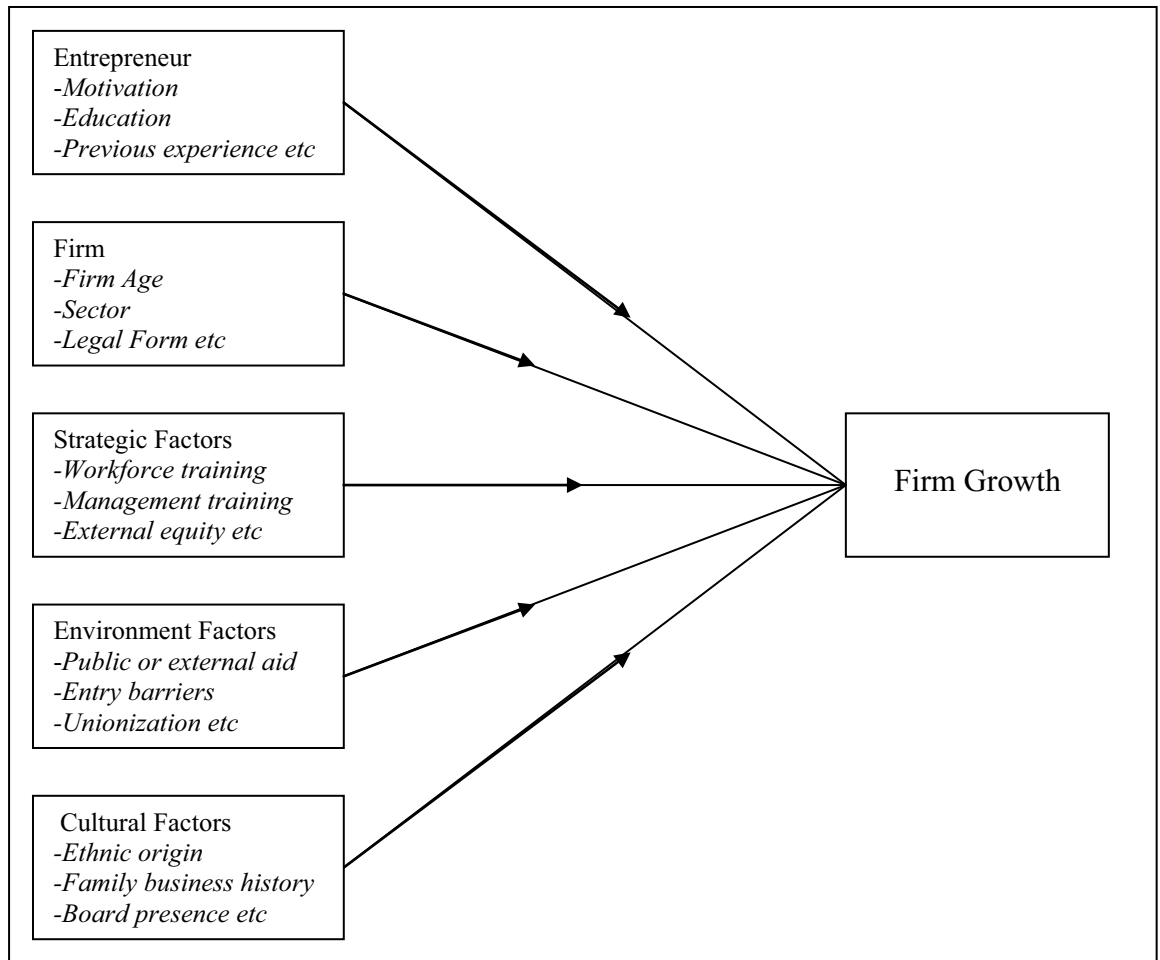


Figure 2.2. Proposed Research Model

Table 2.4 below present details of the variables expected to influence growth individually and jointly as outlined in the proposed research model. The variables listed come from previous research work by Storey (1994), Wiklund (1998), Barringer *et al.* (2005), Zhang *et al.* (2008) and the author's own work. The variables selected are deemed to be those that can be investigated for established small firms that are already operational. The variables omitted are those best investigated prior to the start-up of the firm *e.g.* the entrepreneur's growth aspirations. The variables form the basis of hypotheses development in Chapter four of the thesis.

Table 2.4. Variables Influencing Growth in Small Business (i.e. $g=f(\dots)$)

Researcher	Researcher	Category of Variable	Variable
Author	Storey	Characteristics of the Entrepreneur	Motivation
			Education
			Previous management experience
			Work experience
			Number of founders
			Industry specific experience
			Gender
		Characteristics of the Firm	Firm age
			Business sector
			Legal structure
			Size
		Strategic Factors	Affiliation
			Formal workforce training
			Management training
			External equity
			Use of Electronic Technology Information
			Strategic Planning
			New products introduction
			Exports
			Research and Development
			Partnership with research institutions
	Environmental Factors	Access to public and other external aid	
		Entry barrier	
		Presence of unionized staff	
		Presence in an industrial park	
		Dynamism of the environment	
		Social and fiscal policies	
		Cultural Factors	Owner/manager's ethnic origin
			Family history in business
			Mission and vision statement
Board presence			
Employee participation in decision making			
Frequency of management meetings			
Proportion of non-family members in management			
Membership of professional/business association			
Membership of community/social networks			

Source: Storey (1994), Wiklund (1998), Barringer *et al.* (2005), Zhang *et al.* (2008) and Author's Own Work

2.11 Conclusions

To conclude, this chapter reviewed the literature on the four theoretical perspectives on firm growth *i.e.* the resource-based perspective, the life-cycle perspective, the strategic adaptation perspective and the motivation perspective. The chapter reviewed different research frameworks including those of Storey (1994), Wiklund (1998),

Barringer *et al.* (2005) and Zhang *et al.* (2008) in order to establish a strong theoretical foundation on which to build the framework for the current research.

The chapter also discussed entrepreneurship and small business development and highlighted factors motivating the establishment of small businesses. Research on small firm growth is beset with some theoretical and methodological issues prominent among them being the measurement of growth. For this research, growth is measured based on real turnover and employment. It briefly reviewed the gaps in the literature and ended with a discussion of the development of the current research framework. It proposed a research framework to answer the six main research questions. The next chapter presents the methodology of the research.

3 METHODOLOGY: PHILOSOPHY AND RESEARCH METHODS

3.1 Introduction

In empirical research, several choices have to be made as to what is to be studied and how these studies should be conducted. The choices range from the basic scientific positions *i.e.* research philosophy, to methods of analyzing the ensuing data to be collected. In this chapter, the various issues and choices are discussed in relation to the main aims of this thesis which are to (1) understand why some small firms succeed and grow while others do not; and (2) determine the characteristics that distinguish rapid-growth small firms from slow-growth firms in the manufacturing and services sectors in Ghana.

This research is explanatory and not exploratory. Unlike exploratory research, where the focus is on gaining insights and familiarity with the subject area for more rigorous investigations later, this research is actually testing hypotheses and seeking to analyse and explain why some small businesses grow rapidly while others grow slowly. It adopts a quantitative research approach and is based on a positivist scientific paradigm. Typically, exploratory research adopts a qualitative research approach and is rooted in the interpretative scientific paradigm. The research aims to understand the phenomenon of small firm growth by determining relationships between firm growth and various factors hypothesised to influence growth placing it in the realm of explanatory research.

The chapter begins with a discussion of the research philosophy in section 3.2. The research is grounded in the scientific realism approach to scientific knowledge. Section 3.3 defines key concepts used in the research and includes measurement of growth and the definition of SMEs. Section 3.4 discusses choice of research methods. For this research, a structured questionnaire survey was adopted. Sections 3.5 and 3.6 discuss data collection and the data analysis methods respectively.

For the purpose of providing an appropriate context for the discussion on the methodology, the research questions are repeated below as:

- a) What entrepreneurial characteristics discriminate between growth and non-growth small businesses in Ghana?
- b) What firm characteristics discriminate between growth and non-growth small businesses in Ghana?
- c) What strategic factors discriminate between growth and non-growth small business growth in Ghana?
- d) What environmental factors discriminate between growth and non-growth small businesses in Ghana?
- e) What cultural factors discriminate between growth and non-growth small business in Ghana?
- f) Overall, what key factors are important for growth among small businesses in Ghana?

3.2 Research Philosophy

In undertaking research, it is important for the researcher to establish the philosophy of the research *i.e.* to formulate an ontological and epistemological framework. The framework spells out in advance, the kind of knowledge that is hoped to be obtained through the scientific study of the specified research questions. Lincoln and Guba (1985) posit that epistemological orientations provide researchers with the guiding principles on which they may base their methodologies. This research is grounded in the scientific realism approach to scientific knowledge. Scientific realism is similar to positivism but is different in certain important respects.

In its broadest sense, positivists claim that the goal of science is prediction based only on observable terms (Audi, 1995). Positivism therefore holds that the goal of knowledge is simply to describe the phenomenon that one observes and enables conditional prediction. Observation and measurement are therefore at the core of positivism. The fact that growth is an objective phenomenon that can be observed, measured and investigated may lead one to assume a positivist research philosophy. Empirically, it is very easy to identify growth. A rapidly growing small firm can easily be identified by observing the growth in the number of employees, assets, volume of products traded *etc.* All these variables can be easily measured.

However, for Schumacher (1974), the quantification bias on growth comes at the expense of understanding qualitative differences on growth *i.e.* whether growth resulted in a good or bad outcome. It appears therefore that, equally important to measuring growth, is the determination of its impact such as what has grown and who has benefited. Drucker (1980) argues that firms could also pursue counter-productive forms

of growth. Consequently, it is also important for the firm to distinguish between growth with positive impact and growth with negative impact.

For Drucker (1980, p 49) “any increase in volume that leads to reduced productivities, except for the shortest of start-up periods, is degenerative if not precarious.” It is therefore apparent from the fore-going, that a mere focus on what can be measured and compared in research on small business growth, has the potential to under-represent the impact of qualitative differences in growth. Consequently, research on firm growth should not be solely the preserve of the positivist school of thought.

There are two major criticisms of positivism. The first criticism is that, the positivist point of view does not accept any theory based on unobservable phenomena, and instead rejects them. The second criticism is that many or all scientific methods must be based on theories in use. Positivists believe that valid theories are always logically consistent and are able to predict empirical phenomena. For Boyd (1984), this is an inappropriate description of science. The individual’s beliefs about the world are expected to influence how he/she perceives it, and the knowledge that is gained from it. The term “positivism” is now obsolete among modern philosophers of science (Hunt, 1991, de Regt, 1994).

Scientific realism is the view that the aim of science is knowledge of the truth about observable and unobservable aspects of a mind-independent, objective reality (Sankey, 2001). For Faye (2006), the scientific realist’s claim of mind-independence has two implications. The first is that the external world exists objectively *i.e.* independent of human consciousness. To elaborate, space, time, things, events, properties, and laws of

nature may exist whether we believe that they do or not. Secondly, the objective world is a physical world and does not consist of experiential objects or other mental objects. Scientific realism is therefore based on the assertion that there exists a world even though it may be inconceivable to our minds or even be empirically inaccessible. The aim of science from the scientific realist viewpoint is to discover the truth about the world and to acquire knowledge (Sankey, 2007).

McMullin (1984:26) comments that scientific realists adhere to the premise “that the long term success of a scientific theory gives reason to believe that something like the entities and structure postulated by the theory actually exists”. For Hunt (1991) and de Regt (1994), this statement is still considered at the heart of scientific realism. In the social sciences, the success of attitudes, intentions and beliefs in explaining, predicting and solving problems is adequate proof that these psychological states exist independently of how researchers choose to label them (Hunt, 1991).

Boyd (1983:45) in his description of scientific realism states that “scientific theories, interpreted realistically, are confirmable and in fact often confirmed as approximately true by ordinary scientific evidence interpreted in accordance with ordinary methodological standards”. He further suggests that that the historical progress observed in mature sciences is essentially a matter of successively more accurate approximations to the truth about both observable and unobservable phenomena. Later theories typically build upon the observational and theoretical knowledge already embodied in previous theories.

Thus, contrary to the positivist view-point, scientific realists emphasize that theories about reality are only approximately true with the accuracy of this approximation increasing with the development of methodology and theory. One can therefore argue that scientific realism actually represents a cumulative view of scientific knowledge where methodology, based on approximately true theories, provides a reliable guide to the discovery of new results and improvements of old theories. Theories are relevant to the extent that they accurately explain and predict phenomena.

McKelvey (1997:363) recommends scientific realist epistemology for organisational science and suggests that it is time for organisational scientist to stop their belief in positivism or even using the term positivism, especially if they do not know what it really represents. He argues that the early success of the natural sciences, such as the physical and biological sciences, was due to the fact that they were at first removed from the phenomena under study *i.e.* they separated the idiosyncratic “details” from the actual phenomenon.

McKelvey (1997) recommends that since organisational science is at an early stage of development, it is more appropriate for organisational scientists to use idealised models devoid of any idiosyncrasies to study phenomena. In his opinion, the idealised models, from the beginning, need not represent the full complexity of the phenomena being studied. Complexity must be reduced by initially ignoring or assuming away idiosyncratic microstates so that, relatively simple rules apply. As theories develop, more complexity can be allowed into the study of the phenomena.

Miller (1983) provides some general criteria on how to evaluate what is an appropriate model in the social sciences so that it can be used to adequately explain the phenomenon under study without it being too complex. For Miller, the first criterion is that, the model should identify a sufficient number of explanatory factors. Secondly, the explanatory factors must occur to bring about the phenomenon. Thirdly, the explanations need to reach sufficiently far back along the causal chain.

The scientific realist point of view discussed in this section of the thesis, presents some important implications for empirical research and provides important guidelines for the methodology of this research. The first is that the nature of scientific knowledge is cumulative. It is therefore important to build upon existing theories and findings when designing the study, in line with the explanation provided by Boyd (1983). This research will utilise the theory and findings of previous research and these are discussed in detail in chapter four of this study.

Secondly, from a scientific realism perspective, the relevance of theories *i.e.* the accuracy with which they explain and predict phenomenon, is determined by confronting them with empirical data, similar to the natural sciences. It will therefore be necessary to test the explanatory and predictive power of the theories by using quantitative data and statistical techniques. Scientific realism calls for the use of quantitative data in studies rather than qualitative data. It calls for using causal statistical techniques that allow for prediction and/or explanation of the theories employed especially when the rules about a phenomenon are more complex. This research uses mainly quantitative data and statistical techniques and is deductive in

approach while recognizing that there might be qualitative differences in the growth determinants of firms.

Thirdly, from the scientific realism point of view, the judgement of what is an adequate explanation depends on the theoretical frame of reference and is open to scientific debate. Knowledge is cumulative. Consequently, existing premises about a phenomenon are subject to further discussion, investigation and discourse. The next section below briefly discusses how growth is measured in this study and how small firms are defined for the purpose of data collection.

3.3 Definition of Key Concepts

3.3.1 Measurement of Growth

Growth in the present research is measured based on real turnover and employment figures and using the Average Annual Growth Rate method of calculation (AAGR). A detailed discussion of the process of adopting the AAGR method of calculation is presented in Chapter 6.

3.3.2 Definition of SME

For the purposes of this research, small business is defined based on the number of full-time employees and based on only the headcount figures under the European Union definition presented in Table 3.1 below. The use of number of employees is to once again reiterate that this research is focusing on small businesses because of their potential to create employment and improve incomes. The use of the EU standards is to recognize the importance of relating the size of firms in the study to some international benchmarks in order for the findings to be comparable to the results of other studies.

Turnover and Balance Sheet figures of the EU definition is not used because of the small size of most African economies and the difficulty of obtaining reliable financial data.

Table 3.1. European Union Definition of SMEs

Enterprise Category	Headcount	Turnover	Or	Balance sheet total
Medium-sized	< 250	≤ Euro 50 million		
Small	<50	≤ Euro 10 million		≤ Euro 10 million
Micro	<10	≤ Euro 2 million		≤ Euro 2 million

Source: Adapted from European Commission Recommendation 2003/361/EC

3.4 Choice of Research Methods

The main objective of this research is to identify the key determinants of growth among small businesses. The main thesis is that, characteristics of the owner/manager, characteristics of the firm, business strategies, environmental factors, as well as, cultural factors are the key determinants of growth, and are adequate to differentiate between rapid-growth and slow-growth firms.

3.4.1 Structured Questionnaire Survey

The survey research design entails the collection of primary data about subjects, usually by selecting a representative sample of the population or universe under study, through the use of a questionnaire. Surveys are very popular because different types of information can be collected, including attitudinal, motivational, behavioural and viewpoints. Surveys allow for standardization and uniformity both in the questions asked and in the mode of approaching subjects, making it easier to compare and contrast answers by respondent groups. Surveys also ensure higher reliability than most other techniques.

A well-designed and implemented survey can be an efficient and accurate means of determining information about a given population. Results can be provided relatively quickly and, depending on the sample size and methodology chosen, they are relatively inexpensive. However, a survey is also fraught with a number of problems.

A survey may suffer from a response error or bias because the respondents may want to impress or please the researcher by providing the kind of responses that they believe the researcher is looking for, or to get rid of him quickly. Sometimes, the respondent may view the information requested as sensitive or intrusive. This will result in a low response rate. The question may also be so specific that the respondent will not want to respond leading to a non-response error or bias. Careful wording of the questions can help overcome this problem.

An interviewer in a survey can unknowingly influence the response obtained through comments made or by stressing certain words in the question itself. In an interview survey, the interviewer can also introduce bias through facial expressions, body language or even the clothing that is worn. This is referred to as interviewer error or bias.

A very important consideration of the survey design is the response rate. The response rate is influenced by the method chosen, the length of the questionnaire, the type and/or motivation of the respondent, the type of questions and/or the subject matter. It is also influenced by the time of day or the place and whether respondents were informed to expect the survey or offered an incentive. Blau (1964)'s theory of social exchange argues that individual's actions are often motivated by the "rewards"

they are likely to receive from others. Proper questionnaire design and question wording can help increase the response rate. Jankowicz (1995) argues that if questionnaires are worded correctly, then they will require less skill and sensitivity to administer. It is also useful to get “experts” in the field to vet the questionnaire and ensure its appropriateness for the envisaged target markets. In so doing, respondents will understand the questions and respond quickly.

There are several advantages associated with opting for surveys. Firstly, surveys have internal and external validity. A survey that is based on some form of random sampling technique will produce a sample that is representative of the particular population under study and generate findings which may be generalised to the wider population. Secondly, because surveys can use a random sampling technique to recruit subjects, relatively small sample sizes can be used to generate findings, which can be used to draw conclusions about the whole population. Surveys are therefore a cost-effective way of finding out what people do, think or want.

Thirdly, surveys that can be undertaken using a wide range of techniques including postal questionnaires and telephone interviews can cover geographically-spread samples. This means that even subjects who are widely dispersed can be accessed and included in the sample. In the fourth place, because surveys do not expose individuals to invasive techniques, they may be considered more ethical. The individuals included in the study will be merely exposed to events that occur in the real world and would have taken place anyway. Finally, surveys are flexible. They can easily be combined with other methods such as focus groups or in-depth interviews to produce richer data.

Surveys also have limitations. The first limitation is that their representativeness is very dependent upon the accuracy of the sampling frame used. It is not always easy to identify an accurate and up-to-date sampling frame. Secondly, surveys are not effective at explaining why people think or act as they do. They do provide information on how many people behave in a certain way but are unable to tell why they behave so unless open questions are also included. Inclusion of open questions introduces the problems of analysis also non-response. Finally, interview surveys are only as good as the interviewers asking the question. It is therefore important that all interviewers receive proper training and are thoroughly briefed on the research before undertaking the interview.

Barkham *et al.* (1996) used the survey approach to conduct an in-depth analysis of the determinants of small firm growth, and, in particular, to explore the relationship between the growth of established small firms and the characteristics of their owner managers in the UK. The main research hypothesis was that the characteristics of the owner-manager have a significant effect on the performance of a small firm, both through their abilities and experience, and also, through the management strategies and business practices they choose to adopt. To properly test the hypothesis, they undertook a detailed face-to-face interview survey of 174 small firms. The subsequent data that was collected was used to construct a comprehensive model of small firm growth.

3.4.2 Methods of the Present Study

For the present study, two research strategies were possible. One option would have been to undertake a census of all small businesses in the population but would have been very expensive and time-consuming. The alternative was to select a representative

sample of small businesses and explore the possibility of inferring results from the sample to the population. Secondary data on small businesses in Ghana is non-existent, and since it would not have been feasible to collect data on the entire population of small businesses in the country, a representative sample drawn from the population of small businesses was most appropriate.

A structured questionnaire survey was therefore chosen as the most appropriate methodology given considerations of time, cost and the difficulty of collecting data from small businesses in Ghana. The structured questionnaire survey facilitated the collection of data on a range of variables that was used to conduct single variable tests and to attempt to construct a multivariate model of small business growth. Although a case study would have been useful in explaining how the key factors identified supported small business growth, this was rejected because of the reluctance of the respondents to open up to a detailed discussion of their operations.

Scientific realism advocates the use of quantitative data and statistical analyses in research. For Yin (1994), the choice of research methods should be based on the research questions that one wishes to investigate. Therefore, to facilitate the collection of quantitative data and make it easier to conduct analysis, a quantitative survey approach was the preferred choice in the present study. Quantitative data is the most appropriate data needed for explanation and/or prediction that the present research seeks to achieve. It also makes it easier to infer findings from the sample to the population using standard statistical methods. The quantitative survey approach conforms to the scientific realism point of view for obtaining scientific knowledge.

3.5 Data Collection

Essentially, there are three modes of collecting survey data. These are mail questionnaires, telephone interviews or personal interviews. Mail questionnaires were ruled out because the postal system in Ghana is very unreliable. In this age of information technology, few people even bother to check their post office boxes for mail. Given that in general, mailed questionnaires obtain very low response rates and the study involves obtaining data from small businesses which already are reluctant to provide information, the mail questionnaire option was discarded.

Telephone interviews were also ruled out because of unreliable network connections, the cost of collecting data over the phone and the fear that small business/owners will even be more reluctant to provide information about their business to someone who they do not have physical contact with to enable them to assess the genuineness of his/her request. Telephone interviews take longer and so it is difficult to include a large number of questions (which in this present study is important), since the respondents are likely to get impatient. In certain cases, the format of the questions would require respondents to personally complete them.

For this study, introductory telephone calls and e-mail messages (to those who had reliable e-mail services) were first made to the respondents in the sample (selected from the database of the Association of Ghana Industries) followed by personal contact to deliver the questionnaire. The introductory telephone calls and emails explained the purpose of the research to the respondents and assured them that the findings would be used solely for academic research. It also assured respondents of the confidentiality of the information they would be providing.

An attempt was made to reach all the 252 small firms in the sample by phone and through the e-mail addresses of those who had listed them. Eventually, all the firms were located by phone except 52. Twenty-four requested that the questionnaires should be e-mailed to them for completion and this was also done. They all responded through e-mails. The data collection approach adopted was to facilitate a good response rate from by explaining the essence of the study to them and by reassuring them of the confidentiality of their responses.

3.6 Survey Data Analysis Methods

The data was analyzed using several tools. Descriptive analysis was used to understand the general characteristics of the sample. The single-variable Mann-Whitney (for non-normal data) and Chi-square test of significance (for categorical data) were used for the hypotheses testing in order to determine the association of individual variables with growth. The tests were for test of association and not of causality consequently, none of the subsequent tests prove causality. This was a cross-sectional study implying that all the data was collected at one point in time. Consequently, it is more difficult to validate some causal effects. As demonstrated later in Chapter six, the data gathered for this research was largely non-normally distributed or categorical justifying the use of the Mann-Whitney and Chi-square tests.

The Mann-Whitney test is often viewed as the non-parametric equivalent of the parametric independent t -test. Like the parametric independent t -test, the non-parametric Mann-Whitney test is used to determine if a difference exists between two groups and is dependent on random selection of subjects into their respective groups which was the case in this research. The major difference between the Mann-Whitney

test and the independent t -test involves the concept of the normal distribution. Mann-Whitney is a parametric test and consequently, normal distribution of data is not necessary for use of this test. It also uses measurement at the ordinal level. It is therefore very much appropriate for testing some of the variables in this research that respect these requirements.

Field (2005) recommends the Mann-Whitney test as appropriate to test the differences between two conditions in which different participants have been used in each condition (*i.e.* comparing two independent conditions or groups). The test works by looking at differences in the ranked positions of the scores of the different groups and computes an average for the rankings. If the significance level (p) of the Mann-Whitney test is greater than .05 it implies that there is no significant difference between the two conditions or groups. However, if p is less than .05, then it implies that there is a significant difference between the two conditions or groups. For the hypotheses testing using the single variable Mann-Whitney test, the variable's association with rapid-growth or slow-growth was determined by reviewing the relative magnitude of the Median Rank between rapid-growth and slow-growth firms for the variables representing the hypotheses. Field (2005) posits that the median statistic for the rankings is more appropriate than the mean for non-parametric tests.

Field (2005) also recommend Pearson's Chi-square test as an appropriate test to determine whether there is a relationship between two categorical variables. The Chi-square test is relevant for some of the variables in this research because they are categorical. In addition to that, the Chi-square test does not rely on assumptions such as having a continuous, normally-distributed data. In instances where the Chi-square test

have been applied, the data had complied with the two key assumptions of the test namely (i) that each person, item or entity contributes to only one cell of the contingency table; and (ii) expected frequencies should all be greater than 5.

If the significance level (p) of the Chi-square test is greater than .05 for instance, one concludes that there is no significant difference between the two categorical variables. However if p is less than .05, then one concludes that there is a significant difference between the two variables. For the hypotheses testing using the single variable Chi-square test, the variable's association with rapid-growth or slow-growth was determined by computing the Odds Ratio for significant variables representing the hypotheses. If the Odds Ratios of the variables are greater than 1, it implies they are associated with rapid-growth firms, while Odds Ratios less than 1 implies the variables representing the hypotheses are associated with slow-growth firms.

The multi-variable logistic regression was further used to identify key discriminating variables between rapid-growth and slow-growth small businesses and consequently, the influencers or determinants of rapid-growth in a multivariable setting. Ideally, one could argue that logistic regression should be used to test the hypotheses in a multivariable setting. However, this option was discarded in this research in view of the relatively few responses in relation to the number of variables to be tested.

Logistic regression is similar to ordinary multiple regression with the exception that it is only used when the outcome (dependent) variable is a categorical dichotomy and predictor (independent) variables are continuous or categorical (Field, 2005). It assumes only two discrete values, such as rapid-growth and slow-growth as was the case in the

present research. The predictor variables in logistic regression can either be metric such as age, income, *etc* or categorical such as gender or religion. Indicator or “dummy” variables are used to include categorical variables as predictors. Both types of measurements were incorporated in the research. The dichotomous outcome variable, the non-normally distributed data of the research and the type of measurements encountered in the present research meets the requirement for using logistic regression.

The observed values of the dependent variable take on only two values and are usually represented using a 0-1 dummy variable. The mean of a 0-1 dummy variable is equal to the proportion of observations with a value of 1 and can be interpreted as a probability. The predicted values in a logistic regression model fall between 0 and 1 and are also interpreted as probabilities. Once a logistic model has been estimated, it can be used to make predictions for new observations. It is important to note that unlike the linear regression model, for the logistic regression model, the effect of a one-unit increase in the predictor variable varies. At the extremes, a one-unit change has very little effect, but has a larger effect in the middle. The entry method was applied in order to identify the key explanatory and discriminating variables.

In order to respond to each research question, the logistic regression was first applied to sub-models comprising of each category of variables; secondly, on models comprising of a combination of all variables; and finally, on models comprising only of the significant variables identified in the single variable tests. For the logistic regression analysis, the value of $\exp b$ (Exp (B)), which is an indicator of the change in odds, was used to determine the direction of the significant variables in the model with rapid-growth. Exp (B) greater than 1 implies that the significant variable was more associated

with rapid-growth firms while an Exp (B) less than 1 implies that the significant variable was more associated with slow-growth firms.

Multiple Discriminant Analysis (MDA) was rejected for analyzing the data in this research because it is a parametric method of analysis. MDA assumes a normal distribution of the variables. It also assumes that the covariance matrices across the different groups are equal. Logistic regression however is a non-parametric method. It makes no assumption, neither about the distribution of variables nor about the covariance matrices. Logistic regression simply assumes that the different groups are discrete and non-overlapping similar to MDA and in this research, the assumption is true. There are only two separate groups – rapid-growth and slow-growth.

Therefore, the advantage of logistic regression over MDA is that, there is no formal requirement for multivariate normality, homo-scedasticity, or linearity of the independent variables within each category of the dependent variable although Tabachnick and Fidell (2001) allude to the fact that satisfying these conditions among the independent variables for the whole sample may increase the power of the logistic regression analysis. The Kolmogorov-Smirnov Test of Normality on the data from both the turnover growth measure and the employment growth measure (discussed in Chapter six below) indicated significant non-normality and because this violates the MDA assumption of normality, it was rejected as the preferred analytical tool for this research.

Rapid growers based on both the turnover and employment growth measures were defined as those having average annual turnover growth rate and average annual employment growth rate of over 25% per annum. The turnover figures were converted to real 2000 figures using the Gross Domestic Deflator for Ghana. The 25% criterion used was considered a good benchmark for separating rapid-growth from slow-growth companies because it represented about 5 times the average GDP growth rate in Ghana during the period. Further justification of this criterion is provided in Chapter 6.

3.7 Conclusions

This thesis is grounded on scientific realism as the research philosophy even though one could argue for a positivist philosophy given that growth is a phenomenon that can objectively be observed, measured and investigated. The chapter discussed and justified the survey research method proposed and reviewed the data analysis tools. The single-variable Mann-Whitney test and Chi-square test were proposed for hypotheses testing. None of the subsequent tests prove causality.

Multivariate logistic regression was also proposed as an additional tool to investigate the differences between rapid-growth and slow-growth firms. It was however not used to specifically test the hypotheses in a multivariable setting because of the limited number of responses in relation to the number of variables. Logistic regression was chosen in preference to MDA. Although MDA is similar to logistic regression in assuming that the different groups in the data should be discrete, non-overlapping and identifiable, MDA also assumes normality of the distribution of the variables which is not the case with this research.

4 DEVELOPMENT OF HYPOTHESES

4.1 Introduction

The research framework developed in Chapter two represents an integration of various theoretical perspectives and research frameworks including those of Storey (1994), Wiklund (1998), Barringer *et al.* (2005) and Zhang *et al.* (2008). However, it is infeasible to include all dimensions of the characteristics of the entrepreneur, firm characteristics, strategic factors, environmental factors and cultural factors in the empirical research because it will complicate the research framework and there will be too many variables to investigate. Consequently, for this research, in an effort to identify reliable factors influencing growth rates, as many variables as feasible that the author believes are likely to differentiate rapid-growth firms from slow-growth firms have been included in the framework. The basis for inclusion is explained in detail in this chapter that reviews the development of the hypotheses.

The present study tests 36 hypotheses. These hypotheses were developed based on theoretical arguments, theories or the findings of previous research. The hypotheses presented in the alternative form, and the underlying reasons for incorporating them in this study, are presented below. They have been grouped into the characteristics of the entrepreneur (section 4.3); characteristics of the firm (section 4.4); strategic factors (section 4.5); environmental factors (section 4.6) and cultural factors (section 4.7). Each group of hypotheses relate to one of the first five research questions and has a counterpart in Table 2.4 now reproduced below as Table 4.1.

4.2 Re-statement of the Research Question

The research sought to answer six main research questions:

- a) What entrepreneurial characteristics discriminate between rapid-growth and slow-growth small businesses in Ghana?
- b) What firm characteristics discriminate between rapid-growth and slow-growth small businesses in Ghana?
- c) What strategic factors discriminate between rapid-growth and slow-growth small business growth in Ghana?
- d) What environmental factors discriminate between rapid-growth and slow-growth small businesses in Ghana?
- e) What cultural factors discriminate between rapid-growth and slow-growth small business in Ghana?
- f) Overall, what key factors are important for growth among small businesses in Ghana?

In order to investigate these research questions, variables which are expected to have a significant influence on growth and which are presented in Table 2.4 above are used to develop the research's hypotheses. The Table is produced below as Table 4.1 for ease of reference. Each variable is classified under one of the five categories of variables in the table and relates to one hypothesis.

Table 4.1. Variables Influencing Growth in Small Business (i.e. $g=f(\dots)$)

Researcher	Researcher	Category of Variable	Variable
Author	Storey	Characteristics of the Entrepreneur	Motivation
			Education
			Previous management experience
			Work experience
			Number of founders
			Industry specific experience
			Gender
		Characteristics of Firm	Firm age
			Business sector
			Legal structure
			Size
		Strategic Factors	Affiliation
			Formal workforce training
			Management training
			External equity
			Use of Electronic Technology Information
			Strategic Planning
			New products introduction
			Exports
			Research and Development
			Partnership with research institutions
	Environmental Factors		Access to public and other external aid
		Entry barrier	
		Presence of unionized staff	
		Presence in an industrial park	
		Dynamism of the environment	
		Social and fiscal policies	
		Cultural Factors	Owner/manager's ethnic origin
			Family history in business
			Mission and vision statement
			Board presence
			Employee participation in decision making
Frequency of management meetings			
Proportion of non-family members in management			
Membership of professional/business association			
Membership of community/social networks			

Source: Storey (1994), Wiklund (1998), Barringer *et al.* (2005), Zhang *et al.* (2008) and Author's Own Work (*viz.* Table 2.4)

4.3 Development of Hypotheses relating to Entrepreneurial Characteristics

The hypotheses developed in this section relate to the first research question which seeks to identify the entrepreneurial characteristics that discriminate between rapid-growth and slow-growth small firms in Ghana.

H1: Entrepreneurs with “positive” motivations are more likely to be associated with a business that subsequently grows rapidly, than those with “negative” motivations.

In general, positive motivations connote the desire to do something out of pleasure while negative motivation portrays the desire to avoid or minimize pain. For Storey (1994), positive motivations include perception of a market opportunity for a product or service and the desire to make more money. Positive motivations therefore appear to lean more towards the economic motive for starting a business. Negative motivations on the other hand include dissatisfaction with an existing employer and/or the threat of, or actual, unemployment; desire for a ‘lifestyle’ business *i.e.* one that provides a satisfactory level of income to the business owner. Negative motivations therefore appear to lean more towards the non-economic motive for starting a business.

Kolvereid and Bullvåg (1996) and Miner (1990) have already underscored the importance of the relationship between motivation and firm growth. The motivation to start a business that subsequently grows can broadly be classified under the economic (desire to make profit) motive – McMahon *et al.* (1993) and the non-economic motive. Gundry and Welsch (1997), for instance, have already pointed out that entrepreneurs may have ambitions with their firms other than maximising profits and/or growth.

Gibb and Davies (1990) argue that not all small business owners have the motivation to grow their businesses. According to them, some small business owner(s)/manager(s) are reluctant to grow for fear of losing control especially if the growth will entail dilution of their ownership or the assumption of commercial risks. Hamilton (1987) and Shane *et al.*; (1991) identified desire for recognition and

independence as two social/psychological factors that might influence the reasons for establishing a business.

Storey (1994) corroborates the findings of Gibb and Davies (1990). Summarizing empirical evidence from the United Kingdom, he estimated that at least 50% of all founders start their business with no intention to grow. It is therefore apparent that in analyzing small business growth, the founder's motivations relating to growth are very important. The use of the variable in this research was to establish whether there was a relationship between the reasons why a small business was established and whether it subsequently grew or not.

Kinsella *et al.* (1993) and Barkham (1992) found a positive relation between the growth of the firm and the existence of positive motivations among the owner/managers of those firms. On the other hand, Wymarckzyk *et al.* (1993) did not find a significant relationship between firm growth and positive motivations. This research expects to find a significant positive relationship between rapid-growth and positive motivations in Ghana.

H2: Graduates are more likely to establish and manage businesses associated with high growth potential than non-graduates.

Evidence suggests that important entrepreneurial skills are enhanced through higher education (Watson *et al.*, 2003; Sapeinza and Grimm, 1997). Sapienza and Grimm (1997) specifically argue that search skills, foresight, imagination and computational skills are enhanced through college education. Burki and Terrell (1998) and Tan and

Batra (1995) posit that firms with better-educated owner/managers are more efficient when compared with those with less educated owner/managers. One would expect that efficiency in the way a firm is managed would be important for its growth prospects.

In many developing countries, small firms have less-educated owners and employees when compared to larger firms (Orlando and Pollack, 2000; Soderbom and Teal, 2001). Intuitively, one would expect that higher levels of formal education will provide entrepreneurs with a greater capacity to understand markets and their clients; to undertake reasonable analysis of business opportunities to confirm viability; and to learn about new production processes and product designs among others, resulting in successful and growing firms. Globalization and rapid technological advancement have resulted in increased competition and changed the way in which business must be conducted across the globe. To be successful requires a fair level of formal education to appreciate and respond to issues.

Kantis *et al*; (2004) cited in Nichter and Goldmark (2009) in their study of firms in Latin America found that the attainment of at least a secondary education did not have any discernible impact on firm growth. They, however, found that six out of every ten Latin American entrepreneurs with high-growth firms were university graduates. Studies in Sub-Saharan Africa however found that entrepreneurs who had completed at least a secondary education were found to be associated with more rapid growing firms in Kenya or Zimbabwe (McPherson, 1991; Parker, 1995; Mead and Liedholm, 1998).

Nichter and Goldmark (2009) argue that small firms with more educated owner/managers tend to grow rapidly however, a country-specific threshold, must be reached to observe this effect. They explained that although it appears that a threshold of secondary education was sufficient to identify growth potential in Kenya and Zimbabwe, a higher threshold of university education appeared to exist in Latin America.

Other prior researchers including Johnson (1991) and Jones (1991) found a positive relationship between education and growth of the firm thereby supporting the assertion that highly educated owner/managers are more likely to operate rapidly growing small businesses. It is expected that the same positive relation between education and the growth of the firm will be found in Ghana. To facilitate interpretation of educational qualification, a distinction is made between university graduates and non-university graduates.

H3: Entrepreneurs with some previous managerial experience are more likely to be associated with rapid growth than individuals without such experience.

This hypothesis is premised on the fact that entrepreneurs with prior entrepreneurial experience appear to be better accustomed to the entrepreneurial process and less likely to make costly mistakes than entrepreneurs with no prior experience (Duchesneau and Gartner, 1990; Cooper *et al.*, 1988). Singer (1995) posits that prior entrepreneurial experience is one of the most consistent predictors of future entrepreneurial performance. Parker (1995) found that Kenyan entrepreneurs with at least seven years of work experience expanded their firms more rapidly than those without such

experience. Barkham (1992) and Dunkelberg and Cooper (1982) also found a positive relationship between firm growth and previous management experience. More recently Zhang *et al.*, (2008) in their study of the characteristics of rapid-growth firms and their entrepreneurs in China, also established a significant relationship between prior entrepreneurial experience and rapid-growth.

Unfortunately, opportunities to gain relevant work experience are lacking in some developing countries especially in Sub-Saharan Africa, due to the lack of successful small businesses to learn from. Barr (1998) found that small businesses owners and workers in Ghana had an average of only five years of work experience, compared to ten years for their counterparts in larger firms. One expects to find that in the case of Ghana as well, entrepreneurs with previous managerial experience will be associated with rapidly growing firms.

H4: Businesses founded by more than a single individual are more likely to be associated with rapid growth than those founded by a single person since management of a firm requires a range of skills.

A small business could be established and owned by an individual or a group of individuals with each of them owning a part of the business. Management of businesses require a range of skills. This hypothesis is premised on the notion that new businesses started by a team would have access to greater resources; a broader diversity of viewpoints and opinion; more risk-bearing ability; and a broader array of ideas than those started by individuals (Watson *et al.*, 2003; Barkman, 1994;).

Barringer *et al.*, (2005) from their review of the literature on firms, found compelling results between the size of the founding team and firm growth, with larger teams having an obvious advantage. Barkman (1994) argue that larger teams possess more talent, resources, and professional contacts than a sole entrepreneur. Woo *et al.* (1989) and Reynolds (1993) also found a positive relationship between the number of founders and growth. One expects to find a similar positive relationship between the number of founders and the growth of a firm in developing countries including Ghana, although there is the opposite possibility that conflict among multiple business owners could slow down decision making and consequently growth.

H5: Individuals with marketing skills are more likely to be associated with rapid growth than individuals with other functional skills.

This hypothesis is premised on the assumption that individuals with skills in marketing work hard to increase sales and in so doing, they grow the firm. The same growth objective may not readily be appreciated by individuals in finance for instance, who may be more likely to exercise more caution to prevent the firm from over-committing itself. Harris (1995) cites Joyce *et al.* (1990) as having identified marketing knowledge to be as important as finance in the development of small firms. The hypothesis does not in any way seek to undermine the importance of other skills such as production, personnel, finance *etc* in the successful management of small business. One would expect that small business owner/managers must have a range of skills to be successful, given their limited access and ability to hire qualified personnel.

This hypothesis seeks to identify those skills whose presence, are readily associated with rapidly growing firm. Jones (1991) and Wynarczyk *et al.* (1993), who researched the impact of functional skills on firm growth, found that entrepreneurs with marketing backgrounds were more likely to be associated with rapidly growing small businesses. One expects that marketing skills will similarly be an important functional skill closely associated with rapidly growing firms in developing countries such as Ghana.

H6: Individuals with prior sector experience are more likely to be associated with rapid growth than those without prior sector experience.

This hypothesis arises from the view that entrepreneurs with experience in the same industry as the businesses they are currently engaged, would have a mature network of industry contacts, management expertise and also a better understanding of the subtleties of their respective industries than those without relevant industry experience (MacMillan and Day, 1987; Fesser and Williard, 1990; Siegel *et al.*, 1993). Intuitively, one would expect that individuals who establish a business in the same sector as one in which they previously worked would have developed a good expertise and experience on the acceptable norms and best practices in that sector and would therefore transfer these to their new business to facilitate its rapid growth.

Bosma *et al.*, (2004) in their panel survey of entrepreneurs in the Netherlands found that their prior experience, when in the same industry as their start-ups, improves firm growth, survival and profitability. Both Barringer *et al.*, (2005) and Zhang *et al.*, (2008) confirm that entrepreneurs with relevant prior industry experience are associated with rapidly growing firms.

Nichter and Goldmark (2009) on the other hand argue that other studies in developed countries show mixed evidence linking prior sector experience to small firm growth. Numerous other studies have found an insignificant or even a negative relationship between work experience and growth (Cooper, 1993; Storey, 1994). For Storey (1994), if any pattern emerges at all from the evidence of prior sector experience and firm growth, it is that longer work experience in a sector is associated with slower firm growth. This may be due to the proposition that business growth in some instances require the introduction of new products and services. Consequently, it is those businesses that are started by entrepreneurs with innovative ideas which are likely to achieve growth.

It is expected however that in the case of Ghana and in many developing countries, prior sector experience would be positively associated with growth because it appears that it is those individuals with prior sector experience who invariably are more willing to take the risk to start their own businesses.

H7: Males are more likely to be associated with rapid growth than females, because of the latter's responsibility for raising a family and managing a home.

Liberal feminist theory (Fischer *et al.*, 1993) suggests that small businesses run by women will perform poorer than those run by men because women are openly discriminated against (for example by lenders) and/or deprived of important resources such as business education. Cliff (1998) adds that women are more concerned about the perceived risks of high-rate growth or they desire to balance work and career and this leads them to limit the size of their firms. Both Still (2005) and Cliff (1998) further

suggests that women may also intentionally keep their businesses small to minimize the risk of losing control for example through the dilution of their power from new equity investment.

For England and McCreary (1987), women may keep their businesses small to avoid conflict with family responsibilities. Mead and Liedholm (1998) also found that employment in male-headed small businesses grew at an average of eleven percent per annum compared to seven percent by female-headed small businesses. Storey (1994) cites some of the real or imagined problems that confront female entrepreneurs in the market-place. These include their commitments to raising children and catering for the family which prevents them from putting in the additional working hours necessary to develop a rapidly growing business; their lack of credibility with financial institutions; lack of personal confidence in business matters by some females; and the concentration of female-owned businesses in sectors where female employment is in the majority although these sectors appear to provide few opportunities for rapid business growth. These sectors include hairdressing, textiles and retailing.

In many African cultures, it is the woman who has the responsibility to raise the family and take care of the home. These responsibilities limit the time she can devote to growing her business. Females in Africa perceive they are discriminated against by their male counterparts when they go to financial institutions for credit to expand their businesses, therefore many of them never pursue that option of raising additional external funding to grow their businesses. They are also often found in businesses patronized by other females such as hair-dressing and retailing. The above reasons

appear to give credence to the belief that men are more likely to establish rapid growth businesses than females in Ghana.

4.4 Development of Hypotheses Relating to Firm Characteristics

The hypotheses developed in this section relate to the second research question which seeks to identify the firm characteristics that discriminate between rapid-growth and slow-growth small firms in Ghana.

H8: Younger firms are more likely to be associated with rapid growth than older firms.

Storey (1994) asserts that young firms are more likely to achieve substantial growth compared to older firms because they need to grow quickly to achieve a minimum efficient scale (MES) of operation if they are to survive. Once businesses achieve MES, Storey argues that they tend to grow less rapidly because either their owner/managers lack the motivation to grow them rapidly or they are confronted with diseconomies of scale that arise out of the need to employ more and manage others. For Watson (1990), young firms need to grow rapidly in order to guarantee a satisfactory level of income to the owners.

Intuitively, one would expect that as firms approach their MES, although growth may be slow, productivity should increase because the owner/managers would have a better understanding of the businesses. Interestingly, Burki and Terrell (1998) found that some firms actually suffer productivity losses as they age as well. Productivity

losses may be due to failure by the owner managers to upgrade or modernize their facility and technology.

Parker (1995) and Mead and Liedholm (1998) in their studies of small businesses in Africa, found that young firms were more likely to be associated with high growth rates than older firms. Studies in developed countries by Variyam and Kraybill (1992) and Heshmati (2001) also conclude that older firms are more likely to experience slower growth compared to younger firms. Heshmati (2001) however notes that while younger firms experience faster employment growth in Sweden, older firms experience faster growth in assets and sales. Burki and Terrell (1998) also posit that the average growth rate of firms decreases with age. One expects to find that in the case of Ghana, younger firms will grow more rapidly than older firms.

H9: Service businesses are more likely to be associated with rapid growth than manufacturing firms.

Storey (1994) provides an overview of factors considered by researchers prior to 1994 to contribute to small firm growth and concludes that the firm's industrial sector/market is a significant factor. Storey found that growth rates vary by industrial sector and/or markets with different sectors *e.g.* services, retail trade, and manufacturing growing at different rates. Both Almus and Nerlinger (1999) and Wagner (1995) found that industry sector was a significant factor in their analysis of firm growth rates.

Sub-Saharan Africa on the whole including Ghana, is confronted with the influx of cheaper imports from the Far East especially China. The impact of this development is that increasingly, manufacturing companies are failing since they are unable to produce

competitively. It is therefore expected that small businesses in the services sector will grow faster than those in manufacturing.

H10: Limited liability companies are more likely to be associated with rapid growth than either sole proprietorships or partnerships.

Incorporation provides several advantages to a firm. These include its limited liability status and the fact that the firm can outlive its owners. Sole proprietorships and partnerships typically are fully liable for any claim on their businesses. Harhoff *et al.* (1998), Almus and Nerlinger (1999) and Davidsson *et al.* (2002) established that limited liability firms grew faster than unlimited liability firms. It appears that owners of limited liability firms were more willing to explore risky ventures with firm growth potential. The fact that limited liability firms can outlive their owners is of particular interest to financial institutions that will want to be assured that there is business continuity in the event that an owner dies. They are, therefore, more willing to provide financing to support the growth of limited liability companies compared to sole proprietorships or partnerships.

In Ghana, like many developing countries, the informal economy which consists mainly of unregistered small businesses but which derive income from the production of goods and services, is significant. The ILO (2004), reports that Africa's share of the informal economy in the non-agricultural workforce is nearly 80%. Intuitively, it is apparent that informality reduces the prospects of recorded growth and is associated with several characteristics that make growth difficult to achieve. In particular, small firms in developing countries are already perceived to have problems accessing

financial and legal systems. Informal enterprises face even greater challenges when seeking formal credit or assistance from law enforcement agencies and from the courts.

Snodgrass and Biggs (1996) argue that although informal small businesses may be able to circumvent government regulations and taxation, as they grow, they risk being more visible and this creates disincentives for them to expand beyond a certain size. It is apparent that contracts with large buyers will be off-limits for many informal firms because they will be reluctant to provide legal documentation to back their operations or enter into legal documentations to support the transaction. Sleuwaegen and Goedhuys (2002) found in a study of firms in Cote d'Ivoire that formal firms were efficient because they enjoyed a larger range of production factors and a broader choice of input suppliers. Formal firms in general are incorporated limited liability companies or registered partnerships and sole proprietorships.

The expectation in this research is that incorporated limited liability small businesses in Ghana will grow faster than their counterparts registered as partnerships or sole proprietorships.

H11: Smaller firms are more likely to be associated with rapid growth than bigger ones.

Gibrat's Law of Proportionate Effect, in principle, assumes that the growth of a firm, in any given period of time, is independent of the size at the beginning of the period. The issue of size in small business growth studies is an interesting one. Freeman *et al.* (1983), Aldrich and Auster, (1986) and Brüderl *et al.* (1992) preach the "liability

of smallness” and postulate that larger businesses have a better prospect of growth. On the other hand, Evans (1987); Dunne *et al.* (1989) and Wagner, (1992) argue that larger firms grow more slowly.

A number of studies appear to support Gibrat’s law. For example, Acs and Audretsch (1990), in their study of the US manufacturing sector for the period 1976-1980, found that Gibrat’s law was valid *i.e.* the growth rate of firms is independent of its size. Earlier on, Kumar (1985) and Chen *et al.*, (1985) in their study of agribusiness sector firms also did not also find any relationship between firm size and growth thereby concurring with Gibrat’s law.

Interestingly, other studies have however found that firm growth actually decreases with firm size. For example, Hall (1987) found a negative relationship between firm size and growth in a study of the US manufacturing sector for the period 1976 to 1983. Similarly, Mata (1994) and Becchetti and Trovato (2002) found the same negative relationship between firm growth and size, confirming that smaller firms grow faster than larger firms.

For this research, it is expected that firm size will have a negative relationship with growth. Consequently, smaller sized firms in Ghana will be expected to grow rapidly compared to larger-sized firms among small businesses.

H12: Firms affiliated with bigger ones are more likely to be associated with rapid growth than those not affiliated.

Affiliation between a small firm and a larger one takes several forms and include vertical linkages with buyers and suppliers. Advantages of affiliation include the ability of the firms to share cost (*e.g.* advertising or marketing costs); increase speed or access to market; benefit from economies of scale; gain access to essential resources and knowledge, especially technical expertise (this is common when input suppliers offer training or information related to the use of improved technologies to their clients often smaller firms); and equally important is access to foreign markets which is often observed when larger firms help to link rural industries to urban domestic or international markets.

Aw (2002) posits that affiliations with buyers for instance, can decrease the risks and costs associated with entering new markets by guaranteeing a flow of orders to the firm; providing the firm with critical information about market requirements; and in some selected cases, providing the firm with assistance with capital investment. Berry *et al.*, (2002) also argue that vertical linkages could improve the capabilities of the smaller firm by providing it with opportunities for learning and innovation especially when corporate buyers assist it with quality, maintenance and resolution of technical issues.

In this research, it is expected that larger firms in Ghana will provide assistance such as product/service training, marketing tools and credit to the smaller firms affiliated to them. This is expected to help the smaller firms to grow and be successful. It is worth noting that the larger firms will also benefit from this arrangement since they will be the ultimate beneficiaries for instance, of increased sales by the smaller firms with which they are affiliated. Consequently, affiliated firms are therefore expected to be associated with rapid-growth firms compared to those without any affiliation.

4.5 Development of Hypotheses Relating to Strategic Factors

The hypotheses developed in this section relate to the third research question that seeks to identify the strategic factors that discriminate between rapid-growth and slow-growth small firms in Ghana.

H13: Businesses with a well-developed, workforce training program are more likely to be associated with rapid growth than those without such a program.

This hypothesis is premised on the fact that the principal objective of any workforce training is to provide new skills to the work force and/or deepen existing skills set so that they can contribute more meaningfully to the goals of the firm. Intuitively, one will therefore expect that, given their financial resource constraints, small businesses will only provide training to their workforce if they believe it will lead to business growth and additional revenue.

For Storey (1994), one would have expected that growing firms would perceive the skill base of their enterprises as an important comparative advantage, and would therefore encourage workforce training to a greater extent than non-growing firms. On the contrary, small firm employers are reluctant to make a long-term investment in training their workforces because they are aware of the high risk of failure of their businesses as well as the fear that trained employees may leave. They also perceive external training, in particular, as deepening the skill base of their workforce while their preference is a workforce with greater flexibility. Finally, labour turnover in smaller firms is generally greater than in larger firms consequently reducing the value of training from the perspective of the small firm employer.

Klaas *et al.* (2009) affirm that even though human capital programs designed to affect workforce skill, motivation, performance have been found to positively affect organizational performance, they have been traditionally viewed as an expensive undertaking by the small business sector thereby limiting their use. A new trend however is now emerging. Small and medium enterprises are increasingly turning to Human Resource (HR) outsourcing to provide these services.

For Rich (1999), the ability of a firm to attract and retain skilled and capable workforce increases its ability to effectively implement and maintain a growth-oriented strategy. Barringer *et al.* (2005) in their study found a significant relationship between workforce training and rapid-growth firms. For this research, it is expected that those firms which invest in training their workforces in order to build their skills and motivate them will be associated with rapid-growth while those which do not invest in workforce training will be associated with slow-growth.

H14: Firms that provide formal management training are more likely to be associated with rapid growth than those that do not.

Casson (1982) identified the most prominent skills and competencies required for successful entrepreneurship as forecasting and decision making under uncertain conditions. Other important management skills include negotiation, coaching and mentoring staff. Baron *et al.*, (1999) posits that typically the leader within a small firm is personally involved in many organizational processes and directly influences employees throughout the firm. For Storey (1994), the fact that these competencies can be formally taught to entrepreneurs implies that those who receive training in these

skills are expected to perform better in business than those who do not receive any training.

This study expects to find that firms that provide formal training to their management staff will be providing them with relevant skills and competencies to manage their businesses. Consequently, such firms will be more associated with rapid-growth while those without formal management training will be associated with slow-growth.

H15: Firms that are able to source external equity are more likely to be associated with rapid growth than those which are reluctant to do so.

Entrepreneurs globally typically start firms primarily through their own savings. For Marris and Wood (1971), financial resource constraints are the major limiting factor to firm growth. The three main sources of expansion finance for firms are through their retained earnings; borrowings and new share issues. Retained earnings are an important source of financing, especially in markets in developing economies with undeveloped or under-developed capital markets.

However, small businesses with investment projects significantly larger their current earnings or which are still in the early stages of their investments have no option but to rely on external sources of financing to support their growth. In many developing countries, these could be scarce due to undeveloped financial markets. Rajan and Zingales (1998) found out that industrial sectors with great need of external financing grow significantly less in countries without well-developed financial markets.

Many small businesses, especially in developing countries, complain of the difficulty of accessing formal credit from financial institutions. Even when they do, these credits are usually limited to short-term debt financing. The use of short-term debt financing constrains the growth of a firm. This is because, more often than not, expansion financing is being sought at this stage to acquire capital assets. This hypothesis is therefore premised on the assumption that small businesses which are willing to share equity, and which are successful in attracting external equity, are likely to grow more rapidly than those that are reluctant to do so.

H16: Firms that extensively use electronic information technology in their operations are more likely to show positive association with rapid growth than those that do not.

This hypothesis is based on the notion that the use of new and advanced technology is an important tool for companies to create proprietary products and also compete in fast-growing and dynamic markets (Harrison and Taylor, 1997; Siegal *et al.*, 1993). Phillips and Kirchoff (1989) found out that in the US, high technology small firms were more likely to be rapid-growth firms when compared to small firms in conventional sectors. Storey (1994) argues that it may also be the case that more technologically sophisticated businesses, even in conventional sectors, will be associated with rapid-growth compared to businesses in those same sectors with lower levels of technological sophistication.

Intuitively, it is expected that in many developing countries, including Ghana, the use of electronic information technology will reduce the small businesses' communication expenses; facilitate its ability to reach a wide segment of the market

especially international markets, and generally assist the company to improve the quality of its service delivery. It is, therefore, expected that its use will be more associated with rapid growth firms.

H17: Firms with relatively long-term strategic plans are more likely to be associated with rapid growth than those that do not have strategic plans.

Strategic planning essentially involves a firm setting the objectives and goals it will like to achieve over a relatively long-term planning horizon. Good planning assists a firm to organize itself for growth as well as to address the relevant managerial and strategic issues required to maintain rapid growth (Reid and Smith, 2000). For Karlsson and Honig (2009), the fact that there is plethora of books dedicated to explaining how to write business plans appears to suggest that planning is valuable and important to a firm.

However, research by Ford *et al.*, (2003) as well as Delmar and Shane (2004), suggests that the relationship between business plans and achieved firm performance is open to doubt. Planning a business and documenting it in a strategic or business plan but not actually implementing does not result in good firm performance. For Delmar and Shane (2004), firms could prepare business plans just as a symbolic exercise to please stakeholders.

Intuitively, it is expected that firms which have long term strategic plans and commit to implementing them will be able to monitor their performance, benchmark it to their plans and undertake the necessary steps to ensure that their long term objectives

and goals are achieved. This research therefore expects that small firms in Ghana with long-term strategic plans will be more likely to be associated with rapid-growth compared to those without a strategic plan.

H18: Firms which frequently introduce new products on the market are more likely to be associated with rapid growth than those which introduce products less frequently.

Conceptually, this hypothesis is premised on innovativeness, and on Porter's (1985) concept of "product differentiation". Innovation is expected to result in a constant supply of new products and services in response to changing customer needs and demands. Firms will also seek to differentiate themselves from the competition by offering new and improved products and services in order to retain existing market share or even expand into their competitors' markets. An increasing preference and demand for a firm's products or services is expected to result in an increase in revenues, improvement in business reputation and ultimately, rapid business growth.

For Marris and Wood (1971), a firm's diversification into new products is not just an important vehicle of growth but also a major contributing factor to firm growth. Barringer *et al.* (2005) established a significant relationship between the variable "creating unique value", and firm growth. Zhang *et al.*, (2008) in their study of the characteristics of rapid-growth firms and their entrepreneurs in China established a significant relationship between product innovation and firm growth. It is expected that this research will also find that firms which introduce new products more frequently will be more likely to be associated with rapid-growth compared to those which do so less frequently.

H19: Exporting firms are more likely to be associated with rapid growth than firms that do not export.

Exporting from developing countries especially by small businesses often with less established brands and knowledge of international markets is obviously challenging. There are also issues of meeting international quality standards and product specifications as well as overcoming trade barriers. For Nichter and Goldmark (2009), an important element of growth or growth potential for small businesses is a strong demand from the end market that can be local, regional or international.

Exporting to regional and international markets provides a huge market opportunity for the sale of a firm's product and services. In addition, a firm's ability to export to more competitive markets implies that it is able to produce quality goods and services or cheap ones. Intuitively, therefore, one would expect that companies which export and have access to a large international market would grow faster than those who produce for the limited domestic (local and regional) markets.

H20: Firms with formal Research and Development Units are more likely to be associated with rapid growth, compared with firms that do not have such units.

Coad and Rao (2007) argue that commercial businesses undertake research and development because they anticipate that innovations will ultimately pay off on the average and in the long term. Thornhill (2006), based on survey data from 845 Canadian manufacturing firms, found out that industries with greater aggregate levels of Research and Development (R&D) intensity were associated with higher rates of firm-

level innovation. Similarly, Chakrabarti (1990) suggests that firm growth is stimulated by Research and Development. Coad and Rao (2007) in their review of growth in the high technology sector used Research and Development expenditure as the input for innovativeness. One expects that all companies involved in innovation will have Research and Development Units.

Geroski and Machin (1992) in their review of UK firms found that innovating firms were both profitable and grew faster than non-innovators. Similarly, Deeds *et al.*, (1999) also suggest that firm growth is stimulated by innovation. Increasingly, it is observed that it is those firms that are able to innovate and adapt to the rapidly-changing business environment which survive and grow. Consequently, one expects that those small businesses that have Research and Development Units and are committed to innovativeness will grow faster than those without such Units.

H21: Firms with partnerships with research institutions are more likely to be associated with rapid growth compared with those that do not have any partnership arrangement.

Research institutions are important for product/service knowledge development. They are also important for their ability to recommend possible solutions to problems based on their research into the subject. Small businesses that which cannot afford to maintain a fully-fledged Research and Development Unit may opt to be associated with reputable research institutions so that they can share knowledge and find solutions to problems.

Snuif and Zwart (1994) posit that a firm's proximity to university institutions has a positive effect on its growth. Colombo and Delmastro (2002) suggest that a firm's proximity to research institutions enables it to access scientific expertise and the results of research programs. One therefore expects that small businesses in Ghana with partnership to research institutions will be more likely to be associated with rapid-growth firms compared to those without such a partnership.

4.6 Development of Hypotheses Relating to Environmental Factors

The hypotheses developed in this section relate to the fourth research question which seeks to identify the environmental factors that discriminate between rapid-growth and slow-growth small firms in Ghana.

H22: Firms that have access to public or other forms of external aid are more likely to be associated with rapid growth compared to those that do not have such access.

Public and other forms of external aid, such as government subsidies and donor aid exist to enhance firm performance. Schwartz and Clements (1999), for instance suggest the importance of government subsidies for firm performance. Julien (2000) found in a study in Quebec that government subsidies, particularly in Research and Development as well as in export promotion, have a positive effect on firm growth. Becchetti and Trovato (2002) also investigated the impact of subsidies on firm growth of a sample of Italian firms and found out that firms which received subsidies showed higher growth rates.

It is expected that financial assistance from non-bank sources should stimulate growth in small businesses since they have difficulties accessing credit from the banks. Consequently, those firms which are able to have access to some form of public or external aid would be more likely to be growth companies compared to those which have no access to aid.

H23: Firms in sectors with entry barriers linked to capital intensity, research and development or promotional expenditure are more likely to be associated with rapid growth, compared to firms in sectors without those entry barriers.

Entry barriers exist in a given market if firms are able to maintain monopolistic prices and profits but not attract new entrants. Entry barriers may be associated with high capital intensity, research and development cost or promotional expenditure. For example, a new entrant to a market where existing firms benefit from a high level of customer loyalty would be confronted with the challenge of having to spend huge sums in promotional expenditure in order to attract customers.

Comanor (1967) alludes to the fact that Research and Development expenditure could be a barrier to entry in many markets. This expenditure increases the initial investment that new entrants to the market have to make in order to begin operations. In effect, high entry barriers reduce the number of entrants and, consequently, competition in a given market, and make it possible for those already in the market to make monopolistic profits.

Weinzimmer (1993) found a positive relationship between entry barriers resulting from Research and Development and sales growth. It is expected that a similar positive relationship will be found among firms in Ghana, and that rapidly growing firms will be those in markets where the entry barriers are high.

H24: Firms with unions are more likely to be associated with slow growth than those that do not have unions.

Unionization appears to be a liability for growth in the small business. Acs and Audretsch (1990) note that the degree of unionization in a sector has a negative influence on the growth of SMEs. Wooden and Hawke (2000) provide some reasons for this. Firstly, salaries in unionized firms generally tend to be much higher than in non-unionized firms. Probably, this is due to the relatively strong negotiation and bargaining power of unions. Secondly, the effect of unionization on productivity is negative. At best, its impact will not be significant. Finally, unions tend to negotiate to maintain salaries and working conditions of employees independently of the real financial circumstances of the firm.

In this research, it is expected that unionization will increase the operational cost of small businesses in Ghana and that those firms with unions will be likely to grow more slowly than those without unions.

H25: Firms based in industrial parks or areas are more likely to be associated with rapid growth than those that are not.

The aim of industrial parks is to promote the start-up or development of businesses by providing logistical and infrastructural facilities. Locating a firm within a cluster of similar firms or in an area that provides a qualified labour pool is expected to result in lower logistical and infrastructural cost as well as reduced personnel expenses. In addition, it is expected that it would be easier for the firm to identify and attract high-quality employees. According to Marshall (1922), industrial parks enable businesses to benefit from agglomeration economics associated with interactions between companies that are concentrated within a restricted space. Colombo and Delmastro (2002) confirm that location in industrial or science parks has a positive effect on the growth of firms.

This research expects that in Ghana, firms located in industrial parks would be more likely to grow faster than those located outside in industrial parks. Industrial parks in developing countries such as Ghana are often better served with logistical and infrastructural facilities and tend to attract a larger concentration of relevant skills.

H26: Firms operating in a very dynamic environment are more likely to be associated with rapid growth than those that are not operating in such an environment. A dynamic environment is one that is experiencing rapidly changing technology.

Zhang *et al.* (2008: 684) note that “environment dynamism refers to the amount and unpredictability of change in customer preferences, products or service technologies, and method of competition in firm’s principal industry”. This hypothesis is premised on the assumption that, a dynamic environment gives birth to several market opportunities that stimulate growth. Miles *et al.*, (2000) found that environmental dynamism was positively associated with innovation while Zhang *et al.* (2008) confirmed that

environment dynamism was significantly associated with rapid-growth firms. Consequently, rapid-growth firms were more likely to be those operating in a dynamic environment.

This research expects that small businesses in Ghana operating within a very dynamic environment would be more likely to grow rapidly compared to those not operating within such an environment.

H27: Firms operating in a restrictive fiscal and social policy environment are more likely to be associated with slow growth than those operating in non-restrictive environments.

For Nichter and Goldmark (2009), the overall state of a country's economy directly impacts upon the availability of profitable business opportunities. This hypothesis is based on the premise that hostile policies in the business environment will make it difficult for small businesses to operate, and will therefore constrain their growth.

The World Bank (2006) notes that the regulatory and institutional environment in developing countries that are generally burdensome compared to developed countries often constrains small business growth. For De Soto (1989), strict regulations and high taxes may restrict the growth of firms. Beck *et al.* (2005) in their survey of firms in 54 countries found out that financial, legal and corruption challenges restrict the growth of small businesses. For the World Bank (2005), reports by small firms that they find government policies unpredictable could yet be another factor reducing growth-enabling investments.

It is worth noting that some government policies and incentives that are aimed at supporting small businesses growth could end up as a disincentive for them to grow beyond the cut-off point because they will lose those benefits. Consequently, some business owners may choose no longer to grow or some may just choose to split up their business into several ones to continue to be small. De Paula and Scheinkman (2007) found out in their study of the “*Simples*” program in Brazil which offers tax benefits only up to a certain size of a firm, that it induces formalization, however it constrains growth.

In this research, it is expected that firms operating in restrictive fiscal and social policy environments are more likely to experience slower growth than firms operating in less restrictive environments.

4.7 Development of Hypotheses Relating to Cultural Factors

The hypotheses developed in this section relate to the fifth research question which seeks to identify the firm characteristics that discriminate between rapid-growth and slow-growth small firms in Ghana.

H28: Firms owned by non-Africans are more likely to be associated with rapid growth than those owned by Africans.

As mentioned earlier, entrepreneurs from specific ethnic communities have always been a part of the business landscape of most countries in the world. The level of education and literacy in Africa is generally low (primarily due to poorer economies and inadequate budgetary support to the sector) when compared to other developing and

developed countries. As mentioned earlier, education plays a meaningful role in providing entrepreneurs with the relevant skills they need to be successful. The World Bank (2001) reports that primary education completion rates in Sub-Saharan Africa remains only at 55% compared to 78% in South Asia and 89% in Latin America. Intuitively, one will expect that the relatively lower education levels of African entrepreneurs will impact negatively on their ability to successfully manage and grow businesses compared to their counterparts from developed countries or other more prosperous developing countries.

It is also worth noting that, often, the most enterprising and adaptable people migrate to other countries to seek greener pastures and live more comfortable lives. Consequently, they are more adept at identifying opportunities and willing to work harder to ensure survival than nationals who are comfortable being at home. This research expects that non-Africans from developed and more prosperous developing countries will be associated with rapid-growth small businesses in Ghana.

H29: Firms whose leaders have a family history in business are more likely to be associated with rapid growth than those without a family history in business.

Anderson and Reeb (2003) and Morck and Yeung (2004) allude to the significant role family firms play in the current global economy. Fairlie and Robb (2005) posit that entrepreneurs often have a family history where their mother or father was self-employed. For Dyer and Handler (1994), many entrepreneurs often indicate that they were placed in positions of responsibility within their family business at a young age. These entrepreneurs also indicate that their parents used the family business as a means

to teach them the relevant skills, values and confidence that they required to own their own business. For Carr and Sequeira (2007), these prior experiences are important elements that contribute to the informational requirements and behavioural skills necessary for self-employment, even if it is not used in the family's existing business.

Morris and Lewis (1995) also allude to the fact that family background/childhood experiences, exposure to others in business, as well as previous job experiences influence the development of entrepreneurial-related attitudes. It is equally important to note the support, both financially and psychological, which an entrepreneur with a family background in business could rely on.

In their research on prior family business exposure as intergenerational influence and entrepreneurial intent, Carr and Sequeira (2007) concluded that family owned firms serve as incubators and models for additional entrepreneurial activities and that prior family business exposure helps to shape attitudes and feelings of self-efficacy among would-be entrepreneurs. More importantly, the influence of a family's involvement in business extends beyond the immediate family business to include subsequent entrepreneurial activities by family members.

This hypothesis is therefore premised on the fact that, firms with a family history in business are more aware of the critical factors for success and will easily share their experiences with other family members interested in pursuing business opportunities. Family members may also be more understanding of the risks involved in business and will therefore be more willing to provide other family members with finance to establish a business or to overcome short-term financing problems. These firms are

expected to be more likely to be rapid-growth ones compared to those without any prior family business background.

It is worth noting that, in recent times, researchers including Mason and Harrison (2000) have sought to investigate the small firm's access to informal sources of financing especially from "business angels" – individuals without family connection who however are willing to invest directly in unlisted companies. Although, this source of financing is important in understanding small firm growth, it was not investigated in this study that focussed on support from family sources.

H30: Firms with clear vision and mission statements are more likely to be associated with rapid growth than those without such statements.

The advantage of a clear growth-oriented vision and/or mission statement is that, it communicates to all relevant stakeholders the importance of growth for the firm. For Kim and Mauborgne (1997), a growth-oriented vision, whether it is communicated through a vision, mission or values statement, emphasizes the importance of growth to the firm and ensures that decisions are made bearing growth in mind. In their research into firm growth, Doorley and Donovan (1999) found out that about 60% of the rapid-growth firms studied had a documented growth vision, compared to only 15% of the slow-growth firms.

Both Barringer *et al.*, (2005) and Zhang *et al.*, (2008) in their research on firm growth, found out that firms with clear growth-oriented vision or mission statements were more likely to be rapid-growth firms compared to those without a clear vision.

This research expects to find that in Ghana as well, firms with well-articulated and documented growth-oriented vision and mission statements will be more likely to be associated with rapid growth than those without such a statement.

H31: Firms with a Board that meets formally and regularly are more likely to be associated with rapid growth than those without such a Board.

The presence of a good corporate governance culture has long been perceived as an indicator of the quality of a company and its management. Cain (2002) notes that the involvement of a board of directors is perceived to be an integral part of the governance and management structure of publicly-traded corporations, especially large organizations. The board of directors' primary role is to provide leadership and management direction to the organization. Consequently, it is important that the boards consist of members with skills and experiences to match the needs of the organization. In recent times, due to increasing regulatory requirements placed on publicly traded companies, the use of boards of directors is becoming even more prominent.

It is worth noting that traditionally, boards of directors have been common among large corporations because of the recognition of the value they add to improving governance and management. Among others, Siebens (2002) posits that boards of directors can provide a qualitatively better direction to the organization through spreading of knowledge in the board's composition, splitting-up of special functions and having more frequent meetings.

Boards of directors are less common among small firms. It is, however, expected that a proper functioning board in a small firm would provide guidance and direction to the firm's management. It would also review its operations in line with agreed targets with the ultimate goal of maximizing shareholder value. Given the expected diverse skills of the board members, it is expected that a well-constituted board for a small firm would guide it in the taking of strategic decisions such as expanding into new product/service lines and/or geographical areas.

Formal and regular meetings would also enable the board to track the progress of the firm and quickly respond to issues both internal and external as they arise. In particular, frequent meetings would enable the board to quickly respond to challenges in the market place such as competition, declining demand for product/services and changes in economic, as well as fiscal, policies. In this research, it is expected that small businesses in Ghana with well-constituted formal board of directors who meet regularly will be more likely to be rapid-growth firms.

H32: Firms, in which employees participate in decision-making, are more likely to be associated with rapid growth than those in which employees do not participate in decision-making.

This hypothesis is premised on the concept of participative management. Dubrin and Ireland (1993) view management as a process that involves the effective and efficient use of an organisation's resources to achieve objectives through the functions of planning, organizing, leading and controlling. Participative management involves the concepts of consultation and joint-decision making by the employer and the employee.

Marshall (1982) outlines four types of participative management, namely, participation in goal-setting; participation in decision-making; participation in problem-solving and participation in change.

Lawler (1996) posits that a key factor in the interest of participative management was the realization that better management practices such as superior quality management systems, better employee relations and integrated design and production teams could provide competitive advantages to public and private sector organizations. Bloom (2000), supports the belief that people who are involved in making decisions would have a greater stake in carrying out those decisions than those who are not involved in the decision-making. For Collins (1996) participatory management is widely perceived as an attribute of socially responsible companies while Greenberg (1986) views participation in decision-making at the workplace as central to the democratic vision and basic to the good society.

Participative management is even more relevant because of its impact on organizational performance. Denison (1990) concludes using empirical evidence that higher levels of employee participation in decision-making are correlated with better organizational performance. Further Markowitz (1996) asserts that giving employees, decision-making power boosts their morale and commitment to the organization and that aids productivity.

It is worth noting that especially in small businesses, employees have regular interactions with customers and are therefore more likely to have valuable knowledge about their perceptions of the company. This information, if properly channelled to

management, will provide them with a basis on which to make informed decisions. The employees, on the other hand, will be motivated by the fact that they participated in the success of the company. It is, therefore, expected that small businesses which involve employees in decision-making will be more likely to grow rapidly compared to those which do not involve their employees in decision making.

H33: Firms whose management holds formal meetings at least quarterly are more likely to be associated with rapid growth than those whose management meets less frequently.

This hypothesis is still premised on the concept of participative management. As mentioned earlier, apart from participation in decision-making, Marshall (1982) alludes to participation in goal-setting; participation in problem-solving and participation in change. These are best achieved through frequent interactions between senior and middle level management. It is also intuitive that, as businesses expand and the number of employees increases, it becomes necessary for the owner/managers or senior managers to delegate responsibility to the next crop of managers as part of burden sharing. Formal management meetings enable the owner/managers or senior managers to be updated on the developments in the company; work with the team to resolve problems and equally important, to provide training and coaching.

It is expected that regular and formal management meetings in small businesses will facilitate responsiveness in solving problems confronting the firm. Consequently, firms that hold frequent meetings will be expected to grow faster than those which do not.

H34: Firms in which non-family members are a majority in management are more likely to be associated with rapid growth than those in which family members are in the majority.

An important priority for all firms desirous of growth is to properly staff their organizations. These firms need to hire and retain skilled staff equally committed to the growth of the organization. Gallo (1995) and Ibrahim *et al.*, (2001) recognize non-family managers as important stakeholders in family firms. For Dunn (1995) and Whyte (1996), limiting management positions primarily to family members may lead to the hiring of sub-standard people who cannot easily be dismissed.

Intuitively, one could argue that not all family members have the requisite skills to successfully manage a firm. Also, they may not want to grow the firm in such a way that they lose control. Instead, they are likely to prefer to ensure a satisfactory income for themselves. This study expects that firms in which non-family members are in a majority in management will grow faster than firms in which non-family members are in a minority in management.

H35: Firms which are members of professional or business associations are more likely to be associated with rapid growth than those that are not members of professional or business associations.

This hypothesis is premised on network theory. Watson (2007) posits that network theory suggests that the ability of business owners to obtain access to resources not under their control in a cost-effective way through networking can influence the success

of business ventures. Networking could take the form of the personal networks of the small business owners which allows them access to the social resources embedded within the network (Florin *et al.*, 2003) or the organizational networks of the business (Brüderl and Preisendörfer, 1998).

Organizational networks refer to the firm's membership of professional and business associations which are particularly useful for sharing information on market and market opportunities; obtaining financial and non-financial support from government and development partners; and advocating changes in regulations which constrains the growth of businesses. For Julien (1993), networking can facilitate the achievement of economies of scale in small firms without producing the diseconomies resulting from large size.

It is expected that small firms that are members of professional or business associations will grow faster than those firms that are not members because networking will enable them to access needed resources that are presently external to them.

H36: Firms that belong to community or social networks are more likely to be associated with rapid growth than those which do not.

Community or social networks refers to the relationships between individuals particularly the owners of the firms. They are also important in helping business owner's access information, know-how, customer referrals and financing. For Nichter and Goldmark (2009), entrepreneurs often take the advantage of opportunities to invest in social networks when they perceive payoffs in terms of growth of their businesses.

Barr (1998) concluded from the study of small-scale manufacturing in Ghana that entrepreneurs with larger and more diverse sets of networks were more productive.

For Coleman (1988), networks can improve a small business owner's social capital because it provides access to information embedded within the networks accessed. Granovetter (1983) suggests that individuals whose networks are limited to primarily family and friends are likely to have less information than those whose networks includes many acquaintances. Fischer and Reuber (2003) argue that owners of high-growth firms need to develop relationships beyond their personal circles of contacts and local communities.

Several studies appear to suggest a positive relationship between membership of social networks and firm growth. For instance, Donckels and Lambrecht (1995) found that network development, especially at the national and international levels, was positively associated with firm growth. Also, Lerner *et al*, (1997) concluded that network affiliation was significantly related to profitability of the firm. In this research, it is expected that firms affiliated with community and social networks will grow faster than those firms with no affiliation.

4.8 Conclusions

This chapter discussed the development of 36 research hypotheses based on theoretical arguments, theories or previous research findings. A general observation was that, there was not always a consensus among researchers on how various variables influence growth of small businesses. This observation provides a further justification for this research to determine those factors that are perceived to influence small

business growth rates in developing countries such as Ghana. The next chapter focuses on the sample selection and measures.

5 SAMPLE AND MEASURES

5.1 Introduction

The variables used in this research are based on entrepreneurial characteristics (including motivations), firm characteristics (including other resources), strategic factors, environmental factors and cultural factors as possible influencers of rapid small firm growth. The measures used are individual items and not constructs because the research sought to investigate how each variable related to growth of small businesses in order to provide a richer understanding of the influencers of growth rates.

Section 5.2 reviews the sample selection. This was a random sample selected from the database of the Association of Ghana Industries, a leading association of private sector entrepreneurs and companies in Ghana. Section 5.3 reviews the variables selected for measurement. The variables belong to one of the broad categories of factors expected to influence rapid growth. Section 5.4 reviews the questionnaire and measures, and provides the framework for designing the questionnaire. It also discusses the pilot testing of the questionnaire to improve its quality and the subsequent amendments made to it.

Finally, section 5.5 presents a table that lists all the variables and their expected relationships with growth. The table also links the variables to the hypotheses being tested. It also indicates the specific question number(s) in the questionnaire used to measure the variables.

5.2 Sample Selection

A random sample of 252 small businesses covering manufacturing and services companies was selected based on stratified random sampling, from a population of 393 small businesses from the database of the Association of Ghana Industries (AGI). The data set was limited to companies in the manufacturing and services sectors in the Greater Accra region and comprised of 168 manufacturing companies and 225 services companies. The sample was restricted to the Greater Accra region due to cost and time considerations.

A survey random sample calculator was used to estimate the number of manufacturing and services companies to be included in the sample in order to ensure adequate representation of both sectors. The sample therefore consisted of 104 manufacturing companies and 138 services companies. The MS Excel random function was used to randomly select companies from each data sub-group to be included in the sample. Out of the 252 companies randomly selected, 52 (*i.e.* about 20%) could not be contacted by phone possibly because they had closed down, relocated or changed telephone numbers.

Manufacturing was selected because of the government of Ghana's focus on strengthening the industrial base of the country. It was therefore useful to establish the factors that were critical for growth in the sector. The service sector was selected because it is the largest sector for small business in Ghana. Many small businesses are in the service sector or even start off from this sector due to the relatively low initial capital cost, and the fact that, the sector is shielded from external competition. The manufacturing sub-sectors included in the study were foods and agro-processing,

plastics manufacturing, cosmetics, printing and construction materials. For services, the sub-sectors included commerce, professional bodies, and consultancy services.

The time period covered for this study was six years (*i.e.* 2000 to 2005 to yield 5 data points) based on the feedback from the preliminary testing of the questionnaires. The general conclusion from the pilot testing was that, due to poor record-keeping, most small businesses in Ghana could not provide data on their activities beyond five years. There was relatively high employee turnover making it even more difficult to obtain additional information from relevant individuals. All participating companies were expected to have been in existence at least 3 years before 2000.

Although the three years is an arbitrary figure, it underscores the basic assumption that within three years of start-up, companies would have overcome all their teething problems and would have begun to stabilize their operations. It is again assumed that the three-year requirement reduces the impact of initial size on the growth rate. It would also ensure that selected companies have a reasonable track record to facilitate a proper assessment of their operations.

5.3 Variables to be Tested

5.3.1 Variables relating to Entrepreneurial Characteristics

Variables under entrepreneurial characteristics include key motivational factors for starting the business, education, previous management experience, work experience, industry-specific experience and gender. These are both general and specific human capital resources of the founder/entrepreneur.

The motivational factors adopted from Storey (1994) are, the perception of a market opportunity, desire to make money, dissatisfaction with an existing employer, threat of unemployment, actual unemployment, desire to guarantee a satisfactory income and desire for personal development. The perception of a market opportunity and the desire to make money can be classified as positive motivational factors while dissatisfaction with an existing employer, threat of unemployment, actual unemployment, desire to guarantee a satisfactory income and desire for personal development may be classified as negative motivational factors. It is expected that the positive motivational factors will be associated with rapid-growth firms while the negative motivational factors will be associated with slow-growth firms.

Education is measured by the highest educational qualification attained by the entrepreneur. Previous management experience, work experience and industry-specific experience are included as dummy variables indicating whether or not the entrepreneur had the experience concerned. Collectively, education, management, work and industry-specific experience are referred to as human capital. In follow-on questions, respondents indicate the number of years of the experience. Gender is included as another dummy variable. One expects that businesses managed by males, and firms with owner/managers endowed with more human capital (based on human capital theory by Becker (1975), will have a higher probability of belonging to the rapid-growth small business category.

5.3.2 Variables relating to the Firm's Characteristics

Variables included in the characteristics of the firm are firm age, business sector, legal structure, size and affiliation to other related businesses. Firm age was established by the entrepreneur's response to the question on when the firm was formed. Since the study was limited to two main sectors *i.e.* manufacturing and services, respondents were asked to select the sectors in which they operate. Legal structure was determined by whether or not the firm is incorporated as a limited liability company, and size was measured by the number of employees. Affiliation was included as a dummy variable. It is important to the extent that, affiliated businesses in general tend to have strong links to other institutions that provide needed support as is often observed in franchising arrangements.

5.3.3 Variables relating to Strategic Factors

Dichotomous strategy variables were used to measure the impact of strategic factors on growth. These variables included formal workforce training, formal training among key management staff, the firm's capacity to raise additional equity, use of electronic information technology in the firm's operations, strategic planning, frequency of introducing new products to the market, export market focus, presence of a research and development unit within the firm and partnership with a research institution.

Additional variables are the extent to which the business plans its operation over time as evidenced by the presence of business and strategic plans as well as how it manages its finance. It is expected that, even though an innovative strategy *per se*, is not a necessary requirement for success, it at least increases the chances of rapid growth. One also expects that firms that carefully plan their activities would demonstrate a more

ambitious and goal-directed behaviour. This will improve their probability of rapid growth. Easy access to external finance and partnership with research institutions are expected to facilitate rapid growth.

5.3.4 Variable relating to Environmental Factors

Variables included under environment are the small business' access to public or other form of external aid, entry barriers to the firm's business sector, presence of unionized staff, the firm's presence in an industrial park, dynamism of the environment and restrictive social and fiscal policies. Access to public or other forms of external aid is included as a dummy variable in the model and focuses largely on the firm's ability to attract financial support from government, donors or development partners, non-governmental organizations or international organizations. Typically, the nature of such aid could be grant, technical assistance or equipment supply.

Entry barriers to the firm's business sector are measured by the respondent's feelings about the level of capital asset requirements, research and development as well as promotional expenditure required to start or operate a business in their area of operation. The presence of unionized staff and the firm's location in an industrial park, are included in the model as dummies. The dynamism of the environment is measured in terms of the rate of technological change in the respondent firm's business compared to those the owner/manager is familiar with. The impact of fiscal and social policies such as taxation or industrial relations on the firm's activities is measured by the respondents' rating of their importance to the firm's operation. These policies include the impact of high taxation, difficulty in obtaining licenses/permits, poor industrial relations and cumbersome procedures at the ports and entry points.

A favourable business environment will likely impact positively on a small firm's growth potential consequently, firms which are able to access public or external aid, operate in a high barrier to entry sector, have no trade unions, and are located in industrial parks are expected to grow rapidly. In addition, firms that do not feel their operations are hampered by fiscal or social policies will grow faster than those which do.

5.3.5 Variables relating to Cultural Factors

Variables include the entrepreneur's ethnic origin, family history in business, the presence of written mission and vision statements within the organization and the presence of a board that meets formally and regularly. Other variables include the extent to which employees participate in decision-making, the frequency with which management holds formal meetings and the proportion of non-family members in management. Further important variables included the entrepreneurs and the firm's association with a profession or business association as well as their association with community or social networks.

Ethnic origin rather than the entrepreneur's nationality was used in the study to avoid situations where they have chosen to naturalize and adopt another country's citizenship or carry dual nationality. The broad regions of the globe *i.e.* Asia, North America, South America, Europe, Middle East and North Africa, Sub-Saharan Africa and Australasia, were used. Family membership used included grand-parents (including grand-uncles and aunts), parents (including uncles and aunts) and brothers and sisters. The presence of written vision and mission statements, a board that meets regularly and formally, the owner/manager and the firm's association with professional or business

association, as well as community or social networks are included as dummy variables. Community or social networks included sports club, golf club and or social clubs based on ethnic origin for instance.

5.4 Questionnaire and Measures

A major guiding principle in designing the questionnaire was to use variables and measures from previous research work. The variables used are presented in Table 2.4 and were drawn largely from previous research work by Storey (1994), Wiklund (1998), Barringer *et al.* (2005), Zhang *et al.* (2008) and the author's own work. The appropriateness of the measures was confirmed through the pilot testing of the questionnaire. The questionnaire consisted mainly of closed questions with standardised response categories.

To ensure the quality of the data, the questionnaire was first pre-tested on ten small firms also selected from the AGI database. The pre-test questionnaire is presented in Appendix 1. Those ten firms used to pre-test the questionnaire were excluded from the sample selection process. For the pre-testing, an introductory call was first made to the respondents followed by personal visit to deliver the questionnaires and a subsequent meeting to discuss their feedbacks. The questionnaire was then modified based on the comments received. It must be noted that the aim of the pre-testing was simply for the purposes of ensuring clarity of the questions and eliminate ambiguity; use words that the respondents could easily understand and ensure that there were adequate responses from which they could select from. The aim of the pre-testing was not to collect a preliminary data to compare with that of the final data.

Following comments from the pilot testing, the following modifications were made to the pre-test questionnaire as follows:

- A definition of management was added to Question 3.
- Standardized response categories were expanded for Questions 9, 11, and 14.
- Question 19 was expanded to provide better clarity on external equity.
- Question 21 was modified to provide clarity on the use of technology that was now made specific to electronic information technology usage.
- Question 22 was modified to differentiate strategic plans from the small business' annual budgets.
- New product was defined in Question 25 to eliminate ambiguity.
- Question 24 was re-phrased to provide better understanding.
- Questions 38 and 39 were modified and combined to enable the respondents to focus on their ethnic origin and not nationality. The response category was also expanded.
- Question 40 was modified to focus on other family businesses separate from the current one.
- Questions 47 and 49 were expanded to enable respondents to indicate the order of importance of the professional/business association or community/social networks to which they might belong.
- Question 48 was modified to enable respondents to relate membership of the community or social network to the business operations.
- The number of years for which turnover and number employee figures were sought was reduced to six years to yield 5 data points.

The post-test questionnaire presented in Appendix 2 also incorporated additional comments received from the supervisor and colleagues. The changes included the following:

- Modifying the response options for Questions 1 and 39 to enable respondents to rate their importance based on a scale of 1 (Not Important) to 5 (Extremely Important).
- Question 27 was introduced to enable respondents to indicate the principal market of their exports.
- Question 35 was introduced to explore if entrepreneurs encouraged trade union activities in their organization.
- Questions 45 and 46 were introduced to investigate employee participation in management and how frequently management meetings were held.

The characteristics of the entrepreneur were measured by ten questions *i.e.* Q1 to Q10 in the post-test questionnaire presented in Appendix 2. The questions measured the entrepreneur's motivation, education, previous management experience, number of founders, skills, previous work experience in a similar sector and gender. The question on education measured the highest educational qualification of the entrepreneur while follow-on questions were asked to determine the number of years of previous management and similar work experience, where applicable.

Characteristics of the firm were measured by six questions *i.e.* Q11 to Q16. They measured the age of the firm, the sector in which it operates, its legal form, number of full-time employees and nature of affiliation with another firm, if any. Strategic factors were measured by thirteen questions *i.e.* Q17 to Q29. Some of the strategic factors

measured included training programs to the workforce and management, the firm's ability to raise additional equity post-formation, extent of electronic information technology usage, availability of strategic plan, new product introduction to the market, export strategy and finally, policy on research and development and partnership with research institutions.

Ten questions *i.e.* Q30 to Q39, measured environmental factors associated with the firm's operations. The questions measured the firm's access to public aid and the nature of the aid when applicable, barriers to entry into the firm's sector of operations, trade union activities, location in an industrial park and impact of fiscal and social policies on the firm's operations. The cultural factors were measured by twelve questions Q40 to Q51. Measurements included the entrepreneur's ethnic origin, family experience in business, governance and association with professional, business, community or social networks.

As already discussed in Chapter three, Methodology, introductory telephone calls and e-mail messages (to those who had reliable e-mail services) were first made to the respondents followed by personal contact to deliver the questionnaire. The introductory telephone calls and e-mails explained the purpose of the research and its use for academic purposes only. It was also used to assure them of the confidentiality of the information they were providing. The message was essentially that in the cover letter to the questionnaire and presented in Appendix 3.

5.5 List of Variables and their Expected Relationships with Growth

Table 5.1 below presents the list of variables and the expected relationship with Growth. The table also contains the hypotheses which were to be tested and the corresponding question numbers (indicated in brackets next to the variables) from the post-test questionnaire that was administered to respondents in the sample.

Table 5.1. List of Variables Proposed for the Thesis and their Expected Relationship with Growth

Category of Independent Variable	Hypothes is Tested	Independent Variable/ Question numbers	Indicator (s)	Expected Relation with Growth
Characteristics of the Entrepreneur	H1	Motivation (Q1)	Perception of a market opportunity Desire to make money Dissatisfaction with an existing employer Threat of unemployment Actual unemployment Desire to guarantee a satisfactory income	+ + - - - -
	H2	Education level (Q2)	Graduate Non-graduate	+ -
	H3	Previous management experience (Q3 & 4)	Previous experience No previous experience	+ -
	H4	Number of founders (Q5&6)	Single Founder More than one Founder	- +
	H5	Functional skills/Work experience (Q7)	Marketing Finance Production Personnel Research and Development Other (please specify)	+ - - - - -
	H6	Industry specific experience (Q8&9)	Previous industry experience No previous industry experience	+ -
	H7	Gender (Q10)	Male Female	+ -
	H8	Firm Age (Q11)	Up to 5 years More than five years	+ -
	H9	Sector (Q12)	Services sector Manufacturing	+ -
	H10	Legal Form (Q13)	Limited liability companies Partnership Sole Proprietorship	+ - -
	H11	Size (Q14)	1-30 More than 30 employees	+ -
	H12	Affiliation with a bigger entity (Q15 & 16)	Affiliation Non-affiliation	+ -
Characteristics of the Firm				

Category of Independent Variable	Hypotheses is Tested	Independent Variable/ Question numbers	Indicator (s)	Expected Relation with Growth
Strategic Factors	H13	Workforce training (Q17)	Formal workforce training No formal workforce training	+ -
	H14	Management training (Q18)	Management training No management training	+ -
	H15	External equity (Q19 & 20)	Presence of external equity Absence of external equity	+ -
	H16	Technological sophistication (Q21)	Some sophistication Limited sophistication	+ -
	H17	Strategic Planning (Q22, 23, 24)	Prepares a strategic plan Does not prepare a strategic plan	+ -
	H18	New product innovation (Q25)	New product introduction No new product introduction	+ -
	H19	Exporting (Q26 & 27)	Export firm Non-export firm	+ -
	H20	Research and Development Unit (Q28)	Has R & D Unit Has no R & D Unit	+ -
	H21	Partnership with other research institutions (Q29)	Has partnership Does not have a partnership	+ -
	H22	Access to public or external aid (Q30, 31 & 32)	Have access Has no access	+ -
	H23	Entry barrier (Q33)	High Medium Low	+ - -
	H24	Unionized staff (Q34 & 35)	Presence of a union Absence of a union	- +
	H25	Presence in an industrial park (Q36)	Presence in an industrial park Non presence	+ -
	H26	Dynamism of the environment (Q37)	Rapid technological change Average or slow change	+ -
H27	Restrictive social and fiscal policies (Q38 & 39)	Presence of restrictive policies Absence of restrictive policies	- +	
Environmental Factors				

Category of Independent Variable	Hypotheses is Tested	Independent Variable/ Question numbers	Indicator (s)	Expected Relation with Growth
Cultural Factors	H28	Ethnic origin (Q40)	Non-African African	+ -
	H29	Family history in business (Q41 & 42)	Presence of family history Absence of family history	+ -
	H30	Presence of a clear mission and vision statements (Q43)	Has written vision and mission statements Does not have statements.	+ -
	H31	Presence of a Board (Q44)	Presence of a formal Board Absence of a formal Board	+ -
	H32	Frequency of management meetings (Q46)	At least quarterly Semi annual or annual	+ -
	H33	Employee participation in decision making (Q45)	Very often and always None, to some extent, often	+ -
	H34	Proportion of non-family members in management (Q47)	Majority non-family members Minority non-family members	+ -
	H35	Membership of a professional/business association (Q48)	Membership of an association Non-membership	+ -
	H36	Support from community networks (Q50)	Membership of a network Non-membership of a network	+ -

5.6 Conclusion

This chapter has discussed the sample selection that was through stratified random sampling from the database of the Association of Ghana Industries. The association is a leading grouping of private sector entrepreneurs and enterprises in Ghana and is well respected among the business community, government and development partners. The chapter also reviewed the variables to be tested. Each variable was classified under one of the following categories *i.e.* characteristics of the entrepreneur, characteristics of the firm, strategic factors, environmental factors or cultural factors.

The chapter also discussed the questionnaire design. It was essentially based on variables presented in Table 2.4 and drawn largely from previous research work by Storey (1994), Wiklund (1998), Barringer *et al.* (2005), Zhang *et al.* (2008) and the author's own work. It highlighted the main amendments to the pre-test questionnaire following the pilot testing to improve questionnaire quality to ensure that it was useful in eliciting the appropriate responses from the respondents. Finally, the proposed variables and expected relationship with growth were presented in Table 5.1. The table also related the variables being measured to the corresponding question in the questionnaire as well as the hypotheses being tested.

Chapter 6 below presents a discussion on the characteristics of the respondents and conducts a preliminary analysis on the data to test and eliminate biases.

6 RESPONDENT CHARACTERISTICS AND CATEGORIZATION OF FIRMS

6.1 Introduction

This chapter begins with a descriptive analysis of the sample gathered during the survey. The sample is split into two. The first sub-sample represents the “truncated sample” which consists of all respondents who answered the questionnaire completely including providing information on their turnover and employment figures from 2000 to 2005. There were 107 companies in this group representing a response rate of 53.5%.

The second sub-sample is the “full sample” which includes respondents who responded to the questionnaire but refused to provide information on their turnover and employment figures. There were 132 companies in this sample representing a 66% response rate. Of the remaining companies; 18 did not respond at all after persistent follow-ups even though they had agreed to provide information; 33 provided partial information; while 27 companies explicitly stated that they would not participate.

Section 6.2 presents a descriptive analysis of both samples. The purpose of the analysis was to obtain a better appreciation of the characteristics of the respondents (which is presented in the analysis below) and also to determine if there were significant differences between the truncated sample (which contained complete information and was to be used for the main research analysis *i.e.* hypotheses testing and logistic regression) and the full sample (which was not used for any further analysis). The independent *t*-test and Chi-square tests were used where relevant to test the differences between the two samples. The results of all the tests showed that there were no significant differences between the two

samples. This provided adequate justification to use the truncated sample for the main analysis.

There are various ways of calculating growth rates. Prominent are total growth rate; average annual growth rate and the compound annual growth rate. Section 6.3 discusses each of these growth rates and applies it to the truncated data. The main purpose of this section is to identify the growth rate calculation method which best fits the data and results in the least number of outliers. Z-score analysis and box plots were used for this. The box plot discussed further in the section is simply a visual representation of the data showing the outliers, identified by the identity number of the respondents. The box plots facilitate data screening and elimination of biases.

The Kolmogorov-Smirnov Test of Normality was also applied to the data to confirm normality or otherwise. This informed the choice of appropriate statistics. Based on the results of the test, two non-parametric test statistics were selected for the analysis because the data was non-normally distributed or categorical. The Mann-Whitney test was applied to non-normally distributed data. For categorical variables, cross-tabulation analysis and the Chi-square test of significance was applied to the sub-samples.

Section 6.4 briefly reviews the screening of the data and the elimination of biases while section 6.5 discusses the categorization of the data into rapid-growth and slow-growth firms. It explains why a growth rate of 25% can be taken as an appropriate cut off rate for the data collected.

6.2 Sample Characteristics – Descriptive Analysis

6.2.1 Characteristics of the Entrepreneur

6.2.1.1 Motivation

Both the truncated sample and full sample revealed that most respondents considered the perception of market opportunity, the desire to make money, the desire to guarantee income and the desire for personal development as very important motivational factors for them, while they placed less importance on dissatisfaction with employer, threat of unemployment and actual unemployment. The perception of a market opportunity (77.9% for the truncated sample and 78.4% for the full sample) and desire for personal development (78.0% for truncated sample and 79.7% for the full sample) stood out as the two most important motivational factors.

Table 6.1. Motivation

	Truncated Sample				Full Sample			
	Not Important		Very Important		Not Important		Very Important	
	N	%	N	%	N	%	N	%
Market opportunity	23	22.1	81	77.9	27	21.6	98	78.4
Desire to make money	42	42.4	57	57.6	48	39.0	75	61.0
Employer dissatisfaction	83	91.2	8	8.8	103	92.0	9	8
Threat of unemployment	86	93.5	6	6.5	108	92.3	9	7.7
Actual unemployment	78	92.9	6	7.1	100	91.7	9	8.3
Desire to guarantee income	41	42.7	55	57.3	45	38.1	73	61.9
Personal development	22	22.0	78	78.0	25	20.3	98	79.7
Motivation – Other	1	16.7	5	83.3	1	16.7	5	83.3

An independent *t*-test was conducted on the truncated and full samples to determine if there were significant differences between their arithmetic means for each of the motivational factors. Regarding the perception of a market opportunity, the test showed that on the average, the full sample showed a marginally higher motivation ($M = 4.13$, $SE = 0.09$) compared to the truncated sample ($M = 4.11$, $SE = 0.11$). This difference was however not significant $t(227) = 0.155$, $p > .05$; and represented a very small effect $r =$

0.01. Similarly, the *t*-test did not show any significant differences in the samples when desire to make money was the motivational factor. Even though the full sample showed a slightly higher motivation ($M = 3.80, SE = 0.08$) compared to the truncated sample ($M = 3.77, SE = 0.09$), the difference was not significant $t(220) = 0.288, p > .05$. The effect size was also very low $r = 0.02$.

On the average, dissatisfaction with an existing employer was a higher motivational factor for the full sample ($M = 1.54, SE = 0.09$) compared to the truncated sample ($M = 1.52, SE = 0.11$). This difference was however not significant $t(201) = 0.136, p > .05$; and represented a very small effect $r = 0.01$. The analysis showed that, threat of unemployment was a slightly higher motivational factor for the full sample ($M = 1.61, SE = 0.10$) compared to the truncated sample ($M = 1.53, SE = 0.11$). However, this difference was not significant $t(207) = 0.498, p > .05$; and represented a very small effect $r = 0.04$.

An independent *t*-test on actual unemployment, a desire to guarantee satisfactory income and desire for personal development were all not significant. The results of the test showed that, the motivation to start businesses due to actual unemployment was slightly higher in the full sample ($M = 1.45, SE = 0.09$) compared to the truncated sample ($M = 1.40, SE = 0.10$). This difference was however not significant $t(192) = 0.367, p > .05$; and represented a very small effect $r = 0.03$.

The motivation to start a business due to the desire to guarantee a satisfactory income was slightly higher for the full sample ($M = 3.65$, $SE = 0.11$) compared to the truncated sample ($M = 3.54$, $SE = 0.12$). This difference was not significant $t(214) = 0.705$, $p > .05$; and represented a very small effect $r = 0.05$. Finally, the desire for personal development as the key motivational factor influencing the desire to start a small business was also slightly higher in the full sample ($M = 4.06$, $SE = 0.10$) compared to the truncated sample ($M = 4.00$, $SE = 0.11$). However, the difference again was not significant $t(223) = 0.372$, $p > .05$; and represented a very small effect $r = 0.03$.

6.2.1.2 Highest Educational Qualification

The data gathered showed that the majority of the respondents were either university graduates or post-graduates. For the truncated sample, 80.4% of respondents had formal university education compared to 76.5% for the full sample. Relatively, fewer respondents had either a secondary or vocational/technical education. Professional Accounting certifications and Diploma in Journalism were two other educational qualifications mentioned by respondents. The data appears to suggest that a significant number of entrepreneurs in the formal sector were university graduates. Non- university graduates operated more in the informal sector of the economy with very little affiliation to industry associations.

Table 6.2. Highest Educational Qualification

	Truncated Sample		Full Sample	
	N	%	N	%
Secondary Education	12	11.2	16	12.1
Vocational/Technical	6	5.6	9	6.8
University Graduate	52	48.6	59	44.7
University Post-Graduate	34	31.8	42	31.8
Other	3	2.8	6	4.5
Total	107	100.0	132	100

A Chi-square test was undertaken to establish whether or not there were significant differences in the highest educational qualification of the full sample and the truncated sample. The test showed no significant differences, $X^2 (4) = 0.849, p > .05$. Other qualifications were mainly those pursuing professional courses in accounting and banking.

6.2.1.3 Entrepreneurial Skills

Both truncated and full sample data revealed that marketing was the predominant skill of the entrepreneurs followed by production and finance. This finding appears to conform to the general expectation that entrepreneurial people are usually those with the relevant skills and expertise to market their products and services as well as themselves or those who have the relevant abilities and capabilities to produce products and services of an acceptable standard and quality. The total number of responses was 170 for the truncated sample and 207 for the full sample, an indication that, on the average, each entrepreneur had more than one skill. The “other” skills mentioned in the data collection included education, law, insurance, interior decorations, medical practice, design and construction, graphic design art and information technology.

Table 6.3. Entrepreneurial Skills

	Truncated Sample		Full Sample	
	N	%	N	%
Marketing	58	34.1	73	35.6
Finance	30	17.6	34	16.6
Production	35	20.6	43	21.0
Personnel	14	8.2	16	7.8
Research and Development	22	12.9	27	13.2
Other	11	6.6	12	5.9
<i>Total Responses</i>	<i>170</i>	<i>100.0</i>	<i>205</i>	<i>100.0</i>

6.2.1.4 Gender

Preliminary analysis of both samples showed that approximately a quarter of respondents were female. This was an interesting finding given that women entrepreneurs play a dominant role in the informal sector of most African economies. Although this research did not focus on women entrepreneurship, the findings appear to suggest that females are less likely to formalize their operations even though they attract a lot of attention from development partners. They also appear less likely to provide financial information on their operations compared to their male counterparts. This assertion is subject to further investigation which is not the subject of the current research.

Table 6.4. Gender

	Truncated Sample		Full Sample	
	N	%	N	%
Female	23	21.5	30	22.7
Male	84	78.5	102	77.3
Total	107	100.0	132	100.0

A Chi-square test showed no significant difference between the full sample and the truncated sample on the issue of gender, $\chi^2 (1) = 0.052, p > .05$.

6.2.2 Characteristics of the Firm

6.2.2.1 Firm Age and Firm Age Group

The age of firms in 2005 (the last year for which turnover and employment data was provided) ranged from 8 years (established in 1997) to 64 years (established in 1941). Four firms were older than 40 years implying they were established before 1965. The mean age and standard deviation were 14.89 years and 9.77 years for the full sample and 15.56 years

and 10.45 years for the truncated sample. Consequently, there was not a significant difference between the age group of the two samples.

The descriptive analysis on firm age shows that a proportionally large number of participating firms (*i.e.* 81.3% for the truncated sample and 84.1% for the full sample) had been in operation for less than 20 years. A higher percentage of these had been in operation for less than 10 years. Only 10% of the firms had operated for more than 30 years. Even though the proportion is low, the data suggest that these firms are likely to either have out-lived their owner/managers at start-up or have new managers assisting the initial founders. A review of both samples shows a fairly similar distribution for the two samples except that the full sample had a slightly higher percentage of respondents that had been operating for less than 10 years, and were less willing to provide financial information on their operations.

Table 6.5. Firm Age Group

	Truncated Sample		Full Sample	
	N	%	N	%
Up to 10 years	49	45.8	64	48.5
11 to 20 years	38	35.5	47	35.6
21 to 30 years	9	8.4	9	6.8
31 to 40 years	7	6.5	9	6.1
41 plus years	4	3.7	4	3.0
Total	107	100.0	132	100.0

6.2.2.2 Sector in which Firm Operates

As anticipated, a significant number of the firms operated in the services sector. For the truncated sample, 57% of firms operated in the services sector compared to 43% in

manufacturing. The results are not very different in the full sample data that shows 61.4% of firms operating in services and 38.6% operating in manufacturing.

Table 6.6. Sector in which Firm Operates

	Truncated Sample		Full Sample	
	N	%	N	%
Services	61	57.0	81	61.4
Manufacturing	46	43.0	51	38.6
Total	107	100.0	132	100.0

On the issue of the sector in which firm operates, a Chi-square test showed no significant difference between the full sample and the truncated sample $\chi^2 (1) = 0.465$, $p > .05$.

6.2.2.3 Legal Form of Firms

Analysis of the data collected regarding the legal structure of the firms showed that a significant number of them (more than 80%) were limited liability companies. Less than 20% were either Partnerships or Sole Proprietorship. There was a noticeable difference in the legal structure of firms between the truncated sample and the full sample. The truncated sample showed a relatively larger proportion of limited liability companies (86%) compared to the full sample (81.1%). The full sample also had more sole proprietors. Preliminary analysis of the data appears to suggest that Sole Proprietors in particular were less willing to submit financial information on their business.

Table 6.7. Legal Structure of Firms

	Truncated Sample		Full Sample	
	N	%	N	%
Limited Liability	92	86.0	107	81.1
Partnership	6	5.6	10	7.6
Sole Proprietorship	9	8.4	15	11.4
Total	107	100.0	132	100.0

6.2.2.4 Number of Full-Time Employees

The data analysis shows that a significant proportion of the firms (70.8% for truncated data and 77.2% for the full sample) had no more than 50 full-time employees. This finding appears to suggest that the SME sector in Ghana consists mainly of small enterprises rather than medium-size enterprises. About 50% of the enterprises had less than 20 employees.

Table 6.8. Number of Full Time Employees

	Truncated Sample		Full Sample	
	N	%	N	%
Up to 5 Employees	15	14.0	26	19.7
6 to 20 Employees	34	31.8	44	33.3
21 to 50 Employees	31	29.0	32	24.2
51 to 100 Employees	12	11.2	12	9.1
More than 100 Employees	15	14.0	18	13.6
Total	107	100.0	132	100.0

6.2.3 Strategic Factors

6.2.3.1 Strategic Business Plan

Preliminary analysis of the data gathered revealed that a majority of the firms (more than two-thirds) in both the truncated and full samples had business plans. The truncated sample had a slightly higher proportion of firms with strategic business plans compared to the full sample. The data gathered also showed that most businesses planned within the 2 to 5 years range while a little less than one-fifth planned for more than 5 years.

Table 6.9. Strategic Business Plan

	Truncated Sample		Full Sample	
	N	%	N	%
No Strategic Plan	29	27.1	41	31.1
Has Strategic Plan	78	72.9	91	68.9
Total	107	100.0	132	100.0

A Chi-square test showed no significant difference between the full sample and the truncated sample on the issue of whether or not the firms had strategic plans, $X^2 (1) = 0.447, p > .05$.

Table 6.10. Years of Strategic Planning

	Truncated Sample		Full Sample	
	Frequency	% of Total	Frequency	% of Total
Less than 2 years	10	9.3	12	9.1
Two – five years	47	43.9	54	40.9
More than 5 years	20	18.7	24	18.2
Missing	30	28.0	42	31.8
Total	107	100.0	132	100.0

6.2.3.2 *New Product Development*

About a fifth of the firms in both the truncated and full samples did not ever introduce new products to the market as a matter of on-going policy. They just stuck to the products they were already marketing. The majority of the firms (about 40%) introduced one new product every year with the truncated sample having a slightly higher proportion. About a fifth introduced products more than 5 times a year.

Table 6.11. Frequency of New Product Development

	Truncated Sample		Full Sample	
	Frequency	% of Total	Frequency	% of Total
None	15	22.4	28	21.2
Once a year	34	41.1	50	37.9
Twice a year	31	8.4	12	9.1
Two – five times a year	12	17.8	24	18.2
More than five times a year	15	3.7	6	4.5
Missing Data	7	6.5	12	9.1
Total	107	100.0	132	100.0

6.2.3.3 *Export Business*

Although not the majority, a surprisingly significant number of firms said they were engaged in exports. The analysis shows that a little over a third of respondents were engaged in exports. This is interesting given that about 60% of respondents are in the services sector.

There is a slight difference between the proportion of exporters and non-exporters reported by both samples. On the average, the truncated sample showed 5% points fewer exporters (60.7%) compared to the full sample (64.4%). Conversely, exporters in the truncated samples were about 5% higher than those in the full sample. The data appears to suggest that exporters were more willing to provide information on their financials than non-exporters.

Table 6.12. Export Business

	Truncated Sample		Full Sample	
	N	%	N	%
Non-Exporter	65	60.7	85	64.4
Exporter	42	39.3	47	35.6
Total	107	100.0	132	100.0

A Chi-square test showed no significant difference between the full sample and the truncated sample on the issue of whether or not the firms exported, $X^2(1) = 0.336, p > .05$.

A further review of the data showed that for the truncated sample, out of the 61 firms in the services sector, 10 firms representing 16.4% of the total services firms were export firms and out of the 46 firms in the manufacturing sector, 32 firms representing about 70% of the total manufacturing firms, were export firms. Similarly for the full sample, out of the

81 firms in the services sector, 13 firms representing about 19% of the total services firms were export firms and out of the 51 manufacturing firms, 34 firms representing 66.7% of the total manufacturing firms, were export firms.

6.2.3.4 Access to External Aid

The data gathered showed that more than three-quarters of respondents had not accessed, any external aid. This information is surprising and revealing considering the numerous aid programs from Development Partners and multilateral agencies targeted at SMEs. Those who had accessed external aid were a little more eager to provide financial information compared to those who had not.

Table 6.13. Access to External Aid

	Truncated Sample		Full Sample	
	Frequency	% of Total	Frequency	% of Total
No Access to External Aid	83	77.6	107	81.1
Access to External Aid	24	22.4	25	18.9
Total	107	100.0	132	100.0

A Chi-square test showed no significant difference between the full sample and the truncated sample on the issue of whether or not the firms had access to external aid, $X^2 (1) = 0.442, p > .05$.

6.2.4 Environmental Factors

6.2.4.1 Trade Union Presence

The data showed that 80% of firms did not have a trade union presence. In addition, there were no differences between the truncated sample and the full sample.

Table 6.14. Trade Union Presence

	Truncated Sample		Full Sample	
	Frequency	% of Total	Frequency	% of Total
No Trade Union	85	79.4	106	80.3
Presence of a Trade Union	22	20.6	26	19.7
Total	107	100.0	132	100.0

On the issue of trade union presence, the Chi-square test showed no significant difference between the full sample and the truncated sample, $X^2(1) = 0.027, p > .05$.

6.2.4.2 Location in an Industrial Park

Not surprising, the preliminary data shows that a significant number of firms (about two-thirds) of respondents were not located in an industrial park. The concept is not well developed. Most small businesses tended to establish businesses in whatever areas they found convenient and easy to acquire. The data for both samples were similar reflecting approximately the same representation of firms located in industrial parks versus those not located in industrial parks.

Table 6.15. Location in an Industrial Park

	Truncated Sample		Full Sample	
	Frequency	% of Total	Frequency	% of Total
Not located in an Industrial Park	69	64.5	88	66.7
Located in an Industrial Park	38	35.5	44	33.3
Total	107	100.0	132	100.0

6.2.4.3 Technological Changes

Both the truncated sample and the full sample provided similar findings regarding the owner/managers' perception of technological changes in their sector. Approximately half of them perceived technological changes in their sector to be moderate followed by a third

that perceived it to be rapid. Less than a fifth classified technological changes in their sector as slow.

Table 6.16. Technological Changes

	Truncated Sample		Full Sample	
	Frequency	% of Total	Frequency	% of Total
Slow Change	20	18.7	23	17.4
Moderate Change	54	50.5	65	49.2
Rapid Change	33	30.8	44	33.3
Total	107	100.0	132	100.0

6.2.4.4 Restrictive Fiscal and Social Policies

The majority of the owner/managers (about 55%) stated that restrictive fiscal and social policies hampered their business. There was no difference between the results of the truncated sample and that of the full sample.

Table 6.17. Restrictive Fiscal and Social Policies

	Truncated Sample		Full Sample	
	Frequency	% of Total	Frequency	% of Total
Not hampered by policy restrictions	47	43.9	59	44.7
Hampered by policy restrictions	60	56.1	73	55.3
Total	107	100.0	132	100.0

6.2.5 Cultural Factors

6.2.5.1 Ethnic Origin

Not surprisingly, an overwhelming number of respondents were from Sub-Saharan Africa (about 88%). The remainder came mostly from Asia and the Middle East and North Africa. Respondents from North Africa were classified as Non-African.

Table 6.18. Ethnic Origin

	Truncated Sample		Full Sample	
	Frequency	% of Total	Frequency	% of Total
Asia	5	4.7	5	3.8
North America (USA)	2	1.9	2	1.5
Europe	1	.9	2	1.5
Middle East and North Africa	4	3.7	5	3.8
Sub-Saharan Africa	94	87.9	117	88.6
Australasia	1	.9	1	.8
Total	107	100.0	132	100.0

Table 6.19. Ethnic Origin (African or Non-African)

	Truncated Sample		Full Sample	
	Frequency	% of Total	Frequency	% of Total
African	94	87.9	117	88.6
Non-African	13	12.1	15	11.4
Total	107	100.0	132	100.0

6.2.5.2 Family Entrepreneurship

The data gathered showed that the majority of the respondents (more than 57%) had a family tradition of entrepreneurship. In addition, there was no difference between the full sample data and the truncated sample data.

Table 6.20. Family Entrepreneurship

	Truncated Sample		Full Sample	
	Frequency	% of Total	Frequency	% of Total
No Family Entrepreneurship	45	42.1	54	40.9
Family Entrepreneurship	61	57.0	76	58.5
Sub-Total	106	99.1	130	98.5
Missing	1	.9	2	1.5
Total	107	100.0	132	100.0

6.2.5.3 Formal Board Meetings

The data analysis on the sample showed that the majority of the firms (about two-thirds) held regular board meetings. There was a slight difference between the two samples

in terms of the proportion of those who had regular board meetings and those that did not. The full sample showed a relatively higher proportion of firms with no regular board meetings compared to the truncated sample. The data appears to suggest that firms that had regular board meetings were rather more comfortable with providing financial information when compared with those which did not hold regular board meetings.

Table 6.21. Whether Board Meets Formally

	Truncated Sample		Full Sample	
	Frequency	% of Total	Frequency	% of Total
No Regular Board Meetings	35	32.7	49	37.1
Regular Board Meetings	72	67.3	82	62.1
Sub-Total	107	100.0	131	99.2
Missing	0	0.0	1	.8
Total	107	100.0	132	100.0

6.2.5.4 Membership of Business Associations

A significant number of respondents to the survey indicated membership of at least one business association in addition to the Association of Ghana Industries. The data gathered showed a little below three quarters indicating membership of another business association with slightly different proportions being reported between the truncated sample and the full sample. The preliminary information confirms the notion that membership of business associations where networking is facilitated is important for entrepreneurship. The key associations cited were the Chartered Institute of Marketing, Empretec Business Forum, Ghana National Chamber of Commerce, Ghana Manufacturers Association, Ghana Association of Handicraft Exporters and the Pharmaceutical Society of Ghana.

Table 6.22. Membership of Business Association

	Truncated Sample		Full Sample	
	Frequency	% of Total	Frequency	% of Total
Not a member	29	27.1	41	31.1
Member	78	72.9	91	68.9
Total	107	100.0	132	100.0

6.3 Definition of Rapid-Growth and Slow-Growth Firms

The analyses considered three definitions of growth – total growth rate, average annual growth rate and the compound annual growth rate.

6.3.1 Total Growth Rate

Total growth rate (*i.e.* full-period growth rate) was defined as the ratio of the change in real turnover between 2000 and 2005 to the turnover in 2000. For turnover, the analysis showed growth rates ranging from -147% to 1,320%. The mean of the growth rate was 1.1646 (*i.e.* 116.5%) with a standard error of 0.2455. The statistics showed that the data was negatively skewed (Skewness = 2.909) and was platykurtic (Kurtosis = 9.608). The Z-score skewness of 14.5 and Z-score kurtosis of 20.73 were both highly significant ($p < .001$).

For employment, the analysis (a summary of which is presented in Table 6.23 below) showed growth rates ranging from -53% to 1,160% with a mean growth rate of 1.3056 (*i.e.* 130.5%) and a standard error of 0.1875. This data was also negatively skewed (Skewness = 2.645) and was platykurtic (Kurtosis = 8.976). The Z-score skewness of 11.3 and Z-score kurtosis 19.387 were both highly significant ($p < 0.001$). The Total Annual Growth Rates

for both turnover and employment appear to have significant outliers that were further investigated using Z-scores and box-plots.

Table 6.23. Basic Statistics of the Total Growth Rate Measure

Statistics	Turnover Growth Rate	Employment Growth Rate
Sample Size	107	107
Mean	1.1646	1.3056
Std. Error of Mean	0.2455	0.1875
Std. Deviation	2.5398	1.9392
Skewness	2.909	2.645
Std. Error of Skewness	0.234	0.234
Kurtosis	9.608	8.976
Std. Error of Kurtosis	0.463	0.463

The Z-score analysis for Total Growth Rate - Turnover showed that 5.6% cases were outliers with absolute Z-score greater than 1.96 out of which 2 (1.9%) cases were significant outliers with absolute Z-scores greater than 3.29. Similarly Z-score analysis for Total Growth Rate – Employment showed 6.6% of the cases were outliers with Z-scores above 1.96 (compared to an expected figure of 5%) and 1.9% of the cases were significant outliers with Z-scores greater than 3.29 (compared to an expected figure of none). A summary of the analysis is presented in Table 6.24.

The analysis showed significant outliers in the data when the Total Growth Rate measure is used. Field and Hole (2003) posit that outliers bias the mean and inflate the standard deviation and recommend screening data to detect them. Field (2005) suggests that the researcher should delete the data from the case contributing the outlier if he/she has good reasons to believe that it was not from the population intended to be sampled.

Table 6.24. Z-score Analysis of Total Growth Rate Measure

Item	Turnover Growth Rate			Employment Growth Rate		
	Freq.	%age	Cum. %age	Freq.	%age	Cum. %age
Absolute z-score less than 2	101	94.4	94.4	100	93.5	93.5
Absolute z-score greater than 1.96	1	0.9	95.3	5	4.7	98.1
Absolute z-score greater than 2.58	3	2.8	98.1	2	1.9	100.0
Absolute z-score greater than 3.29	2	1.9	100.0	0	0	
Total	107	100.0		107	100.0	

The tests for normality using the Kolmogorov-Smirnov (K-S) presented in Table 5.25 statistic showed that Total Growth Rate – Turnover, $D(107) = 0.226$, $p < 0.001$ and Total Growth Rate – Employment, $D(107) = 0.246$, $p < 0.001$ were both significantly non-normal.

Table 6.25. Kolmogorov-Smirnov Test of Normality

	Statistics	df	Sig
Total Growth Rate - Turnover	0.226	107	.000
Total Growth Rate – Employment	0.246	107	.000

The box plots of the Total Growth Rate measure for turnover and employment are shown in Figure 6.1 and Figure 6.2 below. Field (2005) recommends box plots as very convenient for detecting outliers in a data.

A box plot consists of (i) a bottom horizontal line that represents the lowest score in the data; (ii) a top horizontal line which represents the highest score; and (iii) a box which is a tinted area. The distance between the bottom horizontal line and the lowest edge of the tinted box is the range in which the lowest 25% of the scores in the data fall (*i.e.* the bottom quartile). The tinted box is the inter-quartile range *i.e.* it shows the middle 50% of scores. The distance between the top edge of the tinted box and the top horizontal represents the range in which the top 25% of scores fall. The slightly thicker line in the middle of the box represents the value of the median. The box plot also informs the

researcher whether the data is symmetrical or skewed. The circles above a box plot represent cases that are deemed to be outliers. The circles have numbers next to them and this informs the researcher as to the identity of each outlier.

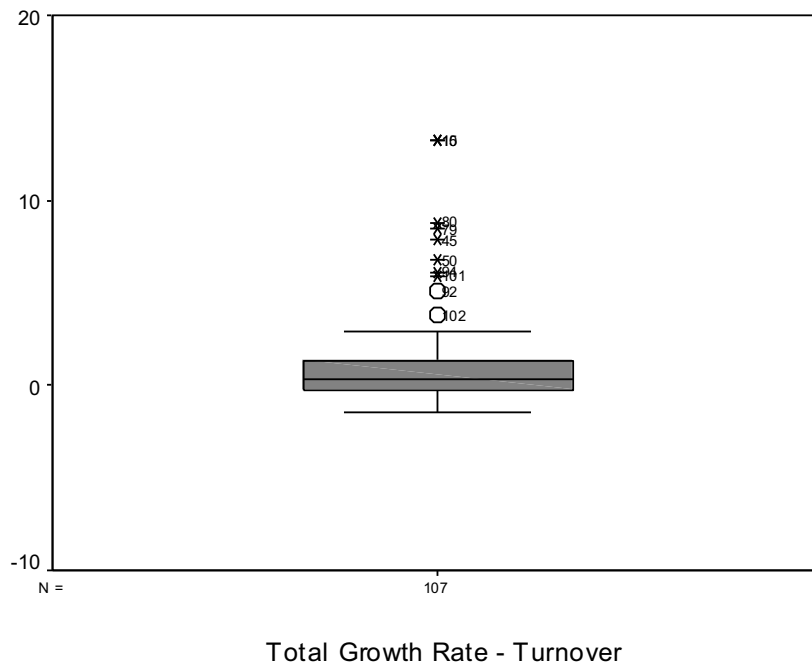


Figure 6.1. Box Plot of Total Growth Rate Measure for Turnover

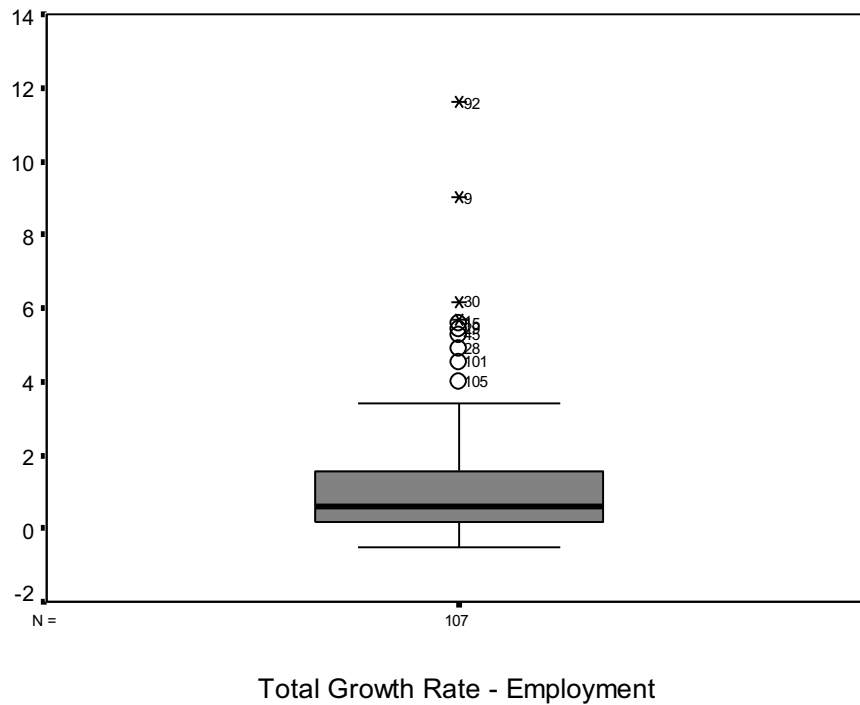


Figure 6.2. Box Plot of Total Growth Rate Measure for Employment

6.3.2 Average Annual Growth Rate

The Average Annual Growth Rate (AAGR) is the average of the annual growth rates between 2000 and 2005. The results of the descriptive statistics, Z-score analysis for outliers and the K-S tests for normality are shown in Tables 6.26, 6.27 and 6.28.

For turnover, the analysis showed growth rates ranging from -34% to 3,237%. The maximum growth rate was from a firm in the packaging sector that experienced low sales and profitability in 2000 and 2001 because of problems with its machinery. Its financial performance improved substantially after the firm acquired new machines and could produce better quality products.

The mean of the growth rate was 46.12% with a standard error of 0.3021. The statistics showed that the data was negatively skewed (Skewness = 10.226) and was platykurtic (Kurtosis =105.336). The Z-score skewness of 43.7 and Z-score kurtosis of 227.5 were both highly significant ($p < .001$). For employment, the analysis showed growth rates ranging from -13% to 77% with a mean growth rate of 15.7 and standard error of 0.0167. This data was also negatively skewed (Skewness = 1.224) and was leptokurtic (Kurtosis = 1.485). The Z-score skewness of 5.2 and Z-score kurtosis 3.2 values were both highly significant ($p < 0.05$).

Table 6.26. Basic Statistics of the Average Annual Growth Rate Measure

Statistics	Turnover Growth Rate	Employment Growth Rate
Sample Size	107	107
Mean	0.4612	0.1573
Std. Error of Mean	0.3021	1.673E-02
Std. Deviation	3.1253	0.1731
Skewness	10.226	1.224
Std. Error of Skewness	0.234	0.234
Kurtosis	105.336	1.485
Std. Error of Kurtosis	0.463	0.463

The AAGR for both turnover and employment had cases of outliers that were further investigated using Z-score and box-plots.

The Z-score analysis for AAGR - Turnover showed only one case of a significant outlier. 99.1% of the cases were within an absolute Z-score of less than 2. Similarly, the Z-score analysis for AAGR – Employment showed only 4.7% of the cases were outliers with Z-scores above 1.96 (compared to an expected figure of 5%). The Z-score analysis shows that the number of outliers based on AAGR was not significant.

Table 6.27. Z-score Analysis of Average Annual Growth Rate Measure

Item	Turnover Growth Rate			Employment Growth Rate		
	Freq.	%age	Cum. %age	Freq.	%age	Cum. %age
Absolute z-score less than 2	106	99.1	99.1	102	95.3	97.2
Absolute z-score greater than 1.96	0	0.0	99.1	2	1.9	99.1
Absolute z-score greater than 2.58	0	0.0	99.1	2	1.9	100.0
Absolute z-score greater than 3.29	1	0.9	100.0	1	0.9	
Total	107	100.0		107	100.0	

The tests for normality using the Kolmogorov-Smirnov (K-S) statistic showed that AAGR – Turnover, $D(107) = 0.4.27, p < 0.001$ and Total Growth Rate – Employment, $D(107) = 0.135, p < 0.001$ were both significantly non-normal

Table 6.28. Kolmogorov-Smirnov Tests of Normality

	Statistics	Df	Sig
Average Annual Growth Rate - Turnover	0.427	107	.000
Average Annual Growth Rate - Employment	0.135	107	.000

The box plots of the Average Annual Growth Rate measure for turnover and employment are shown in Figure 6.3 and Figure 6.4 below.

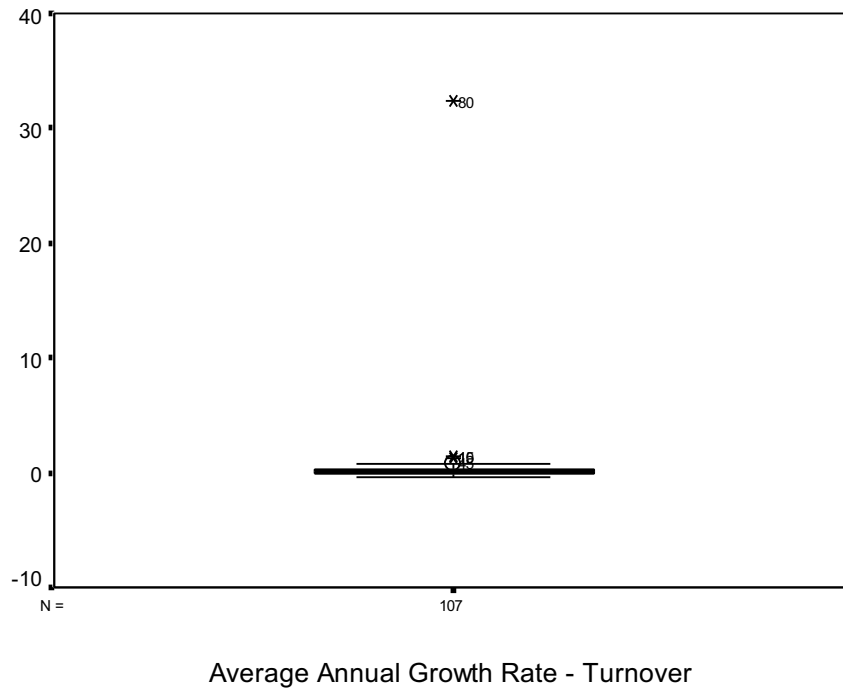


Figure 6.3. Box Plot of Average Annual Growth Rate Measure for Turnover

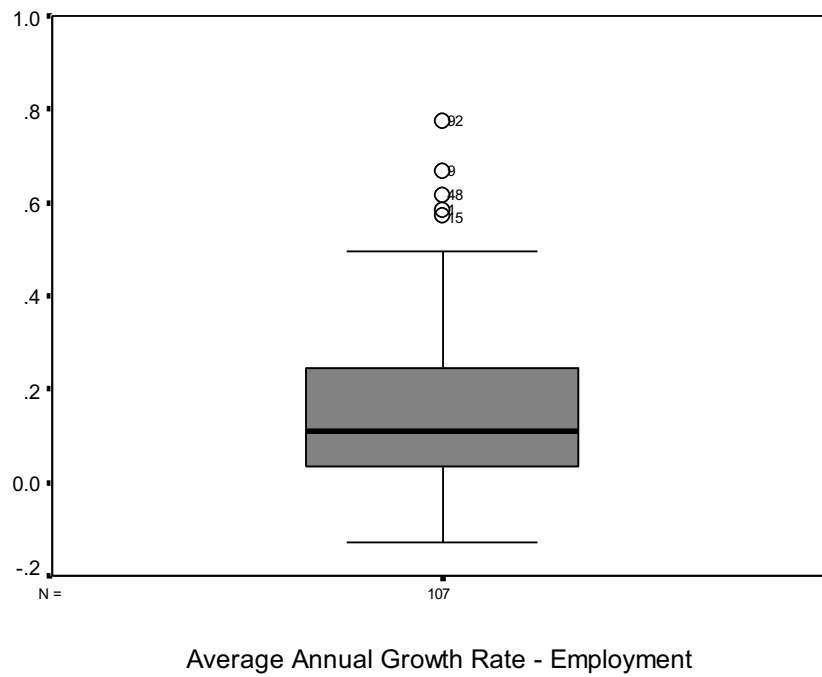


Figure 6.4. Box Plot of Average Annual Growth Rate Measure for Employment

6.3.3 Compound Average Growth Rate (CAGR)

CAGR is obtained by taking the n th root of the total return where n is the number of years of growth. The advantage of CAGR compared to AAGR is that it provides a ‘smoothed’ growth rate. The results of the descriptive statistics, Z-score analysis for outliers and the K-S tests for normality are shown below in Tables 6.29, 6.30 and 6.31.

For turnover, the analysis showed growth rates ranging from -186% to 70%. The mean of the growth rate was 7.56% with a standard error of 2.64%. The statistics showed that the data was positively skewed (Skewness = -2.987) and was platykurtic (Kurtosis =23.554). The Z-score skewness of 12.8 and Z-score kurtosis of 50.9 were both highly significant ($p < .001$). For employment, the analysis showed growth rates ranging from -14% to 66% with a mean growth rate of 13.8% and standard error of 1.48%. This data was negatively skewed (Skewness = 1.008) and was leptokurtic (Kurtosis = 0.975). The Z-score skewness of 4.3 and Z-score kurtosis of 2.1 were both significant ($p < 0.05$).

Table 6.29. Basic Statistics of the Compound Average Growth Rate Measure

Statistics	Turnover Growth Rate	Employment Growth Rate
Sample Size	107	107
Mean	7.556E-02	0.1377
Std. Error of Mean	2.637E-02	1.479E-02
Std. Deviation	0.2727	0.1530
Skewness	-2.987	1.008
Std. Error of Skewness	.234	.234
Kurtosis	23.554	.975
Std. Error of Kurtosis	.463	.463

The CAGR for both turnover and employment had cases of outliers that were further investigated using Z-score and box-plots.

The Z-score analysis for CAGR - Turnover showed only three outliers. 97.2% of the cases were within absolute Z-score of less than 2. However, the Z-score analysis for CAGR – Employment showed 6.5% of the cases were outliers with Z-scores above 1.96 (compared to an expected figure of 5%). The Z-score analysis shows that the number of outliers in CAGR – Turnover was not significant. It was significant for CAGR – Employment.

Table 6.30. Z-score Analysis of Compound Average Growth Rate Measure

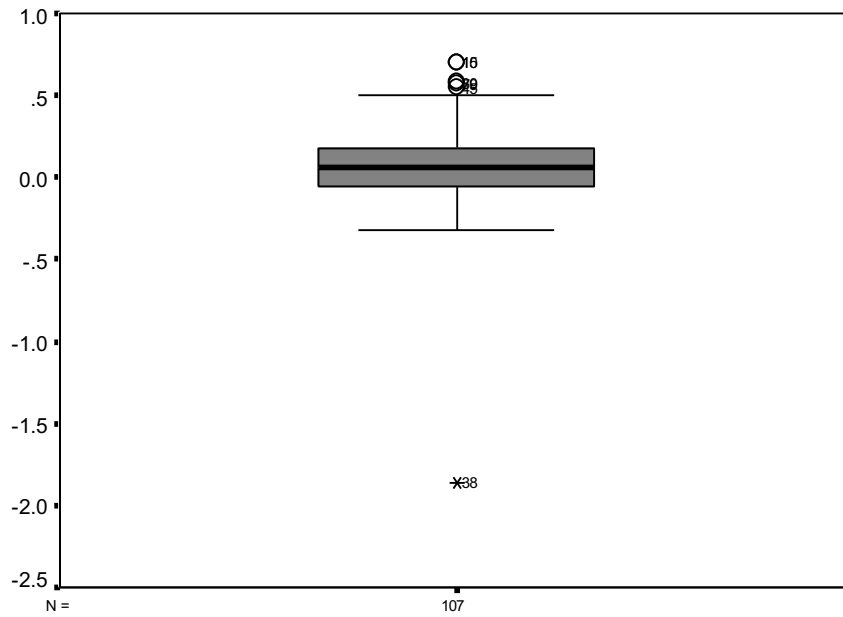
Item	Turnover Growth Rate			Employment Growth Rate		
	Freq.	%age	Cum. %age	Freq.	%age	Cum. %age
Absolute Z-score less than 2	104	97.2	97.2	100	93.5	93.5
Absolute Z-score greater than 1.96	2	1.9	99.1	5	4.7	98.1
Absolute Z-score greater than 2.58	0	0	0	1	0.9	99.1
Absolute Z-score greater than 3.29	1	0.9	100	1	0.9	100
Total	107	100.0		107	100.0	

The tests for normality using the Kolmogorov-Smirnov (K-S) statistic showed that CAGR – Turnover, $D(107) = 0.185$, $p < 0.001$ and Total Growth Rate – Employment, $D(107) = 0.135$, $p < 0.001$ were both significantly non-normal.

Table 6.31. Kolmogorov-Smirnov Tests of Normality

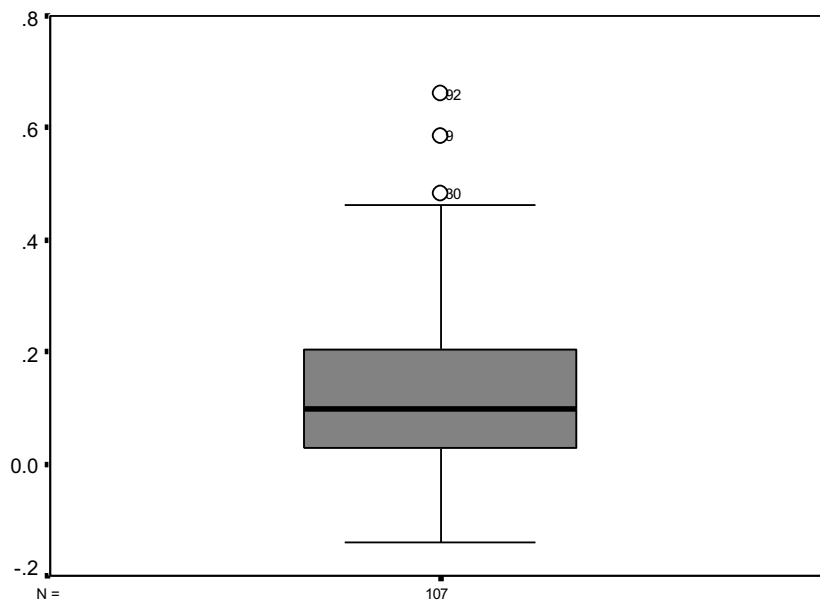
	Statistics	Df	Sig
Compound Average Growth Rate - Turnover	0.185	107	.000
Compound Average Growth Rate - Employment	0.135	107	.000

The box plots of the Compound Average Growth Rate measure for turnover and employment are shown in Figure 6.5 and Figure 6.6 below.



Compound Average Growth Rate - Turnover

Figure 6.5. Box Plot of Compound Average Growth Rate Measure for Turnover



Compound Average Growth Rate - Employment

Figure 6.6. Box Plot of Compound Average Growth Rate Measure for Employment

6.3.4 Recommended Growth Measure

Based on the results of the analysis of the Total Growth Rate, Average Annual Growth Rate and the Compound Average Growth Rate, this thesis adopted the Average Annual Growth Rate as the preferred method for calculating growth. This is because, the Z-score analysis based on AAGR showed that the number of outliers was not significant and therefore easier to manage.

6.4 Data Screening and Test for Biases

Three cases of outliers were removed from the data after a careful review of the questionnaires and a confirmation that they were not a good representation of the population (Field, 2005). In the first case, the firm's figures showed an average annual growth rate in real turnover of 3,237% which is highly unusual and was therefore removed from the data. The remaining two outliers showed average annual growth rates of 134% and 132%. A review of the questionnaires revealed very low turnovers in 2000 to 2004 and a sudden increase in 2005 which again is not representative of the pattern in the data collected, hence, the cases were taken out. In a similar fashion, the data and questionnaires for employment growth were reviewed and five unusual cases were screened out.

The basic statistics and K-S test for normality for the cleaned data are presented in Table 6.32 and Table 6.33 and the box plots for the trimmed data are presented below:

Table 6.32. Basic Statistics of the Cleaned Data

Statistics	Turnover Growth Rate	Employment Growth Rate
Sample Size	104	102
Mean	0.1371	0.1335
Std. Error of Mean	2.154E-02	1.364E-02
Std. Deviation	0.2196	0.1378
Skewness	0.796	0.728
Std. Error of Skewness	0.237	0.239
Kurtosis	0.547	-0.034
Std. Error of Kurtosis	0.469	0.474

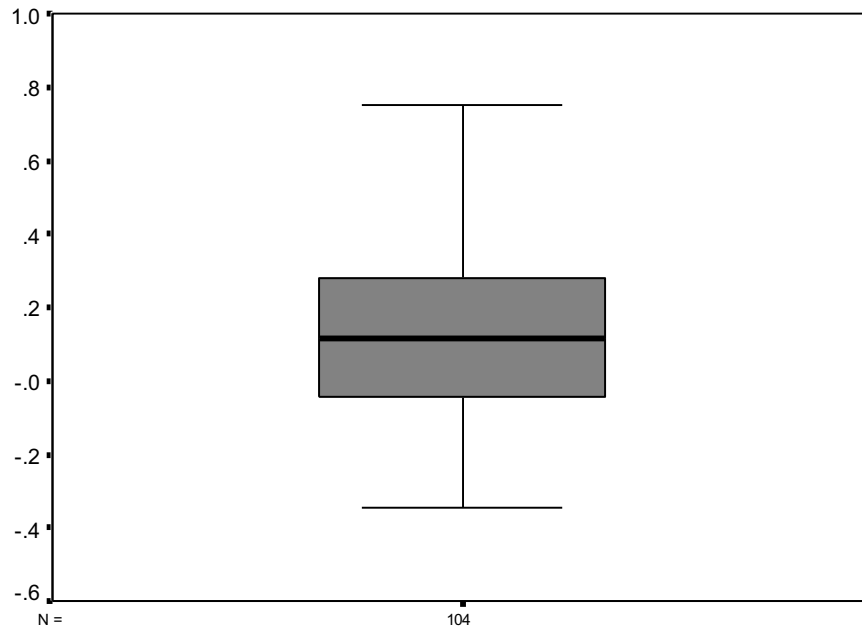
For turnover, the analysis showed growth rates ranging from -34% to 75%. The mean of the growth rate was 13.7% with a standard error of 2.15%. The statistics showed that the data was slightly negatively skewed (Skewness = 0.796) and was leptokurtic (Kurtosis = -0.034). The Z-score skewness of 3.6% was above the threshold of 3.29 hence it was significantly skewed. The Z-score kurtosis of 1.2 represents insignificant kurtosis even at ($p < 0.05$).

For employment, the analysis showed growth rates ranging from -13% to 50% with a mean growth rate of 13.4% and standard error of 1.4%. This data was slightly negatively skewed (Skewness = 0.728) and was leptokurtic (Kurtosis = -0.034). The Z-score skewness of 3.0 is below the threshold of 3.29 indicating insignificant skewness ($p < 0.001$). The Z-score kurtosis of 0.072 represents insignificant kurtosis even at ($p < 0.05$).

The tests for normality using the Kolmogorov-Smirnov (K-S) statistic showed that AAGR – Turnover, $D(104) = 0.106$, $p < 0.01$ and AAGR – Employment, $D(102) = 0.114$, $p < 0.01$ were both significantly non-normal although the degree of normality had improved with the screening of the data. This finding is confirmed by the box plots in Figure 6.7 and Figure 6.8 below.

Table 6.33. Kolmogorov-Smirnov Tests of Normality

	Statistics	Df	Sig
Average Annual Growth Rate - Turnover	0.106	104	.006
Average Annual Growth Rate - Employment	0.114	102	.002



Average Annual Growth Rate - Turnover

Figure 6.7. Box Plot of Average Annual Growth Rate for Turnover after Screening

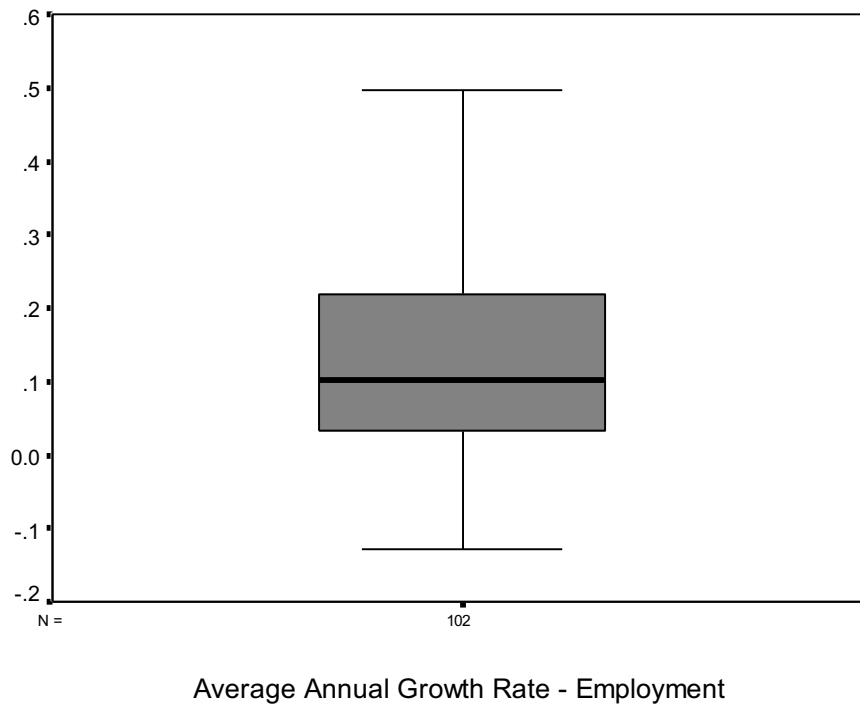


Figure 6.8. Box Plot of Average Annual Growth Rate for Employment after Screening

6.5 Categorization of Firms Based on Turnover and Employment Measures

Twenty-nine firms representing 27.9% of the total met the minimum 25% growth rate criterion for rapid-growth firms based on turnover. The mean growth rate and median growth rate for these firms were 41.67% and 34.11% respectively. The standard error of the mean was 0.0297, while the standard deviation was 0.1597. On the other hand, 75 firms (72.1%) met the criteria for slow-growth firms. The mean growth rate for these firms was 2.90% with a median growth rate of 0.04%. The slow-growth firms had a standard error of the mean of 0.014 and a standard deviation of 0.1225. The statistics show a clear distinction between rapid-growth and slow-growth firms. The median for the slow-growth firms implies that about 50% of the firms had either negative or zero growth rates.

Using the employment growth measure, 27 firms representing 26.5% of total firms were rapid-growth firms meeting the criterion of a minimum growth rate of 25%. The mean growth rate and median growth rate for these firms were 32.46% and 31.67% respectively. The standard error of the mean was 0.0163 while the standard deviation was 0.084. 75 firms representing 73.5% of total firms met the criteria for slow-growth firms. Their mean growth rate was 6.48% with a median growth rate of 7.28%. The slow-growth firms had a standard error of the mean of 0.0084 and a standard deviation of 0.073. Once again, the statistics show a clear distinction between rapid- growth and slow-growth firms.

Table 6.34 below presents a classification of the firms into rapid-growth and slow-growth assuming cut-off rates of 20%, 25% and 30% and provides a justification for why a cut-off rate of 25% was appropriate *i.e.* one only lose four firms by going down to 20%.

Table 6.34. Classification of Firms into Rapid-growth and Slow-growth for Cut-off Rates of 20%, 25% and 30%.

Cut-Off Rate	Turnover Growth Measure				Employment Growth Measure			
	Rapid-growth	%	Slow-growth	%	Rapid-growth	%	Slow-growth	%
20%	33	31.7	71	68.3	28	27.5	74	72.5
25%	29	27.9	75	72.1	27	26.5	75	73.5
30%	20	19.2	84	80.8	16	15.7	86	84.3

The table shows that the number of firms classified as rapid-growth significantly decreases with a 30% cut-off rate. In addition, while there is a significant difference between the number of firms classified as rapid-growth and slow-growth when a 30% cut-off is compared to a 25% cut-off (*i.e.* 9 and 11 firms are re-classified as slow-growth for the turnover and employment growth measure respectively), the difference in classification

between a cut-off point of 25% and 20% is marginal (*i.e.* 4 firms in the case of the turnover growth measure and only one firm in the case of the employment growth measure is reclassified as slow-growth). The 25% cut-off for both growth measures seems appropriate for this research.

6.6 Conclusions

The chapter focussed on a descriptive analysis of the data collected to better understand the characteristics of the respondents. More important however, was to determine whether there was a significant loss of information if only the truncated sample is used for the analysis and the full sample is discarded. Analysis of the samples based on the independent *t*-test and the Chi-square test for categorical data established that there was no significant difference between the truncated sample and the full sample. Consequently, only the truncated sample was used for the main analysis.

The chapter also conducted a preliminary analysis to determine the appropriate method of calculating growth rates for the data to minimize the number of outliers. The data was analyzed based on total growth rate, average annual growth rate and compound growth rate. The Z-score analysis and box-plots were further used to investigate the outliers in each case. The results of the analysis showed that the average annual growth rate was a more appropriate method of calculating growth rate for the data because it did not result in significant outliers. The Kolmogorov-Smirnov test of Normality was also conducted on the truncated data. The results of the test showed that the data was non-normal.

Finally, the chapter discussed the categorization of firms into rapid-growth and slow-growth groups based on an average annual cut-off growth rate of 25% and provided a justification for the appropriateness of 25% as the cut-off rate. Twenty-nine firms representing 27.9% of the total were classified as rapid-growth companies based on the turnover criteria while 27 firms representing 26.5% of total firms were rapid-growth firms based on the employment criteria. 10 firms met both the turnover criteria and employment criteria for rapid-growth. The next chapter reviews the hypotheses testing.

7 HYPOTHESIS TESTING: SINGLE-VARIABLE TESTS

7.1 Introduction – Hypothesis Testing

In this chapter, the hypotheses developed in Chapter 4 will be tested using the results of the single-variable Mann-Whitney and Chi-Square Tests based on the turnover and employment growth measures. Tables 7.1, 7.2, 7.3 and 7.4 present the results of all the single-variable tests. The results of the Mann-Whitney Test include the Average Rank (median) for the rapid-growth and slow-growth firms associated with each variable tested, the level of significance and the effect size. The Chi-square tests include the Odds Ratio associated with each variable tested. These are tests of association with no proof of causation. The cross-sectional nature of the study makes it even more difficult to validate some causal effects because all the data was collected at one point in time.

The hypotheses were tested using the single-variable test in order to determine the relationship or association of individual characteristics or factors with firm growth and consequently, how they individually influenced firm growth rates. The advantage of the single-variable test is that it enables the researcher to accurately assess the relationship or association between an independent variable and a dependent variable. In a multivariable setting, the relationship or association between the independent and dependent variables may be complicated by interactions or correlation with other independent variables.

The hypotheses stated in the null and alternative forms are as follows:

Ho = All firms will have a similar growth rate independent of the variable specified.

H₁ = Rapid growth-firms will be more (less) associated with the given variable than slow-growth firms.

If the level of significance is greater than .05, the null hypothesis is accepted and the alternative hypothesis is rejected. However, if the level of significance is less than .05, the alternative hypothesis is accepted and the null hypothesis is rejected. For the ensuing discussions, the hypotheses have been presented in the alternative form to provide clarity on the expected association of the variables with rapid growth or slow growth. They have also been grouped into the five components *i.e.* characteristics of the entrepreneur; characteristics of the firm; strategic factors; environmental factors and cultural factors.

Table 7.1: Results of the Single Variable Mann-Whitney Test including Direction of Association for the Significant Variables based on the Turnover Growth Measure

	Median (Slow-Growth)	Median (Rapid-Growth)	Mann-Whitney Test	1-tail Significance	Effect size	Remarks
Characteristics of Owner/Manager						
Perception of a market opportunity	51.03	50.93	$U = 1020.0$	$p = .493$	-0.002	Ns
Desire to make money	47.13	51.82	$U = 859.0$	$p = .215$	-0.080	Ns
Dissatisfaction with an existing employer	44.48	44.56	$U = 786.0$	$p = .493$	-0.133	Ns
Threat of unemployment	46.70	40.66	$U = 691.5$	$p = .105$	-0.022	Ns
Actual unemployment	42.57	38.59	$U = 596.0$	$p = .172$	-0.038	Ns
Desire to guarantee a satisfactory income	47.01	48.66	$U = 891.5$	$p = .389$	-0.029	Ns
Desire for personal development	49.75	48.88	$U = 962.5$	$p = .441$	0.089	Ns
Characteristics of the Firm						
Firm Age Group	53.49	49.95	$U = 1013.5$	$p = .295$	-0.053	Ns
Legal Form	54.77	46.64	$U = 917.5$	$p = .022$	-0.198	Sig, <i>Mdn (Slow-Growth) > Mdn (Rapid-Growth)</i> implying variable is more associated with slow-growth firms.
Number of Full Time Employees	51.43	55.26	$U = 1000.5$	$p = .275$	-0.059	Ns
Strategic Factors						
Technological Sophistication	52.08	53.58	$U = 1056.0$	$p = .394$	-0.026	Ns
New Product Development	51.98	41.66	$U = 760.5$	$p = .043$	-0.175	Sig, <i>Mdn (Slow-Growth) > Mdn (Rapid-Growth)</i> implying variable is more associated with slow-growth firms.
Environmental Factors						
Entry Barrier	50.87	56.71	$U = 965.5$	$p = .155$	-0.100	Ns
Level of Sector Technological Change	52.99	51.24	$U = 1051.0$	$p = .387$	0.028	Ns
Cultural Factors						
Frequency of Management Meetings	52.90	44.62	$U = 859.0$	$p = .019$	-0.209	Sig, <i>Mdn (Slow-Growth) > Mdn (Rapid-Growth)</i> implying variable is more associated with slow-growth firms.
Employees Participation in Decision Making	50.89	56.67	$U = 966.5$	$p = .181$	-0.089	Ns

Table 7.2: Results of the Single Variable Chi-Square Test including Direction of Association for the Significant Variables based on the Turnover Growth Measure

Variable	Chi-Square Test	1-tail Significance	Eta	Odds Ratio	Remarks
Characteristics of Owner/Manager					
University Education	$\chi^2(1) = 3.483$	$p = .031$	0.183	3.949	Sig. Odds _{rapid-growth given graduate} = 0.466; Odds _{rapid-growth given non-graduate} = 0.118
Previous Management Experience	$\chi^2(1) = 0.398$	$p = .264$	0.062	1.393	Ns
Number of Founders	$\chi^2(1) = 1.549$	$p = .107$	0.122	1.752	Ns
Marketing Skills	$\chi^2(1) = 0.084$	$p = .385$	0.028	1.135	Ns
Finance Skills	$\chi^2(1) = 0.622$	$p = .215$	0.077	1.447	Ns
Production Skills	$\chi^2(1) = 4.439$	$p = .018$	0.057	0.302	Sig. Odds _{rapid-growth given production skills} = 0.154; Odds _{rapid-growth given no production skills} = 0.510
Personnel Skills	$\chi^2(1) = 0.335$	$p = .282$	0.203	0.672	Ns
Research and Development Skills	$\chi^2(1) = 4.283$	$p = .019$	0.005	2.762	Sig. Odds _{rapid-growth given R&D skills} = 0.833; Odds _{rapid-growth given no R&D skills} = 0.302
Industry Specific Experience	$\chi^2(1) = 0.002$	$p = .482$	0.021	0.120	Ns
Gender	$\chi^2(1) = 0.047$	$p = .414$	0.207	1.125	Ns
Characteristic of the Firm					
Sector	$\chi^2(1) = 0.377$	$p = .189$	0.087	1.493	Ns
Affiliation with a bigger entity	$\chi^2(1) = 0.347$	$p = .278$	0.065	0.698	Ns
Strategic Factors					
Workforce Training	$\chi^2(1) = 7.651$	$p = .003$	0.271	4.196	Sig. Odds _{rapid-growth given workforce training} = 0.600; Odds _{rapid-growth given no workforce training} = 0.143
Management Training	$\chi^2(1) = 1.303$	$p = .127$	0.112	1.804	Ns
External Equity (Post-formation)	$\chi^2(1) = 0.016$	$p = .450$	0.012	0.937	Ns
Strategic Planning	$\chi^2(1) = 0.002$	$p = .483$	0.004	1.021	Ns
Exporting	$\chi^2(1) = 3.934$	$p = .024$	0.194	0.384	Sig. Odds _{rapid-growth given exporting} = 0.206; Odds _{rapid-growth given no exporting} = 0.537
Research and Development Unit	$\chi^2(1) = 0.076$	$p = .392$	0.027	1.155	Ns
Partnership with Other Research Institutions	$\chi^2(1) = 0.002$	$p = .481$	0.005	0.966	Ns

Variable	Chi-Square Test	1-tail sig.	Eta	Odds Ratio	Remarks
Environmental Factors					
Access to Public or External Aid	$\chi^2(1) = 0.129$	$p = .359$	0.035	0.825	<i>Ns</i>
Unionized Staff	$\chi^2(1) = 4.901$	$p = .014$	0.217	0.204	Sig. Odds _{rapid-growth given unionization} = 0.100; Odds _{rapid-growth given no unionization} = 0.490
Presence in an Industrial Park	$\chi^2(1) = 1.120$	$p = .245$	0.104	0.605	<i>Ns</i>
Restrictive Social and Fiscal Policies	$\chi^2(1) = 0.833$	$p = .180$	0.090	0.666	<i>Ns</i>
Cultural Factors					
Ethnic Origin	$\chi^2(1) = 0.200$	$p = .328$	0.044	1.340	<i>Ns</i>
Family History in Business	$\chi^2(1) = 0.622$	$p = .215$	0.078	0.704	<i>Ns</i>
Presence of a clear mission and vision statements	$\chi^2(1) = 4.116$	$p = .021$	0.200	3.438	Sig. Odds _{rapid-growth given statement} = 0.550; Odds _{rapid-growth given no statement} = 0.160
Presence of a Board	$\chi^2(1) = 1.631$	$p = .101$	0.125	1.872	<i>Ns</i>
Proportion on non-Family members in management	$\chi^2(1) = 0.871$	$p = .175$	0.091	0.644	<i>Ns</i>
Membership of Professional or Business Association	$\chi^2(1) = 4.130$	$p = .021$	0.199	3.618	Sig. Odds _{rapid-growth given membership} = 0.492; Odds _{rapid-growth given no membership} = 0.136
Support from Social and Community Networks	$\chi^2(1) = 0.434$	$p = .255$	0.065	0.719	<i>Ns</i>

Table 7.3 Results of the Single Variable Mann-Whitney Test including Direction of Association for the Significant Variables based on the Employment Growth Rate

	Median (Slow-Growth)	Median (Rapid-Growth)	Mann-Whitney Test	1-tail Significance	Effect size	Remarks
Characteristics of Owner/Manager						
Perception of a market opportunity	45.72	61.41	$U = 664.0$	$p = .005$	-0.261	Sig. Mdn (Rapid-Growth) > Mdn (Slow-Growth) implying the variable is more associated with rapid-growth firms.
Desire to make money	47.84	46.65	$U = 881.5$	$p = .420$	-0.087	Ns
Dissatisfaction with an existing employer	45.59	39.83	$U = 656.0$	$p = .110$	-0.140	Ns
Threat of unemployment	47.91	39.56	$U = 677.5$	$p = .036$	-0.189	Sig. Mdn (Slow-Growth) > Mdn (Rapid-Growth) implying variable is more associated with slow-growth firms.
Actual unemployment	44.19	37.19	$U = 616.0$	$p = .037$	-0.196	Sig. Mdn (Slow-Growth) > Mdn (Rapid-Growth) implying variable is more associated with slow-growth firms.
Desire to guarantee a satisfactory income	47.33	44.38	$U = 803.0$	$p = .320$	-0.050	Ns
Desire for personal development	49.22	46.67	$U = 882.0$	$p = .333$	-0.044	Ns
Characteristics of the Firm						
Firm Age Group	55.03	41.69	$U = 747.5$	$p = .215$	0.200	Ns
Legal Form	52.58	48.50	$U = 931.5$	$p = .152$	0.102	Ns
Number of Full Time Employees	49.23	57.80	$U = 842.5$	$p = .091$	0.130	Ns
Strategic Factors						
Technological Sophistication	53.49	45.96	$U = 863.0$	$p = .091$	0.132	Ns
New Product Development	44.50	59.25	$U = 630.0$	$p = .008$	0.246	Sig. Mdn (Rapid-Growth) > Mdn (Slow-Growth) implying the variable is more associated with rapid-growth firms.
Environmental Factors						
Entry Barrier	50.93	53.07	$U = 970.0$	$p = .355$	-0.037	Ns
Level of Sector Technological Change	50.64	53.89	$U = 948.0$	$p = .296$	-0.053	Ns
Cultural Factors						
Frequency of Management Meetings	49.61	49.19	$U = 928.0$	$p = .460$	-0.010	Ns
Employees Participation in Decision Making	51.99	50.13	$U = 975.0$	$p = .385$	-0.029	Ns

Table 7.4: Results of the Single Variable Chi-Square Test including Direction of Association for the Significant Variables based on the Employment Growth Measure

Variable	Chi-Square Test	1-tail Significance	Eta	Odds Ratio	Remarks
Characteristics of Owner/Manager					
University Education	$\chi^2(1) = 0.203$	$p = .326$	0.045	1.320	Ns
Previous Management Experience	$\chi^2(1) = 0.512$	$p = .237$	0.071	1.490	Ns
Number of Founders	$\chi^2(1) = 3.891$	$p = .025$	0.195	2.440	Sig. Odds _{rapid-growth} given multiple founders = 0.571; Odds _{rapid-growth} given sole founder = 0.234
Marketing Skills	$\chi^2(1) = 3.999$	$p = .023$	0.198	2.574	Sig. Odds _{rapid-growth} given marketing skills = 0.528; Odds _{rapid-growth} given no marketing skills = 0.205
Finance Skills	$\chi^2(1) = 0.914$	$p = .169$	0.095	0.607	Ns
Production Skills	$\chi^2(1) = 8.160$	$p = .002$	0.283	0.178	Sig. Odds _{rapid-growth} given production skills = 0.097; Odds _{rapid-growth} given no production skills = 0.545
Personnel Skills	$\chi^2(1) = 0.212$	$p = .322$	0.046	0.728	Ns
Research and Development Skills	$\chi^2(1) = 0.060$	$p = .403$	0.024	1.143	Ns
Industry Specific Experience	$\chi^2(1) = 0.170$	$p = .340$	0.041	1.205	Ns
Gender	$\chi^2(1) = 1.410$	$p = .117$	0.118	0.544	Ns
Characteristics of the Firm					
Sector	$\chi^2(1) = 0.891$	$p = .172$	0.093	1.530	Ns
Affiliation with a bigger entity	$\chi^2(1) = 0.816$	$p = .183$	0.089	1.661	Ns
Strategic Factors					
Workforce Training	$\chi^2(1) = 3.987$	$p = .023$	0.198	2.750	Sig. Odds _{rapid-growth} given work-force training = 0.500; Odds _{rapid-growth} given no work-force training = 0.182
Management Training	$\chi^2(1) = 0.215$	$p = .321$	0.046	1.265	Ns
External Equity (Post-formation)	$\chi^2(1) = 3.563$	$p = .029$	0.187	0.300	Sig. Odds _{rapid-growth} given external equity = 0.136; Odds _{rapid-growth} given no external equity = 0.453
Strategic Planning	$\chi^2(1) = 0.004$	$p = .476$	0.005	0.969	Ns
Exporting	$\chi^2(1) = 0.737$	$p = .195$	0.085	1.470	Ns
Research and Development Unit	$\chi^2(1) = 0.006$	$p = .468$	0.008	0.958	Ns
Partnership with Other Research Institutions	$\chi^2(1) = 0.435$	$p = .254$	0.065	0.586	Ns

Variable	Chi-Square Test	1-tail sig.	Eta	Odds Ratio	Remarks
Environmental Factors					
Access to Public or External Aid	$\chi^2(1) = 2.751$	$p = .048$	0.164	0.344	Sig. Odds _{rapid-growth given aid} = 0.150; Odds _{rapid-growth given no.aid} = 0.436 <i>Ns</i>
Unionized Staff	$\chi^2(1) = 0.096$	$p = .378$	0.031	0.839	<i>Ns</i>
Presence in an Industrial Park	$\chi^2(1) = 0.317$	$p = .286$	0.056	1.295	<i>Ns</i>
Restrictive Social and Fiscal Policies	$\chi^2(1) = 1.599$	$p = .103$	0.126	0.566	<i>Ns</i>
Cultural Factors					
Ethnic Origin	$\chi^2(1) = 2.966$	$p = .042$	0.171	0.361	Sig. Odds _{rapid-growth given African} = 0.309; Odds _{rapid-growth given non-African} = 0.857 <i>Ns</i>
Family History in Business	$\chi^2(1) = 0.462$	$p = .248$	0.068	1.370	<i>Ns</i>
Presence of a clear mission and vision statements	$\chi^2(1) = 0.384$	$p = .262$	0.062	0.740	<i>Ns</i>
Presence of a Board	$\chi^2(1) = 0.016$	$p = .449$	0.013	0.955	<i>Ns</i>
Proportion on non-Family members in management	$\chi^2(1) = 3.256$	$p = .035$	0.179	2.345	Sig. Odds _{rapid-growth given majority non-family board members} = 0.647; Odds _{rapid-growth given minority non-family board members} = 0.276 <i>Ns</i>
Membership of Professional or Business Association	$\chi^2(1) = 0.040$	$p = .421$	0.020	0.902	<i>Ns</i>
Support from Social and Community Networks	$\chi^2(1) = 0.113$	$p = .363$	0.033	0.843	<i>Ns</i>

7.2 Hypothesis Testing Based on the Turnover Growth Measure

7.2.1 Testing of Hypothesis Relating to Entrepreneurial Characteristics

H1: Entrepreneurs with “positive motivations” are more likely to be associated with a business which subsequently grows rapidly, than those with “negative” motivations.

On the perception of a market opportunity as a motivation, the Mann-Whitney test found that there was no significant difference between entrepreneurs of rapid-growth and slow-growth firms, $U = 1020$, ns ($p > .05$), $r = -0.002$. Similarly, no significant differences in importance were found with the other motivation factors.

Overall, the results of the Mann-Whitney test on motivation as a growth determinant showed that there was no significant difference between the motivations of slow-growth and rapid-growth entrepreneurs. Entrepreneurs of rapid-growth firms were at least as likely to have a preference for positive motivations as entrepreneurs of slow-growth firms. Both groups were driven by similar types of motivations be it economic or non-economic. Consequently, the hypothesis was rejected. The findings support the work of Wymarckzyk *et al.* (1993) who found no significant positive relationship between firm growth and “positive” motivations.

H2: Graduates are more likely to establish and manage businesses associated with high growth potential than non-graduates.

The Chi-square test on university education found a significant association between whether or not the entrepreneur had a university education and the firm's growth category (rapid-growth or slow-growth), $X^2(1) = 3.483, p < .05$. Based on the odds ratio, the results suggests that entrepreneurs with university education were 3.95 times more likely to be associated with rapid-growth firms than those without university education. The results affirm the hypothesis that small businesses established by university graduates were likely to grow rapidly compared to those established by non-university graduates. The finding provides credence to those of Johnson (1991) and Jones (1991) who found a positive relationship between education and growth of the firm. It also supports the views of Watson *et al.* (2003) and Sapeinza and Grimm (1997) who suggest that entrepreneurial skills are enhanced through higher education.

H3: Entrepreneurs with some previous managerial experience are more likely to be associated with rapid growth than individuals without such experience.

This hypothesis was rejected by the research. The Chi-square test did not find a significant association between previous managerial experience of the entrepreneur and whether the firm was a rapid-growth or slow-growth one, $X^2(1) = 0.389, p > .05$. Previous managerial experience was therefore not an important criterion in distinguishing rapid-growth firms from slow-growth firms. This finding is at variance with those of Barkham

(1992), Dunkelberg and Cooper (1982), Parker (1995) and more recently Zhang *et al.* (2008) who found a positive association between previous managerial experience and growth of small businesses.

H4: Businesses founded by more than a single individual are more likely to be associated with rapid growth than those founded by a single person since management of a firm requires a range of skills.

The Chi-square test did not establish a significant relation between ownership of a firm and its growth classification, $X^2(1) = 1.549, p > .05$. The hypothesis was rejected based on the non-significance of the test statistics. The finding does not corroborate those of Woo *et al.* (1989), Reynolds (1993) and Barringer *et al.* (2005) who all found a significant positive relationship between the number of founders of a firm and its growth.

H5: Individuals with marketing skills are more likely to be associated with rapid growth than individuals with other functional skills.

The research did not corroborate this hypothesis and countered the findings of Jones (1991) and Wyncarczyk *et al.* (1993) who affirmed that entrepreneurs with marketing backgrounds were more likely to be associated with rapidly growing small businesses. The Chi-square test did not establish a significant relationship between the possession of marketing skills by the owner/manager and the firm's growth classification, $X^2(1) = 3.483, p > .05$.

The research, however, found a significant relationship between firm growth and production ($\chi^2 (1) = 4.439, p < .05$) or research and development skills ($\chi^2 (1) = 4.284, p < .05$). Based on the odds ratio, firms whose entrepreneurs had production skills were 3.3 times more likely to be slow-growth firms than those whose entrepreneurs did not have production skills. While, the odds ratio suggested that firms whose entrepreneurs had research and development skills were 2.8 more times likely to be rapid-growth firms when compared those firms whose entrepreneurs did not have these skills.

H6: Individuals with prior sector experience are more likely to be associated with rapid growth than those without prior sector experience.

This hypothesis was not confirmed. The Chi-square test did not establish a significant relationship between the entrepreneur's prior sector experience and the growth category of their firms, $\chi^2 (1) = 0.002, p > .05$. Entrepreneurs with or without prior sector experience were equally likely to establish rapid-growth firms. This finding did not support the views of Barringer *et al.* (2005) and Zhang *et al.* (2008) who found that entrepreneurs with relevant prior sector experience were associated with rapidly growing firms. Instead, the finding corroborates those of Cooper (1993) and Storey (1994) who also did not find a significant relationship between prior sector experience and firm growth.

H7: Males are more likely to be associated with rapid growth than females, because of the latter's responsibility of raising a family and managing a home.

The research rejected this hypothesis. The data analysis did not corroborate it. The Chi-square test between gender and growth category of the firm did not establish any significant relationship $\chi^2 (1) = 0.047, p > .05$. The findings did not support the liberal feminist theory (Fischer *et al.* 1993) that suggests that small businesses managed by women will perform poorer than those managed by men. It was also at variance with the notion that women preferred to keep their businesses small to minimize risk of losing control through dilution of their power from new equity investment (Still, 2005; Cliff, 1993) or to avoid conflict with family responsibilities (England and McCreary, 1987). Contrary to expectations in many African cultures, females in Ghana were equally likely to establish rapid growth firms as their male counterparts. The impact of gender on small business growth in developing countries is an interesting one that requires further investigation.

7.2.2 Testing of Hypothesis Relating to Firm Characteristics

H8: Younger firms are more likely to be associated with rapid growth than older firms.

The Mann-Whitney test did not establish a significant association between firm age and whether or not the firm was a rapid-growth or slow-growth one $U = 1013, ns$ ($p > .05$), $r = -0.053$. The analysis showed that contrary to expectation, older firms were equally associated with rapid-growth as younger firms. Consequently, the hypothesis was rejected. The results of the research did not corroborate the findings of Watson (1990),

Variyam and Kraybill (1992), Parker (1995), Mead and Liedholm (1998) and Heshmati (2001) who all found that younger firms were more likely to experience rapid-growth than older firms.

H9: Service businesses are more likely to be associated with rapid growth than manufacturing firms.

This hypothesis was rejected by the research. Service and manufacturing firms did not differ significantly in their association with rapid-growth or slow-growth. The Chi-square test between sector and the growth category of the firm was not significant $X^2(1) = 0.038$, $p > .05$.

H10: Limited liability companies are more likely to be associated with rapid growth than either sole proprietorships or partnerships.

The Mann-Whitney test found a significant association between the legal form of a firm and its growth category $U = 917$, sig ($p < .05$), $r = -0.20$. The effect size was low-to-medium. The hypothesis was, however, not accepted. The research established that limited liability companies in Ghana had a higher association with slow-growth than other legal forms. The finding did not corroborate that of Harhoff *et al.* (1998), Almus and Nerlinger (1999) and Davidsson *et al.* (2002) who found that firms with limited liability grow faster than firms with unlimited liability.

H11: Smaller firms are more likely to be associated with rapid growth than bigger ones.

The research rejected this hypothesis. The Mann-Whitney test did not establish any significant association between firm size (based on the number of full time employees) and the firm's growth category $U = 1002$, ns ($p > .05$), $r = -0.059$. Bigger firms were equally associated with rapid-growth as smaller firms. This finding appears to be consistent with Gibrat's law which in principle assumes that the growth of a firm, in any given period of time, is independent of the size at the beginning of the period.

H12: Firms affiliated with bigger ones are more likely to be associated with rapid growth than those not affiliated.

The research rejected this hypothesis. The Chi-square test did not establish a significant association between the existence of a firm's affiliation with a bigger entity and its growth category $\chi^2 (1) = 0.347$, $p > .05$. Firms without affiliation were equally likely to be rapid-growth firms as those with affiliation. Affiliation with bigger entities in the form of franchise arrangement or technical partners did not differentiate firms' growth rate. The finding is contrary to the expectation of Aw (2002) who argued that affiliation for instance with buyers, could decrease the risks and cost associated with entering new markets by guaranteeing a flow of orders to the firm; providing the firm with critical information about market requirements; and in some selected cases, providing the firm with assistance with capital investment.

7.2.3 Testing of Hypothesis Relating to Strategic Factors

H13: Businesses with a well-developed, workforce training program are more likely to be associated with rapid growth than those without such a program.

This hypothesis was accepted. The Chi-square test found a significant association between the presence or absence of a work force training program and the firm's growth category $X^2 (1) = 7.6510, p < .05$. Based on the Odds Ratio, firms with workforce training programs were 4.2 times more likely to be associated with rapid-growth firms than firms without workforce training. This finding corroborates that of Barringer *et al.* (2005) who also established a significant relationship between workforce training and rapid-growth firms in their research.

H14: Firms that provide formal management training are more likely to be associated with rapid growth than those that do not.

This hypothesis was rejected by the research. The Chi-square test between the presence or absence of formal management training and a firm's growth category was not significant $X^2 = 1.303, p > .05$. The research found that firms, with or without formal training programs, were equally likely to be rapid-growth firms. The findings did not support Storey's (1994) assertion that entrepreneurs who receive management training are expected to perform better in business than those who do not receive any training.

H15: Firms that are able to source external equity are more likely to be associated with rapid growth than those which are reluctant to do so.

The Chi-square test was not significant, hence the hypothesis was rejected. The test did not find a significant association between a firm's ability to source external equity and its growth category $\chi^2 (1) = 0.016, p > .05$. Firms were equally likely to be rapid-growth firms whether or not they sourced external equity (post formation). The findings did not support Marris and Wood's (1971) assertion that financial resource constraints were a major limiting factor to firm growth.

H16: Firms that extensively use electronic information technology in their operations are more likely to show positive association with rapid growth than those that do not.

This hypothesis was rejected by the research. The Mann-Whitney test between the extent to which the firm uses electronic information and its growth category was not significant $U=1056, ns (p>0.05), r=-0.03$. The research found that firms that scarcely used electronic information technology in their operations were equally likely to be rapid-growth firms as those that depended on an extensive use of electronic information technology. The finding does not support Storey (1994)'s argument that more technologically sophisticated businesses, even in conventional sectors, will be associated with rapid-growth compared to businesses in those same sectors with lower levels of technological sophistication.

H17: Firms with relatively long-term strategic plan are more likely to be associated with rapid growth than those that do not have strategic plans.

The Chi-square test between the presence or absence of a strategic plan and whether or not a firm was a rapid-growth one was not significant $\chi^2 (1) = 0.002, p > .05$. The research found that firms, with or without a strategic plan, were equally likely to be rapid-growth firms. The findings appear to support the views of Ford *et al.* (2003) and Delmar and Shane (2004) who suggest that the relationship between business plans and actual firm performance is actually open to doubt. Delmar and Shane (2004) further argued that firms could prepare business plans as a symbolic exercise to please shareholders.

H18: Firms which frequently introduce new products on the market are more likely to be associated with rapid growth than those which introduce products less frequently.

The Mann-Whitney test between the frequency of product innovation and a firm's growth category was significant $U = 760.5, sig (p < .05), r = -0.18$. Interestingly however, the research found that frequent product innovation was associated with slow-growth firms rather than rapid-growth firms. Consequently the hypothesis was rejected. The finding is contrary to that of Zhang *et al.* (2008) who established a significant relationship between product innovation and firm growth.

The association of frequent product innovation with slow-growth firms is an interesting finding that requires further investigation. It appears that unsuccessful firms in Ghana tend

to change products rapidly hoping to get into the market the product that best meets the needs of their clients. In so doing, management is diverted away from core business. This finding also raises the question of whether or not the firms have the competence to handle new product development.

H19: Exporting firms are more likely to be associated with rapid growth than firms that do not export.

The Chi-square test established a significant association between a firm's market (domestic or export) and growth category $X^2 (1) = 3.934, p < .05$. Interestingly, and contrary to expectations under the hypothesis, firms that produced for the domestic market were more associated with rapid-growth than those which produced for exports. The odds ratio suggests that firms which produce solely for the domestic market were 2.6 times more likely to be rapid-growth firms when compared to firms that produced for exports. The finding buttresses the challenges that small businesses in developing economies such as Ghana face when they export and try to compete in the global market place.

H20: Firms with formal Research and Development Units are more likely to be associated with rapid growth, compared with firms that do not have such units.

This hypothesis was rejected based on the research findings. The Chi-square test between the presence or absence of a Research and Development Unit and a firm's growth category was not significant $X^2 (1) = 0.076, p > .05$. The results showed that there was no

association between the presence or otherwise of an R&D unit and a firm's growth category. The finding did not corroborate that of Chakrabarti (1990) who suggests that firm growth is stimulated by R&D.

H21: Firms with partnerships with research institutions are more likely to be associated with rapid growth compared with those that do not have any partnership arrangement.

This hypothesis was rejected based on the research findings. The Chi-square test between the presence or absence of partnership with research institutions and a firm's growth category was not significant $X^2 (1) = 0.002, p > .05$. The results showed that there was no association between the presence or otherwise of a partnership with a research institution and a firm's growth category. The finding did not corroborate Colombo and Delmastro (2002) suggestion that a firm's proximity to research institutions enables it access to scientific expertise and the results of research programs. Intuitively, it is expected that association with such a research institution should enable the firm perform better and grow rapidly.

7.2.4 Testing of Hypothesis Relating to Environmental Factors

H22: Firms that have access to public or other forms of external aid are more likely to be associated with rapid growth compared to those that do not have access.

The Chi-square test between access or otherwise to public aid and the growth category of the firms was not significant $X^2 (1) = 0.129, p > .05$. The research found that access to

public aid was not a significant factor in differentiating rapid-growth firms from slow-growth firms. The hypothesis was therefore rejected. It did not support Schwartz and Clements' (1999) assertion of the importance of government subsidies for firm performance. The finding does not corroborate those of Julien (2000) who found in a study in Quebec that government subsidies, particularly in Research and Development as well as in export promotion, had a positive effect on firm growth. Given that many developing partners and multilateral institutions are devoting considerable resources to the SME sector in most countries, it will be important to investigate the impact of this assistance on the growth of small businesses.

H23: Firms in sectors with entry barriers linked to capital intensity, research and development or promotional expenditure are more likely to be associated with rapid growth compared to firms in sectors without those entry barriers.

The Mann-Whitney test between the level of entry barriers and growth category of the firm was not significant $U = 965.5$, ns ($p > .05$), $r = -0.10$. The research found that a firm's categorization as a rapid-growth or a slow-growth one was independent of the level of entry barrier in its industry. Consequently, the hypothesis was rejected. The findings are at variance with those of Weinzimmer (1993) who found a positive relationship between entry barriers resulting from Research and Development and sales growth.

H24: Firms with unions are more likely to be associated with slow growth than those that do not have unions.

This hypothesis was accepted and supports the notion that unionization appears to be a restraint for growth in the small business. The Chi-square test established a significant association between the presence or absence of unions in a small business and its growth category $X^2 (1) = 4.901, p < .05$. Firms with unions were found to be more associated with slow-growth firms than firms without unions. The Odds Ratio suggests that firms without unions were 4.9 times more likely to be rapid-growth firms when compared to firms with unions. This corroborates the findings of Acs and Audretsch (1990) who noted that, the degree of unionization in a sector had a negative influence on the growth of SMEs.

H25: Firms based in industrial parks or areas are more likely to be associated with rapid growth than those that are not.

This hypothesis was rejected. The Chi-square test between the presence or absence of a firm in an industrial park and its growth category was not significant $X^2 (1) = 1.120, p > .05$. Firms not located in industrial parks were just as likely to be rapid-growth or slow-growth firms as firms that are located in an industrial park. There was therefore no association between a firm's presence in an industrial park and its categorization as a rapid-growth firm. The finding does not corroborate that of Colombo and Delmastro (2002) who confirm that location in industrial or science parks has a positive effect on the growth of firms. It also did not support Marshall (1922)'s suggestion that industrial parks

enable businesses to benefit from agglomeration economics associated with interactions between companies that are concentrated within a restricted space.

H26: Firms operating in a very dynamic environment are more likely to be associated with rapid growth than those that are not operating in such an environment. A dynamic environment is one that is experiencing rapidly changing technology.

The Mann-Whitney test between the level of dynamism in a firm's industry and its growth categorization was not significant $U = 1051$, ns ($p > .05$), $r = -0.03$. The hypothesis was therefore rejected. The study showed that dynamism in a firm's industry was not associated with its growth categorization. The findings did not support that of Zhang *et al.* (2008) who confirmed that environment dynamism was significantly associated with rapid-growth firms.

H27: Firms operating in a restrictive fiscal and social policy environment are more likely to be associated with slow growth than those operating in non-restrictive environments.

This hypothesis was also rejected. The Chi-square test between the presence (or absence) of restrictive fiscal and social policy environment and growth category was not significant $\chi^2 (1) = 0.833$, $p > .05$. These policies appear not to have had an impact on the

growth of firms in Ghana. The finding does not corroborate De Soto's (1989) assertion that strict regulations and high taxes may restrict the growth of firms.

7.2.5 Testing of Hypothesis Relating to Cultural Factors

H28: Firms owned by non-Africans are more likely to be associated with rapid growth than those owned by Africans.

The Chi-square test did not find a significant association between the ownership of a firm (African or non-African) and whether it was a rapid-growth or slow-growth one $\chi^2 (1) = 0.200, p > .05$. The findings suggest that both Africans and non-Africans are equally likely to establish rapid-growth or slow-growth firms and do not support the expectations that, due to the low level of education in Sub-Saharan Africa reported by the World Bank (2001), Africans will be less successful in managing and growing their businesses.

H29: Firms whose leaders have a family history in business are more likely to be associated with rapid growth than those without a family history in business.

The Chi-square test between family history in business and whether or not a firm was a rapid-growth or slow-growth one was not significant $\chi^2 (1) = 0.622, p > .05$. The research found that family history in business had no association with a firm's growth. Firms started by individuals without a family background in entrepreneurship were as likely to be rapid-growth or slow-growth firms as those with a family background in entrepreneurship. The

findings did not support Morris and Lewis' (1995) assertion that family background and childhood experiences, exposure to others in business, as well as previous job experience influence the development of entrepreneurial-related attitudes. It is expected that these new attitudes would lead to better management of businesses and consequently improving their chances of growing more rapidly.

H30: Firms with clear vision and mission statements are more likely to be associated with rapid growth than those without such statements.

This hypothesis was accepted. The Chi-square test found a significant association between the presence or absence of a clear vision and mission statement in a firm and its growth category $\chi^2 (1) = 4.116, p < .05$. The research found that firms that had a clear vision and mission statement were more associated with rapid-growth than firms which did not have it. These firms were more likely to grow faster and be rapid-growth ones than those that had not properly articulated their vision and mission. The odds ratio suggests that firms with clear vision and mission statements were 3.44 times more likely to be rapid-growth firms when compared to those without clear mission and vision statements.

The findings corroborated those of several other researchers including Doorley and Donovan (1999) who found out that about 60% of rapid-growth firms studied had a documented growth vision compared to only 15% of the slow-growth firms. Similarly, Barringer *et al.* (2005) and Zhang *et al.* (2008) also found that firms with clear growth

oriented vision or mission statement were more likely to be rapid-growth firms compared to those without a clear vision.

H31: Firms with a Board that meets formally and regularly are more likely to be associated with rapid growth than those without such a Board.

This hypothesis was rejected. The Chi-square test between the presence or absence of a formal board and the growth category of a firm was not significant $X^2(1) = 1.631, p > .05$. The research found that firms, with or without formal Boards, were equally likely to become rapid-growth or slow-growth firms. There was therefore no association between board presence and rapid-growth firms. The findings do not appear to agree with the views of Siebens (2002) who suggests that boards of directors could provide a qualitatively better direction to the organisation. One expects that this better direction would result in rapid-growth of the firms.

H32: Firms, in which employees participate in decision-making, are more likely to be associated with rapid growth firms than those in which employees do not participate in decision-making.

The Mann-Whitney test did not find a significant association between the extent of employee participation in decision-making and the growth category of the firm $U = 967, ns (p > .05), r = -0.09$. Firms in which employees did not often participate in decision-making were equally likely to be growth-firms as those in which employees participated most often

in decision making. The findings do not corroborate Denison's (1990) findings based on empirical evidence that higher levels of employee participation in decision-making are correlated with better organisational performance.

33: Firms whose management holds formal meetings at least quarterly are more likely to be associated with rapid growth than those whose management meets less frequently.

This hypothesis was not accepted based on the findings of the research. Although the Mann-Whitney test on the frequency of management meetings and whether or not a firm experienced rapid-growth or slow-growth was significant $U = 859$, sig ($p < .05$), $r = -0.21$, the research found out that frequent management meetings were associated with slow-growth firms than rapid-growth firms. The interesting finding here is that, contrary to expectation, firms which had frequent management meetings were more likely to be slow-growth firms casting doubts on the objectives and effectiveness of these management meetings.

H34: Firms in which non-family members are a majority in management are more likely to be associated with rapid growth than those in which family members are in the majority.

This hypothesis was rejected. The Chi-square test between the proportion of non-family board members and whether or not a firm was a rapid-growth or slow-growth one was not significant $\chi^2 (1) = 0.871$, $p > .05$. The research found that there was no association between the proportion of non-family members on the board and a firm's

growth category. The findings appear to suggest that there was no real value addition with having non-family members on the board contrary to both Gallo (1995) and Ibrahim *et al.*'s (2001) expectation that non-family members would be important stakeholders in family firms.

H35: Firms which are members of professional or business associations are more likely to be associated with rapid growth than those that are not members of professional or business associations.

This hypothesis was accepted based on the research findings. The Chi-square test established a significant association between a firm's membership or non-membership of a professional/business association and its growth category $X^2 (1) = 4.130, p < .05$. The odds ratio suggests that firms which are members of professional or business associations were 3.6 times more likely to be rapid-growth firms when compared firms which belong to no association. This finding supports network theory which, according to Watson (2007), suggests that the ability of business owners to obtain access to resources not under their control in a cost-effective way through business networking can influence the success of their firms.

H36: Firms which belong to community or social networks are more likely to be associated with rapid growth than those which do not.

This hypothesis was rejected. The Chi-square test between membership of a community or social network and the growth category of the firm was not significant $\chi^2(1) = 0.434, p > .05$. Firms belonging to community or social networks were equally likely to be rapid-growth companies compared to those that did not belong to any network. The findings do not support those of Donckels and Lambrecht (1995) who found that network development, especially at the national and international level, was positively associated with firm growth.

7.3 Hypothesis Testing Based on the Employment Growth Measure

7.3.1 Testing of Hypothesis Relating to Entrepreneurial Characteristics

H1: Entrepreneurs with “positive motivations” are more likely to be associated with a business that subsequently grows rapidly, than those with “negative” motivations.

On perception of a market opportunity as a motivation, the Mann-Whitney test found a significant difference between entrepreneurs of rapid-growth and slow-growth firms, $U = 664, \text{sig} (p < .05), r = -0.26$. Similar significant differences in importance were found with two other motivation factors as follows: threat of unemployment, $U = 678, \text{sig} (p < .05), r = -0.19$; actual unemployment, $U = 616, \text{sig} (p < .05), r = -0.02$. In all three cases, the effect sizes were low-to-medium. The Mann-Whitney test did not find a significant

difference between rapid-growth and slow-growth firms on the other four motivational factors.

The results of the Mann-Whitney test on motivation showed that the perception of a market opportunity was the only important “positive” motivational factor that distinguished rapid-growth firms from slow-growth firms. The hypothesis was consequently accepted for perception of market opportunity as a “positive” motivational factor. The findings therefore appear to support those of Kinsella *et al.* (1993) and Barkham (1992) who found a positive relation between firm growth and the existence of positive motivation among entrepreneurs.

H2: Graduates are more likely to establish and manage businesses associated with high growth potential than non-graduates.

The Chi-square test on university education did not find a significant association between whether or not the entrepreneur had a university education and the firm’s growth category (rapid-growth or slow-growth), $\chi^2 (1) = 0.203, p > .05$. The result does not affirm the hypothesis that small businesses established by university graduates were likely to grow rapidly compared to those established by non-university graduates. The finding is contrary to that of Kantis *et al.* (2004) cited in Nichter and Goldmark (2009) who found that six out of every ten Latin American entrepreneurs with high-growth firms were university graduates.

H3: Entrepreneurs with some previous managerial experience are more likely to be associated with rapid growth than individuals without such experience.

This hypothesis was rejected by the research. The Chi-square test did not find a significant association between previous managerial experience of the owner/manager and whether the firm was a rapid-growth or slow-growth one, $\chi^2 (1) = 0.512, p > .05$. Previous managerial experience was therefore not an important criterion in distinguishing rapid-growth firms from slow-growth firms. Similar to the instance of the turnover growth measure, this finding is at variance with those of Barkham (1992) and Dunkelberg and Cooper (1982) who found a positive association between previous managerial experience and growth of small businesses.

H4: Businesses founded by more than a single individual are more likely to be associated with rapid growth than those founded by a single person since management of a firm requires a range of skills.

The Chi-square test established a significant relationship between multiple founders of a firm and its growth classification, $\chi^2 (1) = 3.891, p < .05$. The hypothesis was accepted based on the significance of the test statistics. The finding affirms the notion that businesses started by a team that have greater resources; a broader diversity of viewpoints; more risk-bearing ability; and a broader array of ideas than those started by individuals (Watson *et al.*, 2003; Barkham, 1994). The finding affirms the views of Barringer *et al.* (2005) who found compelling results between the size of the founding team and firm

growth from their review of literature. It also supports those of Woo *et al.* (1989) and Reynolds (1993) who found a significant positive relationship between the number of founders of a firm and its growth.

H5: Individuals with marketing skills are more likely to be associated with rapid growth than individuals with other functional skills.

The Chi-square test established a significant relationship between the marketing skills of the entrepreneur and the firm's growth classification, $\chi^2 (1) = 3.999, p < .05$. The results confirm the findings of Jones (1991) and Wyncarczyk *et al.* (1993) who affirmed that entrepreneurs with marketing backgrounds were more likely to be associated with rapidly growing small businesses. The odds ratio showed that firms of entrepreneurs with marketing skills were 2.57 times more likely to be rapid-growth firms compared to firms whose entrepreneurs did not have marketing skills.

The Chi-square test also established significant relationship between firm growth and production skills $\chi^2 (1) = 8.160, p < .05$. Based on the odds ratio to measure the effect of the association, firms whose entrepreneurs had production skills were 5.6 times more likely to be slow-growth firms than those whose entrepreneurs did not have production skills. The findings appear to suggest that going into business based merely on the ability to produce will often not result in growth. A focus on marketing appears to lead to growth.

H6: Individuals with prior sector experience are more likely to be associated with rapid growth than those without prior sector experience.

This hypothesis was not confirmed. The Chi-square test did not establish a significant relationship between entrepreneurs' prior sector experience and the growth category of their firms, $\chi^2 (1) = 0.170, p > .05$. Entrepreneurs with or without prior sector experience were equally likely to establish rapid-growth firms. This finding corroborates that of Cooper (1993) and Storey (1994) who also did not find a relationship between prior sector experience and growth. It is however contrary to more recent findings by Barringer *et al.* (2005) and Zhang *et al.* (2008) who found that prior sector experience was associated with faster growing firms.

H7: Males are more likely to be associated with rapid growth than females, because of the latter's responsibility of raising a family and managing a home.

The research rejected this hypothesis. The data analysis did not corroborate it. The Chi-square test did not find a significant association between gender and the growth category of the firm $\chi^2 (1) = 1.41, p > .05$. Once again, the findings did not support the liberal feminist theory (Fischer *et al.* 1993) that suggests that small businesses managed women will perform poorer than those managed by men. It was also at variance with the notion that women preferred to keep their businesses small to minimize risk of losing control through dilution of their power from new equity investment (Still, 2005; Cliff, 1993) or to avoid conflict with family responsibilities (England and McCreary, 1987). Contrary to

expectations in many African cultures, females were as equally likely to establish rapid growth firms as their counterpart males.

7.3.2 Testing of Hypothesis Relating to Firm Characteristics

H8: Younger firms are more likely to be associated with rapid growth than older firms.

The Mann-Whitney test did not indicate a significant difference between the age group of the firms and whether or not they were rapid-growth or slow-growth firms $U = 748$ sig ($p < .05$), $r = -0.200$ and confirmed the hypothesis. The analysis showed that younger firms were no more likely to be associated with rapid-growth firms when compared to older firms. This finding did not support that of Parker (1995) and Mead and Liedholm (1998) who found that young small firms were more likely to be associated with high growth rate firms than older firms.

H9: Service businesses are more likely to be associated with rapid growth than manufacturing firms.

This hypothesis was rejected by the research. Service and manufacturing firms did not differ significantly in their association with rapid-growth or slow-growth. The Chi square test between sector and the growth category of the firm was not significant $X^2 (1) = 0.891$, $p > .05$.

H10: Limited liability companies are more likely to be associated with rapid growth than either sole proprietorships or partnerships.

The Mann-Whitney test did not find a significant difference in the legal forms of both rapid-growth and slow-growth firms $U = 931$, ns ($p > .05$), $r = -0.10$. Limited liability companies for instance were as likely to be associated with rapid-growth and slow-growth. This finding is contrary to that of Harhoff *et al.* (1998), Almus and Nerlinger (1999) and Davidsson *et al.* (2002) who found out that limited liability firms grow faster than unlimited liability firms.

H11: Smaller firms are more likely to be associated with rapid growth than bigger ones.

The research rejected this hypothesis. The Mann-Whitney test did not establish any significant association between firm size (based on the number of full time employees) and the firm's growth category $U = 843$, ns ($p > .05$), $r = -0.130$. Bigger firms were as equally associated with rapid-growth as smaller firms. This finding supports Gibrat's law that assumes that the growth of a firm, in any given period of time, is independent of the size at the beginning of the period. It also corroborates the findings of Acs and Audretsch (1990) who also found that the growth rate of firms is independent of size.

H12: Firms affiliated with bigger ones are more likely to be associated with rapid growth than those not affiliated.

The research rejected this hypothesis. The Chi-square test did not establish a significant association between a firm's affiliation with a bigger entity and its growth category $\chi^2 (1) = 0.816, p > .05$. Firms without affiliation were as likely to be rapid-growth firms as those with affiliation. Affiliation with bigger entities in the form of a franchise arrangement or technical partnership did not differentiate between rapid-growth and slow-growth firms. The finding appears not to support the assertion by Berry *et al.* (2002) who suggest that vertical linkages could also improve the capabilities of the smaller firm by providing it with opportunities for learning and innovation especially when corporate buyers assist with quality, maintenance and resolution of technical issues.

7.3.3 Testing of Hypothesis Relating to Strategic Factors

H13: Businesses with a well-developed, workforce training program are more likely to be associated with rapid growth than those without such a program.

This hypothesis was accepted. The Chi-square test found a significant association between the presence or absence of a work force training program and the firm's growth category $\chi^2 (1) = 3.987, p < .05$. Small businesses that provided workforce training were 2.75 times more likely to be associated with rapid-growth firms than those that did not provide any training. The finding affirms that of Klass *et al.* (2009) who suggest that human capital programs designed to affect workforce skill, motivation, and performance

are expected to have a positive impact on organizational performance. It also corroborates the findings of Barringer *et al.* (2005) who found a significant relationship between workforce training and rapid-growth firms.

H14: Firms that provide formal management training are more likely to be associated with rapid growth than those that do not.

This hypothesis was rejected by the research. The Chi-square test between the presence or absence of a formal management training program and a firm's growth category was not significant $X^2 (1) = 0.215, p > .05$. The research found that firms, with or without formal management training programs, were as likely to be rapid-growth firms. It did not support the assertion by Storey (1994) that entrepreneurs whose firms provide them with training in important management skills are expected to perform better than those which do not.

H15: Firms that are able to source external equity are more likely to be associated with rapid growth than those which are reluctant to do so.

The Chi-square test established a significant association between a firm's ability to source external equity and its growth category $X^2 (1) = 3.563, p < .05$. The hypothesis was however rejected because the results showed that firms that did not source external equity were 3.33 times more likely to be rapid-growth firms than those which sourced external equity. This finding does not support Marris and Wood (1971)'s assertion that financial resource constraints are the major limiting factor to firm growth.

H16: Firms that extensively use electronic information technology in their operations are more likely to show positive association with rapid growth than those that do not.

This hypothesis was rejected by the research. The Mann-Whitney test between the extent to which the firm uses electronic information and its growth category was not significant $U=863$, ns ($p > 0.05$), $r=-0.132$. The research found that firms that scarcely used electronic information technology in their operations were as likely to be rapid-growth firms as those that depended on an extensive use of electronic information technology. This finding appears to be contrary to the expectations of Storey (1994) that technologically sophisticated businesses, even in conventional sectors, will be associated with rapid-growth compared to businesses in those same sectors with lower levels of technological sophistication.

H17: Firms with relatively long-term strategic plan are more likely to be associated with rapid growth than those that do not have strategic plans.

The Chi-square test between the presence or absence of a strategic plan and whether or not a firm was a rapid-growth one was not significant $X^2(1) = 0.004$, $p > .05$. The research found that firms, with or without a strategic plan, were equally likely to be rapid-growth firms. This finding appears to give some credence to Delmar and Shane (2004)'s assertion that firms could prepare business plans just as a symbolic exercise to please stakeholders.

H18: Firms which frequently introduce new products on the market are more likely to be associated with rapid growth than those which introduce products less frequently. .

The Mann-Whitney test found a significant difference between the frequency of product innovation and a firm's growth category $U = 630$, sig ($p < .05$), $r = -0.25$. Firms that frequently introduced new products on the market were more likely to be rapid-growth firms compared to those which did not. The hypothesis was therefore accepted. The effect size of the test was low-to-medium. This finding corroborates that of Zhang *et al.* (2008) who similarly established a significant relationship between product innovation and firm growth. It supports Marris and Wood's (1971) views that a firm's diversification into new products is not just an important vehicle of growth but also a major contributing factor to firm growth.

H19: Exporting firms are more likely to be associated with rapid growth than firms that do not export.

The Chi-square test did not establish a significant association between a firm's market (domestic or export) and growth category. Small firms that exported were equally likely to be associated with rapid-growth as their counterparts that did not export. The finding buttresses the challenges that small businesses in developing economies such as Ghana face when they export and try to compete in the global market place.

H20: Firms with a formal Research and Development Unit are more likely to be associated with rapid growth, compared with firms that do not have such a unit.

This hypothesis was rejected based on the research findings. The Chi-square test did not establish a significant association between the presence or absence of a Research and Development Unit and a firm's growth category $\chi^2 (1) = 0.006, p > .05$. The finding does not support that of Thornhill (2006) who found that industries with greater aggregate levels of Research and Development intensity were associated with higher levels of firm-level innovation.

H21: Firms with partnerships with research institutions are more likely to be associated with rapid growth compared with those that do not have any partnership arrangement.

The research findings did not support this hypothesis. The Chi-square test did not establish a significant association between the presence or absence of partnership with research institutions and a firm's growth category, $\chi^2 (1) = 0.435, p > .05$. The findings did not support those of Snuif and Zwart (1994) who found that a firm's proximity to university institutions has a positive effect on growth. Universities globally tend to be important centres for research. It also appears not to support Colombo and Delmastro's (2002) suggestion that a firm's proximity to research institutions enables it access to scientific expertise and the results of research programs. This knowledge is expected to enable the firms to improve the operations.

7.3.4 Testing of Hypothesis Relating to Environmental Factors

H22: Firms that have access to public or other forms of external aid are more likely to be associated with rapid growth compared to those that do not have access.

The Chi-square test established a significant association between access or lack of access to public aid and the growth category of the firms $\chi^2 (1) = 2.751, p < .05$. The research found that access to public aid was a significant factor in differentiating rapid-growth firms from slow-growth firms. The hypothesis was however rejected because the research finding suggests that firms that did not access public aid were more likely to be rapid-growth firms. Based on the odds ratio, these firms were 2.9 times more likely to be rapid-growth firms compared to those with public aid.

The finding does not corroborate that of Julien (2000) who found in a study in Quebec that government subsidies, particularly in Research and Development as well as in export promotion, had a positive effect on firm growth. Given that many developing partners and multilateral institutions are devoting a lot of resources to the SME sector in most countries, it will be important to investigate the impact of this assistance on the growth of small businesses.

H23: Firms in sectors with entry barriers linked to capital intensity, research and development or promotional expenditure are more likely to be associated with rapid growth compared to firms in sectors without those entry barriers.

The Mann-Whitney test did not establish a significant difference between the level of entry barriers and growth category of the firm $U = 970$, ns ($p > .05$), $r = -0.037$. The research found that a firm's categorization as a rapid-growth or a slow-growth one was independent of the level of entry barriers in its industry. Consequently, the hypothesis was rejected. The finding therefore did not corroborate that of Weinzimmer (1993) who found a positive relationship between entry barriers resulting from Research and Development and sales growth.

H24: Firms with unions are more likely to be associated with slow growth than those which do not have unions.

This hypothesis was rejected. The Chi-square test did not establish a significant association between the presence or absence of unions in a small business and its growth category $\chi^2 (1) = 0.096$, $p > .05$. This finding does not support that of Acs and Audretsch (1990) who noted that, the degree of unionization in a sector had a negative influence on the growth of SMEs.

H25: Firms based in industrial parks or areas are more likely to be associated with rapid growth than those that are not.

This hypothesis was rejected. The Chi-square test did not establish a significant relationship between the presence or absence of a firm in an industrial park and its growth category $\chi^2 (1) = 0.317, p > .05$. Firms not located in industrial parks were equally likely to be rapid-growth or slow-growth firms as firms in industrial park. The finding does not support that of Colombo and Delmastro (2002) who affirm that location in industrial or science parks has a positive effect on the growth of firms.

H26: Firms operating in a very dynamic environment are more likely to be associated with rapid growth than those that are not operating in such an environment. A dynamic environment is one that is experiencing rapidly changing technology.

The Mann-Whitney test did not find a significant difference between the level of dynamism in a firm's industry and its growth categorization $U = 948, ns (p > .05), r = -0.053$. The hypothesis was therefore rejected. The study showed that dynamism in a firm's industry was not associated with its growth categorization. The finding does not corroborate that of Zhang *et al.* (2008) who confirmed that environmental dynamism was significantly associated with rapid-growth firms.

H27: Firms operating in a restrictive fiscal and social policy environment are more likely to be associated with slow growth than those operating in non-restrictive environments.

This hypothesis was also rejected. The Chi-square test did not establish a significant association between the presence (or absence) of a restrictive fiscal and social policy environment and a firm's growth category $\chi^2 (1) = 1.599, p > .05$. These policies appear not to have an impact on the growth of firms in Ghana. The finding does not support De Soto's (1989) suggestion that strict regulations and high taxes may restrict the growth of firms.

7.3.5 Testing of Hypothesis Relating to Cultural Factors

H28: Firms owned by non-Africans are more likely to be associated with rapid growth than those owned by Africans.

The Chi-square test established a significant association between the ownership of a firm (African or non-African) and whether it was a rapid-growth or slow-growth one $\chi^2 (1) = 2.966, p < .05$. Based on the odds ratio, non-Africans were 2.77 times more likely to establish rapid-growth firms compared to Africans.

H29: Firms whose leaders have a family history in business are more likely to be associated with rapid growth than those without a family history in business.

The Chi-square test between family history in business and whether or not a firm was a rapid-growth or slow-growth one was not significant $X^2 (1) = 0.462, p > .05$. The research found that family history in business had no association with a firm's growth. Firms started by individuals without a family background in entrepreneurship were equally likely to be rapid-growth or slow-growth firms as those with a family background in entrepreneurship. The finding does not support Morris and Lewis (1995) argument that family background/childhood experiences, exposure to others in business, as well as previous job experiences influence the development of entrepreneurial-related attitudes. Ultimately, these attitudes are expected to lead to successful management of the enterprises and to rapid-growth.

H30: Firms with clear vision and mission statements are more likely to be associated with rapid growth than those without such statements.

This hypothesis was rejected. The Chi-square test did not find a significant relationship between the presence or absence of a clear vision and mission statement in a firm and its growth category $X^2 (1) = 4.116, p < .05$. The research found that firms that had a clear vision and mission statement were equally likely to be rapid-growth firms when compared with those without a clear vision and mission statement. The finding is contrary to that of Barringer *et al.* (2005) and Zhang *et al.* (2008) who found that firms with a clear growth-

oriented vision and mission statement were more likely to be rapid-growth firms compared to those without a clear vision.

H31: Firms with a Board that meets formally and regularly are more likely to be associated with rapid growth than those without such a Board.

This hypothesis was rejected. The Chi-square test between the presence or absence of a formal Board and the growth category of a firm was not significant $X^2(1) = 0.016$, $p > .05$. The research found that firms, with or without formal Boards, were equally likely to become rapid-growth or slow-growth firms. There was therefore no association between board presence and rapid-growth firms. The finding is at variance with Sieben's (2002) arguments that boards of directors can provide qualitatively better direction to the organization through spreading of knowledge in the board's composition, splitting-up of special functions and more frequent meetings.

H32: Firms, in which employees participate in decision-making, are more likely to be associated with rapid growth than those in which employees do not participate in decision-making.

The Mann-Whitney test did not find a significant association between the extent of employee participation in decision-making and the growth category of the firm $U = 975$, ns ($p > .05$), $r = -0.029$. Firms in which employees did not often participate in decision-making were equally likely to be rapid-growth firms when compared to those in which

employees participated frequently in decision-making. The finding appears to reject Denison's (1990) conclusion using empirical evidence that higher levels of employee participation in decision-making are correlated with better organisational performance.

H33: Firms whose management holds formal meetings at least quarterly are more likely to be associated with rapid growth than those whose management meets less frequently.

This hypothesis was rejected. The Mann-Whitney test did not find a significant difference between the frequency of management meetings and whether or not a firm experienced rapid-growth or slow-growth $U = 928$, ns ($p > .05$), $r = -0.01$, the research found out that holding frequent management meetings was not a good differentiator between slow-growth firms and rapid-growth firms.

H34: Firms in which non-family members are a majority in management are more likely to be associated with rapid growth than those in which family members are in the majority.

This hypothesis was accepted. The Chi-square test established a significant relationship between the proportion of non-family board members and a firm's growth category $X^2 (1) = 3.256$, $p < .05$. Based on the odds ratio, firms in which non-family members were in the majority on their boards were 2.35 times more likely to be rapid-growth firms compared to those in which non-family members were in the minority. The finding supports Gallo (1995) and Ibrahim *et al.*; (2001)'s assertion that non-family managers are important stakeholders in family firms.

H35: Firms which are members of professional or business associations are more likely to be associated with rapid growth than those that are not members of professional or business associations

This hypothesis was rejected. The Chi-square test did not establish a significant association between a firm's membership or non-membership of a professional/business association and its growth category $\chi^2 (1) = 0.040, p > .05$. The finding does not support that of Watson (2007) who posits that network theory suggests that the ability of business owners to obtain access to resources not under their control in a cost-effective way through business networking can influence the success of business ventures. One expects that success will be indicated by rapid-growth.

H36: Firms that belong to community or social networks are more likely to be associated with rapid growth than those which do not.

This hypothesis was rejected. The Chi-square test between membership of a community or social network and the growth category of the firm was not significant $\chi^2 (1) = 0.113, p > .05$. The finding is contrary to the expectations of Donckel and Lambrecht's (1995) who suggest that network development, especially at the national and international level, was positively associated with firm growth.

7.4 Conclusions

The analysis based on single-variable Mann-Whitney and Chi-square tests and for both the turnover and employment growth measures identified 20 significant factors differentiating between rapid-growth and slow-growth small businesses. The analysis based on the turnover growth measure identified 11 significant factors while it identified 12 significant factors based on the employment growth measure. Three factors were common to both growth measures. These were production skills, workforce training and new product development. Table 7.5 below provides a summary of the significant factors based on the broad category of the factors. The results show that the characteristics of the entrepreneur, strategic factors and cultural factors are the main categories of factors that differentiated rapid-growth small firms from the slow-growth ones.

The research supported 11 hypotheses out of the 36 hypotheses based on both the turnover and employment growth measures. Although the variables used to test the hypotheses relating to legal form; exporting; access to external equity (post-formation); and access to public or external aid, were all significant in discriminating between rapid-growth and slow-growth firms, the hypotheses were however rejected because they were associated with slow-growth firms rather than rapid-growth firms as postulated.

The research supported 5 hypotheses based on the turnover growth measure and 7 hypotheses based on the employment growth measure. One hypothesis relating to work force training was common to both. The results showed that most of the supported hypotheses were from the category of the characteristics of the entrepreneur, strategic

factors and cultural factors. The supported hypotheses are shown in Table 7.6 below. A detailed discussion of the findings is presented in Chapter 9 below. The logistic regression analysis is discussed next in Chapter 8.

Table 7.5. Significant Factors Differentiating Rapid-Growth Firms from Slow-Growth Firms

Category of Independent Variable	Independent Variable/ Question numbers	Turnover Growth Measure	Employment Growth Measure	Areas of Commonality
Characteristics of the Entrepreneur	Perception of a market opportunity		✓	
	Desire to make money			
	Dissatisfaction with and existing employer			
	Threat of unemployment		✓	
	Actual unemployment		✓	
	Desire to guarantee a satisfactory income			
	University education	✓		
	Previous management experience		✓	
	Number of founders		✓	
	Marketing skills			
	Finance skills			
	Production skills	✓	✓	✓
	Personnel management skills			
	Research and development skills	✓		
	Industry specific experience			
Gender				
Firm age				
Sector				
Legal form	✓			
Size				
Affiliation with a bigger entity				
Workforce training	✓	✓	✓	
Management training				
External equity (post-formation)			✓	
Technological sophistication				
Strategic planning				
New product innovation	✓	✓	✓	
Exporting	✓	✓		
Research and Development				
Partnership with research institutions				

Category of Independent Variable	Independent Variable/ Question numbers	Turnover Growth Measure	Employment Growth Measure	Areas of Commonality
Environment Factors	Access to public or external aid		✓	
	Entry barrier			
	Unionized staff	✓		
	Presence in an industrial park			
	Dynamism of the environment			
	Restrictive social and fiscal policies			
	Ethnic origin		✓	
	Family history in business			
	Clear vision and mission statement	✓		
	Presence of a formal Board			
Cultural Factors	Frequency of management meetings	✓		
	Employee participation in decision making			
	Proportion of non-family members in management		✓	
	Membership of a professional or business association	✓		
	Support from community networks			

Table 7.6. List of Supported Hypotheses based on Single-Variable Mann-Whitney and Chi-Square Tests

Category of Independent Variable	Independent Variables	Hypotheses	Turnover Growth Measure	Employment Growth Measure	Areas of Commonality
Characteristics of the Entrepreneur	Motivation	H1		✓	
	University education	H2	✓		
	Previous management experience	H3			
	Number of founders	H4		✓	
	Marketing skills	H5		✓	
	Industry specific experience	H6			
	Gender	H7			
	Firm age	H8			
	Sector	H9			
	Legal form	H10			
	Size	H11			
	Affiliation with a bigger entity	H12			
Strategic Factors	Workforce training	H13	✓	✓	✓
	Management training	H14			
	External equity (post-formation)	H15			
	Technological sophistication	H16			
	Strategic planning	H17			
	New product innovation	H18		✓	
	Exporting	H19			
	Research and Development	H20			
	Partnership with research institutions	H21			
	Access to public or external aid	H22			
	Entry barrier	H23			
	Unionized staff	H24		✓	
Environmental Factors	Presence in an industrial park	H25			
	Dynamism of the environment	H26			
	Restrictive social and fiscal policies	H27			

Category of Independent Variable	Independent Variables	Hypotheses	Turnover Growth Measure	Employment Growth Measure	Areas of Commonality
Cultural Factors	Ethnic origin	H28		✓	
	Family history in business	H29			
	Clear vision and mission statement	H30	✓		
	Presence of a formal Board	H31			
	Employee participation in decision making	H32			
	Frequency of management meetings	H33			
	Proportion of non-family members in management	H34		✓	
	Membership of a professional or business association	H35	✓		
	Support from a community network	H36			

8 DETERMINANTS OF GROWTH: MULTIVARIABLE TESTS

8.1 Introduction

In this chapter, multivariate logistic regression will be used to model the relationship between the dichotomous outcome (dependent) variable (rapid-growth or slow-growth) and the predictor (independent) variables. The purpose of doing this is to identify key variables that are significant in discriminating or differentiating between rapid-growth and slow-growth firms. In other words, the multivariable logistic regression is expected to isolate key explanatory variables that are significant in classifying firms into rapid-growth and slow-growth firms in a multivariable setting. The findings of this chapter will be used to complement those of chapter seven where single-variable tests were used to identify significant factors differentiating between rapid-growth and slow-growth firms. The results of the single-variable test were also used to investigate the association of the independent variables with rapid-growth or slow-growth in a single variable setting.

The chapter next discusses the logistic regression procedure in Section 8.2. It then presents a summary of the findings of the logistic regression analysis based on five sub-models (*i.e.* Entrepreneurial Characteristics sub-model; Firm Characteristics sub-model; Strategic Factors sub-model; Environmental Factors sub-model; and Cultural Factors sub-model) and the Overall Model. Each sub-model relates to one of the first five research questions while the Overall Model relates to the sixth and last research question. A seventh sub-model based on the significant variables identified in the single-variable tests is also presented. The purpose of first developing sub-models is to determine within each category of variables (*i.e.* entrepreneurial characteristics, firm characteristics, strategic factors,

environmental factors and cultural factors), those variables which are significant in classifying firms into rapid-growth and slow-growth and consequently, the key characteristics differentiating between the two groups of firms.

The sub-models and the overall models are developed using the turnover (Section 8.3) and employment growth measures (Section 8.4). The logistic regression analysis uses the “enter” method. Studenmund and Cassidy (1987) suggest that the enter method is the most appropriate method for theory testing. The enter method is preferred to the stepwise methods because the latter are influenced by random variation in the data and seldom give replicable results if the model is re-tested within the same sample. This researcher also did not opt for block entry regression that would have resulted in several models based on entering specific blocks of independent variables in the logistic regression analysis. Field (2005) advises the use of the block entry regression when the researcher is trying to build on well-established models that was not the case in this research.

Details of the analysis including the variables in each sub-model are presented in Appendix 3. Table 8.1 and 8.2 below provide a summary of the significant results from the models.

Table 8.1: Significant results from logistic regression using multiple variables in each category as independent variables, based on the turnover growth measure ($p < .05$) and a 95% Confidence Interval of estimation of Exp (B).

Independent variable	B	S.E.	Wald	Sig.	Exp (B)	Lower	Upper
<i>Strategic Factors</i>							
STAFFTRG	-2.625	.979	7.187	$p = .007$.072	.011	.494
NPDTFREQ	-.481	.235	4.177	$p = .041$.618	.390	.980
EXPORT	1.192	.578	4.254	$p = .039$	3.294	1.061	10.223
<i>Significant Variables</i>							
EXPORT	-2.266	.782	8.395	.004	9.640	2.082	44.639
TUNION	3.519	1.321	7.093	.008	33.758	2.533	449.950

Table 8.2: Significant results from logistic regression using multiple variables in each category as independent variables, based on the employment growth measure ($p < .05$) and a 95% Confidence Interval of estimation of Exp (B).

Independent variable	B	S.E.	Wald	Sig.	Exp (B)	Lower	Upper
<i>Entrepreneurial Characteristics</i>							
MOVOPP	1.281	.538	5.680	.017	3.601	1.256	10.329
<i>Cultural Factors</i>							
ETHNICOR	-1.899	.777	5.976	.015	.150	.033	.686
<i>Significant Variables</i>							
MOVOPP	-1.074	.547	3.855	.050	2.928	1.002	8.556

8.2 The Logistic Regression Procedure

Logistic regression is similar to multiple regression but incorporating an outcome variable that is a categorical dichotomy and predictor variable that is continuous or categorical (Field, 2005). Logistic regression is appropriate for modelling the relationship between dichotomous outcome variables *i.e.* rapid-growth or slow-growth in this instance, and predictor variables. It is useful in isolating key explanatory variables that discriminate between the dichotomous outcome variables and the predictor variables. As already explained in the introduction to this chapter, the regression was conducted based on the

‘enter’ method, similar to forced entry in multiple regression in that, all the covariates are placed into the regression model in one block and parameter estimates calculated for each block.

The logistic regression was carried out using the statistical package SPSS. Data for the logistic regression is entered into the SPSS as is done for normal regression. The analysis is done in multiple steps. The first step is the initial model that is derived using only the constant in the regression equation (*i.e.* all predicted variables are omitted). SPSS produces a Classification Table, Variables in the Equation Table and Variables not in the Equation Table. In the Classification Table, SPSS arbitrarily assigns every participant to a single category of the outcome variable. In order to maximize how well the model predicts the observed data, SPSS will assign participants to the category with the most observed cases and indicate the accuracy of its classification.

The Variables in the Equation table summarizes the model, which includes quoting of the value of the constant b_0 (B). The Variables not in the Equation table reports the residual Chi-square statistic (Overall Statistics) and its level of significance p . If $p < .05$, it means coefficients for the variables not in the model are statistically different from zero implying that the addition of one or more of the variables to the model may improve its predictive power. If the probability of the residual Chi-square is greater than .05 (*i.e.* $p > .05$), then it implies that none of the variables excluded from the model could make a significant contribution to the predictive power of the model. Consequently, the analysis is terminated at this stage.

The analysis also produces the log-likelihood (“LL”) of this baseline model. The log-likelihood represents the fit of the model when the most basic model is fitted to the data. It is similar to using the observed and predicted values to assess the fit of the model in normal regression analysis. The log-likelihood is therefore based on summing the probabilities associated with predicted and actual outcomes (Tabachnick and Fidell, 2001). Field (2005) further explains that the log-likelihood statistic is similar to the residual sum of squares in multiple regression analysis, in the sense that, it is an indicator of how much unexplained information there is after the model has been fitted. Large values of the log-likelihood statistic is an indication of poorly fitting statistical models, because the larger the value of the log-likelihood, the more unexplained observations there are. SPSS always computes -2LL.

If the residual Chi-square is significant, then the analysis proceeds to the second step of introducing the predictor variables into the model. In the case of the entry method, the predictor variables are entered into the regression in one block. The output of this analysis includes the Omnibus Tests of Model Coefficients Table, Model Summary Table, Classification Table and the Variables in the Equation Table. The -2LL is shown in the Model Summary. As mentioned earlier, a decrease in the value of -2LL at this stage implies an improvement in the model with the addition of the predictor variables *i.e.* the model is predicting the outcome variable more accurately.

The improvement of the model is assessed using the model Chi-square statistic and its statistical significance that is presented in the Omnibus Tests of Model Coefficients Table.

It measures the differences between -2LL with all the predictor variables included in the Equation and -2LL with only the constant in the equation. The improvement in the model is also shown in the Classification Table that will now indicate that the model is predicting the outcome variable more accurately.

The most crucial output of the analysis is the Variables in the Equation Table simply because it presents estimates for the coefficients for the predictors included in the model. Information presented includes the *b*-value (*i.e.* the change in the logit of the outcome variable associated with a one-unit change in the predictor variable). The logit of the outcome is the natural logarithm of the odds of the outcome variable occurring. The Variables in the Equation Table also presents the Wald Statistics, which has a Chi-square distribution and indicates whether or not the *b*-coefficient for that predictor is significantly different from zero (*i.e.* $p < .05$). If the coefficient is significantly different from zero (*i.e.* $p < .05$), it implies that the predictor is making a significant contribution to the prediction of the outcome variable. However, if the coefficient is not significantly different from zero (*i.e.* $p > .05$), then the assumption is that the predictor variables are not making significant contribution to the prediction of the outcome.

Another important element of the Variables in the Equation table is $\exp b$ (Exp (B)). Exp B is crucial to the interpretation of the logistic regression analysis. It is an indicator of the change in odds resulting from a unit change in the predictor. It is similar to the *b*-coefficient in the logistic regression but without a logarithmic transformation. If the value of Exp B is greater than 1, then it indicates that as the predictor increases, the odds of the

outcome occurring increases. Conversely, if the value of Exp B is less than 1, then it implies that as the predictor increases, the odds of the outcome occurring decreases. The Variables in the Equation Table also presents the Confidence Interval associated with the estimation of Exp B.

8.3 Using Turnover Growth Measure as the Dependent Variable

8.3.1 Results of the Entrepreneurial Characteristics Sub-model

The logistic regression analysis on the Entrepreneurial Characteristics Model did not isolate any significant variables distinguishing rapid-growth firms from slow-growth firms even in the initial model with only the constant included in the model. Consequently, in this research, a multivariate model of entrepreneurial characteristics does not isolate factors that could be used to explain the differences between rapid-growth and slow-growth small businesses based on the turnover growth measure.

8.3.2 Results of the Firm Characteristics Sub-model

With only the constant included in the model, -2 log likelihood was 123.107. Although the “Variables not in the Equation” table shows that LEGFORM is significant ($p = 0.036$), the residual Chi-square statistic of 6.945 is insignificant at $p < .05$. With the inclusion of the independent variables, - 2 log likelihood declined to 114.158 however the model Chi-square of 8.949 was not significant at $p < 0.05$. The Wald statistic in the “Variables in the Equation” show that none of the b -coefficients for the independent variables is significant, not even LEGFORM. The results show that, in this research, a multivariate model of firm

characteristics does not isolate significant variables that could be used to explain the differences between rapid-growth and slow-growth small firms.

8.3.3 Results of the Strategic Factors Sub-model

When only the constant was included in the model, -2 log likelihood was 115.898. The “Variables not in the Equation” table reports a residual Chi-square statistic of 18.189 which is significant at $p < .05$. The statistic reveals that the coefficients for some of the independent variables excluded from the model *e.g.* STAFFTRG and EXPORT are significantly different from zero. This implies that these variables could make a significant contribution towards accounting for the differences between rapid-growth and slow-growth small firms.

With the inclusion of the independent variables, -2 log likelihood of the model is 95.565 indicating that the model is classifying rapid-growth and slow-growth firms more accurately. The model Chi-square statistic, which helps determine how much better the current model classifies the outcome variable, is 20.333 and is significant at $p < .05$. Overall, the current model is classifying rapid-growth and slow-growth firms significantly better than it was with only the constant included. This is evident in the classification table which now shows that the current model achieves 75% accuracy, in classifying rapid-growth and slow-growth small businesses, an improvement of over 70.8% accuracy achieved with only the constant included in the model. The Cox and Snell’s and Nagelkerke’s R square are .191 and .272 respectively.

The Wald statistic presented in Table 8.1 above confirms that the b -coefficients for STAFFTRG, NPDTFREQ, and EXPORT are significantly different from zero (*i.e.* $p < .05$). This implies that these three independent variables significantly contribute towards accounting for the differences between rapid-growth and slow-growth firms. The exp b values in the table represent the change in odds.

Exp b values for STAFFTRG and NPDTFREQ are less than 1 implying that they are more associated with slow growth. The results conclude that firms with workforce training are 13.8 times more likely to be slow-growth firms than those without workforce training, while those with more frequent product development are 1.6 times more likely to be slow-growth firms than those with less frequent product development. Conversely, exp b for EXPORT is greater than 1 implying that, the odds of becoming a rapid-growth firm increase when it exports. Specifically, firms that export are 3.3 times more likely to be rapid-growth firms than those which do not export.

Table 8.1 also provides the confidence interval for exp b . It shows that there is a 95% chance that the actual exp b value for STAFFTRG is between 0.011 and 0.494. Similarly, there is a 95% chance that exp b for NPDTFREQ is between 0.390 and 0.980 while that of EXPORT is between 1.061 and 10.223 leaving only a 5% chance that the values miss these ranges.

8.3.4 Results of the Environmental Factors Sub-model

The “Variables not in the Equation” table reports a residual Chi-square statistic of 8.288 which is not significant at $p < .05$ even though the presence or absence of a trade

union (TUNION) is significant at $p < .05$. With only the constant included in the model, -2 log likelihood was 120.528, and declines to 111.320 with the inclusion of the other independent variables. The classification table shows no change in the accuracy of the model. The model Chi-square of 9.208 is insignificant at $p < .05$. The Wald statistic in the “Variables in the Equation” shows that none of the b -coefficients for the independent variables is significant, not even TUNION. The results show that, in this research, a multivariate model based on environmental factors does not identify significant independent variables that could be used to explain the differences between rapid-growth and slow-growth small firms.

8.3.5 Results of the Cultural model

The “Variables not in the Equation” table reports a residual Chi-square statistic of 11.021 that is not significant at $p < .05$. The results show that, a multivariate model based on cultural factors does not identify key variables that could be used to differentiate rapid-growth small firms from slow-growth firms.

8.3.6 Results of the Combined Variable Model

The logistic regression analysis using a combination of all the independent variables terminated without a solution.

8.3.7 Results of the Significant Variables Model

The “Variables not in the Equation” table reports a residual Chi-square statistic of 35.262 which is significant at $p < .001$. The statistic reveals that the coefficients for some

of the independent variables not in the model are significantly different from zero implying that these variables, if included in the model would improve its predictive power. These include EDUQUA, SKILLS3, SKILLS5, STAFFTRG, EXPORT, TUNION, MNVSTMNT and MPBASSOC.

When only the constant was included in the model, -2 log likelihood was 113.069. However, with the inclusion of the significant independents, -2 log likelihood declines to 68.308 implying that the model is predicting rapid-growth and slow-growth firms more accurately. The model Chi-square statistic is 44.761 and is significant at $p < .001$. Overall, the new model predicts rapid-growth and slow-growth firms significantly better than with only the constant included. This is evident in the classification table that now shows that the model achieves 81.5% accuracy in classifying rapid-growth and slow-growth small businesses, an improvement over the 69.6% originally achieved when only the constant was included. The Cox and Snell's and the Nagelkerke's R square are .385 and .545 respectively.

The Wald statistic presented in Table 8.1 confirms that the b -coefficients for EXPORT and TUNION are significantly different from zero (i.e. $p < .05$, implying that these two independent variables significantly contribute to differentiating between rapid-growth and slow-growth firms. Exp b values for EXPORT and TUNION are both greater than 1 implying that these independent variables were associated with rapid-growth firms. The results conclude that exporting firms were 9.6 times more likely to be rapid-growth firms than those which produce solely for the local market. Similarly, those with a trade union

presence were 33.8 times likely to be rapid-growth firms than those without trade union presence. The table shows that there is a 95% chance that the actual $\exp b$ value for EXPORT is between 2.08 and 44.64. Similarly, there is a 95% chance that $\exp b$ for TUNION is between 2.53 and 449.95 leaving only 5% chance that the values miss these ranges.

8.4 Using Employment Growth Measure as the Dependent Variable

8.4.1 Results of the Entrepreneurial Characteristics Sub-model

The “Variables not in the Equation” table reports a residual Chi-square statistic of 15.805 which is not significant at $p < .05$. The statistic however reveals that the coefficient of MOVOPP is significant ($p = 0.005$). With only the constant included in the model, $-2 \log$ likelihood was 83.207, and declines to 68.308 implying some improvement in the predictive power of the new model. The classification table shows that the new model achieves 77.6% accuracy compared to 76.3% when only the constant is included. The Cox and Snell’s and the Nagelkerke’s R square are .229 and .344 respectively.

The model Chi-square statistic when the independent variables are included is 19.734 and not significant at $p < .05$. The Wald statistic presented in Table 8.2 however shows that the b -coefficient for MOVOPP remains significant ($p = 0.017$) implying that it significantly contributes to differentiating between rapid-growth and slow-growth firms. $\exp b$ values for MOVOPP is greater than 1 implying that entrepreneurs who started their firms based on market opportunities as a motivation are likely to be associated with rapid-growth firms. These firms were 3.6 times likely to be rapid-growth firms and there is a 95% chance that the actual $\exp b$ value for MOVOPP is between 1.256 and 10.329. The

findings affirm that MOVOPP is a significant differentiator between rapid-growth and slow-growth small firms.

8.4.2 Results of the Firm Characteristics Sub-model

The “Variables not in the Equation” table reports the residual Chi-square statistic as 6.894 which is not significant at $p < .05$. The results reveals that, all the coefficients for the independent variables not in the model are insignificant therefore none of them could significantly contribute to the classification power of the model. Consequently, in this research, a model based on the characteristics of the firm cannot isolate significant factors that could be used to explain the differences between rapid-growth and slow-growth small businesses based on the employment growth measure.

8.4.3 Results of the Strategic Factors Sub-model

The “Variables not in the Equation” table reports the residual Chi-square statistic as 8.326 which is not significant at $p < .05$. The results reveal that all the coefficients for the independent variables not in the model are insignificant therefore none of the variables excluded from the model could make a significant contribution to its classification power. The finding suggests that in this research, a multivariate model based on the characteristics of the firm, cannot identify significant factors that can be used to account for the differences between rapid-growth and slow-growth small businesses based on the employment growth measure.

8.4.4 Results of the Environmental Factors Sub-model

The “Variables not in the Equation” table reports the residual Chi-square statistic as 1.959 which is not significant at $p < .05$. The results reveal that none of all the coefficients for the independent variables not in the model are significant and thus would not significantly contribute to the classification power of the model. The results of the logistic regression show that in this research, a multivariate model based on environmental factors is not a good differentiator of rapid-growth and slow-growth small businesses based on the employment growth measure.

8.4.5 Results of the Cultural factors model

The “Variables not in the Equation” table reports a residual Chi-square statistic of 9.164 which is not significant at $p < .05$. The results, however, reveal that the coefficient of ETHNICOR is significant ($p = 0.05$). With only the constant included in the model, -2 log likelihood was 92.655 and declines to 80.401 implying some improvement in the predictive power of the new model. The classification table shows that the new model achieves 83.3% accuracy compared to 81.3% when only the constant is included. The Cox and Snell’s and the Nagelkerke’s R square are .092 and .148 respectively.

The model Chi-square statistic when the independent variables are included is 9.254 and not significant at $p < .05$. The Wald statistic presented in Table 8.2 however shows that the b -coefficient for ETHNICOR remains significant ($p = 0.015$) implying that it significantly contributes to differentiating between rapid-growth and slow-growth firms. The Exp b value for ETHNICOR is less than 1 implying that it correlates negatively with

rapid-growth firms. The results conclude that, firms owned by Africans were 0.15 times likely to be rapid-growth firms than those owned by non-Africans. In other words, firms owned by non-Africans were 6.67 times likely to be rapid-growth firms than those owned by Africans. The results further show that there is a 95% chance that the actual exp b value for ETHNICOR is between 0.033 and 0.686. The findings affirm that ETHNICOR is a significant differentiator between rapid-growth and slow-growth firms.

8.4.6 Results of the Combined Variable Model

The “Variables not in the Equation” table reports the residual Chi-square statistic as 41.158 which is not significant at $p < .05$. The results reveal that all the coefficients for the independent variables, with the exception of MOVOPP and MOVDEMP, are not significant, therefore none of the variables excluded from the model could significantly contribute to the classification power of the model. The analysis was terminated because a final solution could not be found.

8.4.7 Results of the Significant Variables Model

The “Variables not in the Equation” table reports a residual Chi-square statistic of 17.439 which is significant at $p < .05$. The statistic reveals that the coefficients for some of the independent variables not in the model are significantly different from zero implying that these variables if included in the model would improve its predictive power. These include SKILLS3 and MOVOPP.

When only the constant was included in the model, -2 log likelihood was 80.238. However, with the inclusion of the independent variables, -2 log likelihood declines to 59.721 implying that the model is predicting rapid-growth and slow-growth firms more accurately. The model Chi-square statistic is 20.562 and not significant. Overall, the new model predicts rapid-growth and slow-growth firms better than with only the constant included. This is evident in the classification table that now shows that the model achieves 85.3% accuracy in classifying rapid-growth and slow-growth small businesses, an improvement over the 77.3% when only the constant was included. The Cox and Snell's and the Nagelkerke's R square are .385 and .545 respectively.

The Wald statistics shown in Table 8.2 above confirm that the *b*-coefficient for MOVOPP is significant implying that this variable contributes to the improvement in the model and to the prediction of rapid-growth and slow-growth firms. The $\exp b$ values for MOVOPP is greater than 1 implying that it correlates positively with rapid-growth firms. The results suggests that firms whose owner/managers are motivated by market opportunities in starting their businesses are 2.9 times more likely to be growth firms. The table shows that there is a 95% chance that the actual $\exp b$ value for MOVOPP is between 1.00 and 8.56. The findings confirm that MOVOPP is a significant differentiator between rapid-growth and slow-growth firms in the Significant Variable Model based on the employment growth measure.

8.5 Conclusions

The logistic regression analysis isolates some independent variables that are significant in explaining the differences between rapid-growth and slow-growth small businesses in Ghana. These independent variables for each sub-model analysed together with their significance values are presented in Table 8.3 below. The Entrepreneurial Characteristics Sub-model and the Cultural Factors Sub-model based on the employment growth measure each identified one variable - MOVOPP and ETHNICOR respectively - as significant variables in explaining the differences between rapid-growth and slow-growth small firms.

The significant variables model isolated three significant differentiating variables. The model based on turnover growth measure isolated EXPORT and TUNION as key explanatory factors between rapid-growth and slow-growth firms while the employment growth measure identified MOVOPP. The Strategic Factor Sub-model appears to be an important model in isolating significant factors that could be used to explain the differences between rapid-growth small businesses and the slow-growth ones. The model based on the turnover growth measure identified three significant explanatory variables. These were STAFFTRG, NPDTFREQ, and EXPORT. The next chapter discusses in detail the results of this research.

Table 8.3: Significant Independent Variables Differentiating Rapid-Growth Firms from Slow-Growth Firms using Logistics Regression Analysis

Model	Independent Variable	Turnover Growth Measure Sig Values	Employment Growth Measure Sig Values
Owner/Manager Sub-model	Perception of a market opportunity (MOVOPP)	<i>Ns</i>	.005
Strategic Factors Sub-Model	Workforce training (STAFFTRG)	.007	<i>ns</i>
	New product innovation (NPDTFREQ)	.041	<i>ns</i>
	Exporting (EXPORT)	.039	<i>ns</i>
Cultural Factors Sub-model	Ethnic Origin (ETHNICOR)	<i>Ns</i>	.015
Significant Variables Model	Perception of market opportunity (MOVOPP)	<i>Ns</i>	.05
	Exporting (EXPORT)	.004	<i>Ns</i>
	Unionised staff (TUNION)	.008	<i>Ns</i>

9 DISCUSSION

9.1 Introduction

As outlined in Section 1.2 of Chapter One, the research presented in this thesis has its origins in two basic issues. First, why do some small firms succeed and grow while others do not? Second, what are the characteristics that distinguish rapid-growth small firms from slow-growth firms in the manufacturing and services sectors in Ghana? The detailed research questions were specified as follows:

- a) What entrepreneurial characteristics discriminate between rapid-growth and slow-growth small businesses in Ghana?
- b) What firm characteristics discriminate between rapid-growth and slow-growth small businesses in Ghana?
- c) What strategic factors discriminate between rapid-growth and slow-growth small business growth in Ghana?
- d) What environmental factors discriminate between rapid-growth and slow-growth small businesses in Ghana?
- e) What cultural factors discriminate between rapid-growth and slow-growth small business in Ghana?
- f) Overall, what key factors are important for growth among small businesses in Ghana?

To answer these questions, a random sample of small businesses was selected and studied, out of which 107 provided complete information could be analyzed. The small

businesses were assessed against a multitude of factors to identify those that were associated with the different growth patterns. The single-variable Mann-Whitney test for non-normal data and Chi-square test for categorical data was used to test the hypotheses and also identify those significant factors associated with rapid-growth or slow-growth firms. The analysis was complemented with a logistic regression to isolate those factors that were significant in explaining the differences between rapid-growth and slow-growth firms in a multivariable setting. This chapter discusses the findings of these analyses.

9.2 Discussions of Findings in Relation to Entrepreneurial Characteristics

The single-variable test based on the turnover growth measure identified three significant variables differentiating rapid-growth firms from the slow-growth ones. These were university education, production skills and research and development skills. The research found that university graduates were more likely to be associated with rapid-growth firms. The finding appears to suggest that university education equipped entrepreneurs in Ghana with skills that made them more successful than their non-university graduate counterparts and supports the views of Sapienza and Grimm (1997) and Watson *et al.* (2003) that important entrepreneurial skills are enhanced through higher education. It also affirms the findings of Johnson (1991) and Jones (1991) who also established a positive relationship between education and growth.

Contrary to the notion that, in many developing countries, small firms generally have less-educated owners and employees when compared to larger firms (Orlando and Pollack, 2000; Soderbom and Teal, 2001), most entrepreneurs in Ghana in the formal sector have a

university education. A little over 80% of respondents indicated that they were university graduates. More importantly, like Kantis *et al.* (2004) cited in Nichter and Goldmark (2009), who found that six out of every ten Latin American entrepreneurs with high-growth firms were university graduates, Ghanaian entrepreneurs among rapid-growth firms based on the turnover measure were university graduates. For future research, it might be interesting to know what Ghanaian entrepreneurs typically graduate in.

The research found that entrepreneurs with production skills were found to be associated with slow-growth firms based on the turnover growth measure. These entrepreneurs appear to be more concerned with production rather than how to market their products. It also found that entrepreneurs with research and development skills were more likely to establish rapid-growth firms. These finding appears to suggest that the entrepreneur's skills in product innovation, especially to satisfy client needs, results in sales growth.

The employment growth measure also identified other entrepreneurial characteristics that differentiated rapid-growth firms from slow-growth firms. In terms of motivation, the research identified the perception of a market opportunity that is a positive motivational factor as significantly associated with rapid-growth firms. The finding corroborates that of Kinsella *et al* (1993) and Barkham (1992) who also found a positive relationship between the growth of a firm and the existence of positive motivations. The findings on motivation appear to suggest that small businesses established by entrepreneurs who are motivated to tap into market opportunities are likely to be rapid-growth firms.

The research on motivation based on the employment growth measure identified threat of unemployment and actual unemployment, which are negative motivational factors, as significantly associated with slow-growth firms. The finding suggests that the threat of unemployment and actual unemployment are not sufficient reasons to start a small business if appropriate market opportunities do not exist. This finding is particularly interesting and relevant to policy makers since government schemes are often targeted at the newly unemployed.

The research on entrepreneurial skills based on the employment growth measure identified marketing skills and production skills as significant differentiators of rapid-growth and slow-growth firms. It found that entrepreneurs with relevant marketing skills were associated with rapid-growth small firms. The finding affirms that of Jones (1991) and Wynarczyk *et al.* (1993) who also found that entrepreneurs with marketing backgrounds were more likely to be associated with rapidly growing small businesses. On the other hand, entrepreneurs with production skills were associated with slow-growth firms. It appears these entrepreneurs tended to focus on production and reducing production cost so will be more willing to recruit fewer employees especially if the production process involves the use of machinery. It is worth noting that both the turnover growth measure and employment growth measure identified production skills as a significant differentiator between rapid-growth and slow-growth firms. It is however associated with slow-growth firms.

The turnover growth measure also identified the number of founders as a significant differentiator between rapid-growth and slow-growth firms thereby giving credence to the notion that new businesses started by a team will have access to greater resources; a broader diversity of viewpoints and opinion; more risk-bearing ability; and a broader array of ideas than those started by individuals (Watson *et al.*, 2003; Barkham, 1994). For Barkham (1994), larger teams possess more talent, resources and professional contacts than a sole entrepreneur. Intuitively therefore, it is expected that firms with multiple founders should grow faster than those with sole founders.

Based on the turnover growth measure, the research supported one hypothesis *i.e.* Graduates are more likely to establish and manage businesses associated with high growth potential than non-graduates, whilst the employment growth measure supported three hypotheses *i.e.*:

- (a) Entrepreneurs with “positive” motivations (*i.e.* perception of a market opportunity) are more likely to be associated with a business that subsequently grows rapidly, than those with “negative” motivations (*i.e.* Threat of unemployment and actual unemployment).
- (b) Businesses founded by more than a single individual are more likely to be associated with rapid growth than those founded by a single person since management of a firm requires a range of skills.
- (c) Individuals with marketing skills are more likely to be associated with rapid growth than individuals with other functional skills.

The logistic regression analysis based on the significant variables model and on the turnover growth measure initially isolated education, production skills and research and development skills as potentially important discriminators between rapid-growth and slow-growth firms. These were however rejected as significant in the subsequent analysis and the general conclusion was that there was no entrepreneurial characteristic based on the turnover growth measure that was significant in explaining the difference between rapid-growth and slow-growth firms. However, the logistic regression analysis based on employment growth measure established that perception of a market opportunity as a significant differentiator between rapid-growth and slow-growth small firms in Ghana thereby affirming the findings of the single variable test.

Surprising, the research did not establish any significant association between previous management experience and industry specific experience. This is contrary to the findings of Singer (1995) who posits that prior entrepreneurial experience is one of the most consistent predictors of future entrepreneurial performance and Zhang *et al.* (2008) who established a significant relationship between prior entrepreneurial experience and rapid-growth.

The findings relating to prior industry specific experience disputes the intuitive notion that individuals who establish a business in the same sector as one in which they previously worked would have developed a good expertise and experience on the acceptable norms and best practices in that sector and would therefore transfer these to their new businesses to facilitate rapid growth. It appears that the main issue is whether

the entrepreneurs' past experience involved success or failure. If the experience was associated with successful firms, then the entrepreneurs were more likely to transfer best practices that foster rapid growth. However, if the experience was associated with failing firms, then the entrepreneurs were more likely to transfer poor working practices.

Although Bosma *et al.* (2004), Barringer *et al.* (2005) and Zhang *et al.* (2008) affirm that entrepreneurs with relevant prior industry experience are associated with rapidly growing firms, this research appears to support Cooper (1993) and Storey (1994) who posit a non-existent or even a negative relationship between prior work experience and firm growth.

Unexpectedly as well, the research found a non-existent relationship between gender and firm growth rates thereby opposing the liberal feminist theory which suggests that small businesses run by women will perform poorer than those run by men because women are openly discriminated against (for example lenders) and/or deprived of important resources such as business education. Ghanaian women entrepreneurs appear equally competent as their male counterparts to run successful businesses. They also appear equally willing to expand their businesses just as their male counterparts contrary to the belief that they may intentionally keep their businesses small to avoid losing control through dilution of their power from new equity investment (Still, 2005; Cliff, 1998) or avoid conflict with family responsibilities (England and McCreary, 1987).

9.3 Discussions of Findings in Relation to Firm Characteristics

The research based on the turnover growth measure, identified the legal form of the firm as the only significant variable differentiating rapid-growth firms from slow-growth firm. The finding, however, appears to suggest that limited liability companies were more likely to be found among slow-growth firms when compared to partnerships or sole proprietorships. An overwhelming majority of respondents (86%) indicated that their firms were limited liability companies. The finding did not corroborate that of Harhoff *et al.* (1998), Almus and Nerlinger (1999) and Davidsson *et al.* (2002) who all found that limited liability firms grow faster than unlimited liability firms.

Although the finding that limited liability companies were more likely to be associated with slow growth is unexpected, it probably lays the foundation for exploring whether or not limited liability companies will rather remain small in order to manage the payment of taxes. In Ghana, formalized companies (especially registered limited liability companies) bear the blunt of tax collection from the authorities due to the difficulty of accessing the informal sector. Snodgrass and Biggs (1996) argue that although informal small businesses may be able to circumvent government regulations and taxation, as they grow, they risk being more visible and this creates the disincentives for them to expand beyond a certain size. It might be worth exploring if this assertion extends to formalized small businesses in some developing countries such as Ghana. Firms may want to avoid visibility to the tax-paying authorities.

The employment growth measure did not identify any significant variable that discriminated between rapid and slow-growth firms. Rather unexpectedly, based on the turnover and employment growth measures, the research found that younger firms were equally likely to be associated with rapid growth as older firms. This contradicts the findings of Parker (1995), Mead and Liedholm (1998), Variyam and Kraybill (1992) and Heshmati (2001) who all associated younger firms with high growth rates. Interestingly, the research supported Gibrat's law, which, in principle, assumes that the growth of a firm, in any given period of time, is independent of the size at the beginning of the period. It thus affirmed similar findings by Acs and Audretsch (1990), Kumar (1985) and Chen *et al.* (1985).

The research did not support any hypotheses relating to the characteristics of the firm. In addition, the logistic regression analysis did not isolate any significant characteristic that could be used to account for the differences between rapid-growth and slow-growth. Even though the analysis initially isolated legal form as a possible discriminator between rapid-growth and slow-growth firms, it was rejected in subsequent analysis as not significant.

9.4 Discussions of Findings in Relation to Strategic Factors

The research based on the turnover growth measure, identified new product innovation as a significant variable discriminating between rapid-growth firms and slow-growth firms. Interestingly, however, the research found that frequent product innovations were more associated with slow-growth firms contradicting the findings of Barringer *et al.* (2005) and Zhang *et al.* (2008) who both found a significant relationship between product innovation

and firm growth. This finding appears to suggest that unsuccessful firms tended to innovate more frequently in the hope of producing something that is more acceptable. The lack of product acceptability reflects in slow growth in sales.

The finding casts doubt on the competence of the small firms to innovate, especially in the light of the related finding that the presence or absence of research and development units did not have any significant bearing on a firm's growth category. It is, however, surprising that the present research earlier on established that entrepreneurs with research and development skills were associated with rapid-growth firms. Maybe, these entrepreneurs are good at the first but not subsequent, innovations. The impact of product innovativeness on firm growth calls for further investigation.

The research based on the turnover growth measure also identified workforce training and exporting as important in discriminating between rapid-growth and slow-growth firms. The research found that firms that had a good workforce training strategy were more likely to be associated with rapid-growth firms and corroborates the finding of Barringer *et al.* (2005). This finding appears to suggest that work force training was important for equipping staff with skills that fostered growth in sales. These are likely to include skills in customer service. The research also found that firms that produced for the local market were more likely to be associated with rapid growth and appears to reflect the poor export competitiveness of small firms in Ghana in the international markets.

The employment growth measure identified three significant factors discriminating between rapid-growth and slow-growth firms. These were: work force training, external equity (post-formation) and new production innovation. The research appears to provide compelling evidence that work force training is a significant discriminator between rapid-growth and slow-growth firms. Surprisingly, access to external equity (post-formation) was rather more associated with slow-growth firms than rapid-growth firms. It therefore did not support Marris and Wood (1971)'s assertion that financial resource constraints are the major limiting factor to firm growth. It appears that unsuccessful firms resort to raising more informal equity probably due to the difficulty of raising debt.

Unlike the findings based on the turnover-based measure, new product innovation was associated with rapid-growth firms based on the employment growth measure. It supports Marris and Wood's (1971) position that a firm's diversification into new products is not just an important vehicle of growth but also a major contributing factor to firm growth. The finding also collaborates that of Barringer *et al.* (2005) and Zhang *et al.* (2008) who found a significant relationship between product innovation and firm growth. The research findings appear to suggest that more successful firms innovate rapidly, and hire more staff to produce and market their products.

The research supported one hypothesis based on the turnover growth measure *i.e.* Businesses with a well-developed, work-force training program are more likely to be associated with rapid growth than those without such a program. It supported two hypotheses based on the employment growth measure *i.e.*:

- a) Businesses with a well-developed, work-force training program are more likely to be associated with rapid growth than those without such a program.
- b) Firms that frequently introduce new products on the market are more likely to be associated with rapid growth than those that introduce products less frequently.

The logistic regression analysis based on the turnover growth rate confirmed that work-force training, new product innovation and exporting were significant factors in explaining the differences between rapid and slow-growth firms. It, however, affirmed the findings based on the turnover growth measure that more frequent product innovation was associated with slow-growth firms rather than with the rapid-growth ones. Consequently, it will be useful in further research to investigate the competence of small businesses especially in developing countries to successfully innovate giving the affirmation by both the single-variable and multi-variable tests.

Contrary to the findings of the research based on single-variable tests that work-force training was associated with rapid-growth firms, the logistic regression associated it with slow-growth firms. Similarly, the regression analysis associated exporting firms with rapid-growth instead of slow-growth postulated by the single-variable test. The findings are important in that both the single-variable and multi-variable tests confirm work-force training and exporting as significant discriminators between rapid-growth and slow-growth firms. Further research is needed to investigate their association with rapid-growth or slow-growth firms.

Two important unexpected findings of this research worth noting are the impact of the ability to raise external equity (post-formation) and strategic planning on firm growth. Contrary to the notion that the lack of financing is a major constraint to the growth of small firms, this research appears to suggest otherwise. Firms that were able to raise external equity (post-formation) were more associated with slow-growth casting doubts on the long-term viability of their operations.

The research also found that strategic planning was not a significantly factor in discriminating between rapid-growth and slow-growth firms supporting Ford *et al.* (2004) and Delmar and Shane (2004)'s suggestion that the relationship between business plans and actual firm performance is open to doubt. Planning a business and documenting it in a strategic or business plan, but not actual implementing it, does not result in a good firm performance. The research gives credence to Delmar and Shane (2004)'s assertion that firms could prepare business plans just as a symbolic exercise to please stakeholders and other parties. It will therefore be important to encourage small business entrepreneurs not only to prepare strategic plans but also to implement them.

9.5 Discussions of Findings in Relation to Environmental Factors

The research based on the turnover growth measure identified unionization as a significant variable accounting for the differences between rapid-growth and slow-growth firms. The research found that firms with unionized staff were 4.9 times likely to be slow-growth firms and appears to suggest that unionization diverts the attention of staff from pursuing the growth of the firm towards enhancing their own welfare. The finding affirms

the views of Acs and Audretsch (1990) who posit that unionization has a negative influence on the growth of SMEs.

The research based on the employment growth measure identified access to public or external aid as a significant differentiator between rapid-growth and slow-growth firms. Surprisingly, however, firms that had access to public or external aid were 2.9 times more likely to be among slow-growth firms when compared to those that did not have access to any public or external aid. The research appears to suggest that, contrary to expectation, public or external aid does not encourage small firms to grow and/or may not even be directed to firms with potential for growth. This finding in a way appears to align itself to the earlier finding that those entrepreneurs who were able to access equity (post-formation) were also associated with slow-growth firms.

Based on the turnover growth measure, the research supported only one hypothesis *i.e.* Firms with unions are more likely to be associated with slow growth than those that did not have unions. No hypothesis was supported based on the employment growth measure.

The logistic regression analysis based on the turnover measure and the significant variables model isolated unionization as a significant variable explaining the differences between rapid-growth and slow-growth. All the other sub-models on turnover and employment growth measures failed to identify any significant variables explaining the differences between rapid-growth firms and slow-growth ones. An unexpected finding with environmental factors was that public or external aid to small businesses in Ghana

could indeed be misdirected to the wrong companies. Given the earlier finding on strategic planning, it might be interesting to investigate the criteria for selecting companies for public or external aid and what specific actions or steps are taken later on ensure that these scarce resources are used wisely to grow the small firms that have been assisted.

9.6 Discussions of Findings in Relation to Cultural Factors

The research based on the turnover growth measure, identified frequency of management meetings as a significant variable discriminating between rapid-growth and slow-growth firms. The research however found that more frequent management meetings were associated with slow-growth firms rather than rapid-growth ones and appear to suggest that most of these meetings were ineffective in fostering the growth of the firm.

It also identified two significant differentiating variables namely the presence of a clear mission and vision statement and membership of a professional or business association. The test established that firms with the presence of a clear mission and vision statement were 3.4 times more likely to be associated with rapid-growth. This finding affirms those of Barringer *et al.* (2005) and Zhang *et al.* (2008) who also found that firms with a clear growth-oriented vision or mission statements were more likely to be rapid-growth firms compared to those without a clear mission and vision statement. Firms which belong to professional/business associations were also 3.6 times more likely to be rapid-growth ones underscoring the importance of networking in improving sales.

The research based on the employment growth measure identified two significant cultural factors discriminating between rapid-growth firms and slow-growth ones. The research found that non-African entrepreneurs were 2.8 times more likely to establish rapid-growth firms reflecting their skills and resourcefulness in entrepreneurship compared to their African counterparts. The research also found that firms in which the proportion of non-family members in management was in the majority were 2.3 times likely to be rapid-growth firms affirming the views of Gallo (1995) and Ibrahim *et al.* (2001) who recognize non-family managers as important stakeholders in family firms. A controlled representation of non-family members in management appears to facilitate an objective discussion of issues affecting the firm and the courage to take the hard decisions required to make the businesses successful.

Based on the turnover growth measure, the research supported two hypotheses:

- (a) Firms with clear vision and mission statements are more likely to be associated with rapid growth than those without such statements.
- (b) Firms that are members of professional or business associations are more likely to be associated with rapid growth than those that are not members of professional or business associations.

Similarly, the employment growth measure supported two hypotheses:

- (a) Firms owned by non-Africans are more likely to be associated with rapid growth than those owned by Africans.

- (b) Firms in which non-family members are a majority in management are more likely to be associated with rapid growth than those in which family members are in the majority.

The logistic regression analysis based on the turnover growth measure did not isolate any significant cultural factors that were useful in explaining the differences between rapid-growth and slow-growth firms. However, the analysis based on employment growth measure affirmed ethnic origin as a significant differentiator between rapid-growth and slow-growth small firms in Ghana. Firms owned by non-Africans were 6.67 times likely to be rapid-growth firms compared to those owned by Africans.

9.7 Discussions of Findings in Relation to Significant Variables

The multivariate logistic regression analysis of the significant variables based on the turnover growth rate concluded that a small firm's strategy to export or not to export, and the presence or absence of trade unions were the two most critical factors which differentiated rapid-growth firms from the slow-growth ones. The analysis concluded that small firms that exported were 9.6 times likely to be non-growth firms compared to those which produced for the local market. It also found out that those firms with trade unions were 33.8 times likely to be non-growth firms than those without trade unions. As mentioned earlier on, the findings underscore the un-competitiveness of small firms in the export sector adversely affecting their ability to grow turnover. Trade unions also appear to unduly divert attention from business growth and may not be appropriate for small businesses.

The logistic regression analysis of the significant variables based on the employment growth rate identified only motivation based on the perception of a market opportunity as the single most important factor differentiating rapid-growth small firms from slow-growth ones. The analysis concluded that firms whose owners are motivated by the perception of market opportunities to start small businesses are 2.9 times likely to be rapid-growth firms compared those which start small businesses based on other motivations. This finding is interesting in that it underscores the important point that small businesses must not necessarily seek to compete with larger businesses but instead identify their own market niches where they may have better comparative advantages.

9.8 Summary of Discussions

In some aspects, the research findings support what was hypothesized based on theoretical arguments, theories or the findings of previous research, even though there were several instances where the findings were contrary to expectations. The overall aim of any research is to either support or dismiss our premises. It is important to note that it is always a challenge providing scientific evidence as a proof of one's premise. This research, within its limitations, established findings that supported or dismissed current premises. However, what is most important is the extent to which the findings are useful in addressing the two fundamental research issues *i.e.* why do some small firms succeed and grow while others do not? What are the characteristics that distinguish rapid-growth small firms from slow-growth firms in the manufacturing and services sectors in Ghana?

We conclude with some confidence that rapidly growing small firms in Ghana are those that are started for the positive reason that the entrepreneurs perceive a market opportunity. These entrepreneurs identify and take advantage of market opportunities. Small businesses formed based on other motivations do not necessarily end up as rapid-growth firms. Entrepreneurs of rapidly growing firms in Ghana are more likely to be university graduates. Although this finding needs to be further investigated, it appears to suggest that entrepreneurial skills are enhanced through higher education (Watson *et al.*, 2003; Sapienza and Grimm, 1997). Consequently, it might be useful for entrepreneurs who desire to rapidly grow their firms, to seek to upgrade themselves by acquiring new skills, especially marketing skills, through higher education. The research found marketing skills to be associated with entrepreneurs of rapidly growing firms.

Rapidly growing firms in Ghana are also more likely to be those firms with multiple founders, supporting the premise that such a team provides the firm with access to greater resources; a broader diversity of viewpoints and opinions and broader array of ideas among others (Watson *et al.* 2003; Barkham, 1994). Although not investigated in this research, traditionally, it appears that Ghanaian entrepreneurs shy away from teaming up with other potential entrepreneurs due to the lack of trust, preferring instead to team up with family members if there was ever a need to do so. This finding is useful in encouraging them to explore collaboration with other potential entrepreneurs who have skills and resources that can complement theirs.

Rapidly growing firms in Ghana were also more likely to be those that provide training to their work force. There was an overwhelming support for this based on the empirical evidence in this research. As Klass *et al.* (2009) posit, human capital programs designed to affect workforce skill, motivation, and performance have been found to positively affect organisational performance, even though traditionally, these programs have been viewed as an expensive undertaking by the small business sector thereby limiting their use. This research appears to suggest that Ghanaian entrepreneurs value training and are willing to develop the skills of their work force. This is particularly important in developing countries such as Ghana with limited infrastructure for vocational and technical training that are important for middle-level management staff in small businesses.

The impact of new product development among Ghanaian entrepreneurs is an interesting one given the contradictory finding between the turnover growth measure and employment growth measure and requires further investigation. Evidence from this research appears to suggest that firms that are able to frequently introduce new products on the market hire more employees, expectedly to produce and market them. On the other hand, as expected, those that are unable to introduce new products suffer from reduced sales and market share. Marris and Wood (1971) argue for the need for a firm to diversify into new products because it is not just an important vehicle of growth but also a major contributing factor to firm growth. It is therefore imperative for Ghanaian entrepreneurs seeking to rapidly grow their firms to acquire the skills of new product development.

This research finds that rapidly growing firms in Ghana are more likely to be those producing and serving the domestic market. Small firms in Ghana appear to lack the requisite capabilities to meet the demands of the internationally competitive export market. It may be prudent for small firms to first aim at successfully marketing their products in the domestic market before venturing into the international markets. As expected, trade union activities, in general, do not promote rapid-growth among small firms and should be carefully considered when it is being proposed for such firms.

Rapidly growing firms in Ghana appear to be associated with those with a clear vision and mission statement. This is in line with the views of Kim and Mauborgne (1997) that a growth-oriented vision, whether it is communicated through a vision, mission or values statement, emphasizes the importance of growth to the firm and ensures that decisions are made bearing this in mind. Consequently, Ghanaian entrepreneurs seeking to rapidly grow their businesses should learn to articulate their growth aspirations persuasively in a clear mission and vision statement.

The empirical findings in this research give credence to the importance of non-family members in management. Rapidly growing small firms in Ghana were more likely to be associated with those that had non-family members in the majority in management. Consequently, they were able to tap into other skills relevant for firm growth but which were not present in the family. The finding supports Gallo (1995) and Ibrahim *et al.* (2001) who recognize non-family members as important stakeholders in family firms.

This research also found that rapidly growing firms in Ghana were more likely to be those that are members of professional or business associations giving credence to the network theory. For Watson (2007) network theory suggests that the ability of business owners to obtain access to resources not under their control in a cost effective-way through networking can influence the success of their business ventures. This is demonstrated in the case of the Ghanaian firms involved in this research.

The research also identified some unexpected but interesting findings. For instance, contrary to established premise, the research found that firms that raised external equity (post-formation) were associated with slow-growth. It may be that unsuccessful firms that are unable to raise debt due to poor financial performance resort to raising more informal equity. This finding has some implications for the general trend of advocating grant funding to support the development of small businesses.

Small businesses with non-African entrepreneurs (mostly Lebanese and Indians) in Ghana were more likely to be associated with rapid-growth compared to businesses with African counterparts, mostly Ghanaians. It appears that non-Africans have certain skills or expertise in managing small firms that is worth emulating by Africans. This finding requires thorough investigation to identify those skills or expertise and how they could effectively be transferred to African entrepreneurs. Finally, similar to the findings of access to external equity (post-formation), small businesses which had access to public or external aid were associated with slow-growth firms once again, casting doubts on the effectiveness of some of these aid programs directed at small businesses.

The next chapter concludes this thesis with a discussion of the implications of the research for small business entrepreneurs and policy makers. The chapter also discusses the limitations of the study and makes recommendations for further research.

10 IMPLICATIONS, LIMITATIONS AND RECOMMENDATIONS

10.1 Introduction

This chapter concludes this thesis. On the basis of the research findings, the chapter discusses implications for future entrepreneurs, development partners, practitioners and policy makers involved in SME development. It also discusses the limitations of the research and makes recommendations for future research.

10.2 Implications for Small Business Entrepreneurs

An important and critical finding in the research is the fact that small firm entrepreneurs and the choices they make determine the growth pattern of their firms. The fact that they determine the future of their firms should encourage them to act in the best interests of all stakeholders. It should be most assuring for entrepreneurs in general to know that growth of their firms is not the result of some deterministic factors or influences outside of their control but that, it is largely influenced by their conscious decision. Indeed, the small business entrepreneur can take actions that could result in their firms growing rapidly. The research affirms that starting a small business in Ghana and probably in other developing countries, based on the perception of market opportunities, is more likely to result in rapid-growth and success than when doing so more from the threat of unemployment or actual unemployment. Consequently, future entrepreneurs should carefully evaluate the motivations driving their desire to establish small businesses before embarking on it.

The research highlights university education and marketing skills as two personal attributes of entrepreneurs that foster rapid-firm growth in Ghana. It appears that a good

higher education provides entrepreneurs with some of the relevant analytical tools that are important for decision making, not discounting the value of networks that are often established at those levels. Marketing of a firm's products or services is a core function, and success in this is closely linked to firm growth. It is therefore important that small business managers strive to acquire this skill. It is again worth noting that what appears to drive small firm growth is the entrepreneur's ability to identify market niches and detect new business opportunities.

Workforce training was consistently identified as an important strategic factor differentiating rapid-growth from slow-growth firms. It is therefore important for the small business entrepreneur seeking to grow his/her business to provide adequate and relevant training and development opportunities for its staff. Staff with good career potential should be identified and supported through coaching and mentoring as well so that they can contribute effectively to the growth of their firms.

Empirical evidence from the research suggest that there is value in a team of multiple entrepreneurs coming together to found small businesses and, in so doing, sharing resources and diverse skills which can sometimes be critical to the success of these businesses. Entrepreneurs in Ghana and other developing countries should therefore embrace joint ventures especially from non-family members who have relevant resources to contribute to the team effort. In addition, entrepreneurs should encourage the participation of non-family members with diverse skills in the management of their firms.

The research supported the notion that non-family members could also be important stakeholders in small businesses either as potential investors or key management staff.

Entrepreneurs seeking to rapidly growth their business should articulate this clearly in a mission and vision statement and communicate this to all stakeholders especially their workforce. They should also seek active participation in professional and business associations. The networking opportunities which some of these associations provide could be cost-effective ways of them accessing resources not under their control. Finally, these entrepreneurs should learn to produce and introduce innovative products on the market that satisfy the needs of their clients. Doing so may require them to upgrade their research and development skills especially through higher education.

10.3 Implications for Policy Making

Small firm growth continues to be of interest to many stakeholders because of the perception that SMEs are the panacea to combating unemployment, especially in developing economies. Small businesses are also increasingly being viewed as able to create competitive economic environments because of their flexibility to adapt rapidly to changes and target market niches. Consequently, funding is often provided to all small firms without adequate effort to distinguish those that have better growth prospects and better use of the scarce resources.

Current Ghanaian policies targeted at small firms appear to focus on implementing support programs that provide these firms with increased resources especially risk capital

or that seek to enhance the ability of the firms to grow by providing training programs or tax incentives. The general belief is that, given these resources and abilities, small businesses will grow. This view however disregards the importance of the personal qualities of the entrepreneur or the importance of strategic factors associated with the firm's operation such as its ability to successfully introduce innovative products into the market.

This research has relevant implications for policy makers in Ghana because it provides some guidance on which small firms have a better chance to use the scarce financial resources to create employment or generate additional wealth. The empirical finding suggests that growth is based on the motivation of the small business entrepreneur and the decisions they make. Overall, personal qualities such as motivation, drive, attitudes especially towards learning and taking risk are more important than availability of funding and the economic environment in which small businesses operate. The research findings suggest that increasing availability or supply of funds to small firms *per se* would not lead to the creation of new jobs or additional wealth. It will only do so if motivations are properly aligned.

Policies aimed at supporting small businesses should rather focus on identifying those owners with the right motivations and capacity to grow instead of making funding and support available to all. Focus should be on understanding the individuals and what drives them rather than on what they want to do. Policies should create opportunities for networking and mentoring to enhance learning and acquisition of relevant skills and

expertise especially marketing and research and development. The research findings that firms with access to public or external aid or equity (post-formation) are among slow-growth firms and not rapid-growth firms, should alert policy makers to design appropriate monitoring procedures to evaluate and assess the impact of financial assistance packages that are often targeted at small business to address constraints relating to their access to finance.

10.4 Limitations of the Research

Like all research studies, this research has its limitations. The limitations generally result from a researcher's choice on what to do or not to do and, in general, centre on the choices regarding methodology, analysis and data collection methods. The most important hurdle of the study is ensuring that all important discriminating factors were included in the model. It is also to ensure that less important discriminating factors were excluded from the model so that it reflects reality without being too complex to analyse.

The first limitation of this study was the fact that it was limited to small businesses in Ghana and the response rate was low. Given the number of variables to be tested especially with the multivariable logistic regression, the number of actual responses was inadequate. One expects better results to be obtained with a larger sample size or fewer variables in relation to number of actual responses. Secondly, the study was cross-sectional and, therefore, in principle, difficult to empirically validate any causal effects. Thirdly, the sample did not include small businesses that actually failed so the results of this research

must be interpreted with caution. Addition of small business that failed because they grew too slowly, or did not grow at all, may have some impact on the findings.

Fourthly, the lack of a sufficient number of significant factors to explain the differences between rapid-growth and slow-growth firms when logistic regression analysis was performed on the data, leads one to the suspicion that not all discriminatory factors were included in the model. One may speculate that there appear to be other factors that are important for explaining the differences between rapid-growth and slow-growth which were not taken into consideration in the research. A fifth limitation was the data collection method used which limited the number of small firms that could actually be surveyed. The research would obviously have benefited from a larger sample given the number of variables that were being tested.

Finally, the findings of this research are limited to the Ghanaian experience even though some of the conclusions may apply to small firms in other developing countries especially in Sub-Saharan Africa.

10.5 Recommendation for Future Research

There are five main recommendations for future research on small firm growth. In the first place, it is recommended that future researchers make the effort to use larger samples. Overall, larger samples give a more representative view of the population. Secondly, future studies should be multi-country to determine if there are any inherent differences among the growth characteristics of small firms from different countries. Thirdly, different analytical

tools should be used to compare findings - for example, logistic regression and multiple discriminant analysis – to determine if there are differences in the key discriminating variables which will be identified. Fourthly, the researcher should make the effort to include in the research, explanatory factors other than those included in this research such as the entrepreneur's appetite for risk, the relative size of the firm's annual advertising budget and product or service branding, that could potentially explain the differences between rapid-growth and slow-growth firms.

In the fifth place, future studies should try to validate some of the findings of this research, for instance, the relationship of legal form to growth and whether or not tax considerations were preventing some entrepreneurs from rapidly growing their firms; the impact of product innovation on growth and whether small firms in general have the capacity and competency to successfully innovated; the impact of strategic planning on growth; and the impact of improved access to public or external aid or equity (post-formation) on growth. Finally, governments, especially in developing countries, should be urged to put in place appropriate mechanisms to collect and disseminate reliable statistics on small and medium firms in their countries.

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APPENDIX 1: PRE-TEST QUESTIONNAIRE

1. Which of these describe the main reason(s) for establishing your business?
 - a) Perception of a market opportunity
 - b) Desire to make money
 - c) Dissatisfaction with an existing employer
 - d) Threat of unemployment
 - e) Actual unemployment
 - f) Desire to guarantee a satisfactory income

2. Which of these best describes your highest educational qualification?
 - a) Primary education
 - b) Secondary education
 - c) Vocational/Technical
 - d) University-Graduate
 - e) University-Post graduate
 - f) Other (Please specify)

3. Did you ever work in management in your previous job(s)?
 - a) Yes
 - b) No

4. If yes, which of these categories best describes the number of years you spent in management in your previous job?
 - a) 1 – 5 years
 - b) 6 – 10 years
 - c) 10+ years

5. Was this business founded by one person?
- a) Yes
 - b) No
6. If you answered No in Question 5, tick the number of founders?
- a) 2 persons
 - b) 3 persons
 - c) 4 persons
 - d) More than 4 persons
7. Tick the skill(s) below which best describes yours?
- a) Marketing
 - b) Finance
 - c) Production
 - d) Personnel
 - e) Research and Development
 - f) Other (please specify)
8. Have you ever worked in a business in the same sector as this one?
- a) Yes
 - b) No

9. If you answered Yes to Question 8 above, which of these categories best describes the number of years you spent working in the sector?
- a) 1 – 5 years
 - b) 6 – 10 years
 - c) 10+ years
10. Please tick your gender
- a) Male
 - b) Female
11. Which of these categories best describes the age of your firm?
- a) 1 – 5 years
 - b) 6 – 10 years
 - c) 10+ years
12. Which of these best describes the sector in which you operate?
- a) Services
 - b) Manufacturing
13. Which of these best describes the legal form of your business?
- a) Limited Liability
 - b) Partnership
 - c) Sole Proprietorship

14. How many employees do you have?
- a) 1 – 30 employees
 - b) 31 – 100 employees
 - c) 101 – 300 employees
 - d) more than 300 employees
15. Is your firm affiliated with a bigger one?
- a) Yes
 - b) No
16. If you answered Yes to Question 15 above, please describe the nature of the affiliation?
- a) Subsidiary
 - b) Franchisee
 - c) Technical/Market Partnership
 - d) Other (please specify)
17. Do you have a formal workforce training program for your staff?
- a) Yes
 - b) No
18. Do you provide formal training to your key management staff?
- a) Yes
 - b) No

19. Did you obtain external equity (equity not from the original founder(s)) for your business?
- a) Yes
 - b) No
20. If you answered Yes to Question 19 above, please tick the level of external equity.
- a) Less than 25%
 - b) More than 25% but less than 50%
 - c) More than 50%
21. How will you describe the extent to which you use technology in your operations?
- a) Not at all
 - b) To some extent
 - c) To a very large extent.
22. Do you have a strategic plan for your business?
- a) Yes
 - b) No
23. If you answered Yes to Question 22 above, to what extent do you plan into the future?
- a) Less than 2 years
 - b) More than 2 but less than 5 years
 - c) More than 5 years.

24. Can I see a copy of your strategic plan?
- a) Yes
 - b) No
25. How often do you introduce new products on to the market?
- a) None
 - b) Twice a year
 - c) More than twice but less than five a year
 - d) More than five a year
26. Do you export?
- a) Yes
 - b) No
27. Do you have a unit dedicated to research and development?
- a) Yes
 - b) No
28. Do you have a partnership arrangement with any research institution?
- a) Yes
 - b) No
29. Do you have access to public or any other form of aid?
- a) Yes
 - b) No

30. If you answered Yes to Question 29 above, please indicate source of aid.
- a) Government
 - b) Donors
 - c) NGOs
 - d) International Organizations
 - e) Others (please specify)
31. What is the nature of the aid?
- a) Grant
 - b) Technical Assistance e.g. training
 - c) Equipment supply
 - d) Other (please specify)
32. Which of these best describes your feelings about the capital asset requirement, research and development as well as promotional expenditure required to start a business or operate in your sector?
- a) High
 - b) Medium
 - c) Low
33. Do you have an active union?
- a) Yes
 - b) No
34. Are you located in an industrial area or park?
- a) Yes
 - b) No

35. How will you describe technological changes in your sector compared to other sectors you are familiar with?
- a) Rapid change
 - b) Average change
 - c) Slow change
36. Are your operations hampered by restrictive fiscal and social policies such as taxation or industrial relations?
- a) Yes
 - b) No
37. If yes above, list three of such critical policies?
- a)
 - b)
 - c)
38. Are you non-African?
- a) Yes
 - b) No
39. If yes above, which of these best describes the region of your nationality?
- a) Asia
 - b) North America
 - c) South America
 - d) Europe
 - e) Middle East

40. Has any member of your family started a business before you?
- a) Yes
 - b) No
41. If you answered Yes to Question 40 above, which of these best describes the family member?
- a) Grandparent(s) (include grand uncles and aunts)
 - b) Parent(s) (includes uncles and aunts)
 - c) Brother(s) and sister(s)
 - d) None
42. Does your firm have written vision and mission statements?
- a) Yes
 - b) No
43. Do you have a Board that meets formally and regularly?
- a) Yes
 - b) No
44. How often does the Board hold formal meetings?
- a) Quarterly
 - b) Semi-annual
 - c) Annual
 - d) Not at all

45. Please tick which is most applicable. Non family members are in the on the Board.

- a) Majority
- b) Minority

46. Do you belong to a professional or business association?

- a) Yes
- b) No

47. Please state the name(s) of the association?

- a)
- b)
- c)

48. Do you belong to any community or social network?

- a) Yes
- b) No

49. Please list the name(s) of the networks?

- a)
- b)
- c)

50. Please complete the table below.

Year	Net Turnover (GHC' Millions)	No. of Employees
2005		
2004		
2003		
2002		
2001		
2000		
1999		
1998		
1997		
1996		

THANK YOU FOR YOUR ASSISTANCE. IT IS GREATLY APPRECIATED

❖ If you would be prepared to participate in a follow-up discussion, please give your contact details.

❖ If you wish to receive a summary of our findings, please supply your contact details.

Samuel Dzotefe: Tel: +233 24 4323138 e-mail: sdzotefe@ifc.org

APPENDIX 2: POST-TEST QUESTIONNAIRE

1. Which of these describe the main reason(s) for establishing your business? Kindly rate the importance of your reason by using a scale of 1 (Not Important) to 5 (Extremely Important).

Item	Not Important	Slightly Important	Important	Very Important	Extremely Important
Perception of a market opportunity					
Desire to make money					
Dissatisfaction with an existing employer					
Threat of unemployment					
Actual unemployment					
Desire to guarantee a satisfactory income					
Desire for personal development					
Other (Please specify)					

2. Which of these best describes your highest educational qualification?

- a) Primary education
- b) Secondary education
- c) Vocational/Technical
- d) University-Graduate
- e) University-Post graduate
- f) Other (Please specify)

3. Did you ever work in management in your previous job(s)?

Management here means that you were the head of the unit and supervised your subordinates to achieve the organization's goals.

- a) Yes
- b) No

4. If yes, which of these categories best describes the number of years you spent in management in your previous job?

- a) 1 – 2 years
- b) 3– 5 years
- c) 6 -10 years
- d) More than 10 years

5. Was this business founded by one person?

- a) Yes
- b) No

6. If you answered No in Question 5, indicate the number of founders.

- a) 2 persons
- b) 3 persons
- c) 4 persons
- d) More than 4 persons

7. Tick the skill(s) below which best describes your own.

- a) Marketing
- b) Finance
- c) Production
- d) Personnel
- e) Research and Development
- f) Other (please specify)

8. Have you ever worked in a business in the same sector as this one?

- a) Yes
- b) No

9. If you answered Yes to Question 8 above, which of these categories best describes the number of years you spent working in the sector?

- a) 1 –2 years
- b) 3 –5 years
- c) 6 - 10 years
- d) 10 years and above

10. Please tick your gender.

- a) Male
- b) Female

11. When was your enterprise formed?

12. Which of these best describes the sector in which your firm operates?

- a) Services
- b) Manufacturing

13. Which of these best describes the legal form of your business?

- a) Limited Liability
- b) Partnership
- c) Sole Proprietorship

14. How many full-time employees do you have?

- a) 1 – 5 employees
- b) 6 – 20 employees
- c) 21 – 50 employees
- d) 51 – 100 employees
- e) Greater than 100 employees

15. Is your firm affiliated with a bigger one?

- a) Yes
- b) No

16. If you answered Yes to Question 15 above, please describe the nature of the affiliation?
- a) Subsidiary
 - b) Franchisee or Licensee
 - c) Joint venture e.g. Technical or Market Partnership
 - d) Other (please specify)
17. Do you have a formal workforce training program for your staff?
- a) Yes
 - b) No
18. Do you provide formal training to your key management staff?
- a) Yes
 - b) No
19. Have you raised any extra external equity post-formation (equity not from the original founder(s) since the business was established), for your on-going business?
- a) Yes
 - b) No
20. If you answered Yes to Question 19 above, please tick the level of external equity.
- a) Less than 25%
 - b) More than 25% but less than 50%
 - c) More than 50%

21. How will you describe the extent to which you use electronic information technology in your operations?
- a) Not at all
 - b) To some extent
 - c) To a very large extent.
22. Do you have a strategic plan (different from the annual budget) for your business?
- a) Yes
 - b) No
23. If you answered Yes to Question 22 above, to what extent do you plan into the future?
- a) Less than 2 years
 - b) More than 2 but less than 5 years
 - c) More than 5 years.
24. If you do plan, can I see a copy of your strategic plan?
- a) Yes
 - b) No
25. How often do you introduce new products on to the market? New products means, any addition to your product range.
- a) None
 - b) Once a year
 - c) Twice a year
 - d) More than twice but less than five a year
 - e) More than five a year

26. Do you export?

- a) Yes
- b) No

27. If yes to Question 26 above, where is the principal market of your exports?

- a) Asia
- b) North America (U.S.A.)
- c) South America
- d) Europe
- e) Middle East and North Africa
- f) Sub-Saharan Africa
- g) Australasia

28. Do you have a unit dedicated to research and development?

- a) Yes
- b) No

29. Do you have a partnership arrangement with any research institution?

- a) Yes
- b) No

30. Do you have access to public or any other form of aid?

- a) Yes
- b) No

31. If you answered Yes to Question 29 above, please indicate source of aid.

- a) Government
- b) Donors
- c) NGOs
- d) International Organizations
- e) Others (please specify)

32. What is the nature of the aid?

- a) Grant
- b) Technical Assistance e.g. training
- c) Equipment supply
- d) Other (please specify)

33. Which of these best describes your feelings about the capital asset requirement, research and development as well as promotional expenditure required to start a business or operate in your sector?

- a) High
- b) Medium
- c) Low

34. Do you have an active trade union?

- a) Yes
- b) No

35. Do you encourage trade union activities in your organization?
- a) Yes
 - b) No
36. Are you located in an industrial area or park?
- a) Yes
 - b) No
37. How would you describe technological changes in your sector compared to other sectors you are familiar with?
- a) Rapid change
 - b) Moderate change
 - c) Slow change
38. Are your operations hampered by restrictive fiscal and social policies such as taxation or industrial relations?
- a) Yes
 - b) No

39. If yes above, kindly rate the importance of the policies by using a scale of 1 (Not Important) to 5 (Extremely Important).

Item	Not Important	Slightly Important	Important	Very Important	Extremely Important
High taxation					
Difficulty in obtaining licenses/permits					
Poor industrial relations					
Cumbersome procedures at the Ports and entry points					
Other (Please specify)					

40. Which of these best describes your ethnic origin?

- a) Asia
- b) North America
- c) South America
- d) Europe
- e) Middle East and North Africa
- f) Sub-Saharan Africa
- g) Australasia

41. Has any member of your family started another business (separate from this one) before you?

- a) Yes
- b) No

42. If you answered Yes to Question 40 above, which of these best describes the family member?

- a) Grandparent(s) (include grand uncles and aunts)
- b) Parent(s) (includes uncles and aunts)
- c) Brother(s) and sister(s)
- d) None

43. Does your firm have written vision and mission statements?

- a) Yes
- b) No

44. Do you have a Board that meets formally and regularly?

- a) Yes
- b) No

45. To what extent do employees participate in decision making?

- a) Not at all
- b) To some extent
- c) Often
- d) Very often
- e) Always

46. How often does management hold formal meetings?

- a) Quarterly
- b) Semi-annual
- c) Annual
- d) Not at all

47. Please tick which is most applicable. Non family members are in the in management.

- a) Majority
- b) Minority

48. Do you belong to a professional or business association?

- a) Yes
- b) No

49. Please state the name(s) of the association in order of importance.

- i.
- ii.
- iii.

50. In your business capacity, do you belong to any community or social network (e.g. sports club, golf club and or social clubs based on ethnic origin, sector etc)?

- a) Yes
- b) No

51. Please list the name(s) of the networks in order of importance to you?

- i.
- ii.
- iii.
- iv.

52. Please complete the table below.

Year	Net Turnover (GHC' Millions)	No. of Employees
2005		
2004		
2003		
2002		
2001		
2000		

THANK YOU FOR YOUR ASSISTANCE. IT IS GREATLY APPRECIATED

❖ If you would be prepared to participate in a follow-up discussion, please give your contact details.

❖ If you wish to receive a summary of my findings, please supply your contact details.

Samuel Dzotefe: Tel: +233 24 4323138 e-mail: sdzotefe@ifc.org

APPENDIX 3: COVER LETTER TO THE QUESTIONNAIRE

A study on the characteristics of Rapid-growth and slow-growth SMEs in Ghana

Research Survey

Purpose of the Research

As part of my DBA thesis, I am researching into the characteristics of rapid-growth and slow-growth SMEs in developing countries using Ghana as a case study. This survey focuses on five characteristics of SMEs which have been identified as having impact on their growth potential. These are characteristics of the entrepreneur; characteristics of the firm; strategic factors; environmental as well as cultural factors. I will like to obtain your opinion on these by completing the attached questionnaire.

Please note that the research is for academic purposes only and it is not sponsored by any institution. Your honest opinion whether favourable or unfavourable would greatly enhance our understanding of what makes some SMEs grow faster than others.

Any data provided will be kept strictly confidential. Under no circumstances will any individual be identified in the research, as your responses will be combined with those of many others for the purpose of statistical analysis.

I sincerely thank you for accepting to complete this questionnaire and please do not hesitate to contact me personally on +233 24 4323138 if you require any clarifications. Also indicate on the last page of the questionnaire if you want to receive a summary report on my findings.

Sincerely,

Samuel Dzotefe

APPENDIX 4: DETAILS OF LOGISTIC REGRESSION ANALYSIS

1.0 Using Turnover Growth Measure as the Dependent Variable

1.1 Results of the Entrepreneurial Characteristics Model

SPSS Output 2.1.1

Case Processing Summary

Unweighted Cases ^a		N	Percent
Selected Cases	Included in Analysis	77	74.0
	Missing Cases	27	26.0
	Total	104	100.0
Unselected Cases		0	.0
Total		104	100.0

a. If weight is in effect, see classification table for the total number of cases.

Classification Table^{a,b}

Observed			Predicted		
			Turnover Growth Group		Percentage Correct
			Slow-Growth Firms	Rapid-Growth Firms	
Step 0	Turnover Growth Group	Slow-Growth Firms	55	0	100.0
		Rapid-Growth Firms	22	0	.0
		Overall Percentage			71.4

a. Constant is included in the model.

b. The cut value is .500

Variables in the Equation

		B	S. E.	Wald	df	Sig.	Exp(B)
Step 0	Constant	-.916	.252	13.194	1	.000	.400

Variables not in the Equation

Step	Variables	Score	df	Sig.
0	MOVOPP	.120	1	.729
	MOVMON	.367	1	.545
	MOVDEMP	.178	1	.673
	MOVTEMP	1.534	1	.216
	MOVAEMP	.537	1	.464
	MOVINC	.074	1	.785
	MOVPDEV	.613	1	.434
	EDUQUA(1)	1.711	1	.191
	PRMGTEXP(1)	.007	1	.932
	SOLFOUND(1)	.530	1	.466
	MSKILLS(1)	.530	1	.466
	PRINDEXP(1)	.423	1	.516
	GENDER(1)	.428	1	.513
Overall Statistics		6.802	13	.912

1.2 Results of the Firm Characteristics Model

SPSS Output 2.2.1

Case Processing Summary

Unweighted Cases ^a		N	Percent
Selected Cases	Included in Analysis	104	100.0
	Missing Cases	0	.0
	Total	104	100.0
Unselected Cases		0	.0
Total		104	100.0

a. If weight is in effect, see classification table for the total number of cases.

Classification Table^{a,b}

Observed			Predicted		
			Turnover Growth Group		Percentage Correct
			Slow-Growth Firms	Rapid-Growth Firms	
Step 0	Turnover Growth Group	Slow-Growth Firms	75	0	100.0
		Rapid-Growth Firms	29	0	.0
Overall Percentage					72.1

a. Constant is included in the model.

b. The cut value is .500

Variables in the Equation

	B	S.E.	Wald	df	Sig.	Exp(B)
Step 0 Constant	-.950	.219	18.882	1	.000	.387

Variables not in the Equation

Step	Variables	Score	df	Sig.
0	FIRMAGE	.446	1	.504
	SECTOR(1)	.781	1	.377
	LEGFORM	4.419	1	.036
	NUMEMP	.091	1	.763
	ENTAFFLI(1)	.347	1	.556
Overall Statistics		6.945	5	.225

SPSS Output 2.2.2

Omnibus Tests of Model Coefficients

	Chi-square	df	Sig.
Step 1 Step	8.949	5	.111
Block	8.949	5	.111
Model	8.949	5	.111

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	114.158	.082	.119

Hosmer and Lemeshow Test

Step	Chi-square	df	Sig.
1	6.667	8	.573

Classification Table^a

Observed			Predicted		
			Turnover Growth Group		Percentage Correct
			Slow-Growth Firms	Rapid-Growth Firms	
Step 1	Turnover Growth Group	Slow-Growth Firms Rapid-Growth Firms	75 29	0 0	100.0 .0 72.1
Overall Percentage					

a. The cut value is .500

Variables in the Equation

		B	S. E.	Wald	df	Sig.	Exp(B)
Step 1	FIRMAGE	-.023	.028	.673	1	.412	.978
	SECTOR(1)	.700	.599	1.366	1	.243	2.014
	LEGFORM	-1.503	.912	2.712	1	.100	.223
	NUMEMP	.180	.290	.384	1	.536	1.197
	ENTAFFLI(1)	.563	.647	.758	1	.384	1.756
	Constant	-.314	1.660	.036	1	.850	.731

a. Variable(s) entered on step 1: FIRMAGE, SECTOR, LEGFORM, NUMEMP, ENTAFFLI.

1.3 Results of the Strategic Factors Model

SPSS Output 2.3.1

Case Processing Summary

Unweighted Cases ^a		N	Percent
Selected Cases	Included in Analysis	96	92.3
	Missing Cases	8	7.7
	Total	104	100.0
Unselected Cases		0	.0
Total		104	100.0

a. If weight is in effect, see classification table for the total number of cases.

Classification Table^{a,b}

Observed			Predicted		
			Turnover Growth Group		Percentage Correct
			Slow-Growth Firms	Rapid-Growth Firms	
Step 0	Turnover Growth Group	Slow-Growth Firms Rapid-Growth Firms	68 28	0 0	100.0 .0 70.8
Overall Percentage					

a. Constant is included in the model.

b. The cut value is .500

Variables in the Equation

	B	S.E.	Wald	df	Sig.	Exp(B)
Step 0 Constant	-.887	.225	15.615	1	.000	.412

Variables not in the Equation

Step	Variables	Score	df	Sig.
0	STAFFTRG(1)	7.802	1	.005
	MGTTTRG(1)	1.445	1	.229
	NEWEQUIT(1)	.087	1	.768
	INFOTECH	.133	1	.716
	STRAPLAN(1)	.000	1	1.000
	NPDTFREQ	2.466	1	.116
	EXPORT(1)	4.518	1	.034
	RESNDEV(1)	.024	1	.878
	RESPARTN(1)	.004	1	.951
Overall Statistics		18.189	9	.033

SPSS Output 2.3.2

Omnibus Tests of Model Coefficients

	Chi-square	df	Sig.
Step 1 Step	20.333	9	.016
Block	20.333	9	.016
Model	20.333	9	.016

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	95.565	.191	.272

Classification Table^a

Observed		Predicted			
		Turnover Growth Group		Percentage Correct	
		Slow-Growth Firms	Rapid-Growth Firms		
Step 1	Turnover Growth Group	Slow-Growth Firms	60	8	88.2
		Rapid-Growth Firms	16	12	42.9
	Overall Percentage				75.0

a. The cut value is .500

Variables in the Equation

Step	Variable	B	S.E.	Wald	df	Sig.	Exp(B)	95.0% C.I. for EXP(B)	
								Lower	Upper
1	STAFFTRG(1)	-2.625	.979	7.187	1	.007	.072	.011	.494
	MGTTTRG(1)	1.216	.943	1.664	1	.197	3.374	.532	21.403
	NEWEQUIT(1)	.035	.700	.002	1	.960	1.035	.262	4.084
	INFOTECH	.397	.468	.719	1	.396	1.488	.594	3.725
	STRAPLAN(1)	.076	.649	.014	1	.907	1.079	.302	3.849
	NPDTFREQ	-.481	.235	4.177	1	.041	.618	.390	.980
	EXPORT(1)	1.192	.578	4.254	1	.039	3.294	1.061	10.223
	RESNDEV(1)	.175	.672	.068	1	.795	1.191	.319	4.443
	RESPARTN(1)	-.518	1.002	.267	1	.605	.596	.084	4.247
	Constant	-.781	1.637	.227	1	.633	.458		

a. Variable(s) entered on step 1: STAFFTRG, MGTTTRG, NEWEQUIT, INFOTECH, STRAPLAN, NPDTFREQ, EXPORT, RESNDEV, RESPARTN.

1.4 Results of the Environmental Factors Model

SPSS Output 2.4.1

Case Processing Summary

Unweighted Cases ^a		N	Percent
Selected Cases	Included in Analysis	103	99.0
	Missing Cases	1	1.0
	Total	104	100.0
Unselected Cases		0	.0
Total		104	100.0

a. If weight is in effect, see classification table for the total number of cases.

Classification Table^{a,b}

Observed			Predicted		
			Turnover Growth Group		Percentage Correct
			Slow-Growth Firms	Rapid-Growth Firms	
Step 0	Turnover Growth Group	Slow-Growth Firms	75	0	100.0
		Rapid-Growth Firms	28	0	.0
Overall Percentage					72.8

a. Constant is included in the model.

b. The cut value is .500

Variables in the Equation

	B	S.E.	Wald	df	Sig.	Exp(B)
Step 0 Constant	-.985	.221	19.793	1	.000	.373

Variables not in the Equation

Step	Variables	Score	df	Sig.
0	PUBAID(1)	.075	1	.784
	ENTRYBAR	1.562	1	.211
	TUNION(1)	4.627	1	.031
	INDPKLOC(1)	.903	1	.342
	TECHCHG	.028	1	.867
	PRESTRIC(1)	.833	1	.361
Overall Statistics		8.288	6	.218

SPSS Output 2.4.2

Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	9.208	6	.162
	Block	9.208	6	.162
	Model	9.208	6	.162

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	111.320	.086	.124

Hosmer and Lemeshow Test

Step	Chi-square	df	Sig.
1	10.049	8	.262

Classification Table^a

Observed			Predicted		
			Turnover Growth Group		Percentage Correct
			Slow-Growth Firms	Rapid-Growth Firms	
Step 1	Turnover Growth Group	Slow-Growth Firms	75	0	100.0
		Rapid-Growth Firms	28	0	.0
	Overall Percentage				72.8

a. The cut value is .500

Variables in the Equation

	B	S.E.	Wald	df	Sig.	Exp(B)	95.0% C.I. for EXP(B)		
							Lower	Upper	
Step 1	PUBAID(1)	.085	.568	.022	1	.882	1.088	.357	3.313
	ENTRYBAR	.709	.415	2.916	1	.088	2.032	.900	4.585
	TUNION(1)	1.557	.802	3.772	1	.052	4.745	.986	22.838
	INDPKLOC(1)	.358	.545	.432	1	.511	1.431	.492	4.160
	TECHCHG	.047	.340	.020	1	.889	1.049	.539	2.041
	PRESTRIC(1)	.284	.482	.348	1	.555	1.329	.517	3.419
	Constant	-4.647	1.761	6.961	1	.008	.010		

a. Variable(s) entered on step 1: PUBAID, ENTRYBAR, TUNION, INDPKLOC, TECHCHG, PRESTRIC.

1.5 Results of the Cultural Factors Model

SPSS Output 2.5.1

Case Processing Summary

Unweighted Cases ^a		N	Percent
Selected Cases	Included in Analysis	98	94.2
	Missing Cases	6	5.8
	Total	104	100.0
Unselected Cases		0	.0
Total		104	100.0

a. If weight is in effect, see classification table for the total number of cases.

Classification Table^{a,b}

Observed			Predicted		
			Turnover Growth Group		Percentage Correct
			Slow-Growth Firms	Rapid-Growth Firms	
Step 0	Turnover Growth Group	Slow-Growth Firms	70	0	100.0
		Rapid-Growth Firms	28	0	.0
Overall Percentage					71.4

a. Constant is included in the model.

b. The cut value is .500

Variables in the Equation

		B	S. E.	Wald	df	Sig.	Exp(B)
Step 0	Constant	-.916	.224	16.792	1	.000	.400

Variables not in the Equation

Step	Variables	Score	df	Sig.
0	ETHNICOR(1)	.152	1	.697
	FMLYENT(1)	1.074	1	.300
	MNVSTMNT(1)	3.456	1	.063
	BODMEET(1)	1.887	1	.170
	MGFRMEET	2.018	1	.155
	NFMLYIMG(1)	.633	1	.426
	MPBASSOC(1)	3.015	1	.082
	COMSOCNT(1)	.736	1	.391
Overall Statistics		11.021	8	.201

1.6 Results of the Combined Variables Model

SPSS Output 2.6.1

Case Processing Summary

Unweighted Cases ^b		N	Percent
Selected Cases ^a	Included in Analysis	18	17.3
	Missing Cases	86	82.7
	Total	104	100.0
Unselected Cases		0	.0
Total		104	100.0

a. The category variable External equity post-formation is constant for all selected cases. Since a constant was requested in the model, it will be removed from the analysis.

b. If weight is in effect, see classification table for the total number of cases.

1.7 Results of the Significant Variables Model

SPSS Output 2.7.1

Case Processing Summary

Unweighted Cases ^a		N	Percent
Selected Cases	Included in Analysis	92	88.5
	Missing Cases	12	11.5
	Total	104	100.0
Unselected Cases		0	.0
Total		104	100.0

a. If weight is in effect, see classification table for the total number of cases.

Classification Table^{a,b}

Observed			Predicted		
			Turnover Growth Group		Percentage Correct
			Slow-Growth Firms	Rapid-Growth Firms	
Step 0	Turnover Growth Group	Slow-Growth Firms	64	0	100.0
		Rapid-Growth Firms	28	0	.0
Overall Percentage					69.6

a. Constant is included in the model.

b. The cut value is .500

Variables in the Equation

	B	S.E.	Wald	df	Sig.	Exp(B)
Step 0 Constant	-.827	.227	13.311	1	.000	.438

Variables not in the Equation

Step	Variables	Score	df	Sig.
0	EDUQUA(1)	3.947	1	.047
	SKILLS3(1)	1.362	1	.243
	SKILLS5(1)	3.795	1	.051
	LEGFORM	3.046	1	.081
	FIRMAGE	.719	1	.396
	NPDTFREQ	2.063	1	.151
	STAFFTRG(1)	6.958	1	.008
	EXPORT(1)	4.985	1	.026
	TUNION(1)	7.809	1	.005
	MGFRMEET	1.857	1	.173
	MNVSTMNT(1)	3.877	1	.049
MPBASSOC(1)	4.933	1	.026	
Overall Statistics		35.262	12	.000

SPSS Output 2.7.2

Omnibus Tests of Model Coefficients

	Chi-square	df	Sig.
Step 1 Step	44.761	12	.000
Block	44.761	12	.000
Model	44.761	12	.000

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	68.308	.385	.545

Hosmer and Lemeshow Test

Step	Chi-square	df	Sig.
1	6.584	8	.582

Classification Table^a

Observed		Predicted		
		Turnover Growth Group		Percentage Correct
		Slow-Growth Firms	Rapid-Growth Firms	
Step 1	Turnover Growth Group	Slow-Growth Firms	7	89.1
		Rapid-Growth Firms	18	64.3
	Overall Percentage			81.5

a. The cut value is .500

Variables in the Equation

Step		B	S.E.	Wald	df	Sig.	Exp(B)	95.0% C.I. for EXP(B)	
								Lower	Upper
1	EDUQUA(1)	-1.882	1.049	3.216	1	.073	.152	.019	1.191
	SKILLS3(1)	.398	.773	.265	1	.607	1.489	.327	6.775
	SKILLS5(1)	1.129	.746	2.287	1	.130	3.092	.716	13.352
	LEGFORM	-1.686	1.206	1.955	1	.162	.185	.017	1.968
	FIRIMAGE	.032	.040	.656	1	.418	1.033	.955	1.116
	NPDTFREQ	-.424	.280	2.295	1	.130	.655	.378	1.133
	STAFFTRG(1)	-1.442	.756	3.638	1	.056	.236	.054	1.041
	EXPORT(1)	2.266	.782	8.395	1	.004	9.640	2.082	44.639
	TUNION(1)	3.519	1.321	7.093	1	.008	33.758	2.533	449.950
	MGFRMEET	-.020	.693	.001	1	.977	.980	.252	3.811
	MNVSTMNT(1)	-.175	1.038	.029	1	.866	.839	.110	6.413
	MPBASSOC(1)	-1.182	.833	2.016	1	.156	.307	.060	1.568
	Constant	-2.309	2.551	.820	1	.365	.099		

a. Variable(s) entered on step 1: EDUQUA, SKILLS3, SKILLS5, LEGFORM, FIRIMAGE, NPDTFREQ, STAFFTRG, EXPORT, TUNION, MGFRMEET, MNVSTMNT, MPBASSOC.

2.0 Using Employment Growth Measure as the Dependent Variable

2.1 Results of the Entrepreneurial Characteristics Model

SPSS Output 3.1.1

Case Processing Summary

Unweighted Cases ^a		N	Percent
Selected Cases	Included in Analysis	76	74.5
	Missing Cases	26	25.5
	Total	102	100.0
Unselected Cases		0	.0
Total		102	100.0

a. If weight is in effect, see classification table for the total number of cases.

Classification Table^{a,b}

Observed			Predicted		
			Employment Growth Group		Percentage Correct
			Slow Growth	Rapid Growth	
Step 0	Employment Growth Group	Slow Growth	58	0	100.0
		Rapid Growth	18	0	.0
Overall Percentage					76.3

a. Constant is included in the model.

b. The cut value is .500

Variables in the Equation

	B	S.E.	Wald	df	Sig.	Exp(B)
Step 0 Constant	-1.170	.270	18.807	1	.000	.310

Variables not in the Equation

Step	Variables	Score	df	Sig.
0	MOVOPP	8.054	1	.005
	MOVMON	.686	1	.407
	MOVDEMP	2.870	1	.090
	MOVTEMP	.110	1	.740
	MOVAEMP	.112	1	.737
	MOVINC	.299	1	.585
	MOVPDEV	.502	1	.479
	EDUQUA(1)	.598	1	.439
	PRMGTEXP(1)	.019	1	.889
	SOLFOUND(1)	.603	1	.437
	MSKILLS	3.367	1	.067
	PRINDEXP(1)	.025	1	.875
	GENDER(1)	1.895	1	.169
Overall Statistics		15.804	13	.260

SPSS Output 3.2.1

Omnibus Tests of Model Coefficients

Step		Chi-square	df	Sig.
1	Step	19.734	13	.102
	Block	19.734	13	.102
	Model	19.734	13	.102

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	63.473	.229	.344

Hosmer and Lemeshow Test

Step	Chi-square	df	Sig.
1	4.530	8	.806

Classification Table^a

Observed			Predicted		
			Employment Growth Group		Percentage Correct
			Slow Growth	Rapid Growth	
Step 1	Employment Growth Group	Slow Growth	54	4	93.1
		Rapid Growth	13	5	27.8
	Overall Percentage				77.6

a. The cut value is .500

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)	95.0% C.I. for EXP(B)	
								Lower	Upper
Step 1	MOVOPP	1.281	.538	5.680	1	.017	3.601	1.256	10.329
	MOVMON	.106	.436	.059	1	.808	1.112	.473	2.615
	MOVDEMP	-.672	.549	1.499	1	.221	.511	.174	1.497
	MOVTEMP	.704	.583	1.459	1	.227	2.023	.645	6.343
	MOVAEMP	-.559	.551	1.032	1	.310	.572	.194	1.682
	MOVINC	.100	.344	.084	1	.772	1.105	.563	2.168
	MOVPDEV	-.136	.410	.110	1	.740	.873	.391	1.948
	EDUQUA(1)	-.042	1.017	.002	1	.967	.959	.131	7.040
	PRMGTEXP(1)	.027	.877	.001	1	.975	1.028	.184	5.735
	SOLFOUND(1)	-.485	.707	.471	1	.493	.616	.154	2.459
	MSKILLS	.426	.743	.329	1	.566	1.531	.357	6.570
	PRINDEXP(1)	.326	.669	.237	1	.626	1.385	.373	5.139
	GENDER(1)	1.211	.813	2.219	1	.136	3.356	.682	16.511
	Constant	-6.732	3.319	4.113	1	.043	.001		

a. Variable(s) entered on step 1: MOVOPP, MOVMON, MOVDEMP, MOVTEMP, MOVAEMP, MOVINC, MOVPDEV, EDUQUA, PRMGTEXP, SOLFOUND, MSKILLS, PRINDEXP, GENDER.

2.2 Results of the Firm Characteristics Model

SPSS Output 3.2.1

Case Processing Summary

Unweighted Cases ^a		N	Percent
Selected Cases	Included in Analysis	102	100.0
	Missing Cases	0	.0
	Total	102	100.0
Unselected Cases		0	.0
Total		102	100.0

a. If weight is in effect, see classification table for the total number of cases.

Classification Table^{a,b}

Observed			Predicted		
			Employment Growth Group		Percentage Correct
			Slow Growth	Rapid Growth	
Step 0	Employment Growth Group	Slow Growth	83	0	100.0
		Rapid Growth	19	0	.0
	Overall Percentage				81.4

a. Constant is included in the model.

b. The cut value is .500

Variables in the Equation

	B	S.E.	Wald	df	Sig.	Exp(B)
Step 0 Constant	-1.474	.254	33.608	1	.000	.229

Variables not in the Equation

Step	Variables	Score	df	Sig.
0	FIRMAGE	.329	1	.566
	SECTOR(1)	1.798	1	.180
	LEGFORM	.002	1	.965
	NUMEMP	1.910	1	.167
	ENTAFFLI(1)	1.566	1	.211
	Overall Statistics	6.894	5	.229

2.3 Results of the Strategic Factors Model

SPSS Output 3.3.1

Case Processing Summary

Unweighted Cases ^a		N	Percent
Selected Cases	Included in Analysis	95	93.1
	Missing Cases	7	6.9
	Total	102	100.0
Unselected Cases		0	.0
Total		102	100.0

a. If weight is in effect, see classification table for the total number of cases.

Classification Table^{a,b}

Observed			Predicted		
			Employment Growth Group		Percentage Correct
			Slow Growth	Rapid Growth	
Step 0	Employment Growth Group	Slow Growth	77	0	100.0
		Rapid Growth	18	0	.0
Overall Percentage					81.1

a. Constant is included in the model.

b. The cut value is .500

Variables in the Equation

	B	S.E.	Wald	df	Sig.	Exp(B)
Step 0 Constant	-1.453	.262	30.819	1	.000	.234

Variables not in the Equation

Step	Variables	Score	df	Sig.
0	STAFFTRG(1)	1.165	1	.280
	MGTRG(1)	.079	1	.778
	NEWEQUIT(1)	2.647	1	.104
	INFOTECH	.011	1	.915
	STRAPLAN(1)	.011	1	.917
	NPDTFREQ	2.316	1	.128
	EXPORT(1)	1.392	1	.238
	RESNDEV(1)	.048	1	.827
	RESPARTN(1)	.008	1	.928
Overall Statistics		8.326	9	.502

2.4 Results of the Environmental Factors Model

SPSS Output 3.4.1

Case Processing Summary

Unweighted Cases ^a		N	Percent
Selected Cases	Included in Analysis	101	99.0
	Missing Cases	1	1.0
	Total	102	100.0
Unselected Cases		0	.0
Total		102	100.0

a. If weight is in effect, see classification table for the total number of cases.

Classification Table^{a,b}

Observed			Predicted		
			Employment Growth Group		Percentage Correct
			Slow Growth	Rapid Growth	
Step 0	Employment Growth Group	Slow Growth	82	0	100.0
		Rapid Growth	19	0	.0
		Overall Percentage			81.2

a. Constant is included in the model.

b. The cut value is .500

Variables in the Equation

	B	S.E.	Wald	df	Sig.	Exp(B)
Step 0 Constant	-1.462	.255	32.983	1	.000	.232

Variables not in the Equation

Step	Variables	Score	df	Sig.
0	PUBAID(1)	.648	1	.421
	ENTRYBAR	.150	1	.698
	TUNION(1)	.001	1	.975
	INDPKLOC(1)	.000	1	.983
	TECHCHG	.865	1	.352
	PRESTRIC(1)	.322	1	.570
	Overall Statistics	1.959	6	.923

2.5 Results of the Cultural Factors Model

SPSS Output 3.5.1

Case Processing Summary

Unweighted Cases ^a		N	Percent
Selected Cases	Included in Analysis	96	94.1
	Missing Cases	6	5.9
	Total	102	100.0
Unselected Cases		0	.0
Total		102	100.0

a. If weight is in effect, see classification table for the total number of cases.

Classification Table^{a,b}

Observed			Predicted		
			Employment Growth Group		Percentage Correct
			Slow Growth	Rapid Growth	
Step 0	Employment Growth Group	Slow Growth	78	0	100.0
		Rapid Growth	18	0	.0
Overall Percentage					81.3

a. Constant is included in the model.

b. The cut value is .500

Variables in the Equation

	B	S.E.	Wald	df	Sig.	Exp(B)
Step 0 Constant	-1.466	.261	31.445	1	.000	.231

Variables not in the Equation

Step	Variables	Score	df	Sig.
0	ETHNICOR(1)	3.837	1	.050
	FMLYENT(1)	.489	1	.485
	MNVSTMNT(1)	.001	1	.971
	BODMEET(1)	.062	1	.803
	MGFRMEET	.041	1	.839
	NFMLYIMG(1)	.820	1	.365
	MPBASSOC(1)	.168	1	.682
	COMSOCNT(1)	.265	1	.607
	EPARTIDM	1.216	1	.270
Overall Statistics		9.164	9	.422

SPSS Output 3.5.2

Omnibus Tests of Model Coefficients

	Chi-square	df	Sig.
Step 1 Step	9.254	9	.414
Block	9.254	9	.414
Model	9.254	9	.414

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	83.401	.092	.148

Hosmer and Lemeshow Test

Step	Chi-square	df	Sig.
1	7.635	8	.470

Classification Table^a

Observed		Predicted				
		Employment Growth Group		Percentage Correct		
		Slow Growth	Rapid Growth			
Step 1	Employment Growth Group	Slow Growth	Rapid Growth	78	0	100.0
		Rapid Growth		16	2	11.1
	Overall Percentage					83.3

a. The cut value is .500

Variables in the Equation

	B	S.E.	Wald	df	Sig.	Exp(B)	95.0% C.I. for EXP(B)		
							Lower	Upper	
Step 1	ETHNICOR(1)	-1.899	.777	5.976	1	.015	.150	.033	.686
	FMLYENT(1)	-.567	.602	.888	1	.346	.567	.174	1.845
	MNVSTMNT(1)	.104	.721	.021	1	.885	1.110	.270	4.563
	BODMEET(1)	-.158	.645	.060	1	.806	.854	.241	3.021
	MGFRMEET	-.148	.558	.070	1	.791	.862	.289	2.575
	NFMLYIMG(1)	.881	.624	1.992	1	.158	2.413	.710	8.202
	MPBASSOC(1)	-.385	.690	.311	1	.577	.680	.176	2.631
	COMSOCNT(1)	.593	.742	.637	1	.425	1.809	.422	7.750
	EPARTIDM	.402	.286	1.973	1	.160	1.495	.853	2.621
	Constant	-1.479	1.404	1.109	1	.292	.228		

a. Variable(s) entered on step 1: ETHNICOR, FMLYENT, MNVSTMNT, BODMEET, MGFRMEET, NFMLYIMG, MPBASSOC, COMSOCNT, EPARTIDM.

2.6 Results of the Combined Variables Model

SPSS Output 3.6.1

Case Processing Summary

Unweighted Cases ^a		N	Percent
Selected Cases	Included in Analysis	66	64.7
	Missing Cases	36	35.3
	Total	102	100.0
Unselected Cases		0	.0
Total		102	100.0

a. If weight is in effect, see classification table for the total number of cases.

Classification Table^{a,b}

Observed			Predicted		
			Employment Growth Group		Percentage Correct
			Slow Growth	Rapid Growth	
Step 0	Employment Growth Group	Slow Growth	50	0	100.0
		Rapid Growth	16	0	.0
	Overall Percentage				75.8

a. Constant is included in the model.

b. The cut value is .500

Variables in the Equation

	B	S.E.	Wald	df	Sig.	Exp(B)
Step 0 Constant	-1.139	.287	15.737	1	.000	.320

Variables not in the Equation

Step	Variables	Score	df	Sig.
0	MOVOPP	7.451	1	.006
	MOVMON	.601	1	.438
	MOVDEMP	4.772	1	.029
	MOVTEMP	.019	1	.891
	MOVAEMP	.151	1	.697
	MOVINC	.122	1	.727
	MOVPDEV	.308	1	.579
	EDUQUA(1)	.458	1	.498
	PRMGTEXP(1)	.062	1	.803
	SOLFOUND	.315	1	.575
	MSKILLS(1)	2.625	1	.105
	PRINDEXP(1)	.078	1	.780
	GENDER(1)	1.056	1	.304
	FIRMAGE	.320	1	.572
	SECTOR	2.970	1	.085
	LEGFORM	.160	1	.690
	NUMEMP	1.468	1	.226
	ENTAFFLI(1)	2.425	1	.119
	STAFFTRG(1)	2.832	1	.092
	MGTRG(1)	1.335	1	.248
	NEWEQUIT(1)	1.941	1	.164
	INFOTECH	.557	1	.455
	STRAPLAN(1)	.077	1	.782
	NPDTFREQ	1.723	1	.189
	EXPORT(1)	2.954	1	.086
	RESNDEV(1)	.007	1	.935
	RESPARTN(1)	.080	1	.777
	PUBAID(1)	.190	1	.663
	ENTRYBAR	1.105	1	.293
	TUNION(1)	.006	1	.937
	INDPKLOC(1)	.032	1	.859
	TECHCHG	1.553	1	.213
	PRESTRIC(1)	.995	1	.319
	ETHNICOR(1)	1.782	1	.182
	FMLYENT(1)	.102	1	.750
	MNVSTMNT(1)	.009	1	.925
	BODMEET(1)	.660	1	.417
	EPARTIDM	.592	1	.442
	MGFRMEET	.056	1	.812
	NFMLYIMG(1)	.565	1	.452
MPBASSOC(1)	1.038	1	.308	
COMSOCNT(1)	.148	1	.701	
Overall Statistics		41.158	42	.508

2.7 Results of the Significant Variables Model

SPSS Output 3.7.1

Case Processing Summary

Unweighted Cases ^a		N	Percent
Selected Cases	Included in Analysis	75	73.5
	Missing Cases	27	26.5
	Total	102	100.0
Unselected Cases		0	.0
Total		102	100.0

a. If weight is in effect, see classification table for the total number of cases.

Classification Table^{a,b}

Observed			Predicted		
			Employment Growth Group		Percentage Correct
			Slow Growth	Rapid Growth	
Step 0	Employment Growth Group	Slow Growth	58	0	100.0
		Rapid Growth	17	0	.0
	Overall Percentage				77.3

a. Constant is included in the model.

b. The cut value is .500

Variables in the Equation

		B	S. E.	Wald	df	Sig.	Exp(B)
Step 0	Constant	-1.227	.276	19.800	1	.000	.293

Variables not in the Equation

Step	Variables	Score	df	Sig.
0	EDUQUA(1)	.476	1	.490
	SKILLS3(1)	4.602	1	.032
	MOVOPP	7.393	1	.007
	MOVTEMP	.135	1	.713
	MOVAEMP	.061	1	.805
	SKILLS1(1)	3.291	1	.070
	FIRMAGE	.760	1	.383
	NPDTFREQ	.864	1	.353
	STAFFTRG(1)	2.124	1	.145
	NEWEQUIT(1)	2.496	1	.114
	PUBAID(1)	.316	1	.574
	ETHNICOR(1)	2.238	1	.135
	NFMLYIMG(1)	.085	1	.771
Overall Statistics		17.439	13	.180

SPSS Output 3.7.2

Omnibus Tests of Model Coefficients

Step		Chi-square	df	Sig.
Step 1	Step	20.562	13	.082
	Block	20.562	13	.082
	Model	20.562	13	.082

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	59.721	.240	.365

Hosmer and Lemeshow Test

Step	Chi-square	df	Sig.
1	4.169	7	.760

Classification Table^a

Observed			Predicted		
			Employment Growth Group		Percentage Correct
			Slow Growth	Rapid Growth	
Step 1	Employment Growth Group	Slow Growth Rapid Growth	55 8	3 9	94.8 52.9
Overall Percentage					85.3

a. The cut value is .500

Variables in the Equation

	B	S.E.	Wald	df	Sig.	Exp(B)	95.0% C.I. for EXP(B)	
							Lower	Upper
Step 1								
EDUQUA(1)	-.103	.997	.011	1	.917	.902	.128	6.369
SKILLS3(1)	-1.247	.938	1.766	1	.184	.287	.046	1.807
MOVOPP	1.074	.547	3.855	1	.050	2.928	1.002	8.556
MOVTEMP	.528	.530	.991	1	.320	1.695	.600	4.790
MOVAEMP	-.274	.561	.239	1	.625	.760	.253	2.283
SKILLS1(1)	.461	.778	.351	1	.554	1.585	.345	7.282
FIRMAGE	-.016	.029	.295	1	.587	.985	.931	1.041
NPDTFREQ	.004	.322	.000	1	.990	1.004	.534	1.888
STAFFTRG(1)	-.428	.845	.256	1	.613	.652	.124	3.417
NEWEQUIT(1)	.835	1.105	.570	1	.450	2.304	.264	20.095
PUBAID(1)	-.366	1.071	.117	1	.732	.693	.085	5.656
ETHNICOR(1)	-1.013	.939	1.166	1	.280	.363	.058	2.285
NFMLYIMG(1)	1.033	.870	1.410	1	.235	2.808	.511	15.440
Constant	-5.722	3.507	2.661	1	.103	.003		

a. Variable(s) entered on step 1: EDUQUA, SKILLS3, MOVOPP, MOVTEMP, MOVAEMP, SKILLS1, FIRMAGE, NPDTFREQ, STAFFTRG, NEWEQUIT, PUBAID, ETHNICOR, NFMLYIMG.

RESPONSE TO EXAMINERS' COMMENTS

Examiners' Comments	Response
<p>Problem and Background – Chapter 1</p> <p>The thesis begins very well and the need for the study has been explained well. Then it gets bogged down in a long section on SME definition. Various definitions are mentioned but the author fails to explain which definitions are to be used in the thesis. These definitions are provided later in the thesis (p1 19), but should be provided combined in the method section.</p>	<p>Chapter 1 has been restructured. New sections added are 1.2 (Purpose of the Research); 1.5 (Challenges of Small Firm Research); 1.7 (Research Contribution); 1.9 (Overview of Methodology) and 1.10 (Summary of Findings).</p> <p>Main aim of the study is presented upfront in Section 1.2 (Purpose of the Research).</p> <p>Previous discussion on “Definition of SMEs” has been deleted from the chapter. A brief definition of SMEs for this research is provided in Section 3.3.2 (Definition of SME).</p> <p>Challenges associated with small firm research have been introduced in Section 1.5 (Challenges of Small Firm Research) and research contribution highlighted in Section 1.7 (Research Contribution).</p> <p>Section 1.9 (Overview of Methodology) provides an overview of methodology and affirms that the research is explanatory research and not an exploratory one. It also based on a deductive approach to reasoning and not inductive.</p> <p>Summary of findings are presented in Section 1.10 (Summary of Findings).</p>
<p>Literature Review – Chapter 2</p> <p>The candidate should restructure the Literature Review/Hypotheses development to enable the reader to be guided through the development of the hypotheses starting from the literature background and the theoretical bases. The reader should be able to clearly see how each hypothesis results from the</p>	<p>Chapter 2 has been restructured. Original Section 2.2 (Review of Literature on Small Firm Growth) has been deleted and some of the discussion merged with other sections in this chapter. These are 2.1 (Introduction); 2.3 (Storey’s Framework) and 2.5 (Cultural factors impacting Firm Growth Rates).</p>

<p>existing research/theory. In order to allow for such a more detailed development, the number of hypotheses can be reduced focusing on the most important ones.</p> <p>These chapters should also include more up-to-date references.</p>	<p>Discussion of the theoretical perspectives has been reviewed and made more concise. An introduction on theoretical perspective is first introduced in Section 2.1 (Introduction) and detailed discussion provided in Section 2.2 (Theoretical Perspectives). Discussion of the Life-Cycle perspective has been reduced given that it is of tangential relevance to the study. Each perspective has a paragraph on how it contributes to the current research.</p> <p>The original Figure 2.4 (Schematic of the Development of Theoretical Framework) has been deleted.</p> <p>In addition to Storey’s research framework, the revised Chapter 2 (General Overview of Literature) also discusses other research frameworks in Section 2.4 (Other Research Frameworks).</p> <p>Section 2.9 (Review of Gaps in the Literature) highlights gaps in the literature.</p> <p>The development of hypotheses citing arguments, theories or other previous research that supports them is now discussed in detail in Chapter 4 (Development of Hypotheses).</p> <p>Discussion of the sample and measures of variables is also presented separately in Chapter 5 (Sample and Measures).</p> <p>The references in both Chapter 2 (General Overview of Literature) and Chapter 4 (Development of Hypotheses) have been updated.</p>
<p>Methodology – Chapter 3</p> <p>The examiners felt that the research methodology chosen for the analysis needs to (a) be made clearer, i.e. whether the approach is exploratory or explanatory in nature; (b) brought to the beginning.</p>	<p>Methodology has been moved to Chapter 3 (Methodology: Philosophy and Research Methods) to precede hypotheses development.</p>

<p>before any hypotheses are developed to allow the reader to follow the argumentation. Measures and information on the sample can be kept in their current position, although some consolidation on the discussion of measurements would seem useful.</p>	<p>Samples and measures have been moved to a new Chapter 5 (Sample and Measures).</p> <p>Methodological issues have been moved to the literature review in Section 2.7 (Theoretical and Methodological issues in the Study of Small Firm Growth).</p> <p>This is an explanatory research study, as explained and is discussed in the Introduction of Chapter 3 (Methodology: Philosophy and Research Methods).</p> <p>Measurement of growth is captured under Section 3.3 (Definition of Key Concepts).</p> <p>Discussion on the multi-method approach has been deleted.</p> <p>In response to the Examiners' question "what is the message of Figure 5.3", Figure 5.3 (Box Plot of Average Annual Growth Rate Measure for Turnover) now Figure 6.3 (Box Plot of Average Annual Growth Rate Measure for Turnover) in the revised thesis shows only one significant outlier based on Average Annual Growth Rate on Turnover of the sample.</p> <p>Justification for cut –off point of 25% growth rate is provided in Section 6.5 (Categorization of firms based on Turnover and Employment Measures) of the thesis.</p>
<p>Development of Hypotheses – Chapter 4 Chapter 3 presents a meta-analysis that justifies the tables presented at the end of Chapter 2. It does this in two sections. 3.1 through 3.7 examines the variables, and then 3.8 develops the hypotheses in a rather tedious way, and have never actually citing the arguments, theories or previous research that leads to them.</p>	<p>The original Chapter 3 (Literature Review, Specification of the Research and Model Development of Hypotheses) has been restructured. Discussion of variables has been moved to Chapter 5 (Sample and Measures).</p> <p>Relevant theoretical arguments, theories or evidence from other research findings have been provided to support the development</p>

	<p>of each of the 36 hypotheses.</p> <p>The wording of the hypotheses has been modified to reflect the focus on association with rapid or slow-growth.</p>
<p>Samples and Measures – Chapter 5</p>	<p>This is a new chapter following suggestions and comments from the examiners.</p> <p>Additional clarification has been provided on the source of the sample in Section 5.2 (Sample Selection).</p> <p>Pilot testing and amendments to the questionnaire after the test has been elaborated upon in Section 5.4 (Questionnaire and Measures).</p> <p>Proper reference to the original Table 3.5 (List of Variables Proposed and their Expected Relationship with Growth) now Table 5.1 (List of Variables Proposed and their Expected Relationship with Growth) has been made and the linkage among the variables, question numbers and hypotheses is explained more fully.</p> <p>The messages in the introductory telephone calls and e-mails have been highlighted in Section 5.4 (Questionnaire and Measures).</p>
<p>Respondent Characteristics – Chapter 6 (originally Chapter 5)</p>	<p>The introduction of this chapter explains the purpose of the ensuing analysis in the chapter. The section on the differences between rapid-growth and slow-growth firms has been deleted to focus analysis more strongly on the hypotheses testing and logistic regression.</p>
<p>Hypotheses Testing – Chapter 7 (originally Chapter 6)</p> <p>The reason underlying the chosen procedure(s) of data analysis should be explained in greater detail. The findings of this section should also be discussed in relation to the findings of the regression analysis further below.</p>	<p>The case has been made under methodology and the introduction of the chapter that the tests are tests of association, rather than, causality. A rationale for opting for single-variable testing is given.</p>

	<p>Tests used have been described and justified in Section 3.6 (Survey Data Analysis) under Methodology.</p> <p>Findings of the separate tests in relation to the overall model have been discussed in Chapter 9 (Discussion).</p>
<p>Logistic Regression – Chapter 8 (originally Chapter 7) The reason underlying the chosen procedure(s) of data analysis should be explained in greater detail. The findings of this section should also be discussed in relation to the findings of the previous results on the isolated variables.</p>	<p>The logic behind grouping the variables has been explained in Section 8.1 (Introduction).</p> <p>The reason underlying the logistic regression analysis is provided in Section 8.1 (Introduction) and Section 3.6 (Survey Data Analysis) under methodology. The logistic regression procedure has been presented and explained in Section 8.2 (The Logistic Regression Procedure) including the chosen method of entering different blocks of variables. Several results presented in the computer printout tables have been moved to Appendix 4 (Details of Logistic Regression Analysis) to provide better clarity of the presentation of the logistic regression analysis.</p> <p>Overall purpose of the regression has been explained in Section 8.1 (Introduction).</p>
<p>Discussions The candidate should provide a more detailed discussion and explanation of the findings;</p> <ul style="list-style-type: none"> (i) With regard to unexpected findings, (ii) Compared to existing research on the subject, (iii) With reference to the specific context. 	<p>This is presented in a new Chapter 9 (Discussion)</p>
<p>Conclusion – Chapter 10 (Original Chapter 9) The conclusion is mainly a summary of findings. Given the lack of a proper discussion, it is not clear what the specific contribution of the thesis is and this needs to be made explicit. There are some very general implications for SMEs and policy makers and these, need to be expanded. The limitations of the</p>	<p>Discussion on research findings is now provided in Chapter 9 (Discussion). Chapter 10 (Implications, Limitations and Recommendations), the concluding chapter, focuses on implications of the research for entrepreneurs and policy makers. It also discusses the limitations of the study and makes recommendations for future research.</p>

<p>study contain 3 paragraphs and I would think that there are quite a number of further limitations that should be included in here.</p> <p>Others</p> <p>References are very old and there are hardly any references from later than 2000. We encourage the author to up-date his literature basis wherever possible by checking out the last four years' issues of the Journal of Business Venturing and Entrepreneurship Theory and Practice.</p> <p>The writing quality is quite good, but as a whole, the work is poorly structured and is not a coherent body of work. It provides poor and not very well arguments to inform business practice, and provides no arguments concerning knowledge in the field. That said, the investigative work behind the submission does have some merit and could be the basis of a real contribution if the write-ups of it were appropriately structured, referenced, argued and linked to extant knowledge. Restructuring seems necessary along the lines outlined above.</p>	<p>Done.</p>
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