

**FOSTERING CORPORATE ENTREPRENEURSHIP (CE):
AN EXAMINATION OF THE RELATIONSHIP BETWEEN
CE AND FIRM PERFORMANCE IN AUTO PARTS
MANUFACTURING FIRMS IN THAILAND**

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ABSTRACT

There is very little research in the field of corporate entrepreneurship in developing countries, particularly Thailand. In addition, it seems that existing corporate entrepreneurship literature lacks an integrative framework that conceptualizes and operationalizes the multidimensional construct of corporate entrepreneurship. Further, the relationship between corporate entrepreneurship and firm performance, including both financial and non-financial measures, has not been explicitly examined. This research, therefore, aims to fill these gaps in the literature. Environmental conditions including dynamism, hostility and, heterogeneity and organizational elements in terms of strategy and culture are explored in this research as determinants of corporate entrepreneurship. The relationship between corporate entrepreneurship and firm performance comprising both financial and non-financial aspects is also examined.

The model of corporate entrepreneurship antecedents and effects is examined using a mixed-method approach. Specifically, the impact of environmental and organizational factors on corporate entrepreneurship as well as the relationship between corporate entrepreneurship and firm performance, based on self-report measures of environmental conditions, organizational strategy and culture, firm-level entrepreneurship and firm performance, are examined in 207 auto parts manufacturing companies in Thailand. Qualitative interviews explored the antecedents and the effects of corporate entrepreneurship in depth.

Structural Equation Modeling (SEM) was employed to test a theorized model of corporate entrepreneurship antecedents and effects. Environmental and organizational factors were found to predict corporate entrepreneurship which, in turn, influenced firm performance in terms of both financial and non-financial aspects. Importantly, non-financial performance was found to influence financial outcomes. Furthermore, large companies were found to have a higher level of corporate entrepreneurship, particularly a self-renewal construct and financial performance, than small-sized and medium-sized enterprises (SMEs) did.

The qualitative findings supported the results from the quantitative phase and provided rich information about the entrepreneurship activities of the auto parts manufacturing sector and their impacts on performance. Thai auto parts manufacturing firms stimulate entrepreneurial activities in their organizations through new business venturing, self-renewal, innovativeness, and proactiveness by responding to changes and diversity in dynamic and heterogeneous environments while developing adaptive organizational strategy as well as innovative organizational culture. Through their entrepreneurial activities, Thai auto parts manufacturing firms have not only been able to earn higher profit and increase sales growth but also to achieve effective operations regarding new product development, product quality and employee satisfaction.

This research contributes to the literature related to corporate entrepreneurship antecedents and effects. It contributes to understandings of entrepreneurial activity in the auto parts manufacturing firms in Thailand, and provides a foundation for future research. Recommendations for practice and policy makers are provided to assist Thai auto parts manufacturing companies, business enterprises in other industries, and new foreign investors and those who already have their operations in Thailand to successfully cultivate entrepreneurship in their organizations, with the primary goal of enhancing competitiveness.

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DECLARATION

This thesis:

- Contains no material which has been accepted for the award to the candidate of any other degree or diploma, except where due reference is made in the text of the examinable outcome;
- To the best of the candidate's knowledge contains no material previously published or written by another person, except where due reference is made in the text of the examinable outcome;
- Where the work is based on joint research or publications, discloses the relative contributions of the respective workers or authors; and
- Has met all the requirements of the Ethics Approval from the Swinburne University of Technology under SUHREC Project 0708/109 (refer to Appendix A).

(Laddawan Lekmat)

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PART ONE

INTRODUCTION

Chapter 1: Introduction

Chapter 2: Background of Entrepreneurship, Thailand's Economic Performance, the Automotive Industry and Auto parts Sector

Part one of this thesis introduces the research background and provides crucial basic information about Thailand's economic conditions, automotive industry and auto parts industry. Chapter 1 explains the background of the research, the objective of the research, the research process, an outline of the research, and the contributions of the thesis. Chapter 2 provides the background understanding of the concept of entrepreneurship and an overview of Thailand's economic performance, its automotive industry and its auto parts sector. This chapter also investigates the auto parts industry of Thailand in terms of critical issues concerning entrepreneurial activities in the Thai auto parts sector, including competitive position, economic and government policy, and customer demands and market changes.

Chapter One

Introduction

1.1 Introduction

Entrepreneurship is important for the economic development of many nations. Thailand is no exception. In Southeast Asia, dynamism is not merely described in terms of the size of markets or access to labour but also the growth of companies and entrepreneurship (Kao & Tan 2001; Schaper & Volery 2004). Cultivating entrepreneurship and facilitating organizational development are therefore fundamental to economic growth and the well-being of many individuals (Ahwireng-Obeng & Ncube 2007; Bailom, Matzler & Tschernjak 2007; Deakins & Freel 2003; Liang 2004; OECD 2005; Pearce & Robinson 2009; Seelos & Mair 2007).

Given this understanding, policy makers and academics are re-examining existing economic strategies and policies by including the role of entrepreneurship in economic development. In Thailand, private business enterprises such as Thai auto parts manufacturing companies play an important role in economic development, contributing to employment, production, and national income as well as providing opportunities to lessen poverty (Dicken 2003; Liang 2004; Limsavarn 2004; Schaper & Volery 2004). In this study, the entrepreneurship development is based on the shift in the emphasis of entrepreneurship research from the individual to the firm. Thus, entrepreneurship in an organization or corporate entrepreneurship (CE) is the main focus of this thesis. The term CE does not refer to business start-ups from the field of entrepreneurship research but involves entrepreneurship inside existing organizations (Antoncic & Hisrich 2001) that leads to a variety of innovations such as the renewal of operations, and the creation of new products, services, processes, and markets, thus improving the firm's performance and competitive position (Burns 2008; Kollmann & Stockmann 2008; Pearce & Robinson 2009).

This chapter is structured as follows. Firstly, it explains the background of the research and this is followed by the objectives of the research. The next section describes the research process followed by an outline of the research. Finally, the contributions of the thesis are discussed.

1.2 Background of the Research

Entrepreneurship has long been considered a significant factor for economic growth and development (Bailom, Matzler & Tschernernjak 2007; Burns 2008; Kuratko et al. 1993; Morris, Kuratko & Covin 2008; OECD 2005; Zahra, Jennings & Kuratko 1999). Intensifying global competition and rapid technological progress have heightened the need for companies to become more entrepreneurial in order to survive and prosper.

There has been interest among policy makers and academics in examining the role of entrepreneurship and business enterprises in the economic development of Southeast Asia. This research emphasis has become essential in the light of Asian Financial Crisis of 1997–98 and the regional economic slowdown in 2001 (Hew 2004; Schaper & Volery 2004). Moreover, globalization and the rise of China as an industrial powerhouse have forced Thailand to re-evaluate its economic strategies and policies. China is now the largest recipient of foreign direct investment (FDI) in the developing world and is expected to become the world's largest manufacturer in the coming decade (Hew 2004). In addition, Vietnam, Malaysia and India are increasingly being considered for investment; more than they had been in the past (BOI 2007f). These have led to a serious competitive challenge for FDI to support economic development in the nations of Southeast Asia, particularly Thailand. Thailand has been largely driven by strategies that favoured foreign direct investment (FDI) and export-oriented manufacturing industries (Zsin Woon et al. 2007). The reliance on foreign capital such as FDI and the emphasis on export-led industrialization are the basic elements of Thailand's economic development model.

To sustain growth, Thailand needs to improve its productivity by shifting from low-cost high-productive labour as an investment strategy to a knowledge-based economic system that is driven by innovation and cutting-edge technology (BOI 2006b, 2007f). Thai automotive industry can lead in this shift since it has significant potential for greater value adding and further growth (Ketels 2003). The automobile industry is one of the five sectors in which Thailand aims to be a regional manufacturing hub in Asia (BOI 2008b), and the auto parts manufacturing sector plays a major role in the development of Thailand's automotive industry (BOI 2008f; Limsavarn 2004). Thus, the focus on upgrading the capabilities of the Thai auto parts manufacturing firms is critical.

The competitiveness of Thai auto parts manufacturing firms has been recognized as a priority policy area for Thailand's economy. Competitiveness is defined as the ability of firms to remain profitable by offering to the market the products and services that satisfy consumers' demand (Rodriguez 2004). Companies become more competitive by competing with other companies (Porter 2003; Supratikno 2004). Adaptability and efficiency of those firms should be included as they provide employment potential (Hew 2004; Morris, Kuratko & Covin 2008). Together, the achievement of competitiveness and increased employment would contribute to sustainable poverty reduction in the country. Therefore, exploring corporate entrepreneurship (CE) for this sector may be one way to increase the sector's competitiveness.

Whether Thailand's auto parts manufacturers can sustain their growth will depend on their ability to compete on innovation and value-adding rather than on cost. Corporate entrepreneurship can be beneficial for a growth strategy as well as for competitive advantage. In addition, corporate entrepreneurship is viewed as an effective means for emerging-economy firms to revitalize, reconfigure resources and transform into knowledge-based or innovative-oriented firms that are ready to compete in the global economy (Bierly & Daly 2007; Wiklund & Shepherd 2003; Yiu & Lau 2008).

Attention to firm-level entrepreneurship increased over the last two decades of the twentieth century, according to an incomplete definition of the entrepreneurship field in

terms of the personality and traits of the individual entrepreneur (Kollmann & Stockmann 2008; Liang 2004). A firm-behaviour perspective is suggested because behaviours rather than attributes enable researchers to understand entrepreneurial process and practice as well as gain insights on critical issues such as how to promote entrepreneurship by learning the nature of the entrepreneurial process (Covin & Slevin 1991; Jennings & Lumpkin 1989; Kollmann & Stockmann 2008; Stevenson & Jarillo 1990). Thus, entrepreneurship has become increasingly accepted as a firm-level phenomenon deserving scholarly attention (Aloulou & Fayolle 2005; Barringer & Bluedorn 1999; Brown, Davidsson & Wiklund 2001; Gamble & Thompson 2009; Kollmann & Stockmann 2008; Zahra, Jennings & Kuratko 1999). The term corporate entrepreneurship can be viewed as the application of entrepreneurship as firm behaviour, especially entrepreneurship within an existing organization. Corporate entrepreneurship also refers to an internal process in an existing firm (not a new start-up) that leads to a variety of innovations. These can be new business ventures, innovative activities, developing strategic decision-making orientations or firm self-renewals (Antoncic & Hisrich 2001).

Studies have been conducted on entrepreneurship, entrepreneurial orientation, intrapreneurship and corporate entrepreneurship in the U.S. and other developed countries (Bruton, Ahlstrom & Obloj 2008; Fitzsimmons et al. 2005; Luo, Zhou & Liu 2005). However, much less is known about the increasing importance of entrepreneurial orientations or activities and their performance impacts in developing countries. Thus, the generalization of the research findings from U.S. and Western based studies to the rest of the world, especially Asia, is questionable. Furthermore, it seems that existing corporate entrepreneurship literature lacks an integrative framework that conceptualizes and operationalizes the multidimensional construct of corporate entrepreneurship. Given that Thailand is undergoing economic transformation, this type of research is timely.

Another stream of corporate entrepreneurship research focuses on how environmental and organizational factors promote corporate entrepreneurship. For example, Morris, Kuratko and Covin (2008) claim that organizational strategy is effective for an entrepreneurial organization. In addition, Wheelen and Hunger (2008) suggest that the

external environment has a strong effect on the level of entrepreneurial intensity in the organization. As such, organizational and environmental influences are usually empirically examined as determinants of corporate entrepreneurship.

Covin and Slevin (1991) claimed that environmental and organizational factors have an effect on corporate entrepreneurship, but they did not empirically test their claim. The purpose of this study is to empirically test their model. To do this, the study aims to explore the relationship between corporate entrepreneurship and firm performance. In the past, most studies have used financial performance as the indicator for the outcome of corporate entrepreneurship. However, this study will also attempt to provide evidence that factors other than financial outcomes are also indicators for the outcome of corporate entrepreneurship (Zahra, Jennings & Kuratko 1999), specifically in Thai auto parts manufacturing firms.

This research will be the first major research investigation of the auto parts manufacturing industry of Thailand, particularly with the focus on antecedents and effects of entrepreneurial activity. This research will build upon previous corporate entrepreneurship studies (Antoncic & Hisrich 2001; Covin & Slevin 1991; Zahra, Jennings & Kuratko 1999) where research in the field is advanced. A new theoretical framework will be developed for the empirical study of the auto parts manufacturing sector of Thailand. It is an exploratory research with an aim to work on the basis of stated research objectives and testing of specified hypotheses in order to determine the applicability of existing theories in the Thai context.

1.3 Research Objectives

The objective of this research is to contribute knowledge to an overall understanding of the antecedents and effects of corporate entrepreneurship in Thailand, particularly the auto parts manufacturing sector. Firstly, this study aims to investigate the impact of environmental and organizational factors on corporate entrepreneurship in Thailand's auto parts manufacturers. External (dynamism, hostility, and heterogeneity) and internal

(strategy and culture) environmental factors are explored as determinants of entrepreneurial activity at the organizational level.

A further objective is to examine the relationship between corporate entrepreneurship and firm performance in Thailand's auto parts manufacturers. This will help improve understanding of the impact and contributions of entrepreneurial activity in auto parts manufacturers and in the development of Thailand. It is anticipated that this study will make a valuable contribution to corporate entrepreneurship literature by providing understanding and knowledge of entrepreneurial activity in existing firms in developing countries, particularly Thailand. The result will expand the literature and guide researchers in their review of theories of corporate entrepreneurship.

Finally, this study seeks to provide insights into Thai auto parts manufacturers' cultivation of corporate entrepreneurship in their operations in order to improve their performance and enhance competitiveness, leading to being recognized as an important contributor of economic growth for the country. This will provide a meaningful way for auto parts companies to understand themselves better so that they can prosper and achieve performance in a competitive environment. It is expected that the outcome from this research will provide supportive policies for the auto parts manufacturing industry, and will also assist the Thai government and policy makers in supporting and promoting private sector development, with the primary goal of enhancing competitiveness.

1.4 Research Questions

In order to achieve the objectives of the study outlined above, environmental factors, organizational factors, corporate entrepreneurship, and firm performance were identified for investigation and exploration.

The study contributes to corporate entrepreneurship research by answering the following questions:

- (1) What are the major factors which appear to influence corporate entrepreneurship practices of the auto parts manufacturing firms in Thailand?
- (2) Is there a positive relationship between corporate entrepreneurship and organizational financial performance and between corporate entrepreneurship and organizational non-financial performance of the auto parts manufacturing firms in Thailand?
- (3) Are there corporate entrepreneurship practices and firm performance that differ because of the size of the auto parts manufacturing firms in Thailand?

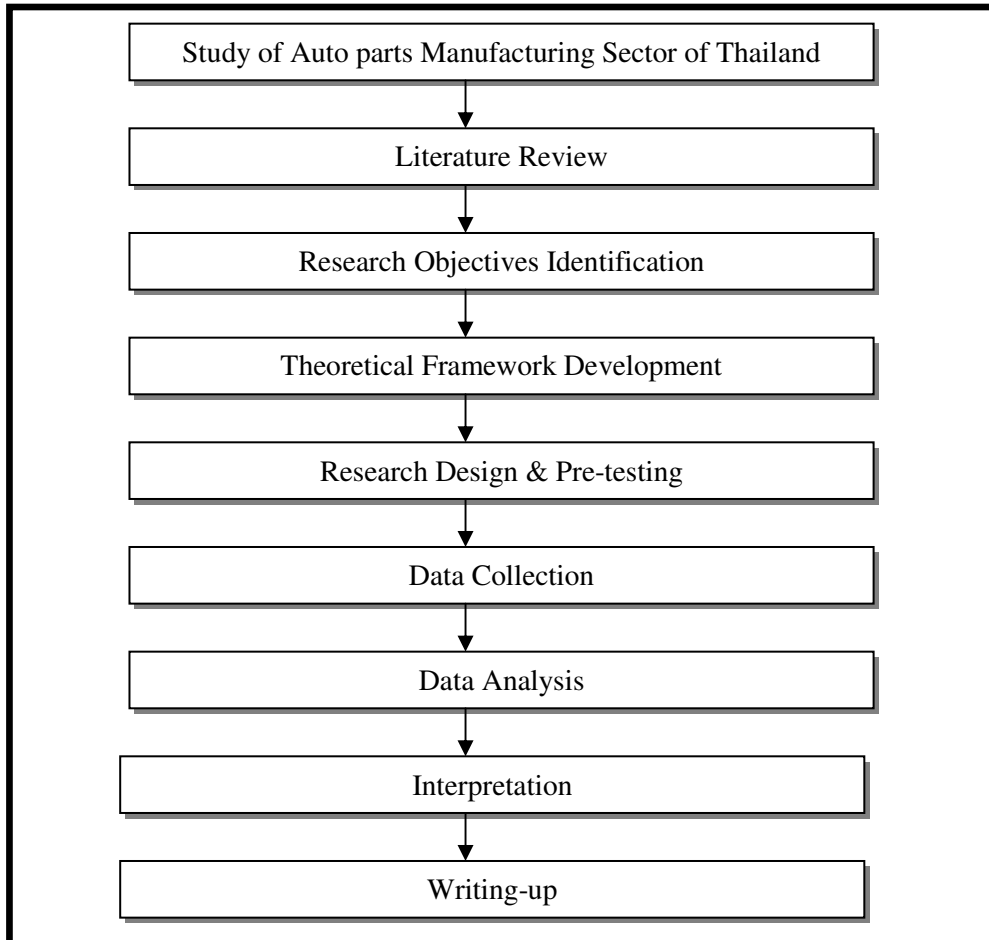
To answer these questions, this study presents and tests empirically a model of the antecedents and effects of corporate entrepreneurship in Thai auto parts manufacturing firms. In essence, this study seeks to take an important step toward an overall understanding of the influence of corporate entrepreneurship on firm performance in the auto parts manufacturing sector in Thailand, making progress in the two directions discussed earlier; namely, the antecedents and effects of corporate entrepreneurship. The study aims to develop and expand both the theory and the methods used in discussing corporate entrepreneurship.

1.5 Research Process

Figure 1.1 is a summary of the steps followed in this research. The first step of this study was to identify the research objectives after an extensive review and study of the auto parts manufacturing sector in Thailand, including the current situation and other possible impacts. The theoretical framework was then developed to provide a suitable understanding of the definition and a number of diverse variables of corporate entrepreneurship antecedents and performance. The questionnaire was designed based upon this theoretical framework and was developed in both English and Thai versions. The Thai version of the questionnaire was back-translated from the English questionnaire. The questionnaire was pre-tested prior to the commencement of the fieldwork. The primary data was collected through both a survey and personal

interviews with senior executives of auto parts manufacturing firms in Thailand. This was followed by data analysis, interpretation and, finally, writing-up.

Figure 1.1: Flowchart of Research Process



1.6 Thesis Outline

Figure 1.2 shows the structure of this thesis, which is organized into five parts based on the issues described above. Part 1 comprises two chapters. Chapter 1 describes the research background, research objectives, research process, and thesis structure. Chapter 2 introduces the background of entrepreneurship, Thailand's economic growth, the automotive industry in Thailand and the auto parts sector, and critical issues concerning entrepreneurial activity in Thai auto parts manufacturing firms.

Part 2 consists of two chapters. Chapter 3 reviews relevant literature, including corporate entrepreneurship theory and its outcomes in terms of financial and non-financial performance. This chapter also identifies gaps in the research of corporate entrepreneurship and the applicability of the definitions of entrepreneurship within developing country contexts. Chapter 4 further examines the antecedents of corporate entrepreneurship in terms of external environments and organizational factors. This chapter also introduces the theoretical framework and its hypotheses, which were developed based on previous research findings to examine the extent to which this existing knowledge applies in the developing country context.

Part 3 explains the methodology used in this research. Chapter 5 discusses the research design and methodology, the population, sample group, research instruments, analytical techniques and the approaches to the study. The research objectives for the study support a mixed-method approach which utilizes both quantitative and qualitative methods of data collection and analysis. This approach allows the investigation and exploration of the diverse variables that provide detailed information about the auto parts manufacturing sector, and the testing of hypotheses to determine the applicability of existing theories in the Thai context.

Part 4 presents an analysis of the data gathered from both the survey and the interviews. Chapter 6 describes the characteristics of the respondent companies and of the respondents. This chapter also presents the preliminary analysis of the survey data conducted prior to running the further analyses, including confirmatory factor analysis (CFA), structural equation modeling (SEM) and multivariate analysis of variance (MANOVA). The remaining data analysis is divided into two main chapters. Chapter 7 reports on the results of the quantitative analysis of the data, using statistical techniques such as SEM, CFA and a reliability test to test the four hypotheses of the study. The findings arising from this study are based on four hypotheses: the relation between environmental conditions and corporate entrepreneurship, the relation between organizational strategy and corporate entrepreneurship, the relation between organizational culture and corporate entrepreneurship, the relation between corporate entrepreneurship and financial performance as well as non-financial performance.

Chapter 8 analyzes the final model for testing the hypotheses and explores the differences between small-sized and medium-sized enterprises (SMEs) and large firms on corporate entrepreneurship and firm performance. The results from the qualitative data using content analysis are also presented in this chapter. Frequency data illustrates the themes and findings arising from the interview results.

The final part presents the discussion and conclusions of this thesis. Chapter 9 discusses the overall results of the study based on the results presented in part 4, using statistical techniques such as structural equation modeling (SEM), confirmatory factor analysis (CFA), reliability test, correlations and multivariate analysis of variance (MANOVA) to test the four hypotheses of the study. Chapter 10 provides a concluding profile of the Thai auto parts manufacturing sector and reflects on the theory of corporate entrepreneurship in the light of the findings of this study, highlighting contributions to the theory of corporate entrepreneurship. The thesis concludes in this chapter with the summary of the major findings and implications of the study for further research and recommendations for auto parts manufacturers, government and policy makers.

Figure 1.2: Structure and Organization of the Thesis

<p>PART ONE: INTRODUCTION AND RESEARCH BACKGROUND</p> <p>Chapter 1 Introduction This chapter describes the research background, the objectives and questions of the research, research process, an outline of the research, and the contributions of the thesis.</p> <p>Chapter 2 Overview of the Auto parts Manufacturing Industry of Thailand This chapter provides the background of entrepreneurship, an overview of Thailand's economic growth, automotive industry, auto parts sector, and critical issues concerning entrepreneurial activity in the Thai auto parts manufacturing sector.</p> <p>PART TWO LITERATURE REVIEW</p> <p>Chapter 3 Corporate Entrepreneurship This chapter reviews the literature, focusing on corporate entrepreneurship and the outcomes of corporate entrepreneurship.</p> <p>Chapter 4 Corporate Entrepreneurship Antecedents & the Conceptual Framework This chapter examines antecedents of corporate entrepreneurship and develops the theoretical framework and its hypotheses based on the literature review.</p> <p>PART THREE METHODOLOGY</p> <p>Chapter 5 Research Methodology This chapter describes the research design in this research which employs a mixed-method approach combining both quantitative and qualitative methods of data collection and analysis.</p> <p>PART FOUR ANALYSIS AND RESULTS</p> <p>Chapter 6 Preliminary Analysis of Data This chapter analyzes the characteristics of responding firms and of the respondents, and performs descriptive analyses prior to further analyses.</p> <p>Chapter 7 Model Development This chapter reports on the results of the quantitative analysis of the data, using statistical techniques such as structural equation modeling (SEM), confirmatory factor analysis (CFA), and a reliability test to test the four hypotheses of the study.</p> <p>Chapter 8 Hypotheses Testing & Results This chapter presents the hypotheses testing based on the analysis of the final model, and reports on the results of the comparison between SMEs and large firms, employing multivariate analysis of variance (MANOVA), as well as the findings of qualitative data using content analysis.</p> <p>PART FIVE DISCUSSION AND CONCLUSION</p> <p>Chapter 9 Discussion This chapter discusses the overall results of the study based on the four hypotheses and comparison between SMEs and large firms.</p> <p>Chapter 10 Conclusion The chapter comprises a summary of the findings, the implications of the findings, the limitations of this research and suggestions for future research.</p>

1.7 Contributions of this Research to Theory

This research is a pioneering academic study on corporate entrepreneurship in the auto parts manufacturing sector of Thailand. It provides the following distinct contributions to the body of knowledge in the area of corporate entrepreneurship antecedents and effects in the Thai context.

Firstly, this research seeks to explore and provide detailed information on corporate entrepreneurship and provides a deep insight into antecedents and effects of entrepreneurial orientation and activities in Thai auto parts manufacturing firms. The theoretical framework developed covers the multidimensional and complex variables in this study and will enable researchers to further examine corporate entrepreneurship in industries other than the auto parts manufacturing industry of Thailand. In addition, this study will provide a foundation for further studies in other developing countries.

Secondly, this study provides detailed insight into the corporate entrepreneurship of the Thai auto parts manufacturing sector, which will be valuable for top management to facilitate and to stimulate corporate entrepreneurship in their organizations in order to improve performance and achieve competitive advantage, with the focus on external and internal environments. It will also help to explain differences that may occur due to firm size.

Finally, this study will allow companies who are not engaged in corporate entrepreneurship to gain insights into the future development of corporate entrepreneurship in their organizations, and also allow Thai businesses outside the auto parts manufacturing industry and foreign firms who seek to expand their business into Thailand to understand selected features of a Thai industry.

1.8 Chapter Summary

This study is an exploratory study on corporate entrepreneurship antecedents and effects in the Thai context, particularly the auto parts manufacturing industry. There has been very little research in corporate entrepreneurship in developing countries, particularly Thailand. Thus, this thesis attempts to extend the corporate entrepreneurship literature with an aim to contribute to knowledge about corporate entrepreneurship in a developing country context, in particular, Thailand. In addition, the relationship between corporate entrepreneurship and firm performance, including both financial and non-financial measures has not been explicitly examined. This research, therefore, aims to fill those gaps in the literature.

In this study, environmental conditions including dynamism, hostility and heterogeneity, and organizational elements in terms of strategy and culture are explored as determinants of corporate entrepreneurship. The relationship between corporate entrepreneurship and firm performance comprising both financial and non-financial aspects is also examined.

The findings of this study will provide contributions to theory and new insights on corporate entrepreneurship antecedents and effects in the auto parts manufacturing sector in Thailand. This thesis's results will benefit the auto parts manufacturing industry as well as the country's economic development, since recommendations for Thai auto parts manufacturing companies, business enterprises in other industries, and new foreign investors and those who already have their operations in Thailand are provided. The implications for future research are also provided.

In this introductory chapter, an overview of the content of this thesis was provided, consisting of the background of the research, the research process, the thesis structure, and the contributions of the research. An overview of the definitions of entrepreneurship and information on the study area, Thailand, especially on the country's economic conditions and its automotive and auto parts industry, are discussed further in the next chapter.

Chapter Two

The Automobile Industry in Thailand

2.1 Introduction

Before turning to the review of literature in the next chapter, the entrepreneurial activity of an organization and Thailand's economic development as well as its auto parts manufacturing industry needs to be discussed. The background contextualization to this research is addressed in this chapter. This chapter identifies gaps in the entrepreneurship literature, which initially was focused on the study of individual entrepreneurial behaviour. In recent years there has been a shift to the study of the organization, which this thesis also addresses. As such, research addressing entrepreneurial activities of firms has been increasing over the past two decades. The auto parts manufacturing sector, which is targeted as an important contributor to Thailand's economic development, is analyzed in relation to entrepreneurial activities. This chapter provides the background for understanding what entrepreneurship really means and its role in promoting and developing entrepreneurship in the auto parts manufacturing industry in Thailand.

This chapter is structured as follows. It provides the background understanding of the concept of entrepreneurship, Thailand's overall economic development, an overview of Thailand's automotive industry and Thailand's auto parts industry. Finally, issues concerning entrepreneurial activities in Thailand's auto parts sector are presented.

2.2 Background of Entrepreneurship

Before presenting definitions in the field of corporate entrepreneurship, the term 'entrepreneurship' is briefly discussed. Although entrepreneurship is recognized as having been of fundamental importance for the development of national economies for

over 200 years, and many researchers have turned their attention to it, there is no agreement on the definition of entrepreneurship (Bruyat & Julien 2000; Davidsson 2005; Morris, Kuratko & Covin 2008; Schaper & Volery 2004). Scholars seem to differ in their views on who is an entrepreneur, what an entrepreneurial venture looks like, and the nature of the activities that represent entrepreneurial behaviour (Morris, Kuratko & Covin 2008). This adds to the confusion related to the development of entrepreneurship theory.

Entrepreneurship has been defined in different ways from the diverse perspectives of economic theory, sociology, psychology, anthropology, political science, and business administration (Cassis & Minoglou 2005; Schaper & Volery 2004; Zahra 2007). For example, in the economic view, entrepreneurship is perceived as profit opportunity identification and exploitation resulting from the market disequilibria, by breaking away from the path of routine and implementing innovations under conditions of uncertainty (Cassis & Minoglou 2005; Foreman-Peck 2005). According to a psychology approach, the behaviour of the entrepreneur is best understood in terms of the number of intrinsic qualities, attitudes and traits (Landstrom 2005). From a management perspective, entrepreneurship is viewed as a process of allocating resources by exploiting opportunity into marketable products and services (Stevenson & Jarillo 1990).

Although such a diverse mix of disciplines brings the potential for richness and texture, a major weakness is that scholars from one field tend to ignore entrepreneurship research by scholars in the other fields (Bruyat & Julien 2000; Bull & Willard 1993). Bull and Willard (1993) claimed that the problem of definition continues to be difficult for the development of theory as too many researchers adopt their own definitions and terms of entrepreneurship within their discipline or field.

The concept of entrepreneurship in regard to the individual entrepreneur was first developed in business history, which was conceived as an academic discipline in the late nineteenth century (Cassis & Minoglou 2005; Schaper & Volery 2004). The entrepreneur was seen as having different skills, coordinating scarce resources, making judgments and decisions and taking risk (Lowe & Marriott 2006). However, the theory

of entrepreneurship in the early research in entrepreneurship tends to be incomplete by defining the field in terms of the personality and characteristics of the individual entrepreneur (Eckhardt & Shane 2003; Kollmann & Stockmann 2008; Liang 2004; Schaper & Volery 2004). The identification of the entrepreneurship concept with entrepreneur does not withstand the study of other researchers (Shane & Venkataraman 2000). Thus, over the first two decades in the twentieth century, the focus of research in business history shifted from the individual entrepreneur to the study of individual firms. The corporation became the basic unit of analysis (Cassis & Minoglou 2005).

Stevenson and Jarillo (1990) claimed that trying to understand the entrepreneurial process or behaviour allows researchers to make use of previous research findings as well as gain insights on crucial issues such as how to foster entrepreneurship by understanding the nature of the entrepreneurial process. This approach allows researchers to deal with both individual and organizational entrepreneurship. Therefore, the focus of studies shifted from the individual to the process in the development of new entrepreneurship strategies, with the organization as the focus (Aloulou & Fayolle 2005; Kollmann & Stockmann 2008). This allowed alternative definitions of entrepreneurship to flourish. For example, Bhuian et al. (2005) defined the entrepreneurial process as the dynamic capabilities that involve all functions, activities and actions of the firm to create wealth through product and process innovation as well as market development. Shane and Venkataraman (2000, p. 218) noted that “entrepreneurship involves the study of sources of opportunities, the processes of discovery, evaluation, and exploitation of opportunities”.

In analyzing the diverse and complex definition of entrepreneurship, the pursuit of opportunity is the essence of entrepreneurship (Eckhardt & Shane 2003; Morris, Kuratko & Covin 2008; Pearce & Robinson 2009; Shane & Venkataraman 2000; Stevenson & Jarillo 1990). When entrepreneurship is viewed as a process, it includes both an opportunity identification and an action component (Bratnicki 2005). A related point of view by Morris, Kuratko and Covin (2008) stated that at the heart of the entrepreneurial process lies the ability to identify new opportunities in the external environment, assess and prioritize these opportunities, and then translate these

opportunities into sound business concepts. The definition of entrepreneurship by Stevenson and Jarillo (1990) can easily be applied to a corporation. They defined entrepreneurship as a process by which individuals, either on their own or inside an organization, pursue opportunities without regard to the resources they control.

In addition, innovation is also claimed as the core of entrepreneurship. Entrepreneurship can be defined on the basis of the concept of innovation (Covin & Miles 1999; Morris, Kuratko & Covin 2008; Schuler 1986). This concept of entrepreneurship is heavily influenced by Schumpeter's (1984) view of the entrepreneur as one who carries out new combinations, which may take the form of new products, processes, markets, organizational forms, or sources of supply. The new combinations of resources in Schumpeter's terms refer to the transformation of the firm into something significantly different from what it was before (something new). In an organizational context, Chung and Gibbons (1997) point out that successful champions of innovation act like transformational leaders who express a clear vision about the potential of an innovation and receive support from others in mobilizing resources to exploit the opportunity. Thus, entrepreneurship is an organizational process for transforming individual ideas into collective action through the management of uncertainty.

Defining entrepreneurship is challenging because a definition that is too narrow may cause research to be inapplicable to important areas (Sharma & Chrisman 1999; Stevenson & Jarillo 1990). On the other hand, too broad a definition may make it difficult to capture what the term actually means (Lowe & Marriott 2006). Many scholars have a narrow view, since they associate entrepreneurship with the start-up of new businesses and often ignore existing and large firms (Burns 2008; Kollmann & Stockmann 2008). Casson (2005) argued that entrepreneurship occurs in organizations of all sizes and types. Seeking and capitalizing on opportunity, taking risks, and pushing an innovative idea through to reality represent the importance of what entrepreneurs do. Entrepreneurship is not limited to a set of people. An entrepreneurial perspective can be developed in any individual. An entrepreneurial perspective can be developed inside and outside of a company. The aim is to turn innovative ideas into organizational realities (Morris, Kuratko & Covin 2008). Similarly, Sharma and Chrisman (1999)

defined entrepreneurship as acts of organizational creation, renewal, or innovation that occur within or outside an existing organization. Entrepreneurship is redefining business concepts. Companies must continually adjust, adapt, or redefine themselves. This is a fundamental principle in a free market (Morris, Kuratko & Covin 2008).

Entrepreneurship, both as a concept and in practice, is multifaceted; thus its definition depends on the aim of the research undertaken. In this study, the focus is on the nature of entrepreneurship and how it is applied in established corporations. Thus, definitions of entrepreneurship by Morris, Kuratko and Covin (2008) seem relevant to this study since they capture the importance of entrepreneurship by integrating its core elements. Entrepreneurship is something that resides in each and every employee in an organization (Cohen 2002; Gamble & Thompson 2009; Lau & Ngo 2004). It has been pointed out that entrepreneurship is not limited to starting a small business. It is about a process of value creation through unique resource combinations for the exploitation of an opportunity. Thus entrepreneurship is a universal concept that can be applied in any organizational context. Morris, Kuratko and Covin (2008) noted that this phenomenon can occur in start-up ventures, small firms, mid-sized companies, large conglomerates, non-profit organizations, and even public sector agencies.

The previous definitions make it clear that entrepreneurship is a phenomenon that can occur in any organizational context. Definitions of entrepreneurship can easily be applied to a corporation and “corporate entrepreneurship” becomes common term when the stream of research investigates entrepreneurial phenomenon on the organizational level of an established organization. Thus, the field of corporate entrepreneurship does not limit itself to the study of internal venturing, but applies also to the ability of organizations to act entrepreneurially. The definitions pertaining to corporate entrepreneurship will be discussed in Chapter 3.

The overview of Thailand’s economic performance and its automotive and auto parts manufacturing industry is discussed below.

2.3 Overview of Thailand's Economic Performance

The Kingdom of Thailand is located in the heart of Southeast Asia, making it a gateway to nations of the Greater Mekong. It is surrounded by Laos to the north and north-east, Myanmar to the north and west, Cambodia to the east and Malaysia to the south (NESDB 2001). A developing country of approximately 65 million people, of which approximately 10 million live in the capital city, Bangkok (OIE 2006), Thailand has been successfully transiting from a low-cost factor-driven to a manufacturing and export-driven economy by pursuing economic openness and macroeconomic stability.

In 2008, Thailand posted a 5 percent rate of real GDP growth. In terms of the structure of the economy, the manufacturing sector in 2007 accounted for the largest share of GDP at 39.6 percent, but employed only 15.8 percent of the workforce, as shown in Table 2.1.

Table 2.1: Thailand's GDP and Labour Force by Sector

Structure of the Economy in 2007		
Sector	GDP by Sector (%)	Labour force by occupation (%)
Agriculture	8.8	38.8
Manufacturing	39.6	15.8
Wholesale and Retail Trade	13.6	15.6
Other services*	37.9	24.4
*Other services include financial sector, education, hotels and restaurants, etc.		
Source: Bank of Thailand		

The Thai economy has recovered strongly from the Asian Financial Crisis of 1997. It grew gradually at 6 percent annually in 2002–2004 (Zsin Woon et al. 2007). This economic growth has contributed to poverty reduction. According to the World Competitiveness Yearbook, Thailand's unemployment rate of 1.1 percent ranked first, far below the average value of 6.6 percent for all countries. Thailand was 11th in exports as a percentage of GDP at 62 percent, compared with the average value of 42 percent for the 55 countries in the report (BOI 2008e). However, economic growth has slowed down over the past three years due to “depressed domestic demand driven by high

energy prices, rising interest rates and political uncertainty” (Zsin Woon et al. 2007, p. 3).

Thailand’s political crisis since 2006 has affected its economic outlook. Conflict between anti-Thaksin protestors from the People’s Alliance for Democracy (PAD) and the People’s Power Party (PPP) of Prime Minister Thaksin Shinawatra has created an unstable political environment (BangkokPost 2008; Min 2008). The first political transition occurred in September 2006 when the PAD’s protests against Thaksin led the military to oust the government headed by Thaksin. The military’s Council for National Security appointed an interim government and undertook to hold democratic elections by December 2007. The interim government’s public promotion of “sufficiency economy policy to strengthen the economy’s resilience to external shocks caused some investors and analysts to misinterpret this policy as one of reversing Thailand’s openness to foreign investment and international trade” (Zsin Woon et al. 2007, p. 3). Sufficiency economy philosophy, which is a middle-path development strategy to create self-immunity in the economic system in changing global conditions, shifted away from Thaksin’s pro-growth strategies, fuelled largely by boosting domestic consumption and investment mega-project programs (BangkokPost 2006; Chantanusornsiri 2006). The mega-project marketing successfully caught the imagination of local businessmen and raised interest among investors around the world (BangkokPost 2006). Given the interim status of the new government and the concept of the sufficiency economy, this development philosophy was misunderstood among investors as one of economic isolationism.

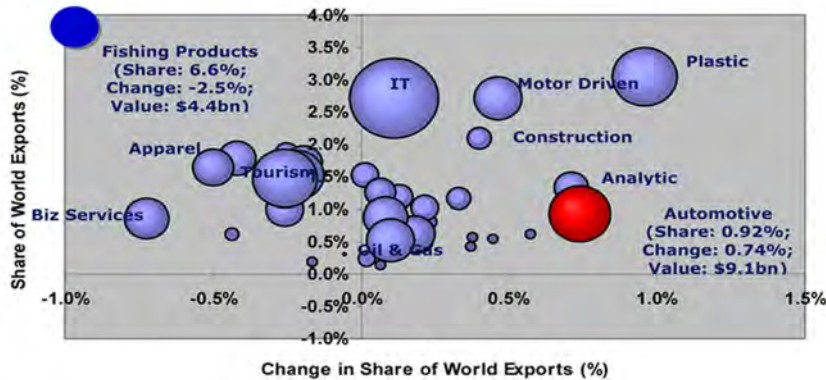
Thailand returned to democracy in late December 2007, raising hopes that the new prime minister, Samak Sundaravej, leader of the PPP, could push forward with needed infrastructure investments and policy initiatives required to open up economic growth (BangkokPost 2008). However, this led to another political crisis in 2008, resulting in a change of government for the third time since 2006. Samak resigned and the PPP deputy leader, Somchai Wongsawat, was elected as prime minister in September 2008. However, in early December 2008, Somchai was removed from the premiership when the PAD claimed that Samak Sundaravej and Somchai Wongsawat were proxies for

Thaksin. In late December 2008, yet another new government was formed, headed by Abhisit Vejjajiva, leader of the Democrat Party, which was able to gain sufficient support from other political parties and won a special vote in parliament (BBC 2008). This instability in the political environment of Thailand has caused nervousness among foreign investors.

The three years of domestic political tensions has dampened economic growth in Thailand. Political stability remains a top concern for both private enterprises and foreign investors. Confidence in Thailand as one of the most stable investment destinations in Southeast Asia could be further eroded. Given the uncertainty of the government's economic position, private investors appear to be deferring their investments at a time when capacity utilization requires expanded production capacity to cope with future demand growth (Zsin Woon et al. 2007).

Strong export performance, resulting from increased global growth in 2006, helped to mitigate the economic growth slow-down due to depressed domestic demand driven by high energy prices, rising interest rates and political uncertainty. According to the share of the world exports, the relative performance of Thailand's exports in 1997–2005 exhibits the structural shift from cost-driven factors to export-driven economic development over the past decade (see Figure 2.1). Thailand's automotive industry exported about US\$ 9.1 billion over 1997 to 2005, which was more than triple its share of world exports from 1997 (Zsin Woon et al. 2007). The relatively strong export performance of the automotive industry supports the Thai government's efforts to become a world leader in this particular niche market. The overview of Thailand's automotive industry is now presented.

Figure 2.1: Thai Export Performance (1997–2005)



Source: Zsin Woon et al. (2007)

2.4 Overview of Thailand’s Automotive Industry

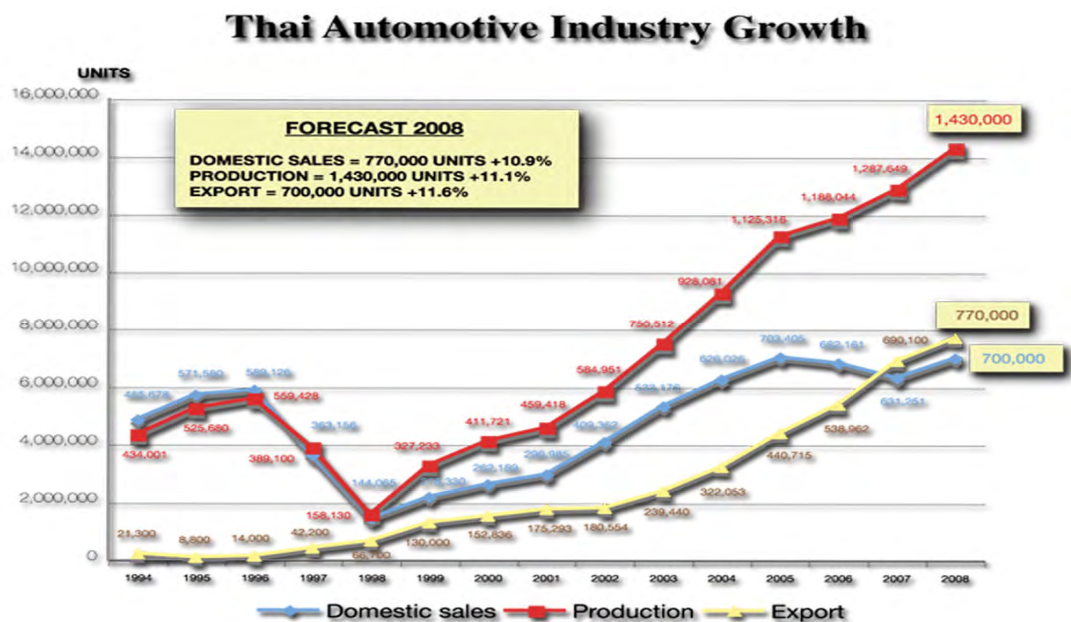
The automotive industry is considered as an important contributor to the industrialization of developing countries. Thailand’s automotive industry is a key strategic driver of the country’s economic growth and one of the five core industries in which Thailand aims to be a regional manufacturer and supplier in Asia (BOI 2008b; Panthong 2005).

The automotive industry in Thailand started in 1961 and has grown from being an import-substitution to an export-oriented industry. The transition towards a liberalized policy only began in the 1990s and accelerated after the Asian Financial Crisis in 1997–1998 when the government responded quickly to restore and maintain investors’ confidence in the business environment and to attract foreign direct investments (FDI) to the country. The large domestic market size, market growth potential, liberal trade and investment policy, the readiness of support industries, and Thailand’s geographical advantage as a hub of ASEAN were attractive to foreign investors and attracted some of the world’s major auto manufacturers to the country.

According to the Thailand Automotive Institute, production between 1997 and 2004 increased on average by 81.2 percent per year (Figure 2.2). By 2005, Thailand had the largest production capacity in ASEAN, exporting about 540,000 cars per year and

generating over US\$5 billion in export revenue (Zsin Woon et al. 2007). Production in 2007 was 1,301,116, with domestic sales of 631,251 units (BOI 2008b). The pickup truck is the most popular type of automobile in the Thai market, with more customized model variations than anywhere in the world (Zsin Woon et al. 2007). Sales of the pickup trucks are more than 60 percent of the overall vehicle market. Pickup trucks have become the product champion for Thailand, as Thailand is the world's largest producer of pickup trucks (BOI 2008f). This is reflected by the sheer size of production, resulting from strong domestic market conditions (Zsin Woon et al. 2007).

Figure 2.2: Thai Automotive Industry Growth



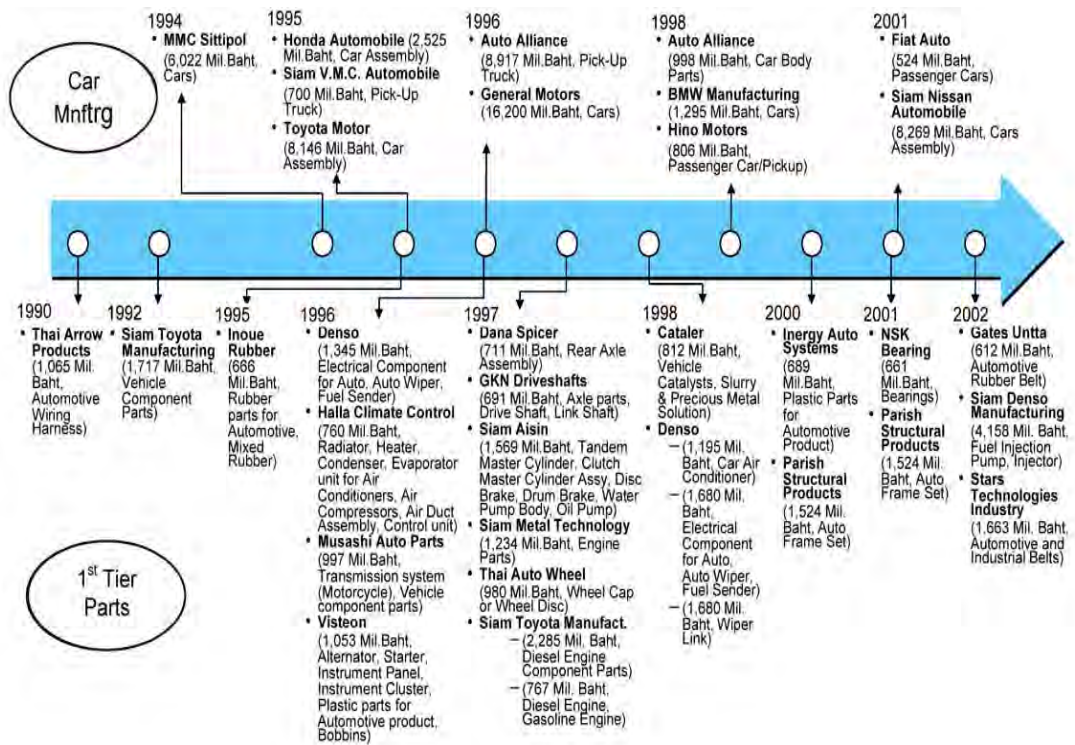
Source: BOI (2008f)

Thailand's automotive industry success is the result of its evolution from import-substitution policies to liberalized policies in keeping with current globalization trends. These include loosening tariff barriers, abolishing local content measures, promoting investments and exports, as well as cooperating with international communities such as ASEAN, APEC and WTO (OIE 2006). The liberal economic policies of Thailand have removed entry barriers into the market for foreign investors, creating a friendly

environment with no export requirements and no foreign equity restrictions in manufacturing (BOI 2006a).

The liberalization policies have enabled the country to benefit from the global trends in relation to production-relocation, especially by Japanese firms. Moreover, both expansion of investment by existing Japanese players and the entry of major European and U.S. players in both assembly and parts manufacturing have increased to strengthen their market position in the Thai market (Figure 2.3). Thus, nearly all of the world's major car manufacturers have local assembly operations. Also, the entry of new global parts manufacturers such as Denso and Visteon have helped stimulate the development of an auto parts industry and therefore enhance industry competitiveness (Dicken 2003; Zsin Woon et al. 2007).

Figure 2.3: Key Automotive FDI into Thailand from 1990–2003



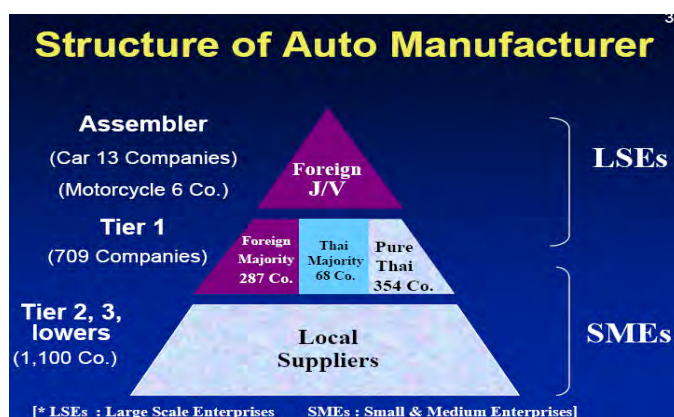
Source: Zsin Woon et al. (2007)

At present, Thailand is the largest automotive market and manufacturer in Southeast Asia and possibly has the highest quality parts manufacturing capability (Crawford 2005). It is one of the few growing automotive markets in the world and stands as the world's largest producer of pickup trucks, the seventh largest automotive exporter, and the fourteenth largest automotive producer (BOI 2008f). The country is now continuing to make steady progress to achieving its goal of 2 million units by the year 2010, at which time Thailand will have moved up from its current fourteenth place ranking to become one of the world's top ten automotive manufacturing countries (BOI 2006a).

2.5 Overview of Thailand's Auto Parts Industry

The successful automotive industry is directly related to a strong support industry. The auto parts industry is a critical advantage contributing to the industry's strength while giving Thailand an edge over competitors (Crawford 2005; Dicken 2003; Porter 2003). According to the Thailand Automotive Institute, there are about 1,100 local suppliers and more than 700 first-tier manufacturers employing an estimated total workforce of approximately 300,000 workers, as seen in Figure 2.4 (BOI 2006a). They produce a wide range of parts, from steering wheels to the most cutting-edge electronic components.

Figure 2.4: Structure of Thai Auto Manufacturing



Source: The Thailand Automotive Institute

Automotive parts manufacturers can be classified into two groups, namely OEM (Original Equipment Manufacturers) and REM (Replacement Equipment Manufacturers), which basically serve different market segments. OEM manufacturers or direct supplier groups produce auto parts which are for automobile assembly plants or are sent to the service centres of automobile dealers directly. On the other hand, REM manufacturers, which include auto parts shops, service centres, and car repair centres, have various grades of automobile parts available, including those for older-model cars.

Most of the first-tier manufacturers (OEM) are foreign medium and large firms with high levels of technological know-how. They employ 100,000 workers, with 50 percent of OEM manufacturers being joint-venture companies or receiving technical assistance from overseas companies, mostly from Japan (OIE 2006; Tiasiri 2002). These OEM parts manufacturers include first-tier suppliers, who are supplied by successively lower subcontracting tiers down the line, thus all contributing to OEM parts higher in the chain. Moreover, there are 1,100 suppliers for supporting industries and raw materials; these are small-to-medium enterprises (SMEs) (Santo 2005), comprising companies with 100 percent local capital and those with foreign capital (OSMEP 2005). The majority of purely Thai (PT) companies are in the second and third tiers, which provide raw materials to direct suppliers. They are also minor suppliers that provide automotive parts to OEMs, or are in the REM businesses that produce auto parts for replacing defective or worn out equipment, catering to parts outlets, auto service centres and garages.

Such strong supporting industries for automotives offering a local market and opportunities for the development of exports enhance Thailand's attractiveness investment location as an auto parts production base (Santo 2005). The world's major auto manufacturers have their operations in Thailand to export spare parts to plants in countries around the world, or find Thailand a good place to source parts and components due to their high quality and international standards attainment.

According to the Japan Automobile Manufacturers Association (JAMA), the quality of automotive parts in Thailand is rated as the best among ASEAN countries. The local

parts manufacturers supply approximately 80–90 percent of all the parts used for the assembly of pickup trucks, approximately 30–70 percent for passenger cars, and nearly 100 percent for motorcycles (OIE 2006). There are more than 3,000 parts and components in a typical vehicle. Locally produced or assembled parts include engines, suspension controls and springs, axles, hubs, propeller shafts, brakes, clutches, steering systems, body parts, electronic parts, air conditioning, tyres, wheels, internal and external trim components, and glass, as seen in Figure 2.5.

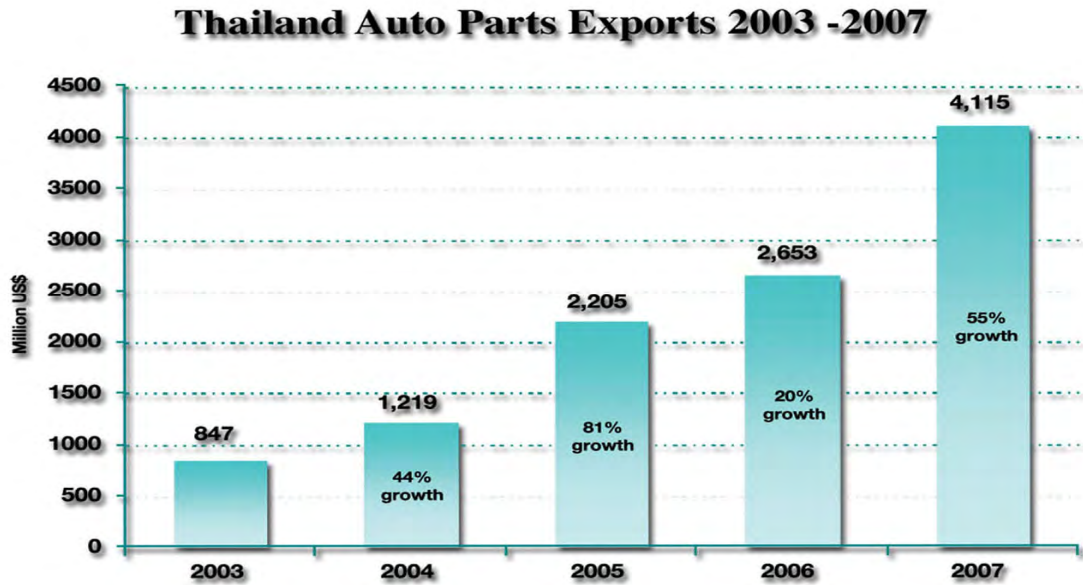
Figure 2.5: Thai Automotive Parts Suppliers OEM

Automotive Part Suppliers OEM				
Group of Part	Thai	Thai Majority	Foreign Majority	Total
1.Engine Parts	20	8	35	63
2.Electrical Parts	15	10	27	52
3.Drive/Transmission	17	6	29	52
4.Suspension/Brake	13	1	21	35
5.Body Parts	57	17	47	119
6.Accessories	18	2	19	39
7.Other	214	24	111	349
Total	354	68	287	709

Source: The Thailand Automotive Institute

As a result of the continuous growth of the automotive market and the automotive and auto parts industry, the net worth of the automotive industry in Thailand was US\$15.59 billion in 2007 (BOI 2009b), contributing to the country’s second highest level of export revenue after computers and electronic parts. The automotive industry sector represents approximately 8.4 percent of the nation’s gross domestic product (BOT 2008). Over the past five-year period from 2003 to 2007, Thailand’s auto parts exports grew dramatically by 386 percent (Figure 2.6). In 2007, the value of auto parts exported from Thailand was estimated at more than US\$4 billion (BOI 2008f).

Figure 2.6: Thailand Auto Parts Exports 2003–2007



Source: BOI (2008f)

Such growth in the export of auto parts and the sale of passenger vehicles is due to Thailand's strategic location within the ASEAN region. Asia is the fastest growing region in the world and Thailand serves as a gateway to Southeast Asia and the Greater Mekong sub-region, where newly emerging markets provide business potential (Figure 2.7). Thailand is located at the centre of a region that includes the 1.3 billion population of China, the 1 billion population of India and the 500 million population of ASEAN (BOI 2007e). Thus, it is convenient to trade with China, Japan, India, and the ten countries of the Association of Southeast Asian Nations (ASEAN). There is also ease of trading with the rest of the world because of a number of free trade agreements (FTAs) that Thailand has signed (BOI 2008b).

Figure 2.7: Geographic Location of Thailand



Source: Angkasuvana (2005)

Thailand's strategic location within the free trade areas offers auto parts manufacturers a comparative advantage for growth strategy in terms of broader new markets as well as export market expansion. The growth of the automotive market, with an expected 14 million passenger vehicle sales in 2008 in the Asia Pacific region, makes Thailand an attractive location for auto parts makers to base their manufacturing operations. The automotive market is continuing to increase due to Thailand's free trade agreements (FTAs) with Australia and Japan and other arrangements such as the China and India agreements with ASEAN are expanded in scope and exports increase to ASEAN member nations (BOI 2008f).

Investment opportunities are plentiful within Thailand's auto parts industry. With many of the world's leading auto manufacturers having operations in Thailand, the demand

for locally-produced auto parts and components is not only sizable, but is also growing. Currently, certain types of parts and components are still imported from abroad. These include production of electronic systems, molds and dies, jigs and fixtures, anti-lock braking systems, and substrates for catalytic converters. However, the Thai auto industry prefers to be able to source these parts and components locally, inviting manufacturers of auto parts to set up operations in the country (BOI 2008f). The BOI provides “priority activity” status to attract high-level parts producers to invest in such identified key components, providing excellent opportunities to auto parts companies looking to expand their market in Thailand (Santo 2005).

Clearly, all of the factors, including its growing auto assembly facilities, a large and continuous growth in domestic auto and export markets, a strategic location within free trade areas, quality parts and components, and innovation, in addition to the number of tax and non-tax incentives provided by the Thai government, offer Thailand’s auto parts industry a window of opportunity to upgrade its industry to become competitive.

2.6 Critical Issues Concerning Entrepreneurial Activities in the Thai Auto Parts Sector

To sustain growth, Thailand needs to improve its productivity and up-skill from low-cost high-productive labour as an investment attraction to a knowledge-based economic system driven by innovation and cutting-edge technology (BOI 2006b). The Thai automotive industry can lead in this transition since it has significant potential for greater value-added production and further growth (Ketels 2003). Thus, the Thai government has focused on strengthening the competitiveness of the targeted industry, particularly the auto parts and component sector, for economic development by adopting five key strategies: competitiveness, management, marketing, quality and innovation (Bunyamanee 2005).

According to Porter (2003), the government needs to improve the economy and the sophistication of the local companies and local competition. Entrepreneurship in

existing organizations is one important feature of organizational and economic development as well as wealth creation (Antoncic & Hisrich 2004). Researchers and practitioners have increasingly been interested in the concept because of the positive effect on revitalization and performance of the firms (Antoncic & Hisrich 2004; Burgelman 1983a; Duobiene 2008; Gamble & Thompson 2009; Guth & Ginsberg 1990; Zahra 1991). In the broadest sense, entrepreneurship allows firms to discover and exploit opportunities to create future goods and services (Morris, Kuratko & Covin 2008; Shane & Venkataraman 2000). Entrepreneurial activity involves the creation of new business venturing and innovative activities such as the development of new products, services, technologies, administrative techniques, strategies, and competitive posture (Antoncic & Hisrich 2001).

Thus, entrepreneurship is a key factor for firms in emerging economies to revitalize, reconfigure resources and transform themselves into knowledge-based or innovation-oriented firms ready to compete in the global economy (Dess et al. 2003; Kontoghiorghes, Awbre & Feurig 2005; Zahra, Jennings & Kuratko 1999; Zahra, Neubaum & Huse 2000). Entrepreneurship has been highlighted as a growth strategy and can be an effective means for achieving competitive advantage (Bhardwaj, Sushil & Momaya 2007; Gamble & Thompson 2009), not only for business enterprises but also for entire economies (Aloulou & Fayolle 2005; Carrier 1997; OECD 2005; Pearce & Robinson 2009). Entrepreneurship can affect an economy by increasing productivity, improving best practices, creating new industries, and enhancing international competitiveness (Dess, Lumpkin & McGee 1999; Hisrich, Peter & Shepherd 2005; Morris, Kuratko & Covin 2008; Pearce & Robinson 2009; Zahra 1999; Zahra & Garvis 2000).

The demands of global competition have intensified the need for cost-based strategies at the same time that advances in technology are requiring firms to update and differentiate by innovating and reengineering (Dess, Lumpkin & McGee 1999; Pearce & Robinson 2009). Dess, Lumpkin, and McGee (1999) suggest that successful entrepreneurship may depend on a company's ability to combine external forces that focus on efficiencies, processes and 'fit' with strategic approaches that emphasize

quality and effectiveness; successful entrepreneurship is thus utilized as a means to achieve competitive advantage.

The rapid growth and successful performance of Thailand's automotive and auto parts industry result from its proactive national investment policies of catching up with the current global trend from its auto parts makers' aggressive strategies to invest heavily for business expansion to both domestic and global markets, and from private business's adaptation to meet changes and trends in the market by continuously developing technologies and new products with superior quality (BOI 2009a; Limsavarn 2004). These activities involve entrepreneurial activities of firms (Yiu & Lau 2008).

2.6.1 Competitive Position

Despite the robust performance of the automotive industry in terms of expanding its share of world exports, the industry has been obstructed by weak supporting industries and weak factor conditions, including R&D and product development or process engineering (Limsavarn 2004; Zsin Woon et al. 2007). Some key areas are still considered uncompetitive, such as second-tier and third-tier parts manufacturers. Most of the sophisticated parts are either imported or produced by foreign firms and first-tier producers. Local firms are mostly SMEs serving as second- and third-tier producers who supply raw materials and basic components to the first-tier manufacturers. A study by the Thai Auto parts Manufacturers Association (TAPMA) (2002) indicated that "the scarcity of skilled workers and the low management abilities in the area of quality control" (Zsin Woon et al. 2007, p. 20) and production technology among local firms (OIE 2006; Panichapat & Kanasawat 2000) are the main reasons why firms fail to develop products to meet international standards. These problems also restrain the development of first-tier producers that play an important role in strengthening the automotive industry (Zsin Woon et al. 2007).

The entry of foreign parts producers due to the liberalized policies and free trade agreements (FTAs) signed with several countries enhances capabilities to produce auto

parts locally. The liberal policies and the FTAs create competition and drive market expansion; the environment so created stimulates local companies to increase their capacity and competitiveness to cope with intensified competition in both domestic and global markets.

Global procurement systems of auto manufacturers enable them to search for quality parts at reasonable cost (PricewaterhouseCoopers 2007). This has less impact for big auto parts manufacturers which are foreign ventures or overseas joint ventures with high technology (OIE 2006; TFRC 2002). Most of them are first-tier OEMs which produce and supply parts to auto factories, or firms under agreements and conditions with acceptable standards of production. Technology and new management strategies can be transferred efficiently from the parent company to the joint venture (JV) company. Financial support from the parent company is common in joint ventures. The support is normally for high technology machines, research activities and development programs to continuously improve products and production quality. However, management problems among partners in some cases might have led to a high-cost problem due to higher management expenses (Panichapat & Kanasawat 2000).

Some local parts manufacturers have technical assistance (TA) agreements with foreign companies. Foreign companies offer technical support in which the agreement will be made on a product-by-product basis. This technical assistance usually does not cover any funding or management development issues. An effective management style needs to be self-developed by the local company without any support from the foreign company. Management costs for a company operating under a TA are relatively cheaper than those of a joint-venture company (Panichapat & Kanasawat 2000).

On the other hand, second- and third-tier OEMs as well as REMs face difficulties from trade liberalization policies and the global procurement systems of automotive firms. REMs encounter competition from Taiwan, China and India in terms of prices and quality of products (TFRC 2002). Thai-owned companies manufacture without any support from foreign companies. Production technology and management style are developed within the organization. Local Thai companies are capable of manufacturing

parts that do not require high technology. Costs in these companies are relatively inexpensive due to the production technology which requires cheaper machines and lower wages. However, management problems can sometimes make production costs higher (Panichapat & Kanasawat 2000). The quality of products might be an issue in some cases. Although most of the local Thai companies make good-quality products, some may not meet global standards because of outdated technology and management problems.

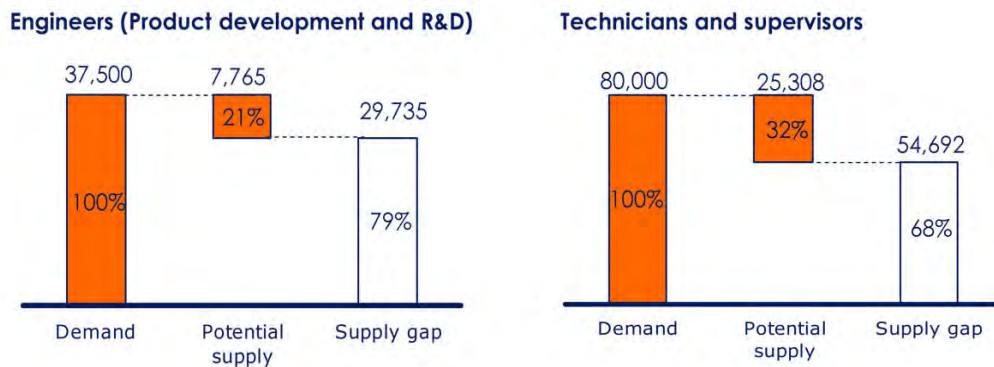
Therefore, local Thai companies need to improve their technical and research capabilities to meet the global market requirement, as manufacturers tend to buy parts in a more complex module or a complete set. These firms should also embrace the information technology trends more fully. Many of the local Thai companies have been transferred into JV and TA companies due to the financial crisis of 1997–1998 and to inadequate technical capability. Some of the remaining local Thai firms have opted for foreign technical support for helping them improve their technical know-how. Furthermore, the government is committed to develop and motivate companies to upgrade their machinery, improve efficiency, and achieve international standards (OIE 2006). In this regard, the BOI provides US\$153.52 million in support for improved machinery, R&D and training to help improve efficiency and competitiveness (BOI 2008c). By doing so, value-added activities and technological upgrading are encouraged.

The shortage of skilled labour in engineers, technicians and supervisors is another main constraint that “impedes the expansion of the Thai automotive industry into higher value-added activities such as R&D” (Zsin Woon et al. 2007, p. 21). Furthermore, the shortage of skilled labour hinders the ability of Thai companies to provide reliable and sophisticated parts to support the automotive industry (BOI 2008b).

The importance of education in terms of qualified engineers, technicians, middle managers and production workers has become a key concern of many international companies when seeking to locate their investment. Education is therefore seen as a key driver of a knowledge-based economy. Thailand still lacks skilled labour and

qualifications to match companies' needs. According to the Thailand Development Research Institute (TDRI), automotive companies needed about 37,500 engineers and 80,000 supervisors and technicians in 2008. However, the supply of such skilled labour still falls short by 70 to 80 percent (Zsin Woon et al. 2007), as shown in Figure 2.8.

Figure 2.8: Estimates for 2008 Demand and Supply of Skilled Labour



Source: Zsin Woon et al. (2007)

Another uncompetitive area for the automotive industry is related to R&D. According to the National Research Council of Thailand (NRCT), Thailand lacks R&D for product development cycles of new models or products and process innovation. New product development or product and process innovation could help firms to survive in the increasingly intensified global competition (Burns 2008; Dess, Lumpkin & McGee 1999). According to Porter (2003), R&D is an important means for firms to become competitive as will help move the automotive industry into a newer and more sophisticated playing field. It will enhance product quality, improve productivity and help achieve economies of scale.

2.6.2 Economic and Government Policy

One key success of the auto parts manufacturing sector is due to the clear recognition by the Thai government of the important role the automotive industry plays in the economic development of the country. Since the 1980s the Thai government has

promoted the automotive sector as a means to direct foreign investment into the country and improve its economic status (BOI 2008b). Thailand has been successful at strengthening the economy by attracting automotive and parts manufacturers to concentrate their production in Thailand by pursuing a liberal economic policy through openness and macroeconomic stability. As such, Thailand has become the core venue for assembling and exporting to ASEAN, with focus on the development of the parts industry.

New investment promotion strategies have been adopted to strengthen the attractiveness of Thailand, especially since China, with its low production costs and huge market, has emerged as the world's most popular investment location. The rise of China threatens countries with low wages like Thailand. Given China's rise, Thailand can no longer rely on cheap labour and natural resources to attract foreign direct investment (FDI). The government has focused on projects that generate high value-adding and made a major push for innovation and technology development that could transform the country into a knowledge-based economy.

The Thai government recognizes the importance of improving the productivity and efficiency of the automotive industry as Thailand is aiming to become the hub for the automotive industry in ASEAN. The government must develop a sound macroeconomic framework that provides the political, legal and social context in order to create the potential for competitiveness over both the short and long terms (Virasa & Hunt 2008). The Thai automotive industry is expected to grow and expand because of the liberal trade policies. Open economies are more likely to increase their efficiency, competitiveness and capabilities than closed ones (Lecler 2002; Pearce & Robinson 2009; Porter 2003; Seelos & Mair 2007).

The success of government policy, particularly the export-oriented development strategy, for the industry was evident when automotive and auto parts became one of the fastest-growing and most important sectors of the Thai economy. The government has played a key role in driving the competitiveness of the automotive industry by creating opportunity and an enabling environment via proactive policies and support for

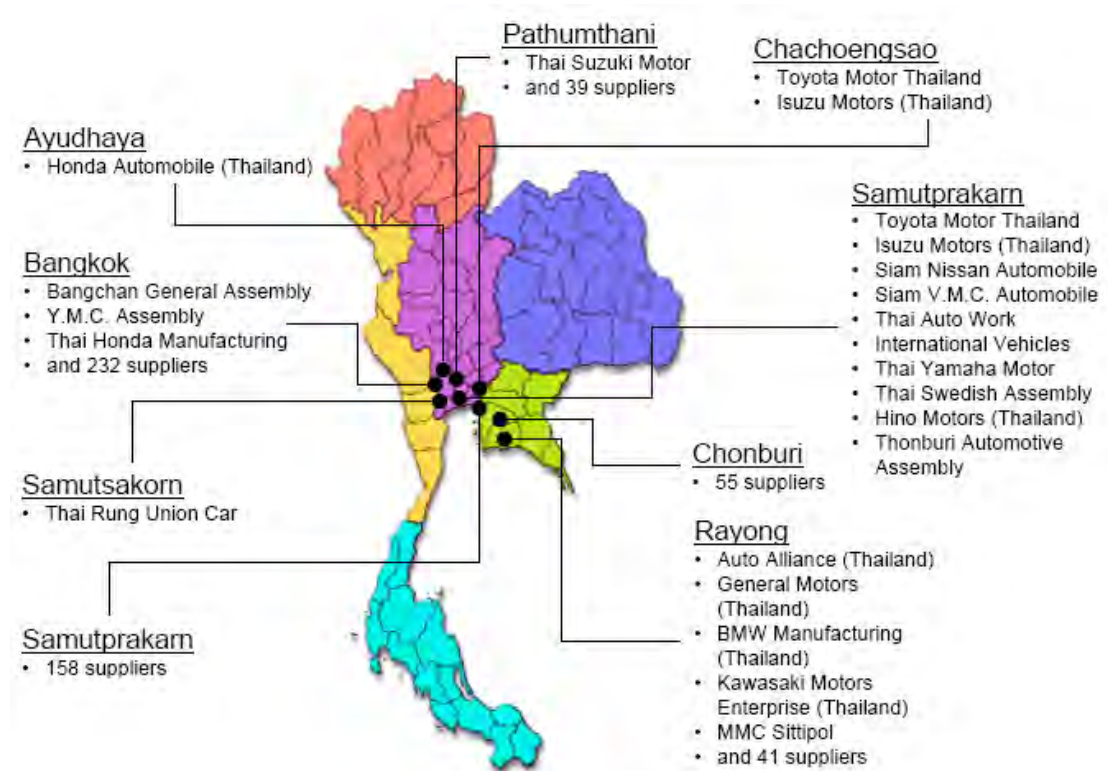
investment. The Thai government offers its full support to this sector by providing both tax and non-tax incentives to companies that set up operations. In addition, the BOI offers attractive investment incentives and support systems for foreign investors, making Thailand an ideal location for the exported-oriented production activities of multinational corporations (MNCs) (BOI 2009a). Huge-inflow FDI and technology-transfer have helped develop Thailand's supporting industry, particularly the auto parts sector. However, even a sound macroeconomic framework is not sufficient to improve productivity and efficiency. Competitiveness depends on improving the microeconomic capability of the economy and the sophistication of local companies and local competition (Pearce & Robinson 2009; Porter 2003). The key areas are the workforce and R&D, which are crucial for developing the industry and local companies in light of an increasingly competitive market.

One such policy is an industry-wide commitment to improving efficiency. In order to promote greater productivity and efficiency amongst auto parts companies, the government has supported the development of automotive clusters. According to Porter (2003), the Thai automotive cluster plays an important role in developing the automotive industry. The proximity between firms and their input suppliers allows and enhances communication and improves the flow of goods. Furthermore, automotive clusters allow manufacturers to benefit from shared core technologies and human resource development programs (BOI 2009a).

Investment opportunities are plentiful within Thailand's auto parts industry. The country's position as one of the world's largest production bases for auto and auto parts offers suppliers within the auto parts value chain the opportunity to develop global manufacturing capacity with a dynamic and highly concentrated cluster (Porter 2003). The establishment of industrial estates (IEs) with industrial infrastructure and tax incentives for cluster formation and industry development has been successful in attracting foreign investors (Lecler 2002; Porter 2003). Almost all of the world's leading auto manufacturing players, as well as auto parts makers and suppliers, are located in the central and eastern seaboard areas of Thailand (see Figure 2.9), where

clustering in the IEs gives the firms involved modern production capacities and infrastructure (Lecler 2002; Supratikno 2004; Zsin Woon et al. 2007).

Figure 2.9: Thai Automotive Cluster



Source: Porter (2003)

Another view of entrepreneurship development is innovation, which is one of its associated characteristics. The focus is on the promotion of innovations, the provision of national innovation systems, and the establishment of technical information mechanisms for business enterprises (Ahwireng-Obeng & Ncube 2007; BOI 2007a; Liang 2004; OECD 2005; Seelos & Mair 2007). The government has also taken a number of steps to enhance the technological capacity of the industry. In addition to the BOI and Ministry of Industry, government support is provided to the auto parts industry through several independent institutions. The first is the Thailand Automotive Institute (TAI), which is responsible for supporting and promoting the development of the industry and enhancing global competitiveness. Its policy consists of the following five key projects: a human resource development program; an automotive experts dispatching program to establish clusters and upgrade auto parts manufacturing

technology; a fund for the establishment of R&D centres, auto parts testing centres, and car-testing tracks; an information technology centre to analyze industry trends; and an automobile export promotion centre. It is expected that the automotive and auto parts industry will be worth US\$32.5 billion by 2010 (BOI 2008f; Crawford 2005).

The Thailand Automotive Institute (TAI) has developed a US\$217.5 million plan to set the country to achieve the goal of 1.8 million units, out of which 55 percent is for exports and 45 percent for domestic sales, and create an automotive production base in Asia that adds value to the country through its strong domestic supplier base within the year 2012 (BOI 2008b; Crawford 2005). Moreover, Thailand will produce internationally-recognized and standardized replacement equipment manufacturing (REM) parts and OEM. Exports of these items in 2006 were valued at more than US\$6 billion and the expected exports will increase to roughly US\$11.5 billion by 2012. Lastly, the Thai automotive industry plans to increase its capacity to produce auto vehicles and parts through local design, research and development to create value-adding of more than 70 percent (BOI 2008b).

Furthermore, the National and Electronics and Computer Technology Centre (NECTEC) and the National Metal and Materials Technology Centre (MTEC) are statutory government organizations under the National Science and Technology Development Agency (NSTDA). They are involved in research and other activities that are directly related to the automotive industry in Thailand (BOI 2007c, BOI 2009a). This helps the industry stay ahead of competitors.

Entrepreneurial activities in the Thai auto parts manufacturing companies are enhanced not only by the BOI providing investment privileges but also the Thai government offering investment promotion incentives to attract foreign direct investment (FDI). The BOI provides tax and non-tax incentives for the manufacturing of vehicles and parts, automotive R&D and testing, while the Thai government “imposes no export requirements, no local content requirements, no location requirements, and no foreign equity restrictions on manufacturers” (BOI 2008f, p. 5). Thus, the auto parts sector receives full support from the BOI and the Thai government in terms of both tax and

non-tax incentives to companies that set up operations in Thailand. The government policies and BOI incentives aim to encourage innovation, technology transfer and human resource development, with the availability of telecommunication and information technology infrastructure as well as an efficient logistics structure in the sector (BOI 2008d; Santo 2004b). As such, parts suppliers that invest in value-added activities such as research and development or design, advanced technology, and human resource development will support the nation to improve its international competitiveness (Runckel 2005), since the benefits for Thailand include employment, production efficiency, a unique style of training, and the know-how to produce both parts and components when foreign companies transfer their investments to Thailand in terms of value-added or hi-tech activities (BOI 2007f).

There are already positive signs in this direction. It appears that MNCs are increasingly recognizing Thailand as a potential location for R&D. Toyota established R&D facilities in Thailand in 2003 in order to undertake research and development work on product design, testing and evaluation and technology-related information within the Asia Pacific region (BOI 2006b). Other companies such as Honda, Nissan, Denso, and Isuzu have likewise established R&D facilities in Thailand (BOI 2008b).

There has also been some positive improvement in the Thai workforce. In order to respond to and support Thailand's automotive industry development as well as the Thai government's Automotive Human Resource Development Project, some automotive and auto parts companies have establish training centres in addition to their in-house training. For instance, Toyota Motor Thailand (TMT) Co. Ltd. has a policy to develop the local economy by enabling local employees with ability to be promoted to top positions in the company (Panichapat & Kanasawat 2000). TMT also offers scholarships to students in government universities such as Chulalongkorn and Thammasart Universities for technical training (TMT 2008). Moreover, TMT opened the Auto Training School (TATS) in 1998, complementing the training centre and internship educational centre (Lecler 2002).

In 1999, Honda established the Automotive Industry Technical College, which is the first specialist automotive training institute in the region. It aims to produce highly skilled human resources for Thailand's increasingly sophisticated automotive industry (HATC 2008) Also, Denso opened the Denso Training Academy (Thailand) in 2005, which is Denso's first comprehensive training centre in Asia and is the group's largest training centre outside Japan (BOI 2008b).

However, it is not enough to develop the skills of the labour force by a reliance on auto or parts makers. The Thai government has taken steps to ensure an adequate labour supply by providing incentives and funds. The government spent 25 percent of its total public expenditure, or 6.6 percent of gross national product (GNP) in 2006, for educational improvement (OIE 2006; Rajoo 2009; VEC 2008). It has allocated money to support educational or research institutions that promote technical and vocational skills required for the industry's growth pertaining to technological development. Therefore, the skills of the Thai workforce can improve due to educational improvement and training, as well as a gradual technological transfer from foreign investment.

2.6.3 Customer Demands and Market Changes

The rapid rate of change in technology and the subsequent shifts in consumer demand require consistent commitment to research and development on the part of auto parts companies if they do not want to be surpassed by their competitors (BOI 2009a). The automotive parts industry is being driven by innovation, particularly in electronics systems. Consumers' demands are related to sophisticated gadgets and electronic applications in their automobiles. Thus, automotive electronics offers a promising field of opportunity in an industry valued at over US\$110 billion (BOI 2009a). In 2007, auto-electrical and electronic investment was estimated to be US\$31.35 million. The world market for auto electronics, comprising about 90 percent of all automotive innovations, is forecast to be US\$52 billion by 2010 (BOI 2008b). Thailand already has over 700 first-tier auto parts companies whose products are used directly in the manufacturing process (BOI 2006b; Crawford 2005).

Thailand's auto parts production, particularly high-value auto electronics, is growing. The emerging Asian market plays a vital role in the growth of automotive electronics systems, both as a producer and as a consumer. It is also one of the regions with the strongest demand for automotive electronics in addition to being the location of much of automotive production (BOI 2008b, 2009a). More and more auto manufacturers employ computer and electronics gadgetry in their vehicles in order to take advantage of the expected continued growth of the market for high-tech consumer electronics. Automotive electronics make up about 15 to 20 percent of the value of the average automobile, with high-end cars comprising up to 50 percent (BOI 2007c).

Finally, the government expects to broaden Thailand's automotive specialization beyond the manufacture of light pickup truck production to include passenger car manufacturing, with the implementation of the "Eco Car" project. This project aims to be a second product champion for the country, complementing the light pickup truck. The addition of the Eco-Car production policy has reintroduced an idea first put forward in 2003 in response to consumer demands, since energy costs, particularly oil, have continued to increase dramatically and the effects of global warming have become more well-known (BOI 2007c). This has led to increases in the global demand for energy-efficient cars. This project is expected to contribute to the creation of a new segment requiring new production lines, increased sales for manufacturers and less expensive vehicles for consumers (Crawford 2005).

2.7 Chapter Summary

Entrepreneurship has historically been viewed as a significant factor for economic growth and development. Uncertain business markets and intensified global competition have required firms to engage in entrepreneurial activity in order to survive and flourish. Although there has been extensive research in entrepreneurship, research tends to be incomplete, especially in the field of personality and traits. The focus of research has shifted from the individual entrepreneur to the study of entrepreneurship in the

organization. Entrepreneurial process or behaviour provides a clear understanding of critical issues such as how to enhance entrepreneurship by learning the nature of the entrepreneurial process. Hence entrepreneurship is a universal concept that can be applied in any organizational context.

The success of the auto parts manufacturing sector has contributed to the overall strength of Thailand's automotive industry and enabled the industry to be more competitive globally. Also, the industry has helped Thailand to become a major hub of automotive manufacturing in Southeast Asia. It seems likely that entrepreneurial activity can help the auto parts manufacturing sector to sustain growth and achieve competitive advantage, resulting in shifting Thailand's economy into a knowledge-based system driven by innovation and cutting-edge technology.

In this chapter, an overview of the definitions of entrepreneurship was provided. Information on the study area, Thailand, was also presented, especially on the auto parts manufacturing sector in Thailand. This background information on the principal issues of analysis in the thesis are further discussed and examined in the next chapter.

PART TWO

LITERATURE REVIEW

Chapter 3: Corporate Entrepreneurship and its Performance

Chapter 4: Corporate Entrepreneurship Antecedents and the Conceptual Framework

Part two reviews literature on corporate entrepreneurship. The literature review is organized into two chapters (Chapters 3 and 4). The process of understanding entrepreneurship as a firm-level phenomenon commences in Chapter 3 with a review of literature on the developmental definitions of the concept of entrepreneurship in an organizational context. Also, the literature review related to the outcomes of the entrepreneurial activities of established firms is presented in Chapter 3.

In Chapter 4, the various existing corporate entrepreneurship theories that explain the relationship between firm-level entrepreneurship and its antecedents are reviewed, highlighting past research to provide an understanding of the determinants of corporate entrepreneurship. Moreover, the theoretical framework and hypotheses as well as the impact of environmental and organizational factors on corporate entrepreneurship and performance are presented in Chapter 4.

Chapter Three

Corporate Entrepreneurship

3.1 Introduction

This chapter firstly reviews the literature related to the developmental definitions of the concept of firm-level entrepreneurship used in this study and this is followed with the relationship between corporate entrepreneurship and firm performance. This chapter also identifies research gaps in the corporate entrepreneurship field. Although the existing theory focuses on entrepreneurial activities and is based on western based studies, this review will help to guide this study and provide a basis for understanding entrepreneurial functions in Thai auto parts manufacturing firms.

3.2 Corporate Entrepreneurship (CE)

Entrepreneurship has become increasingly accepted as a firm-level phenomenon deserving scholarly attention (Aloulou & Fayolle 2005; Barringer & Bluedorn 1999; Brown, Davidsson & Wiklund 2001; Burns 2008; Morris, Kuratko & Covin 2008; Zahra, Jennings & Kuratko 1999). The term corporate entrepreneurship can be viewed as the application of entrepreneurship to firm behaviour, especially entrepreneurship within an existing organization.

The corporate entrepreneurship literature uses a firm-behaviour perspective to understand innovation and entrepreneurship process and practice (Covin & Slevin 1991; Jennings & Lumpkin 1989). According to Covin and Slevin (1991), studying entrepreneurship from a firm-behaviour perspective has a number of advantages over more traditional entrepreneurship models and theories that focus on traits of the individual entrepreneur. First, firm behaviour as strategy, structure and performance is more clearly understood in the entrepreneurial process than when studying only the

characteristics of individual entrepreneurs. Second, firm behaviour is more easily measured than at the individual level as the entrepreneurial process is able to accurately differentiate between firms that are more or less entrepreneurial. Finally, firm behaviour is more manageable. Firm-level behaviour can be managed through the creation of particular strategies, structures, systems and cultures. Thus, a firm-behaviour perspective allows considerable managerial intervention, and emphasizes the firm's resources when studying entrepreneurship and competitive strategies.

The definition of "corporate entrepreneurship" has been the subject of considerable debate since there is no consensus on its definition (Jennings & Lumpkin 1989; Zahra 1991). A number of researchers have expressed concern about the lack of consistency in the manner in which entrepreneurship as firm behaviour has been defined (Covin & Miles 1999; Murphy, Liao & Welsch 2006; Stopford & Baden-Fuller 1994; Zahra 1991). Clear and agreeable definitions are suggested because "they make it easier for scholars to build on each other's work, and for practitioners to decide whether research findings are applicable to their situation" (Sharma & Chrisman 1999, p. 11).

The lack of consensus may be due in part to the different terms used by researchers when discussing aspects of corporate entrepreneurship, for example corporate venturing (Sharma & Chrisman 1999), internal corporate venturing (Jones & Butler 1992), intrapreneurship (Antoncic & Hisrich 2001; Carrier 1997; Fitzsimmons et al. 2005), entrepreneurial management (Stevenson & Jarillo 1990), entrepreneurial orientation (Lumpkin & Dess 1996), entrepreneurial posture (Covin & Slevin 1991) and the entrepreneurial strategy-making process (Dess, Lumpkin & Covin 1997). Unfortunately, the different labels do not solve the issue but rather make it even more unclear because corporate entrepreneurship is more complex (Christensen 2004).

According to Duobiene (2008), these labels capture three main distinctive concepts of a firm's entrepreneurial behaviour. The first phenomenon, where an established organization pursues a new business, is typically referred to as a corporate venture. The second phenomenon, intrapreneurship, is where an individual or a team of individuals contributes to new product ideas within an organizational context, as well as all other

internal processes leading to innovation such as internal innovations, internal venturing, corporate new division and internal new venturing. The last one, where an entrepreneurial philosophy and orientation permeates an entire organization's outlook and operations has been viewed as entrepreneurial management, entrepreneurial posture, entrepreneurial orientation, and entrepreneurial strategy-making. In general, the phenomenon of corporate entrepreneurship refers to cases where entire firms, rather than exclusive individuals or parts of firms, act in an entrepreneurial manner.

Guth and Ginsberg (1990) take a broader view of corporate entrepreneurship which consists of two phenomena: the birth of new business within existing organizations (i.e. internal corporate venturing) and the transformation of organizations through the renewal of key ideas or assumptions on which they were built (i.e. corporate renewal). Others, such as Covin and Slevin (1991), argue that entrepreneurial firms have more innovative, risk-taking, and proactive behaviours than do other firms because the strategic perspective shared within the firm is systematically different to less entrepreneurial firms.

Stevenson (1983) conceptualizes entrepreneurship as a management approach that has at its centre an all-consuming passion for the pursuit and exploitation of opportunities without regard to resources currently controlled. He contrasts entrepreneurial behaviour with administrative behaviour (Brown, Davidsson & Wiklund 2001). In addition, a study of the role of entrepreneurship in General Electric (GE)'s corporate strategy suggests that entrepreneurial activities are the outcome of the interaction of individuals and groups at multiple levels within the firm (Cohen 2002).

The concept of corporate entrepreneurship also pertains to Schumpeter's innovation concept where entrepreneurship refers to value creation through new combinations (Millson & Wilemon 2008). In a similar view, entrepreneurship is related to the pursuit of creative or new solutions to challenges confronting firms, including the development or enhancement of old and new products and services, market administrative techniques, and technologies for performing organizational functions (Knight 1997). Entrepreneurial behaviour can be seen as innovation in the broadest sense with regard to

changes in strategy, organizational structures and systems, and methods of dealing with competitors (Bhardwaj, Sushil & Momaya 2007).

These results and similar observations have identified the concept of corporate entrepreneurship as a firm-level phenomenon. The main assumption that underlies the notion of corporate entrepreneurship is that it is a behaviour phenomenon and all firms fall along a conceptual continuum that ranges from highly conservative to highly entrepreneurial (Barringer & Bluedorn 1999; Covin & Slevin 1989, 1991; Miller & Friesen 1982). An entrepreneurial firm is one that engages in product-market innovation, takes calculated business-related risks, is proactive in searching and exploiting business opportunities within the firm's markets and competes aggressively with competitors. A non-entrepreneurial firm is one that innovates very little, is highly risk averse, and imitates the moves of competitors instead of leading the way.

The common definitions, however, are largely built on the argument for discovering and developing an opportunity to create value through innovation and venturing activities while exploiting that opportunity without regard to either resources (i.e. human and capital) or the location of the entrepreneur – in a new or existing company. These can be not only newness in markets but also new product introduction and marketing and management processes that are intended to achieve competitive advantage. The term “corporate entrepreneurship” has almost always been used to describe entrepreneurship in a very large organization (Burns 2008). However, entrepreneurship within an existing organization does not imply that the organization has to be large. Many have emphasized the need for entrepreneurship in SMEs (Aloulou & Fayolle 2005; Carrier 1994; Covin & Slevin 1989; Masurel 2007; Morris, Kuratko & Covin 2008; Zahra, Neubaum & Huse 2000).

In conceptualizing corporate entrepreneurship, Antoncic and Hisrich (2001) define corporate entrepreneurship as entrepreneurship within an existing organization. Corporate entrepreneurship refers to a process that goes on inside an existing firm, regardless of its size, and leads not to new business ventures but also to other innovative

activities and orientations such as the development of new products, services, technologies, administrative techniques, strategies, and competitive posture.

This concept of corporate entrepreneurship proposed by Antoncic and Hisrich (2001) is consistent with past definitions related to both theoretical and empirical developments. For example, this concept signifies distinctions between conservative and entrepreneurial firms in terms of top managers' overall strategic philosophy and decision-making styles (Covin & Slevin 1989). Similarly, this concept illustrates distinctions between entrepreneurial and administrative managerial behaviours proposed by Stevenson and Jarillo (1990) regarding management approaches, where entrepreneurship refers to a process by which individuals inside organizations pursue opportunities regardless of the resources they currently control. Moreover, this concept captures many different characteristics of firm-level entrepreneurship such as innovativeness, risk-taking, proactiveness, aggressiveness, autonomy, and strategic renewal, which are evident in other corporate entrepreneurship studies (Barringer & Bluedorn 1999; Guth & Ginsberg 1990; Knight 1997; Lumpkin & Dess 1996; Zahra 1991, 1993b).

3.2.1 Dimensions of Corporate Entrepreneurship

As there is no consensus on the definition of corporate entrepreneurship, there has been no agreement reached on the key dimensions of corporate entrepreneurship (Covin & Miles 1999). Corporate entrepreneurship has been considered as a multidimensional concept (Jennings & Lumpkin 1989; Lumpkin & Dess 1996). For examples, some studies view corporate entrepreneurship in terms of entrepreneurial orientation and emphasize such characteristics as (1) innovativeness, (2) proactiveness, (3) risk-taking, (4) autonomy and (5) competitive aggressiveness (Lumpkin & Dess 1996). Others consider it as a three-dimensional construct: 1) venturing, (2) innovation and (3) self-renewal (Zahra 1993b; Zahra & Covin 1995), or (1) proactiveness, (2) risk-taking and (3) innovativeness (Covin & Slevin 1991; Miller 1983). Also, Antoncic and Hisrich (2001) suggest a four-dimensional construct: (1) new business venturing, (2) innovativeness, (3) self-renewal and (4) proactiveness.

Antoncic and Hisrich (2001) develop a more parsimonious multidimensional corporate entrepreneurship construct by integrating previous research studies (Covin & Slevin 1989; Guth & Ginsberg 1990; Knight 1997; Lumpkin & Dess 1996; Zahra 1991). Antoncic and Hisrich (2001) combine two main measures of corporate entrepreneurship, namely the ENTRESCALE and the corporate entrepreneurship scale, which were initially developed independently and have an American basis, and validate them in terms of convergent, discriminant, and nomological validity across two samples – the United States, a developed country and Slovenia, a transition economy. The ENTRESCALE scale includes two main dimensions which reflect entrepreneurial orientation towards innovativeness and proactiveness (Knight 1997), whereas the corporate entrepreneurship scale involves entrepreneurial activities such as venturing, innovation, and self-renewal (Guth & Ginsberg 1990; Zahra 1991). Antoncic and Hisrich (2001) found that their redefined measure of corporate entrepreneurship is more complete due to a combination of all four dimensions in a single study and is more parsimonious in eliminating redundancy in the innovative dimensions, and is valid in a cross-cultural setting. Consequently, they suggest corporate entrepreneurship can be classified into four characteristics: new business venturing, innovativeness, self-renewal, and proactiveness.

Firstly, for all organizations regardless of size, new business venturing refers to the creation of new business within an existing organization regardless of the level of autonomy. These new business entities can reside either within the firm or outside the existing organizational domain (Sharma & Chrisman 1999). Antoncic and Hisrich (2003) considered this dimension as an entrepreneurial firm entering new business by redefining the company's products or markets. They also considered the new business venturing dimension to include the Lumpkin and Dess (1996) dimension of autonomy, which referred to the independent action by an individual or team aimed at bringing forth a business concept or vision and carrying it through to completion.

Secondly, innovativeness refers to products and service innovation with the emphasis on development and innovation in technology. Schollhammer (1982) includes new

product development, product improvements, and new production methods and procedures. Organizational innovativeness relates to the development or enhancement of products, services and new techniques and technologies for production (Knight 1997). Covin and Slevin (1991) suggest it as one part of entrepreneurial posture that involves the extensiveness and frequency of product innovation and the related tendency of technological leadership.

Thirdly, self-renewal is aligned with previous views on organizational renewal or strategic renewal. Self-renewal refers to the process in which organizations seek to renew or redefine the way in which their business units compete and can be seen as the transformation of organizations through the renewal of key ideas on which they are built (Guth & Ginsberg 1990; Zahra 1991). Zahra (1993) considered the self-renewal construct to consist of strategic and organizational change and to include the redefinition of the business concept, reorganization, and the introduction of system-wide changes for innovation. Covin and Miles (1999) consider the strategic renewal concept to be related to the phenomenon whereby the organization seeks to redefine its relationship with its markets or competitors by fundamentally changing how it competes.

Finally, proactiveness refers to the extent to which organizations “attempt to lead rather than follow competitors in such key areas as the introduction of new products or services, operating technologies, and administrative techniques” (Covin & Slevin 1989, p. 631). Knight (1997) suggests that proactiveness is related to aggressively posturing relative to competitors. Moreover, it takes initiative (Lumpkin & Dess 1996), boldness and aggressiveness in pursuing opportunities (Covin & Slevin 1991). Similar to Knight (1997), Antoncic and Hisrich (2001) suggested that risk-taking and competitive aggressiveness should be included in the same dimension with proactiveness, which reflects the orientation and activities of top management.

3.2.2 Debate on the Dimensions of Corporate Entrepreneurship

There has been ongoing debate whether entrepreneurial orientation is most appropriately considered as unique combinations of entrepreneurial orientation attributes, comprising risk-taking, innovation, and proactiveness as originally proposed by Miller (1983), or whether it is a multidimensional construct, adding autonomy and competitive aggressiveness to the entrepreneurial orientation construct as later proposed by Lumpkin and Dess (1996). The core debate is the matter of whether the “sub-dimensions” of entrepreneurial orientation such as risk-taking, innovation, and proactiveness may co-vary with each other or vary independently of one another.

Miller (1983) suggests that firm-level entrepreneurship can be considered in terms of the firm’s ability to innovate, take risk, and compete proactively. Miller argues that an entrepreneurial firm generally does not change its technology or product line simply by directly imitating competitors, not taking risks or being reactive to the competitors’ actions. Similarly, risk-taking firms that are highly leveraged financially are not necessarily entrepreneurial. Miller also says that firms must engage in product-market or technological innovation. The firms exhibiting a combination pattern of behaviour in terms of being innovative, risk-taking and proactive are considered as being entrepreneurial. The companies must be strong in all three aspects of entrepreneurial orientation in order to be successful. Miller does not consider the firms to be entrepreneurial when innovation, risk-taking, and proactiveness vary independently of one another. In support of Miller’s (1983) view, empirical findings suggest that “unique combinations of entrepreneurial orientation provide more precise explanations of entrepreneurship as a firm-level phenomenon as well as greater insights into the relationship of entrepreneurial orientation and performance” (Kollmann & Stockmann 2008, p. 17).

In contrast, Lumpkin and Dess (1996) describe entrepreneurial orientation as a multidimensional construct and one in which a firm must be high only on some dimensions, but not necessarily high on any particular dimension. Subsequently, based

on Lumpkin and Dess's (1996) work, various researchers have supported the multidimensionality of entrepreneurial orientation and the independence of the dimensions encompassing it (e.g. Dess & Lumpkin 2005; Fitzsimmons et al. 2005; Lumpkin & Dess 2001; Wang & Li-Hua 2006). Lumpkin and Dess (2001) explored the relationship between two dimensions of entrepreneurial orientation and the performance of 124 executives from 94 U.S.-based firms and found that proactiveness and competitive aggressiveness are independent dimensions. They suggest that some firms that are strong in only a few aspects of entrepreneurial orientation can be very successful. Furthermore, Dess and Lumpkin (2005, p. 148) suggest that "exploring the linkages among individual dimensions of entrepreneurial orientation to firm performance is superior to considering entrepreneurial orientation as a summated unidimensional construct".

However, there is a theoretical perspective to the argument concerning the dimensions of corporate entrepreneurship that has been neglected in the literature. This theoretical issue concerns how entrepreneurial orientation is defined in the literature (Covin, Green & Slevin 2006). Covin, Green and Selvin (2006) point out that the argument within the entrepreneurship literature relating to the dimensionality of corporate entrepreneurship is somewhat misleading. They suggest that knowledge creation around the construct of corporate entrepreneurship should increase if the discussion within the literature shifts from dimensionality to other theoretical issues. Theory pertaining to corporate entrepreneurship will tend to advance as researchers clearly and completely define the advantages and disadvantages of alternative conceptualizations.

3.3 Corporate Entrepreneurship and Firm Performance

Corporate entrepreneurship has been recognized as a critical factor contributing to firm success (Gamble & Thompson 2009; Kellermanns & Eddleston 2006). The relationship between corporate entrepreneurship and firm performance has been thoroughly investigated from both a theoretical (Aloulou & Fayolle 2005; Covin & Slevin 1991; Lumpkin & Dess 1996; Morris, Kuratko & Covin 2008; Thourmrunroje & Tansuhaj

2005) and an empirical viewpoint (Antoncic & Hisrich 2004; Moreno & Casillas 2008; Wang & Li-Hua 2006; Wiklund & Shepherd 2005; Zhang & Li 2007).

A theoretical link between corporate entrepreneurship and organizational performance can be highlighted from the literature. Today's business environment reflects a shortening of product and business model life cycles (Deakins & Freel 2003; Morris, Kuratko & Covin 2008). Consequently, the future profits of existing operations are uncertain and businesses need to constantly seek out new opportunities (Wiklund & Shepherd 2005). Therefore, corporate entrepreneurship may help companies in such a process and are aimed to facilitate sustainability (Antoncic & Hisrich 2001; Kellermanns & Eddleston 2006). This involves a willingness to innovate and rejuvenate market offerings, engage in risky projects to try out new and uncertain products, services and markets, and be more proactive than competitors toward new market opportunities (Covin & Slevin 1991). Corporate entrepreneurship also includes a process of new business venturing and organizational self-renewal (Guth & Ginsberg 1990). These efforts allow the firm to gain a competitive advantage that leads to improved outcomes. As such, entrepreneurial orientation is viewed as having universal, positive performance implications (Wiklund & Shepherd 2005).

Several empirical research findings on the CE–performance relationship have been presented in the literature. A number of studies examined the relationship between corporate entrepreneurship and organizational performance and found that corporate entrepreneurship leads to improvement in firm performance (Ahwireng-Obeng & Ncube 2007; Antoncic & Hisrich 2004; Covin & Slevin 1989; Fitzsimmons et al. 2005; Kaya 2006; Luo, Zhou & Liu 2005; Luo 1999; Wiklund & Shepherd 2005; Zahra 1991).

Firms with a high level of corporate entrepreneurship are more likely to achieve better business results than firms with lower levels of corporate entrepreneurship (Covin & Slevin 1990; Ireland et al. 2001; Yiu & Lau 2008). Therefore, corporate entrepreneurship is an important element in the survival of the firm because it helps improve profitability, increase growth, and create wealth. For instance, Antoncic and Hisrich (2004) investigated the relationship between corporate entrepreneurship and

performance in 477 Slovenian firms. The findings indicated that corporate entrepreneurship is positive and significantly related to growth, profitability, and new wealth. Similarly, Luo, Zhou and Liu (2005) demonstrated that corporate entrepreneurship is positively related to both sales growth and market share in Chinese firms.

However, not all corporate entrepreneurship efforts lead to improved company performance. Hart (1992) reported that entrepreneurial strategy-making under certain circumstances is more likely to be associated with poor performance because of role imbalances between top management and organizational members. Top management exercises very little strategic control over the organization, making it difficult to engage in any large-scale development that requires central coordination or synergy across organizational units. Similarly, poor organization, lack of strategic focus, ineffective operational and management systems as well as dysfunctional organizational politics often make corporate entrepreneurship activities a failure (Flamholtz & Randle 2007).

In addition, Covin and Slevin (1991) argued that corporate entrepreneurship is a resource-consuming strategic orientation requiring extensive investments by firms. March (1991) also argued that corporate entrepreneurship can be risky and harmful to a firm's short-term financial performance. Atuahene-Gima and Ko (2001, p. 56) further suggested that "an uncontrolled entrepreneurial orientation may lead the firm to the erroneous belief that technological superiority is a key success factor for product innovation". Thus, a firm with such high levels of entrepreneurship "is likely to assign a low priority to collect information to help solve problems and/or attain a broad understanding of markets, as they are more likely to trust their internal R&D competence rather than market intelligence" (Bhuian, Menguc & Bell 2005, p. 12).

Such differences in findings may be attributed to differences in research design or methodological idiosyncrasies. Hence the differences may reflect the fact that corporate entrepreneurship may sometimes, but not always, contribute to improved performance (Wiklund & Shepherd 2005). For instance, using a sample of 413 Swedish firms and a longitudinal design, Wiklund and Shepherd (2005) found that entrepreneurial

orientation with the combination of the three dimensions, namely innovativeness, proactiveness, and risk-taking, positively influences small business performance.

Although corporate entrepreneurship was found to have a universally positive effect on business performance, relying on these main (direct) effect relationships provides an incomplete understanding of organizational performance (Dess, Lumpkin & Covin 1997). Wiklund and Shepherd (2005) further found that a configuration of three factors, entrepreneurial orientation, resources, and the environment (three-way-interaction), provided additional information over and above the main-effects model and a contingency approach (two-way interactions). Their results are consistent with the findings of Dess, Lumpkin, and Covin (1997) that a configuration model is more relevant than contingency models for studying the relationship between entrepreneurial strategy-making and performance.

In contrast, some studies examine the relationship between each dimension of corporate entrepreneurship and firm performance. For example, Lou (1999) investigated each dimension of corporate entrepreneurship separately with performance and found that small businesses with a focus on township and village enterprises (TVE) in China achieved superior financial and market performance when they were innovative and proactive. They found that risk-taking, although not significantly associated with TVE performance, may not necessarily contribute to superior financial or market performance. Similarly, Wang and Li-Hua (2005) demonstrated that innovativeness, self-renewal and proactiveness, with the exception of new business venturing, are positively and significantly related to firm performance.

The extant literature has some limitations. Firstly, many studies have analyzed varied aspects of performance and there is no consensus regarding measures of organizational performance (Venkatraman & Ramanujam 1986). The broad range of research studies in the field of entrepreneurship has used the measures of performance in an isolated and independent manner (Moreno & Casillas 2008); thus it is difficult to generalize findings across studies (Carton & Hofer 2006). Consequently, further efforts in theory-building

by integrating prior works that specifically used the same performance construct are suggested in order to overcome the shortcomings of past studies.

Secondly, although the most common measures of performance in corporate entrepreneurship studies are growth and profitability, both of these dimensions are sometimes contradictory. Firm performance is viewed as a multidimensional construct (Venkatraman & Ramanujam 1986), and most studies have pointed to the need for multidimensional conceptualizations of performance, recognizing that there are tradeoffs between growth and profitability (Zahra, Neubaum & EI-Hagrassey 2002). Growth and profitability do not always correlate positively (Moreno & Casillas 2008). For instance, Antoncic and Hisrich (2001) found that corporate entrepreneurship is positively related to both growth and profitability in Slovenia, but only to growth in the United States. The impact on profitability is not found in the U.S. In addition, Fitzsimmons et al. (2005) found that profits and growth responded to different intrapreneurial activities. While growth is found to be positively associated with new business venturing, profitability is found to be correlated negatively with self-renewal and positively with organizational support.

The contradictions in the findings suggest that the results of the association between corporate entrepreneurship and company performance should be interpreted with caution. First, some corporate entrepreneurship ventures are in their infancy and require several years before they pay (Dess et al. 2003; Zahra 1991). Moreover, corporate entrepreneurship activities might impact profitability only on a limited scale (Zahra & Covin 1995). For example, short-term profitability may suffer from engaging in corporate entrepreneurship activities, whether internal or external. However, companies are willing to accept this reality because entrepreneurial ventures stimulate long-term growth that compensates for the decrease in short-term profitability returns. Thus, the potential trade-off between short-term profitability and long-term growth should be examined by using indicators of both profitability and growth as a consequence of corporate entrepreneurship (Kollmann & Stockmann 2008; Wiklund 1999; Wiklund & Shepherd 2005).

Thirdly, despite the multidimensionality of the performance concept, empirical research has considered only indicators of financial performance (Mair & Rata 2004; Vozikis et al. 1999). Carton and Hofer (2006) assessed performance measurement in entrepreneurship and strategic management research by examining five years of empirical research from 1996 to 2001 published in five journals known for publishing empirical research in these fields. They found that profitability is the primary organizational performance dimension. According to the profitability measures, return on assets is the most frequently employed. Growth is the second most common performance dimension used to measure overall organizational performance since it is recognized as a critical performance dimension for new ventures. Performance measurement based on one-dimensional (financial) measures lacks the necessary diversity to provide managers with the range of information they need for internal management and control (Mair & Rata 2004). Therefore, the relationship between corporate entrepreneurship and firm performance in terms of both financial and non-financial criteria should be considered in the measurement of performance assessment.

Measuring performance on non-financial criteria has received attention recently and some researchers have proposed measurement based on both non-financial and financial measures (Atkinson, Waterhouse & Wells 1997; Dess et al. 2003). However, no specific empirical support for the underlying dimensions of performance was provided (Mair & Rata 2004). As such, in their research on evaluating middle managers' strategic roles in the context of corporate entrepreneurship and their relationship with performance in a banking environment, Mair and Rata (2004) emphasized two criteria, customer satisfaction and employee satisfaction, in addition to financial performance. Nonetheless, such a stakeholder approach of performance measures is too specific to analyze the performance of a bank at subunit level; thus, it may not capture sufficient concepts of performance in the manufacturing industry such as the auto parts manufacturing sector.

Financial and non-financial criteria can be useful in evaluating the performance of firm-level entrepreneurship at different points in time (Zahra 1993a). For example, non-financial criteria can be insightful in the early years of an entrepreneurial project. Later,

managers may wish to rely more heavily on financial than non-financial criteria. Therefore, the financial and non-financial outcomes of entrepreneurship should be recognized in corporate entrepreneurship studies. In addition, a focus on the impact of multidimensional performance measures on corporate entrepreneurship based on both financial and non-financial aspects would broaden the conceptualization of performance (Mair & Rata 2004) as well as contribute to a better understanding of CE–performance relationship implications (Carton & Hofer 2006).

In addition, it is necessary to consider the time lag between corporate entrepreneurship and performance. One- and three-year measures are considered to be the most appropriate time periods by researchers for measuring the effects under study (Carton & Hofer 2006). Zahra (1991) found that corporate entrepreneurship continues to be positively associated with performance, particularly profitability and risk related measures of performance over time when one- and two-year performance lag effects are considered, and noted that lagged correlation coefficients may exceed concurrent correlation. Further, he suggests that a much longer lag time would be essential to study the possible longitudinal effects of corporate entrepreneurship on company performance.

Consequently, Zahra and Covin (1995) extended prior studies by using a longitudinal design to examine the main effect of corporate entrepreneurship on financial performance over time. Their findings show that corporate entrepreneurship is positively associated with performance and the strength of this relationship tends to increase over time, even after controlling past performance. This evidence is also supported by the findings of Wiklund (1999). Such results support prior studies (e.g. Zahra 1991) as they have documented positive concurrent relationship between corporate entrepreneurship and performance. Importantly, the results suggest that corporate entrepreneurship should not be considered as a short-term fix, but as a long-term strategy for achieving superior performance (Carton & Hofer 2006).

While recommending a longer time period, Carton and Hofer (2006) point out that it is much more difficult for management to manipulate long-term performance measures.

One primary weakness of long-term measures is that intervening events, not included in the study, can confound the effect of interest, since the firm and its environment change. The longer the time lags between cause and effect, the greater the risk of other variables that could intervene in the CE–performance relationship. True performance becomes noticeable over time and it depends on the researcher to decide whether the reliability of the short-term measures is satisfactory.

Based on the above limitations and suggestions in the literature, this study focuses on the effect of corporate entrepreneurship using multidimensional performance measures based on both financial and non-financial aspects. Firm performance is viewed as a complex and multidimensional construct that is difficult to measure (Venkatraman & Ramanujam 1986). The use of multiple indicators to measure firm performance is therefore required. In addition, established performance measures are also utilized in this study since the use of common standardized instruments allows comparison across studies.

Organizational performance measures, including both financial and non-financial criteria are adopted from the study of Hart and Quinn (1993), who operationalized Venkatraman and Ramanujam’s (1986) model using subjective data. Subsequent studies have employed their performance measures and validated the measures with objective data; the results showed satisfactory validity and reliability (Vajanapoom 2005; Zakliki 1996). A three-year time frame was used for this study because it is the most commonly used in entrepreneurship and strategic management research (Carton & Hofer 2006). In addition, empirical research studies that employed three-year time frames demonstrated that corporate entrepreneurship leads to superior performance in terms of growth and profitability (Antoncic & Scarlat 2005; Entrialgo, Fernandez & Vazquez 2001; Fitzsimmons et al. 2005; Kaya 2006; Luo 1999; Zhang & Li 2007).

3.4 Chapter Summary

The chapter first examined the existing literature on corporate entrepreneurship and its effects on firm performance, mainly based on the U.S. and other developed countries.

This review helps to guide this study and to determine the extent to which the corporate entrepreneurship theories apply in a developing economy context.

There has been quite extensive research focused on firm-level entrepreneurship referred to as “corporate entrepreneurship”. It shows that whilst there is no agreement on its definition, corporate entrepreneurship at the broadest sense refers to entrepreneurship in existing organizations of all sizes and types. The common definitions involve all actions related to the discovery and exploitation of opportunities initiated by an individual or a group of individuals pertaining to an organization that lead to the creation of new venturing activities, renewal, and innovation within the organization. These can be not only newness in markets but also new product introduction, marketing and management processes that are aimed to achieve competitive advantage.

The concept of corporate entrepreneurship proposed by Antoncic and Hisrich (2001) is mostly consistent with past definitions (Covin & Slevin 1989; Guth & Ginsberg 1990; Knight 1997; Lumpkin & Dess 1996; Zahra 1991) related to both theoretical and empirical developments. Antoncic and Hisrich (2001) define corporate entrepreneurship as a process that goes on inside an existing firm, regardless of its size, and leads not only to new business ventures but also to other innovative activities and orientations such as development of new products, services, technologies, administrative techniques, strategies, and competitive posture.

Numerous theoretical and empirical findings focus on the relationship between corporate entrepreneurship and firm performance. Corporate entrepreneurship can make different contributions to an organization’s financial and non-financial performance. Thus, multidimensionality of the performance construct is essential when exploring the CE–performance link. Although several empirical studies support that entrepreneurial firms can perform better in the markets, the relationship between corporate entrepreneurship and performance is, to some extent, questionable due to some contradictory research findings.

In reviewing the literature, there are three research gaps. Firstly, the research on corporate entrepreneurship in developing countries, particularly Thailand, is less developed. Hence, generalization of research findings from U.S. and Western based studies is questionable. Secondly, existing literature lacks an integrative framework that conceptualizes and operationalizes the multidimensional construct of corporate entrepreneurship. Finally, most studies have examined the effects of corporate entrepreneurship on financial performance as an indicator of performance. Both financial and non-financial measures of performance have not been explicitly examined in research. This study is intended to fill those gaps and also provide knowledge regarding corporate entrepreneurship in Thailand.

Another stream of corporate entrepreneurship literature that emphasizes external and internal environment factors in shaping entrepreneurial processes and behaviour patterns inside firms will be presented in the next chapter, along with the conceptual framework and hypotheses and the impact of environmental and organizational factors on corporate entrepreneurship and performance.

Chapter Four

Corporate Entrepreneurship Antecedents and the Conceptual Framework

4.1 Introduction

The previous chapter reviewed the corporate entrepreneurship literature on defining the principal subject matter for analysis: entrepreneurship in the established organization context and an analysis of the relationship between firm-level entrepreneurship and performance. This chapter examines the literature related to antecedents of corporate entrepreneurship. The chapter commences with a review of external variables, which have been supported both theoretically and empirically, as an important initial step in stimulating entrepreneurial orientations and activities in established firms. Another factor or determinant such as organizational variables, which have been theorized and empirically proven in literature as determinants of corporate entrepreneurship, will be reviewed also. Although, the existing corporate entrepreneurship theories and studies are strongly influenced by the U.S. and other developed countries (Luo, Zhou & Liu 2005; Wang & Li-Hua 2006), this examination brought together a variety of information in order to help prepare a research framework for the study.

After the thorough examination of the existing theories presented in Chapter 3 and 4, a new conceptual framework will be developed for empirical study in the auto parts manufacturing sector of Thailand. Four main hypotheses with eight sub-hypotheses (comprising the five identified factors of corporate entrepreneurship, namely environmental conditions, organizational strategy and culture, firm-level entrepreneurship, and firm performance, based on the integrative theory and research findings of corporate entrepreneurship) will be formulated and tested in order to determine the applicability of existing theories in the Thai context.

4.2 Corporate Entrepreneurship Antecedents

Another stream of corporate entrepreneurship research focuses on how entrepreneurship is enhanced inside an established organization. The literature on corporate entrepreneurship has identified two main factors of corporate entrepreneurship antecedents: external environment and organizational factors. The importance of the external environment in theories of entrepreneurship is evident in past studies by Miller and Friesen (1982), Stewart, May and Kalia (2008), Zahra (1991, 1993b), and many others. Environmental variables provide initial conditions that either facilitate or constraint a firm's entrepreneurial behaviour. Organizational variables also appear important. For instance, organizational strategy and culture can influence the ability of a firm to engage in entrepreneurial activities (Covin & Slevin 1991; Morris, Kuratko & Covin 2008). Therefore, identifying conditions for entrepreneurial behaviour is an important subject in corporate entrepreneurship research.

Past research has examined the relationship between environmental and organizational factors and performance either by connecting two or more of these variables together with corporate entrepreneurship or by studying a specific relationship between corporate entrepreneurship, a particular variable by itself. However, there has been limited research where clearly defined and complete corporate entrepreneurship models are built and explored (Antoncic & Hisrich 2004). In this thesis, the corporate entrepreneurship model not only includes performance as a dependent variable but also incorporates environmental and organizational characteristics simultaneously as independent variables. Environmental factors in terms of dynamism, hostility, and heterogeneity and organizational factors, namely organizational strategy and culture, are now discussed.

4.2.1 External Environment as a Determinant of Corporate Entrepreneurship

The relationship between a firm's external environment and corporate entrepreneurship activities has been widely investigated in the literature. The external environment has

historically been considered as an important determinant of entrepreneurial activity at both the individual and the organizational levels (Aloulou & Fayolle 2005; Antoncic & Zorn 2004; Covin & Slevin 1991; Miller 1983; Stewart, May & Kalia 2008). The external environment also has a contingency relationship with entrepreneurship as firm behaviour and performance (Dess, Lumpkin & Covin 1997; Wiklund & Shepherd 2005). These relationships provide understanding of tradeoffs among corporate entrepreneurship activities and help to identify a firm's viable choices in different environments.

Thus, understanding the nature of the environment represents an important first step in selecting corporate entrepreneurship activities (Kollmann & Stockmann 2008; Zahra 1993b) since the core concept of entrepreneurship is the ability to identify unexploited opportunities for value creation (Ireland et al. 2001; Stewart, May & Kalia 2008). To initiate the process, firms are likely to anticipate change and act opportunistically. This is "to influence trends and shape the environment ahead of the competition" (Stewart, May & Kalia 2008, p. 89) as well as respond to "existing competitive trends and demands in the environment" (Lumpkin & Dess 2001, p. 437).

These efforts, in turn, make the environment dynamic by contributing product and process innovations to markets and changing the way business is done (Morris & Lewis 1995). Covin and Slevin (1991) argued that the relationship between entrepreneurial orientation and environmental conditions could be bi-directional. Environmental conditions may influence entrepreneurial activities and such activities may cause a change in environmental conditions. For example, Miller and Friesen (1982, p. 6) note that "entrepreneurial firms are often found in dynamic and hostile environments" because innovation will be necessary in such rapidly growing and opportune settings which may have high risks and high returns. Such firms may create environmental dynamism by contributing product innovations (Garg, Walters & Priem 2003; Morris & Lewis 1995). In addition, the greater the diversity in a company's personnel, operating procedures, technologies and administrative practices, the more entrepreneurial the firm will be (Miller & Friesen 1982). Entrepreneurship may cause heterogeneity because entrepreneurial firms tend to increase products and services that can be exploited in

different markets (Entrialgo, Fernandez & Vazquez 2001). However, environmental conditions tend to have a stronger influence on entrepreneurial activities than vice versa (Covin & Slevin 1991).

Environmental changes create a greater need for entrepreneurial activity (Entrialgo, Fernandez & Vazquez 2001; Morris & Lewis 1995; Verbeke, Chrisman & Yuan 2007). Successful adaptation to environmental change requires entrepreneurial efforts and behaviours to identify potential opportunities, reallocate resources, shift managerial commitment quickly and develop products, services and/or processes to capitalize on strategic opportunities (Morris & Lewis 1995). It has been found that an entrepreneurial firm takes advantage of environmental trends to create a successful new product by effectively adapting to environmental change (Wheelen & Hunger 2008).

Several researchers have developed theories that demonstrate the external environment cannot be separated from the entrepreneurial process. For example, Zahra (1991) studied 119 manufacturing companies in the U.S. to investigate the relationship between the environment and entrepreneurial activities. The results highlighted that environmental dynamism, hostility and heterogeneity are positively associated with corporate entrepreneurship. Furthermore, Lou (1999) examined the environment-strategy-performance relationships in Chinese small businesses and the found that environmental dynamism influences aspects of the firm's strategic orientations such as innovativeness, risk-taking and proactiveness, whereas environmental complexity seems to have an important impact on innovativeness and proactiveness, with the exception of risk-taking.

Certain environmental characteristics may encourage entrepreneurial behaviour on the part of organizations. Competition in high-tech industries, for example, is commonly driven by technological innovation and consists of a disproportionate number of entrepreneurial firms (Bierly & Daly 2007; Kim & Lim 1988; Lassen, Gertsen & Riis 2006). Bierly and Daly (2007) found that radically new knowledge and innovations are stronger predictors of performance in high-technology industries than in low-technology industries. Likewise, the stages of the firm's industry life cycle create numerous

strategic challenges for the firm and are often essential for a strong entrepreneurial orientation. Companies compete based on product innovation during the early rather than the later stages of the industry life cycle (Deakins & Freel 2003; Zahra & Bogner 1999). Covin and Covin (1990) discovered that new ventures in emerging industries are likely to benefit more from pursuing entrepreneurial postures than new ventures in the more advanced industry life cycle stage. Furthermore, demand for new products and technological opportunities may exhibit an important demand pull (Zahra 1993b) which is found to influence corporate entrepreneurship (Antoncic & Hisrich 2004).

Theoretical and empirical studies suggest that the external environment has a strong influence on the existence and effectiveness of entrepreneurial activity. However, capturing executives' perceptions of the environment is a challenging task; the literature emphasizes multiple classifications of environmental dimensions and uses various concepts and measures to categorize the environmental dimensions according to their perspectives (Bierly & Daly 2007; Zahra 1993b). The concepts and measures of environments based on Dess and Beard (1984), Zahra (1993b) and Miller and Friesen (1982, 1984) are widely used and modified in the literature.

Three dimensions including munificence, complexity and dynamism based on Dess and Beard (1984) are largely consistent with many conceptualizations of the environment (Lumpkin & Dess 2001) and are used in some studies (Baum, Locke & Smith 2001; Luo 1999) to examine the association between entrepreneurship and external environments as well as the moderating effects of environmental conditions on the relationship between entrepreneurship and its outcomes. Dynamism and complexity refer to the degree of uncertainty in the firm's markets and munificence indicates a firm's dependence on those environments for resources (Lumpkin & Dess 2001). These dimensions are viewed as favourable environmental conditions for entrepreneurship, given increased opportunities in the firms' markets (Zahra 1991).

Zahra (1993b) subsequently developed a multidimensional concept of environmental munificence consisting of dynamism, the abundance of technological opportunities, industry growth, and the demand for new products, which reflects the richness of

opportunities for corporate entrepreneurship. Other researchers employ variants of this measure (Antoncic & Hisrich 2001; Fitzsimmons et al. 2005).

On the other hand, a number of researchers (e.g., Entrialgo, Fernandez & Vazquez 2001; Lumpkin & Dess 2001; Vajanapoom 2005; Zahra 1991; Zahra & Bogner 1999) use three other dimensions, namely dynamism, hostility and heterogeneity, based on Miller and Friesen (1982, 1984). These dimensions reflect both opportunities and threats for the firm's operations (Wheelen & Hunger 2008). Not only do favourable environmental conditions provide a rich source of ideas for new product developments, but also unfavourable environmental conditions such as hostility are also claimed to have a strong theoretical link to the construct of corporate entrepreneurship. Survival is often viewed as a major accomplishment (Miller & Friesen 1983; Zahra 1991).

Stewart, May and Kalia (2008) proposed that environmental characteristics can be categorized generally into task and general environments. The task, operating or competitive environments include customers, competitors, suppliers and technology that directly influence the daily operation of a firm, whereas the general environment characterizes a society including the economic, political, legal, financial, logistical and social structures that have a more indirect influence (Pearce & Robinson 2009; Stewart, May & Kalia 2008; Wheelen & Hunger 2008). Consequently, "task environments create higher levels of perceived environmental uncertainty because the task environment changes more rapidly and can be more complex. The task environment is regarded as more important than the general environment" (Stewart, May & Kalia 2008, p. 87).

Innovation is in general correlated with the task sectors of the external environment because these sectors provide more opportunities for goal accomplishment and tend to change more rapidly than general sectors (Daft, Sormunen & Parks 1988; Garg, Walters & Priem 2003; Pearce & Robinson 2009). Product innovation commonly is driven by changes in customer needs and changes in competitors' actions as well as the requirement of new technology for implementation (Garg, Walters & Priem 2003; Miles & Snow 1978; Miller & Friesen 1982). Research indicates that managers of successful firms in dynamic environments are likely to conceptualize their business as involving

the external task environment and innovation-related internal capabilities (Garg, Walters & Priem 2003). In dynamic environments, successful firms emphasize innovation-oriented capabilities in the task environment, while in stable environments, firms focus on efficiency-oriented capabilities in the societal environment (Wheelen & Hunger 2008).

In a similar concept but from a different point of view, Morris and Lewis (1995) suggest that the entrepreneurial process is enhanced under conditions of environmental infrastructure and turbulence. The environmental infrastructure includes the economic, political, legal, financial, logistical and social structures which characterize a society, whereas environmental turbulence refers to rapid change in technological, economic, customer, competitive, legal and social environments, presenting both threats and opportunities for organizations. Certain structures are likely to facilitate both entrepreneurial attitudes and entrepreneurial behaviours. Similarly, Gnyawali and Fogel (1994) suggest that a combination of factors such as the overall economic, socio-cultural and political factors play an important role in the development of entrepreneurship. Such a broader context for the organization's operation can stimulate investment, invention and innovation (Bratnicki 2005; Covin & Slevin 1991). Thus, both environmental infrastructure and turbulence should be considered to foster entrepreneurship in the organization (Morris & Lewis 1995).

To support the above notion, Wheelen and Hunger (2008) suggest that the combined effect of both societal and task environments has a strong effect on the level of entrepreneurial intensity in the organization. Once markets become global, the number of factors a company must consider in any decision becomes huge and much more complex. With short product life cycles and new development of technologies, markets become turbulent and products must change with them. On the other hand, government policies and legal and institutional frameworks can also encourage entrepreneurial activity (Luo, Zhou & Liu 2005; Morris & Lewis 1995). In addition, environmental uncertainty creates both threats and opportunities to a firm (Pearce & Robinson 2009). While environmental uncertainty impedes the "ability to develop long-range plans and to make strategic decisions to keep the organization in equilibrium with the firm's

external environment, the company creates a new playing field in which creativity and innovation can play a major part in strategic decisions” (Wheelen & Hunger 2008, p. 73).

4.2.1.1 Dimensions of Environmental Conditions

Identifying the perceived multiple environments and their characteristics heightens understanding of the strategic behaviour of firms (Garg, Walters & Priem 2003; Kim & Lim 1988; Pearce & Robinson 2009). Thus, environmental conditions are considered as a multidimensional concept to capture a firm’s perception of its environments, and the selection of environmental dimensions should relate to the objectives of the research (Zahra 1993b).

Many conceptualizations of environment are largely consistent with Miller and Friesen’s (1982) three broad classifications, namely dynamism, hostility and heterogeneity. These environmental variables may encourage entrepreneurial behaviour on the part of organizations. They characterize the aspect of the task and institutional environments including technological, economic, customer, competitive, legal and social environments presenting both threats and opportunities for those engaged in commerce in a society (Lou 1999; Morris and Lewis 1995). They have been widely used in recent research (e.g., Entrialgo, Fernandez & Vazquez 2001; Lumpkin & Dess 2001; Moreno & Casillas 2008; Vajanapoom 2005; Zahra 1991; Zahra & Bogner 1999; Zahra & Garvis 2000).

First, dynamism refers to the rate of change and innovation in the industry as well as the uncertainty or unpredictability of the action of competitors and customers. Environmental dynamism may be conducive to corporate entrepreneurship engagement because it is likely to create opportunities in a company’s markets; thus a firm may pursue new innovative ventures, alter its business concept, and emphasize new products and processes to benefit from these developments (Zahra 1991). In their study of 124 executives from 94 firms, Lumpkin and Dess (2001) demonstrate that proactive behaviour is an appropriate mode for firms in dynamic environments or in growing-

stage industries. O'Regan and Ghobadian (2005) studied a sample of 194 manufacturing SMEs from electronics and engineering industries in the U.K. and found that entrepreneurial firms emphasize both process technologies and management practices in a turbulent or dynamic environment compared with a stable environment. These influences are found to influence the success of their overall innovation activities.

Second, hostility represents the degree of threat to the firm posed by the intense competition and uncertainty of the firm's principal industry, and the relative lack of exploitable opportunities (Miller & Friesen 1982). Environmental hostility tends to stimulate the pursuit of corporate entrepreneurship. Stopford and Baden-Fuller (1994) suggest that entrepreneurial activity was necessary in their sampled firms' survival in hostile environments. Zahra (1993b, p. 324) argues that when competition is intense, "companies must innovate in both products and processes, explore new markets, search for new ways to compete, and examine how they will differentiate themselves from competitors".

In their study of 98 U.S. companies, Zahra and Garvis (2000) indicated that the companies tend to adopt innovation, proactiveness and risk-taking during environmental hostility. Covin, Slevin and Heeley (1999), in a study of 103 independent and non-diversified manufacturing firms operating in 75 industries, concluded that first-mover positional advantages from a wide geographical distribution for products may be beneficial for pioneering firms in a hostile environment. In a similar result from a study of 124 executives from 94 firms, Lumpkin and Dess (2001) demonstrated that proactive and aggressive behaviours are appropriate approaches for firms when competition is intense and resources are constrained.

Finally, heterogeneity involves variations among the firm's markets that require diversity in production and marketing orientations (Miller & Friesen 1982). Environmental heterogeneity is likely to cultivate corporate entrepreneurship. Firms operating in many different markets tend to learn from customers and competitors. Diversity of customer needs among the different markets served by the firm offers many opportunities for additional innovation and market development and enables a company

to adopt successful entrepreneurial projects from one market and apply them to another (Entrialgo, Fernandez & Vazquez 2001; Zahra 1991). Zahra and Bogner (1999) examined the relationship between technology strategy and new venture performance of 116 U.S.-based software firms. They found that success in a heterogeneous environment seems to depend on the venture's ability to find and maintain a strong program of research and development (R&D) that leads to frequent product upgrades while making extensive use of external technology resources.

Although theory and evidence support the positive association between entrepreneurship and environmental conditions, the results reported are contradictory. For instance, Zhang and Li's (2007) study of 45 growing private firms in China failed to find statistical significance in the effect of environmental dynamism, hostility and complexity on entrepreneurial activity and performance. Likewise, in their study of 434 SMEs in Spain, Moreno and Casillas (2008) suggest that environmental dynamism and hostility may not have a moderating effect on the relationship between entrepreneurial orientation and performance. Zahra and Bogner (1999) suggest that the contradictory findings reported in the past research were due to the use of different methods and models. Their study, for example, focuses on new ventures in a young industry, in contrast to past research that examines established firms in mature industries (e.g., Zahra & Covin 1993).

Thus far, researchers have not agreed on one best way to conceptualize the external environment, and have developed many different measures (Bierly & Daly 2007; Epstein & Crane 2007). This study employs three environmental constructs based on Miller and Friesen (1982) that are consistent with early research and theory-building. The frequently used measures are expected to best capture the effects of environmental elements and are most relevant to the objectives of this study.

4.2.2 Organizational Strategy as a Determinant of Corporate Entrepreneurship

Developing effective strategies in an environment of constant change is a key requirement for driving corporate entrepreneurship. "Corporate strategy is primarily

about the choice of direction for the firm as a whole”, whether the firm is a small or a large company (Wheelen & Hunger 2008, p. 164). In other words, a strategy is the purpose and direction of a firm’s entire operation and determines how well it is achieved (Daft 2007).

Interestingly, research in strategy and corporate entrepreneurship has increased significantly in recent years (Morris, Kuratko & Covin 2008; O'Regan & Ghobadian 2005). One indication of this growing interest is the impact of the critical role of strategy in driving entrepreneurship activities occurring within the organization for the survival and success of business (Dess, Lumpkin & McGee 1999; Olson & Currie 1992). Strategy builds a sense of unity or consistency of action throughout a company. It can provide employees with direction to contribute innovation to their jobs (Morris, Kuratko & Covin 2008). Morris, Kuratko and Covin (2008) suggest that a core component of a company’s strategy for entrepreneurship is the requirement to approach innovation in a strategic manner. Innovation is the core component of entrepreneurship (Anderson & Atkins 2001; Fitzsimmons et al. 2005). Innovation is the key to developing and successfully exploiting competitive advantages in the marketplace (Ireland, Hitt & Simon 2003; Pearce & Robinson 2009). Entrepreneurial activity is noticeable in innovation processes such as bringing something new to products, internal processes, business models and new markets. Thus, the firm’s strategy for entrepreneurship stimulates such innovation (Morris, Kuratko & Covin 2008). Clearly, a business requires well-defined, effective strategies to serve as plans for enhancing corporate entrepreneurship.

In studies of the relationship between strategy and entrepreneurship, researchers such as Mitzberg (1973), Miller and Friesen (1978), Miles and Snow (1978), Porter (1980) and Gupta and Govindarajan (1984) have sought to understand the type of strategy in relation to other variables relevant to entrepreneurship in organization. Strategies have been identified in these studies by studying a large number of firms in a variety of industries. However, much research has focused on the examination and validation of two principal typologies, Porter’s generic strategies and the Miles and Snow’s typology of strategies (O'Regan & Ghobadian 2005), and proposed a general congruence between

Miles and Snow's Defender and Prospector categories and Porter's cost leadership and differentiator categories (Kald, Nilsson & Rapp 2000; O'Regan & Ghobadian 2005). Kald, Nilsson and Rapp (2000) classify Miles and Snow's typology as strategic orientation and Porter's generic strategies as strategic positioning. Innovation is one of the principal drivers of the Prospector-strategic type in the Miles and Snow typology as well as the basis of the differentiation focus in Porter's model of competitive advantage (O'Regan & Ghobadian 2005).

Porter's (1980) original framework has been tested empirically in a large number of studies and has proved to be a relevant description of how successful companies operate (Dess, Lumpkin & McGee 1999; Entrialgo, Fernandez & Vazquez 2001; Kotha & Vadlamani 1995). Several researchers have, however, criticized Porter's typology for conceptual limitations (Kotha & Vadlamani 1995). Mintzberg (1988) claims that the appropriateness of Porter's simple views of low-cost leadership and differentiation in the current corporate environment characterized as increased global competition and technological change is questionable. Subsequently, an empirical study of Kotha and Vadlamani (1995) confirms that Porter's generic strategies are perhaps inadequate at capturing the complexities of the environment. Similarly, Zakliki (1996) argues that Porter's (1980) notions of competitive advantage have been replaced by new sources of competitive advantage such as time, flexibility and competency and may no longer be applicable.

Moreover, Rugman and Verbeke (1987) point out that the use of Porter's (1980) model of competitive strategy is not appropriate in the case of SMEs as the element of choice is restricted to a focus strategy (O'Regan & Ghobadian 2005). Focusing is not an explicit strategy in itself but a choice within a strategy (Kald, Nilsson & Rapp 2000). Strategies of Porter (1980) are restricted to business-level strategies rather than corporate-level strategies (Moreno & Casillas 2008), while decision-making on questions of corporate entrepreneurship is mainly situated at the corporate level. On the other hand, the literature is highly supportive of the use of the Miles and Snow typology in both small and large companies, and confirms that their typology influences entrepreneurship activities (Luo 1999; Moreno & Casillas 2008; Olson & Currie 1992).

The Miles and Snow's typology was chosen in this study for three reasons. First, it is widely recognized in the theoretical and empirical research in the literature on strategy, strategic management and entrepreneurship (Luo 1999; O'Regan & Ghobadian 2005; Vajanapoom 2005). The Prospector and Defender types classified by Miles and Snow exhibit similar attributes to strategy archetypes identified in other studies, including the entrepreneurial and planning mode (Mintzberg 1973), the innovator and dominant type (Miller & Friesen 1978), differentiation and cost leadership (Porter 1980), and build and harvest (Gupta & Govindarajan 1984). Second, it is able to measure strategy at a level of abstraction sufficient to apply across a wide variety of organizations and industries, as research provides strong support for the perceptual measurement validity and reliability of Miles and Snow's strategic orientations (Shortell & Zajac 1990). Moreover, the measurement instrument is logically appealing since top managers' perceptions largely define strategy, and it allows rapid collection of substantial data (James & Hatten 1995). Third, it focuses on the dynamic process of adjusting to environmental change and uncertainty (Miles & Snow 1978). Organizational adaptability corresponds to an entrepreneurial orientation (Miller & Friesen 1983). Entrepreneurship is traditionally considered as a proactive process influenced by the external environment. Thus, Miles and Snow's (1978) typology is useful for analyzing the ways in which organizations respond to changing environmental conditions; that is, the rate at which an organization changes its products or markets to maintain alignment with its environment, and the subsequent innovative-driven strategies it adopts.

Miles and Snow's (1978) typology focuses on the direction and influence given by the top management to the firm's overall vision and direction. Four different strategies are identified based on organizational adaptation to the changing operating environment: Prospector, Analyzer, Defender, and Reactor. These strategies are described as follows:

The Prospector type frequently adds to and changes its products and services and markets, consistently attempting to be first in the market. It tends to stress innovation and flexibility in order to respond quickly to changing market conditions. It is the largest adopter of successful product or market innovations and is consistently seeking

new market opportunities. However, this type of strategy strongly supports product and market innovation and is usually not completely efficient.

The Analyzer type is an intermediate hybrid, combining the strengths of both the Prospector and the Defender into a single system. It maintains a relatively stable base of products and markets while watching its competitors closely for new ideas, and then rapidly adopting those that appear to be the most promising. It tends to emphasize formal planning processes and tries to balance cost control and efficiency with risk taking and innovation. The periodic transformation of the Analyzer type's domain is accomplished through product or market innovation from emerging market opportunities. Thus, it can grow through market penetration as well as product and market development. However, the Analyzer has some costs. Its dual characteristics of stability and flexibility limit its ability to shift dramatically.

The Defender type offers a relatively limited and stable product-market domain and concentrates on doing the best job possible in its area of expertise. As a result of this narrow focus, it seldom needs to make major adjustments in its technology, structure, or production methods. Instead, it emphasizes tight control and continually looks for operating efficiency to lower costs. With its emphasis on efficiency, this type of strategy is unlikely to innovate in new areas and is unable to respond to a major shift in its market environment.

Finally, the Reactor type lacks a consistent strategy. It tends to respond to environmental pressures slowly and ineffectively. Thus, much previous research has tended to exclude the reactor strategy from the scope of analysis (Conant, Mokwa & Varadarajan 1990; Kald, Nilsson & Rapp 2000; Matsuno & Mentzer 2000) because it responds "inappropriately to environmental change and uncertainty, performing poorly as a result, and is then reluctant to act aggressively in the future" (Miles et al. 1978, p. 557). Moreover, no prior predictions or hypotheses can be made regarding the Reactor's strategic intention and its consistent determinant effect on corporate entrepreneurship. Thus, this study uses only three feasible strategy types, Prospector, Analyzer and Defender, for evaluating the determinant effects on corporate entrepreneurship.

Strategies that emphasize innovation and new product introduction are generally associated with an entrepreneurial approach to competitive advantage, whereas strategies based on cost control and incremental process improvements tend to be in the domain of conservative firms being reluctant to innovate (Dess, Lumpkin & McGee 1999). This depiction is consistent with the type of organization-wide entrepreneurial processes described in previous research (e.g., Conant, Mokwa & Varadarajan 1990; Hambrick 1983; James & Hatten 1995; McDaniel & Kolari 1987; Miles & Snow 1978; Miller & Friesen 1982; O'Regan & Ghobadian 2005). Miller and Friesen (1982), for example, suggest that the entrepreneurial firm is the conceptual opposite of the conservative firm. Miles and Snow (1978) suggest that the concept of adaptive strategies tends to link entrepreneurial-type activities much more closely with the Prospector strategy than with the Defender strategy. These distinctions suggest that firms seeking to renew or strengthen themselves by being more entrepreneurial should adopt the Prospector strategy rather than the Defender strategy.

It has been pointed out that the Defender type lags far behind the rest of the industry in innovative behaviour. The Prospector type is the most innovative, and the Analyzer type being second-in with more cost-effective or value-oriented products or services (Miles & Snow 1978). Miles and Snow (1978, p. 55) propose the distinctive competence of the Prospectors concerning “finding and exploiting new product and market opportunities”. Hambrick (1983) found that the Prospector strategic type has a strong entrepreneurial orientation with high product R&D and high market expenses. Similarly, Conant, Mokwa and Varadarajan (1990) reported that the marketing competencies of Prospectors are superior to those of Analyzers and Defenders. The strong market orientation, especially the new service development process dimension, of the Prospector type is confirmed by the results of the study of Matsuno and Mentzer (2000).

In addition, James and Hatten (1995) have found that financial-risk taking is associated with Prospector strategy, while Defender and Analyzer strategies take less venturesome financial positions. The evidence suggests that market success allows firms adopting the Prospector type to operate with higher financial leverage than their less adaptive

competitors. The results of O'Regan and Ghobadian (2005) indicate that the Prospector type seems to have a greater adaptation to the operating environment, and engages in innovation in both turbulent and stable operating environments to a far greater extent than does the Defender type. Moreover, management practices and process technologies are used actively by the Prospector type to innovate and compete in the operating environment.

In spite of considerable research, the findings are ambiguous. It is difficult to form an opinion on how strategy has influenced entrepreneurship in existing organizations. Typically, only two or three of the strategic dimensions in Miles and Snow's adaptive model are considered and evaluated in the strategic-choice approach of innovative firms (Conant, Mokwa & Varadarajan 1990). Kald, Nilsson and Rapp (2000) are of the view that the typologies of Prospector and Defender are the principal ones used. The justification is that the Analyzer type has attributes of both Defenders and Prospectors types and therefore is not a pure concept in itself. Shortell and Zajac (1990) support the view that the Defender and the Prospector strategies tend to exist at opposite ends of a continuum of adjustment strategies.

However, the findings by Dess, Lumpkin and Covin (1997) indicated that low-cost strategies were associated with higher performance in firms where managers used an entrepreneurial approach to decision making. This led Dess, Lumpkin and McGee (1999) to propose that firms pursue corporate entrepreneurship successfully by adopting unique strategic combinations, which is considered an Analyzer strategy since emerging trends suggest this idea has potentially greater applicability to corporate entrepreneurial firms. This is the idea behind efforts to use corporate entrepreneurship as a means of corporate renewal (Guth & Ginsberg 1990). Among these are efforts to use low-cost approaches to compete in an entrepreneurial context. Recently, "the demand of global competition has heightened the need for cost-based strategies", whilst advances in technology are requiring firms to innovate, take risk, and be proactive (Dess, Lumpkin & McGee 1999, p. 86). As such, firms need "to reduce costs, increase quality, and gain access to new technology" in order to achieve competitive advantage (Wheelen & Hunger 2008, p. 90). For example, the use of state-of-the-art technologies and the latest

techniques for cost control and information system management enable companies to focus on efficiency, quality and effectiveness. These activities not only exploit latest technologies and innovations, but also they dramatically enhance the companies' cost position relative to their competitors (Ahwireng-Obeng & Ncube 2007; Dess, Lumpkin & McGee 1999; Pearce & Robinson 2009; Seelos & Mair 2007; Wheelen & Hunger 2008).

In order to interpret these inconsistent findings, the study examines the impact of the strategy classification schemes of Miles and Snow (1978) on corporate entrepreneurship. An objective of this study is to discuss how well-known strategic variables may be assumed to influence corporate entrepreneurship.

4.2.3 Organizational Culture as a Determinant of Corporate Entrepreneurship

Organizational culture plays an important role in motivating and shaping entrepreneurial activity (Covin & Slevin 1991; Gamble & Thompson 2009; Kellermanns & Eddleston 2006; Morris, Kuratko & Covin 2008; Russell & Russell 1992). Organizational culture is generally defined as the pattern of shared values, norms and practices (Higgins & McAllaster 2002) that help organizational members understand the functions and behavioural norms in the organization (Daft 2007; Flamholtz & Randle 2007). Oden (1997) viewed corporate culture as the way the company adapts to external environments. It therefore refers to how a corporation develops itself with regard to a set of shared behaviours, artefacts, values, beliefs and assumptions as it learns to cope with the external and internal aspects of the firm's survival and success factors (Daft 2007). A simple way to think about culture is that it captures the company's behaviour and what the company stands for (Morris, Kuratko & Covin 2008) or what the company is all about with regard to its external environment (Oden 1997).

Based on the above discussion, cultures serve two critical functions in organizations. Daft (2007) classified culture into two functions, which are internal integration and external adaptation. Internal integration means that members develop a collective identity and know-how to work together effectively. It is culture that guides day-to-day

working relationships and determines how people communicate within the organization, what behaviour is acceptable or not acceptable, and how power and status are allocated. On the other hand, external adaptation refers to how the organization meets goals and deals with outsiders. Culture helps guide the daily activities of workers to meet certain goals. It can help the organization respond rapidly to customer needs or the moves of a competitor. Therefore, culture plays a key role in organizational process (Stoica, Liao & Welsch 2004) and serves as a tool to implement strategy and to direct the course of companies more effectively (Lau & Ngo 2004).

However, the crucial point of organizational culture is that it not only helps a firm succeed but also it acts as a significant part of the problem in adapting to new circumstances if it is not managed properly (O'Regan & Ghobadian 2004). In addition, culture can be counterproductive if it conflicts with the firm's strategy and creates substantial problems to the company (Angkasuvana 2005). Higgins and McAllaster (2002) add that when a change in strategy requires a shift in culture, it should be planned very carefully (Duobiene & Pundziene 2007).

It is clear that culture is a critical force that affects behaviour in organizations. Thus, a company's culture can be viewed as a variable influencing the development and reinforcement of its entrepreneurial behaviour. Duobiene and Pundziene (2007) suggest that organizational cultures that support change over tradition inspire innovation, which is at the heart of the entrepreneurial effort (Morris, Kuratko & Covin 2008). A culture of innovation is synonymous with the entrepreneurial spirit and provides a very competitive advantage in the marketplace (Lau & Ngo 2004; Ross 1987). Culture influences innovation by motivating organizational members to pursue innovation as an ongoing process and defining expected and appropriate innovation-related behaviours (Oden 1997; Russell & Russell 1992) rather than innovation-resisting behaviours (Russell 1989).

Creation or change of organizational culture for innovation may bring a number of conflicts and refusals by the workers when they are faced with changes in production and/or administrative processes (Claver et al. 1998; Kellermanns & Eddleston 2006;

Morris, Kuratko & Covin 2008). Thus, the culture must “consider change as a usual component, which is part of day-to-day work, and raises no obstacles to the alteration of established rules” (Claver et al. 1998, p. 64). In addition, “creating an optimistic outlook informing and regarding what the change effort will bring as well as making employees sure of the need of change” will eliminate cultural barriers for change in both individuals and groups or at organizational level (Duobiene & Pundziene 2007, p. 512).

Innovation involves a complex social process which requires an effective interaction between people, groups and functions within a company (Claver et al. 1998; Deakins & Freel 2003; Russell 1989). However, culture can support innovations by creating an innovative climate as an important activity and reward innovative-supporting behaviours that are the essence of entrepreneurship (Duobiene 2008). To inspire process, product and market innovation by implementing entrepreneurial behaviours, an entrepreneurial culture is needed (Morris, Kuratko & Covin 2008). In such a culture, creativity, commitment, dedication and a desire to innovate are common behavioural norms (Kuratko, Ireland & Hornsby 2001).

Claver et al. (1998) suggest that a strong culture, based on innovation, tends to have more impact when a technology-oriented vision is shared by all members of the firm. This will result in developing innovative processes related to new technologies in technology-intensive industries. Lau and Ngo (2004) found that a culture with emphasis on innovation and entrepreneurship enhances new product and service development. Such entrepreneurial culture involves adaptive behaviour, risk-taking, commitment towards innovation, emphasis on growth and new resource acquirement.

A similar view is that of Covin and Slevin (1991), who suggest that positive cultures are ones that are in line with an organization’s vision, mission and strategies, and that such cultures support entrepreneurship. In other organizations where entrepreneurship is lacking as a strategic goal, the culture does not support risk-taking, searching for opportunities and innovation. Duobiene and Pundziene (2007) propose a similar step in creating entrepreneurial culture by anticipating possibilities and challenging mission, strategy and goals. Supporting these arguments, Higgins and McAllaster (2002) found

that strategy and culture have to be aligned in order to encourage innovative and entrepreneurial behaviour.

All in all, the culture of an organization can strongly affect entrepreneurial activity in the organization. A number of researchers propose a causal relationship between culture and corporate entrepreneurship (Duobiene 2008; Russell 1999). Research has also demonstrated that a firm's entrepreneurial actions are affected by cultural norms (Kuratko, Ireland & Hornsby 2001; Lau & Ngo 2004). For example, Russell and Russell (1992) found that innovation norms provide motivation and direction to pursue successful entrepreneurial strategies and processes. The results emerge as a sequence of innovation efforts resulting from a culturally-directed process driven by innovation-supporting norms.

Similarly, the findings of Tushman and O'Reilly III (1997) confirmed the idea that innovation is reflected in norms that support creativity and innovation. Moreover, Brown, Davidsson and Wiklund (2001) developed a measurement instrument to test empirically Stevenson's conceptualization of entrepreneurship as opportunity-based firm behaviour and to test it on a large sample of firms. The results suggest that the entrepreneurial culture dimension facilitates organizational members to take entrepreneurial initiatives.

Although research has expanded in the area, the specific ways in which culture affects a firm's entrepreneurial process is less well developed (Russell 1999), since "inadequate theoretical attention has been paid to issues concerning the development of entrepreneurship in a corporate environment" (Amit, Glosten & Muller 1993, p. 829). Moreover, the conceptual diversity that characterizes organizational culture studies makes it difficult to operationalize culture and inhibits the development of more in-depth empirical knowledge, as a result, few generalizable principles have emerged (Chung & Gibbons 1997). This conceptual diversity of culture may be an artefact of different content or methodology (Christensen & Gordon 1999). A complete model of corporate entrepreneurship must explain how such beliefs and behaviours become

valued and integrated into the ongoing routine of entrepreneurial organizations (Antoncic & Zorn 2004; Covin & Slevin 1991; Russell & Russell 1992).

Explanations from previous studies about culture's consequences have usually focused on synergistic effects of leadership roles and cooperation among members in organizations. For instance, Gray, Densten and Sarros (2003) noted that the role of top management is critical in creating an innovative culture. Kuratko, Ireland and Hornsby's (2001) research evidence from a company in the healthcare management field suggests that culture influences the entrepreneurial behaviour of the company by facilitating learning and innovative responses to challenges, competitive threats or new opportunities. A strong culture that supports adaptation and change motivates people and shapes and guides employee behaviour with shared goals and missions; thus everybody's actions are aligned with the strategic focus. Therefore, leaders of the organization must create and persuade others of an adaptive culture (Daft 2007).

On the other hand, Chen, Zhu and Anquan (2005) and Gamble and Thompson (2009) showed that the existence of firms relies on the contributions of people throughout the organization, since leaders at the top cannot know everything, every market, or every new technology and its application. Cohen (2002) suggests that leaders are not just those at the top. Leadership is also used to describe employees at all levels who are working to find opportunities for change on multiple dimensions such as new products, processes, services, markets, and organizational approaches.

In creating innovative culture in corporations, potential human capital needs should be considered and attached as part of strategic planning. Human capital needs should be integrated into the organization, network development, and information sharing so that the individual's entrepreneurial spirit can be leveraged as part of the organization (Chung & Gibbons 1997; Searle & Ball 2003). Kaya (2006) argues that the development of entrepreneurial culture built on high-quality human resources provides an organization with a sustainable competitive advantage. Culture is offered as the essence of human capital (Chung & Gibbons 1997); it is claimed that culture and HRM are not separable in an organization (Jackson & Schuler 1995). Although human capital

is generally accepted as an enhancement of firms' innovation performance, this link in the literature is less clear (Lau & Ngo 2004).

In terms of corporate entrepreneurship the twin notions of leadership role and human capital are therefore crucial in understanding the sustainability of advantage provided by having an entrepreneurial culture. Overall, the concept of relying on people is a major managerial requirement if corporate entrepreneurship is to prosper. Most studies suggest that entrepreneurial companies emphasize the ability to access human capital, incentives for entrepreneurial behaviour, cooperative work environments, and friendly atmospheres (Chung & Gibbons 1997; Cohen 2002; Duobiene 2008; Kaya 2006).

4.2.3.1 Dimensions of Organizational Culture

Culture can be assessed along many dimensions that influence corporate entrepreneurship. Some researchers have investigated the impact of organizational culture on entrepreneurial activity. Kuratko, Montagno and Hornsby (1990), for example, established a multidimensional framework, named the Intrapreneurial Assessment Instrument (IAI), for fostering entrepreneurial culture in organizations based on the analysis of the most consistent elements in the literature on intrapreneurship, corporate entrepreneurship, and innovation. This multidimensional scale consists of five factors: (1) rewards and resource availability; (2) management support; (3) time availability; (4) organizational structure; and (5) risk-taking. However, their results support the existence of only three factors (management support, organizational structure, and reward and resource availability), providing a parsimonious description of the conditions needed to foster entrepreneurial activity within an organization.

Hornsby, Kuratko and Zahra (2002) subsequently developed an assessment instrument called the Corporate Entrepreneurship Assessment Instrument (CEAI), comprising five factors. This is similar to Kuratko, Montagno and Hornsby (1990) but contains more items that influence corporate entrepreneurship activities. Hornsby et al. (1993) proposed an interactive model that outlined various components, including individual

and organizational characteristics affecting the corporate entrepreneurship process, based on a review of past theoretical and empirical research. The results of Hornsby et al. (1993) are even more consistent with the literature, resulting in the following factors: (1) management support; (2) autonomy/work discretion; (3) reward/reinforcement; (4) time availability; and (5) organizational boundaries. In support of this view, Antoncic and Hisrich (2001, 2004) found a strong and positive relationship between organizational support reflecting entrepreneurial culture and corporate entrepreneurship.

In addition, with the support of a large number of theoretical and empirical studies, involvement of all members of the firm is another critical element of a culture that stimulates innovation in an organization (Claver et al. 1998; Daft 2007). In a study of organizational culture in 1,918 small, medium and large Australian firms, Gray, Densten and Sarros (2003) found that the Organizational Culture Profile (OCP), which includes team-orientation, collaboration and sharing information freely, is positively related to innovation. In the absence of formal controls, Stoica and Schindehutte (1999) suggest that a clan culture is effective in managing the complex social processes of information gathering, exchange and analysis that may influence organizational adaptability and innovation. Stoica and Schindehutte's (1999) results indicate that a clan culture which focuses on the cohesiveness and participation of people in the company and on rapidly changing external environments has a higher adaptability than other types of culture. Stoica, Liao and Welsch (2004) reported the same results. Some studies suggest that culture that supports teamwork is critical to organizational competitiveness and innovativeness (Claver et al. 1998; Duobiene & Pundziene 2007; West 2002b).

This thesis focuses on four (4) specific dimensions based on the analysis of the most consistent elements in the literature: (1) management support; (2) autonomy/work discretion; (3) reward/reinforcement; (4) involvement. Each dimension relative to specific elements of a company's environment will be highlighted as follows.

The first dimension is **management support**, which refers to the extent to which managers encourage employees to believe that innovation is part of the role set for all

people in the company. Managers also are willing to facilitate entrepreneurial projects (Kuratko et al. 1993). Some management support conditions would be the quick adoption of employees' ideas, recognition of people who bring ideas forward, training for creativity and innovation, support for small experimental projects, and seed money to get projects off the ground (Greenberg & Baron 2008; Hornsby et al. 1993; Tushman & O'Reilly III 1997).

The second dimension is **autonomy and work discretion**, which indicates that employees have discretion to the extent that they are allowed to make decisions about their work in ways that they believe are most effective (Hornsby et al. 1993). Oden (1997) suggests that innovative organizations will function with a culture of employee autonomy and self-direction. The aim of autonomy is to tap the creative and intellectual energy of all members in the organization, not just those in top management, and to offer all people the responsibility and resources to demonstrate leadership within their own competence (Cohen 2002; Gamble & Thompson 2009; Oden 1997).

The third dimension is the appropriate use of **reward and reinforcement**. Reward and reinforcement motivates people to engage in innovative behaviour (Hornsby et al. 1993; Lau & Ngo 2004). Companies provide rewards contingent on performance, provide challenge, increase responsibility and make the ideas of innovative people known to others in the organization (Cohen 2002; Hornsby et al. 1993). These factors reinforce the belief that employees are willing to work on new projects and challenge teams if the rewards are noticeable (Greenberg & Baron 2008; Kuratko et al. 1993; Kuratko, Ireland & Hornsby 2001). However, there needs to be an acceptable amount of failure allowed to achieve results. Mistakes are not necessary a reason to cancel a project or dismiss a corporate entrepreneur. People can learn from mistakes and that will be more valuable to the firm (Daft 2007).

The final dimension is **involvement**, which creates a sense of responsibility and ownership, resulting in greater commitment to the organization and its goals (Denison & Mishra 1995). The more people are involved and participate, the greater the chance they will have positive attitudes toward change (Daft 2007; Tushman & O'Reilly III

1997). In addition, the development of collaboration and open communication between entrepreneurial participants and the organization at large can help corporate entrepreneurship to prosper (Daft 2007; Kuratko et al. 1993; Oden 1997). Teamwork which involves people with different skills and functional backgrounds (e.g., marketing, design and production) assists meeting tight timelines, identifying and overcoming unanticipated problems and finding directions and opportunities, thus redefining the original concept and putting it on a more successful path (Morris, Kuratko & Covin 2008; Tushman & O'Reilly III 1997). Teamwork captures collaborative endeavours of people with different skills to produce innovative results and innovative products (Kuratko, Ireland & Hornsby 2001; Oden 1997).

4.3 Conceptual Framework of the Study

This study extends the corporate entrepreneurship literature by integrating previous research findings (Antoncic & Hisrich 2001; Covin & Slevin 1991; Zahra, Jennings & Kuratko 1999) where research in the field is advanced. This study aims to integrate the theory of corporate entrepreneurship developed by Antoncic and Hisrich (2001) with the methodological issues of the direct effects of environmental and organizational factors on corporate entrepreneurship and firm performance articulated by Covin and Slevin (1991). Such an integrated framework is much needed for theory building and empirical testing in the field of corporate entrepreneurship (Antoncic & Hisrich 2004; Wang & Li-Hua 2006).

Specifically, the study attempts to provide evidence that factors other than financial also contribute to corporate entrepreneurship (Zahra, Jennings & Kuratko 1999) in Thai auto parts manufacturers, since in the past most studies have used financial performance as the measure of corporate entrepreneurship. The conceptual framework of corporate entrepreneurship antecedents and performance and its hypotheses for this research is now described.

4.3.1 Corporate Entrepreneurship and its Antecedents

The corporate entrepreneurship research highlights the important roles of environmental and organizational factors in cultivating corporate entrepreneurship. Both internal and external variables are usually empirically examined as determinants of corporate entrepreneurship and have been demonstrated that organizational and environmental factors positively correlate with corporate entrepreneurship (Antoncic & Hisrich 2004; Kaya 2006; Luo 1999; Naman & Slevin 1993; O'Regan & Ghobadian 2005; Zahra 1991). The effect of environmental conditions (dynamism, hostility, and heterogeneity) and corporate entrepreneurship and the impact of organizational factors (organizational strategy and culture) on corporate entrepreneurship are now discussed.

4.3.1.1 Environmental Conditions and Corporate Entrepreneurship

The external environment has historically been the focus as the predictor of corporate entrepreneurship (Covin & Slevin 1991; Dess, Lumpkin & Covin 1997; Guth & Ginsberg 1990; Kollmann & Stockmann 2008; Miller 1983). Environmental conditions are viewed as a multidimensional concept (Zahra 1993b), which highlights the understanding of the strategic behaviour of firms (Garg, Walters & Priem 2003; Kim & Lim 1988; Pearce & Robinson 2009), thus representing an important first step in selecting corporate entrepreneurship activities (Kollmann & Stockmann 2008; Zahra 1993a). Therefore, environmental dimensions are expected to be predictors of corporate entrepreneurship and the following hypothesis is put forward:

H1. Environmental factors will have an impact on corporate entrepreneurship in Thailand's auto parts manufacturing firms.

Environment variables including dynamism, hostility and heterogeneity, based on Miller and Friesen (1983), are widely used in literature and are found to influence corporate entrepreneurship (Covin & Slevin 1989; Kollmann & Stockmann 2008; Lumpkin & Dess 2001; Luo 1999; Zahra 1991). Dynamism refers to the perceived

instability and continuing changes in the firm's market. Organizations often respond to challenging conditions found in dynamic or high-tech environments by adopting an entrepreneurial posture (Antoncic & Hisrich 2004). Based on this understanding, the following hypothesis is put forward:

H1a. Environmental dynamism will have an impact on corporate entrepreneurship in Thailand's auto parts manufacturing firms.

Moreover, hostility represents the degree of threat to the firm posed by the intensity of the competition and the downswings and upswings of the firm's principal industry. It is more likely that firms will be entrepreneurial when competitors' products change rapidly or when customer needs fluctuate (Kollmann & Stockmann 2008; Zahra & Garvis 2000). Based on these arguments, the following hypothesis is put forward:

H1b. Environmental hostility will have an impact on corporate entrepreneurship in Thailand's auto parts manufacturing firms.

Heterogeneity or complexity encompasses variations among a firm's markets that require diversity in production and marketing orientations. Firms operating in many different markets are likely to learn from their broad experience with competitors and customers. Thus, it is likely that entrepreneurial behaviour will follow (Entrialgo, Fernandez & Vazquez 2001; Morris, Kuratko & Covin 2008). In regard to this argument, the following hypothesis is put forward:

H1c. Environmental heterogeneity will have an impact on corporate entrepreneurship in Thailand's auto parts manufacturing firms.

4.3.1.2 Organizational Factors and Corporate Entrepreneurship

Existing organizations present an opportunity structure for entrepreneurship (Burgelman 1983a, 1983b). Previous research claims that organizational factors can be barriers to as well as enhance entrepreneurship in organizations (Dess, Lumpkin & McGee 1999;

Hornsby et al. 1993; Kollmann & Stockmann 2008). Organizational strategy and culture are found in the literature to impact on corporate entrepreneurship (Covin & Slevin 1991; Morris, Kuratko & Covin 2008). They are discussed below.

4.3.1.2.1 Organizational Strategy

The firm's strategy is another variable influencing entrepreneurship. When entrepreneurship is applied to a firm's strategy, the possibilities of entrepreneurial behaviours are greatly enhanced in the organization (Morris, Kuratko & Covin 2008). This means that innovation and value creation play a critical role in the company's strategic direction. The review of the literature suggests the existence of an association between strategic orientation and corporate entrepreneurship. Clearly, organizational strategy that emphasizes innovation and new product introduction is generally associated with an entrepreneurial approach. The following hypothesis is therefore put forwarded:

H2: Organizational strategy will have an impact on corporate entrepreneurship in Thailand's auto parts manufacturing firms.

The Prospector strategy focuses on finding and exploiting new product and market opportunities. Its product-market domain is usually broad and continuously developing. Growth primarily arises from the development of new markets and the expansion of product offerings (Shortell & Zajac 1990). The Prospector type maintains a reputation as an innovator in product and market development and tends to be the creator of change in the industry. Thus, the Prospector type is seen to be the most effective in new product development, new market development, and aggressive growth in the chosen market. Based on these understandings, the following hypothesis is put forward:

H2a: The Prospector strategy type will have an impact on corporate entrepreneurship in Thailand's auto parts manufacturing firms.

Similar to the Prospector strategy, the Analyzer-oriented strategy would be expected to emphasize heavily new product development. The Analyzer strategy seeks both risk-adjusted efficiency and emerging market opportunities. Firms adopting this orientation protect existing products and markets through efficiency-oriented strategies while cautiously penetrating new markets through intensified product or market innovation (Venkatraman & Prescott, in Luo 1999). The following hypothesis is based on the above arguments:

H2b: The Analyzer strategy type will have an impact on corporate entrepreneurship in Thailand's auto parts manufacturing firms.

Unlike the Prospector strategy type, the distinct feature of the defender type is the narrow focus and the stability of its product-market domain; it tends not to search outside its domain for new opportunities. Because the primary emphasis is on efficiency rather than effectiveness, this type of strategy tends to emphasize maintaining market share through low cost and efficiency in narrowly defined market segments. By selecting a stable and narrowly defined product-market domain, firms adopting this orientation are non-adaptive, defensive, non-innovative and risk-averse (Luo 1999). The following hypothesis is put forward:

H2c: The Defender strategy type will not have an impact on corporate entrepreneurship in Thailand's auto parts manufacturing firms.

4.3.1.2.2 Organizational Culture

A general consensus in the literature is that corporate culture plays a critical role in shaping corporate entrepreneurship (Chung & Gibbons 1997; Kuratko et al. 1993; Morris, Kuratko & Covin 2008; Russell & Russell 1992). Culture that supports innovation tends to stimulate organizational members to take corporate entrepreneurship initiatives (Gamble & Thompson 2009; Kuratko, Ireland & Hornsby 2001; Oden 1997; Russell & Russell 1992).

Organizational culture characteristics such as management support, autonomy and work discretion, rewards and reinforcement, time availability, and loose organizational boundaries (Hornsby et al. 1993) are critical to foster an entrepreneurial culture in organizations (Antoncic & Hisrich 2001, 2004; Antoncic & Scarlat 2005). In Antoncic and Hisrich's (2001, 2004) studies, the organizational support dimension is measured by items from Hornsby et al. (1993), and the findings indicate that organizational support can be an important predictor of corporate entrepreneurship. In addition, Angkasuvana (2005) operationalizes company culture consisting of participative decision-making, open, cooperative, teamwork and suggests that the culture influences the management style and shapes entrepreneurial behaviour of individuals and groups in the company at all levels (Gray, Densten & Sarros 2003). Therefore, the following hypothesis is put forward:

H3: Organizational culture will have an impact on corporate entrepreneurship in Thailand's auto parts manufacturing firms.

4.3.2 Corporate Entrepreneurship and Firm Performance

The literature highlights the importance of corporate entrepreneurship for improving a company's performance. Firms with high levels of corporate entrepreneurship are more likely to achieve better business results than firms with lower levels of corporate entrepreneurship (Covin & Slevin 1990; Kuratko, Ireland & Hornsby 2001). As such, organizations engaging in entrepreneurial activities are expected to achieve superior performance to organizations that are lower in corporate entrepreneurship engagement. Therefore, corporate entrepreneurship is expected to be related positively to performance. The following hypothesis is put forward:

H4: Corporate entrepreneurship will have a positive influence on firm performance in Thailand's auto parts manufacturing firms.

The most common measures of performance in corporate entrepreneurship studies are growth and profitability. Improved organizational outcomes are claimed to be the result

of entrepreneurship in established companies (Covin & Slevin 1991; Kollmann & Stockmann 2008) and the research findings support a positive association between corporate entrepreneurship and financial performance (Antoncic & Hisrich 2001, 2004; Covin & Covin 1990; Covin & Slevin 1989, 1990; Dess, Lumpkin & Covin 1997; Naman & Slevin 1993; Wiklund 1999; Zahra 1991, 1993b; Zahra & Covin 1995). Therefore, corporate entrepreneurship is expected to be positively related to financial performance. The following hypothesis is put forward:

H4a: Corporate entrepreneurship will have a positive influence on financial performance in Thailand's auto parts manufacturing firms.

Measuring performance on non-financial criteria has been recognized recently in the corporate entrepreneurship field and some researchers argue that non-financial criteria can be insightful in the early years of an entrepreneurial project (Dess et al. 2003; Zahra 1993a). Thus, non-financial criteria can be useful in evaluating the performance of firm-level entrepreneurship. Research findings support a positive association between corporate entrepreneurship and non-financial performance (Kaya 2006; Mair & Rata 2004). Therefore, corporate entrepreneurship is expected to positively relate to non-financial performance. The last hypothesis put forward is:

H4b: Corporate entrepreneurship will have a positive influence on non-financial performance in Thailand's auto parts manufacturing firms.

4.3.2.1 Summary of the Hypotheses of the Study

Based on the literature and discussions, the following hypotheses were developed for testing in Thailand's auto parts manufacturing firms:

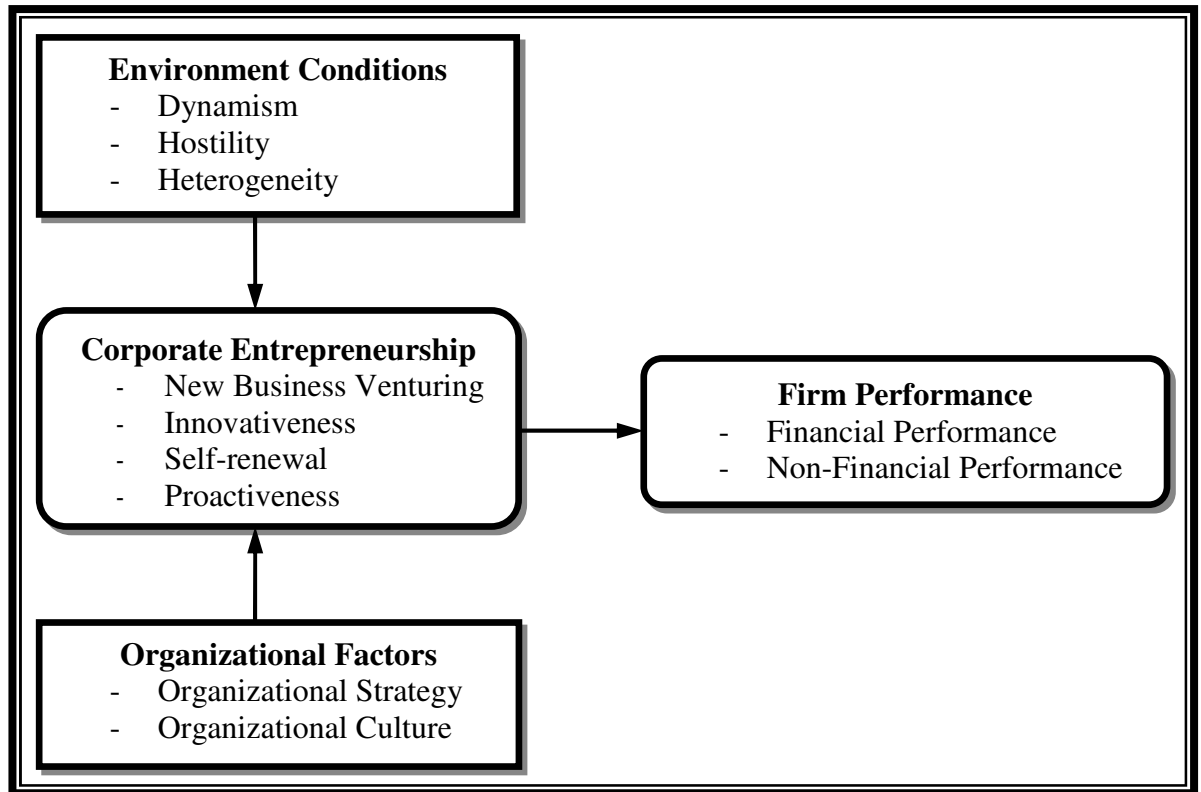
H1. Environmental factors will have an impact on corporate entrepreneurship in Thailand's auto parts manufacturing firms.

H1a. Environmental dynamism will have an impact on corporate entrepreneurship in Thailand's auto parts manufacturing firms.

- H1b. Environmental hostility will have an impact on corporate entrepreneurship in Thailand's auto parts manufacturing firms.
- H1c. Environmental heterogeneity will have an impact on corporate entrepreneurship in Thailand's auto parts manufacturing firms.
- H2: Organizational strategy will have an impact on corporate entrepreneurship in Thailand's auto parts manufacturing firms.
- H2a: The Prospector strategy type will have an impact on corporate entrepreneurship in Thailand's auto parts manufacturing firms.
- H2b: The Analyzer strategy type will have an impact on corporate entrepreneurship in Thailand's auto parts manufacturing firms.
- H2c: The Defender strategy type will not have an impact on corporate entrepreneurship in Thailand's auto parts manufacturing firms.
- H3: Organizational culture will have an impact on corporate entrepreneurship in Thailand's auto parts manufacturing firms.
- H4: Corporate entrepreneurship will have a positive influence on firm performance in Thailand's auto parts manufacturing firms.
- H4a: Corporate entrepreneurship will have a positive influence on financial performance in Thailand's auto parts manufacturing firms.
- H4b: Corporate entrepreneurship will have a positive influence on non-financial performance in Thailand's auto parts manufacturing firms.

Also based on the literature, discussions and hypotheses, Figure 4.1 conceptualizes and illustrates the theoretical framework of the study.

Figure 4.1: The Conceptual Framework of the Study



4.4 Chapter Summary

The literature in relation to corporate entrepreneurship has shed light on many of the variables in question. Also the chapter examines another stream of corporate entrepreneurship literature that focuses on external and internal environment factors as determinants of a firm's entrepreneurial behaviour in addition to corporate entrepreneurship implications (see Chapter 3), as proposed strongly by Covin and Slevin (1991). Their model of the antecedents and the effects of corporate entrepreneurship has been widely recognized and extensively referenced in the literature.

A model of corporate entrepreneurship antecedents and effects is further explained and enhanced in this thesis in an attempt to explore the dynamic nature and complex model of corporate entrepreneurship antecedents and effects. This thesis also seeks to develop an understanding of such a model in auto parts manufacturing firms in Thailand by

addressing the factors influencing corporate entrepreneurship and performance. There is a need to find out whether those research findings based on corporate entrepreneurship from developed countries are applicable to the Thai auto parts manufacturing firms. The existing corporate entrepreneurship theories explaining predictors of the entrepreneurial behaviour of firms and their performance have been formulated primarily from research in developed countries; it is important to examine the extent to which they apply in the context of developing countries, particularly Thailand.

Due to the complex nature of the research, which takes a multidimensional approach to measure corporate entrepreneurship in Thailand's auto parts manufacturing firms, the research method for the study supports a mixed-method approach. This methodology allows the use of both quantitative and qualitative methods, and allows general themes to emerge. A qualitative approach provides depth of information from the participants' points of view and explores the several variables and factors. This will best achieve the aim of this study, which seeks to develop an understanding of the antecedents and the effects of corporate entrepreneurship. A quantitative approach is also useful in identifying the extent of variables underpinning the diversity of the participants' experience, enabling consideration of the number of diverse variables rather than a single one that may influence corporate entrepreneurship and performance. The hypotheses will be tested to determine the applicability of existing theories in the Thai cultural context.

A solid theoretical framework of corporate entrepreneurship antecedents and effects is then developed for hypothesis-testing in the Thai auto parts manufacturing sector by integrating the previous research studies. The review of literature in relation to corporate entrepreneurship was helpful in identifying the survey and interview questions for this study. The next chapter will present the research methodology.

PART THREE

METHODOLOGY

Chapter 5: Research Methodology

Part three of this thesis describes the methodology used in this research. Chapter 5 gives a detailed description of the methodological approach. It explains the philosophical thrust of the framework influencing the procedures in the research. This study employs a mixed-method research, which focuses on collecting, analyzing and mixing both quantitative and qualitative data in a single study during the same time-phase. A survey questionnaire was used in the quantitative research, whilst interviews were conducted using open-ended questions. The qualitative data were utilized to validate the quantitative results from the survey and provide detailed information concerning the objectives under study. The purpose of using quantitative and qualitative approaches in combination provides a better understanding of research problems than either approach alone.

Chapter Five

Research Methodology

5.1 Introduction

The previous chapters introduced the literature and the theoretical framework for this research as well as the hypotheses. This chapter now explains the data collection and analysis. This chapter is structured as follows: firstly, a brief overview of the research paradigms will be presented, including one used in this thesis, and the research strategies used to collect data for the study. Then the quantitative method will be presented including the research population and the sampling technique, instruments and procedures of data collection, and the data analysis methods utilized in the study. The qualitative method will be presented in the final section, including the sampling procedure, protocol design, data collection procedures, and data analysis.

5.2 Philosophical Research Paradigms

Since a philosophical statement is made when choosing a research method, this chapter will explain the parameters upon which the mixed methodology was chosen and found appropriate for this study. This chapter begins with a brief overview of the three broad research paradigms, namely the quantitative, qualitative and mixed methodologies. Then the paradigm used in this study will be presented.

5.2.1 Quantitative Research Paradigm

Quantitative research (also called positivism) has been traditionally dominant in the social, psychological and behavioural sciences as well as management research (Ridenour & Newman 2008; Veal 2005). The quantitative approach involves data collection and the analysis of numerical data (Hesse-Biber & Leavy 2006; Veal 2005).

It relies on numerical evidence to draw the results or to test hypotheses. The advantage of quantitative research is that it is possible to measure the reactions of a large number of subjects as representative of some wider population to a limited set of questions, which facilitates comparison and statistical aggregation of the data. This gives a generalizable set of results presented concisely and parsimoniously, but the richness and depth of meaning for participants are usually limited (Johnson & Onwuegbuzie 2006; Ridenour & Newman 2008; Singleton & Straits 1999). The methods used to gather quantitative data include experimental studies, questionnaire-based surveys, observation, and secondary sources (Singleton & Straits 1999; Veal 2005).

5.2.2 Qualitative Research Paradigm

Qualitative research (also called constructivist and interpretivist) in social sciences traditionally derives from anthropology and sociology (Ridenour & Newman 2008). This approach involves gathering large amounts of rich information based on belief in the value of understanding the experiences and situations of a relatively small number of subjects (Veal 2005). The basic assumption underlying qualitative research is to uncover meanings and understanding of the issues being studied (Morse 2006; Veal 2005). Qualitative techniques are also used when exploratory theory building, rather than theory testing, is undertaken (Ridenour & Newman 2008). The strength of qualitative research is that it enables researchers to gain a depth of understanding of the cases and situation studied (Berg 2004). However, a major weakness of this approach is that it reduces generalizability due to the relatively small number of samples (Patton 2002). The qualitative data might be derived from informal, unstructured and in-depth interviewing, case studies, narrative inquiry or from participant observation (Patton 2002; Ridenour & Newman 2008; Singleton & Straits 1999; Veal 2005).

5.2.3 Mixed Method Paradigm

Mixed method research is relatively new in the social and human sciences as a distinctive research approach and is less well known than either the quantitative or

qualitative approaches (Creswell 2003). Several sources identify the concept of mixing different methods as beginning in 1959, when Campbell and Fiske employed multiple methods to study the validity of psychological traits and encouraged others to use their multi-method matrix to test multiple approaches to data collection in a study. This interested others, e.g., Jick (1979), in converging or triangulating different quantitative and qualitative data sources (Creswell 2003).

A mixed-method approach is defined as one in which the researcher employs strategies of inquiry that involve collecting diverse types of data either simultaneously or sequentially to best understand research problems (Creswell 2003; Hesse-Biber & Leavy 2006). It focuses on collecting and analyzing both quantitative and qualitative data in a single study. Researchers employ a mixed-method design because they want to expand an understanding from one method to another, to converge or confirm findings from different sources (Creswell & Clark 2007). By combining multiple methods, researchers obtain a better, richer and more complete picture of reality and theoretical concepts (Berg 2004).

For example, a researcher may want to both generalize the findings to a population and develop a detailed view of meaning of a phenomenon for individuals. In this approach, a large number of individuals may be surveyed, e.g., instruments (close-ended quantitative data), followed up by e.g., open-ended interviews (qualitative data), with a few of participants to obtain their specific language and voice about the topic. Alternatively, the researcher may explore generally to learn about what variables to study and then study those variables with a large sample population. In these situations, it is useful to capture advantages of both quantitative and qualitative approaches.

5.3 Paradigm of This Study

The choice of a research methodology does not rest on whether it is good or bad. Rather the choice is based on whether it is appropriate for the particular type of research which has a particular purpose (Veal 2005). Researchers are generally free to choose the techniques best suited to their own research.

Since quantitative and qualitative methods involve different strengths and weaknesses, it has been argued that researchers should try to use multiple research methods because the findings provide broader insights into the issues being studied (Jick 2006; Morse 2006; Veal 2005). Researchers should use the tools of data collection suited to their research which could involve techniques from the quantitative and qualitative methodologies rather than being restricted to the types of data collection typically related to either one. The choice of the techniques is related to the problem to be solved. In this study, therefore, instead of restricting the study to one method, the researcher used both quantitative and qualitative methods to achieve the objective.

Similarly, it has been argued in corporate entrepreneurship literature that qualitative and quantitative studies should be combined in order to enrich the understanding of firm-level entrepreneurship (Zahra, Jennings & Kuratko 1999). Zahra, Jennings and Kuratko (1999) noted that the role of antecedent variables in explaining entrepreneurial activities or the effect of these activities on company performance would benefit from integrating quantitative and qualitative approaches.

The advantages of using a mail survey approach are as follows: firstly, it is easier to administer to a large and geographically spread population. Secondly, it can easily reach CEOs, who are normally difficult to access and interview. Moreover, greater uniformity of data can be achieved, which facilitates data analysis. Finally, greater coverage of the population is possible which may provide greater validity through a larger and more representative sample. Thus, quantitative research is employed to collect quantitative data by surveys and by analyzing data using statistical techniques. In addition, the specified hypotheses of the study could be tested and empirical support found for theoretical points of view without any bias.

Qualitative research was also used in this study to explore the complexities of the interrelationships between corporate entrepreneurship antecedents and effects. Qualitative data was collected by interview to gain rich information about corporate entrepreneurship antecedents and their effect in Thailand, particularly the auto parts

manufacturing sector. The interview responses from the senior managers of Thai auto parts manufacturing firms enabled the study to capture and provide deeper understanding of corporate entrepreneurship practice in auto parts manufacturing firms.

It is clear from the above analysis that a mixed-method research approach is appropriate for this study. Based on these reasonings, a mixed research methodology, having both quantitative and qualitative research methods, was employed to collect and analyze data for the study.

5.4 Triangulation

Triangulation is the most common and best-known approach in mixed-method research (Creswell 2003). Triangulation involves the use of more than one research approach in a single study to gain a broader or more complete understanding of the issue being studied (Veal 2005). The methods used are complementary in that the weaknesses of one approach are complemented by the strengths of another. In addition, biases inherent in any single method could neutralize or cancel the biases of other methods (Creswell 2003). Triangulation often integrates both quantitative and qualitative approaches in the same study.

Triangulation is a one-phase design implementing the quantitative and qualitative methods during the same time frame and with or without equal weight. Ideally, the priority would be equal between the two methods, but the priority may also be given to either the quantitative or the qualitative approach (Creswell 2003). This one-phase timing is referred to as “concurrent triangulation design” (Creswell & Clark 2007). It involves the concurrent, but separate, collection and analysis of quantitative and qualitative data. In this design, the researcher merges the two data sets by bringing the separate findings together in the interpretation or by transforming data to facilitate integrating the two data types during the analysis.

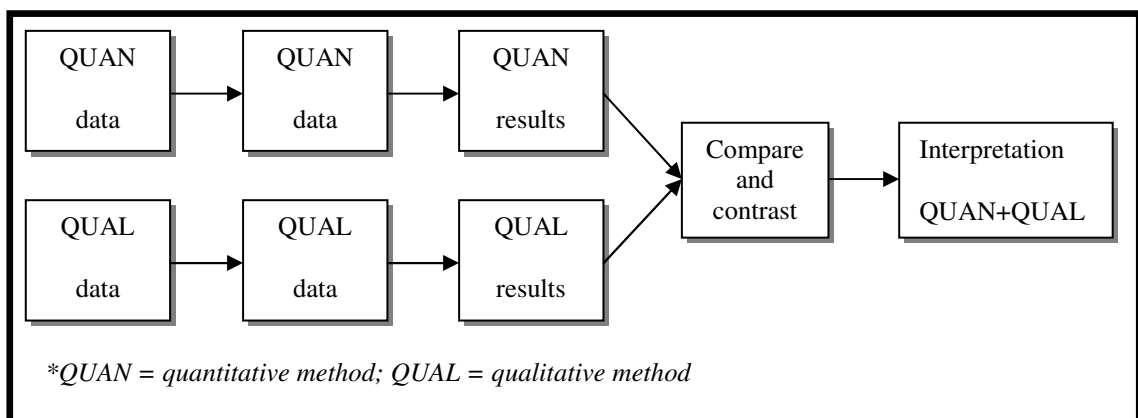
According to Creswell and Clark (2007), there are four variants of triangulation: the convergence model, the data transformation model, the validating quantitative data

model, and the multilevel model. The first two models distinguish in terms of how the researcher attempts to merge the two data types (either during interpretation or during analysis). The third model is used to support results from a survey, and the fourth is used to examine different levels of analysis. The convergence strategy was used in this study, and it is discussed below.

5.4.1 The Convergence Model of Triangulation

In order to achieve the objective of this study, the convergence model of triangulation was used to collect and analyze quantitative and qualitative data separately on the same topic, then the different findings were converged by comparing and contrasting the different results or validating, confirming or corroborating quantitative findings with qualitative results during the interpretation (see Figure 5.1). The convergence model of triangulation was suitable for this study since it is useful to gain valid and well-substantiated conclusions about a single phenomenon (Creswell & Clark 2007). This approach with the use of quantitative and qualitative approaches in combination provides a better understanding of research problems than either approach alone.

Figure 5.1: Triangulation: the Convergence Model



Source: Creswell and Clark 2007

A questionnaire survey was mailed out to collect quantitative data, while qualitative interviews were conducted with CEOs or senior managers of Thai auto parts

manufacturing firms within the sample group. The rationale behind the use of this strategy was to obtain statistical quantitative results from a larger number of Thai auto parts manufacturing firms as well as to test hypotheses, and concurrently interview individual senior managers by exploring the research questions in more depth. Both quantitative and qualitative results were merged during the interpretation. Thus, this principle was useful in strengthening the findings or gaining deeper insight into the relationship between the inquiry approach and the phenomenon under study.

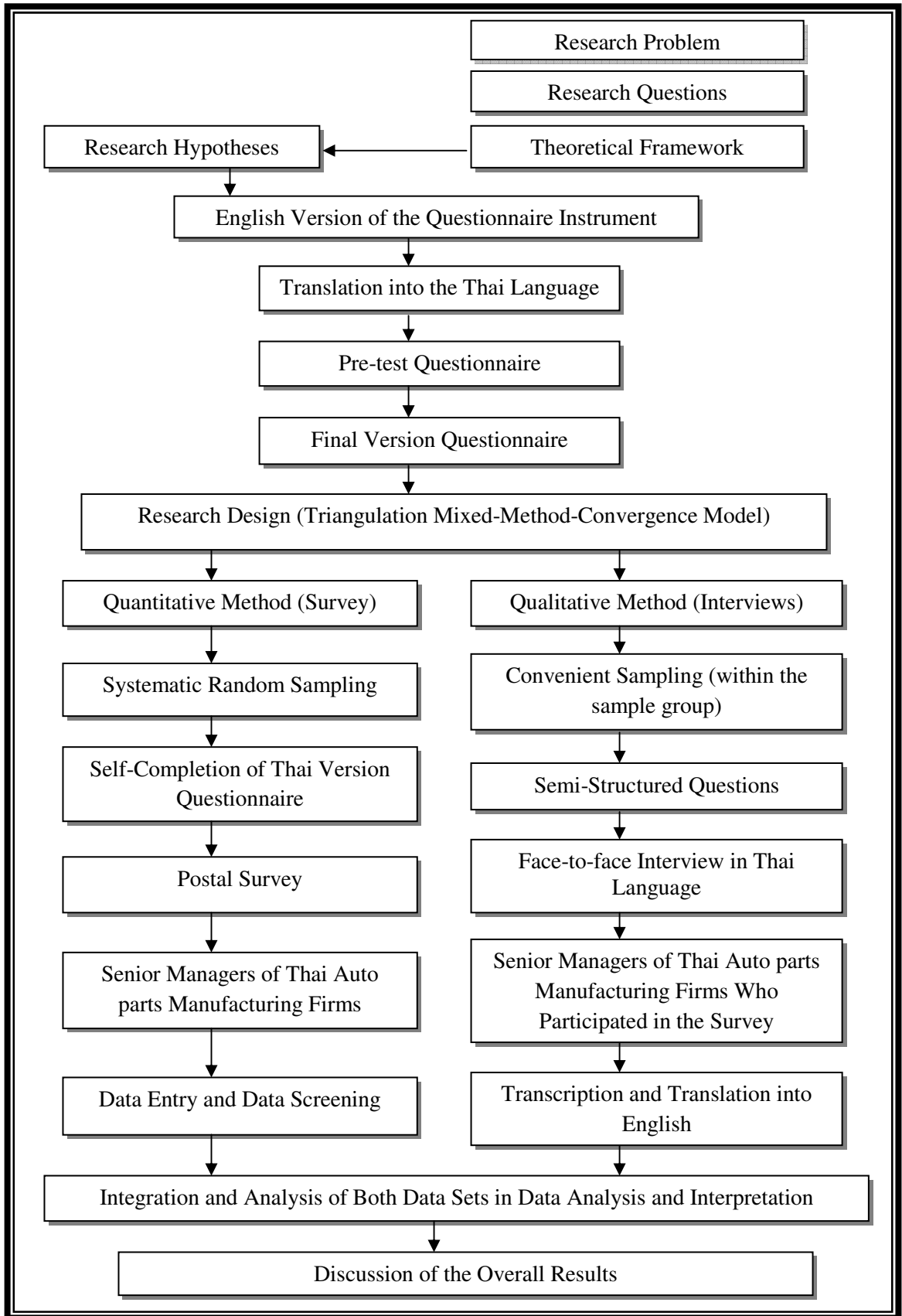
The use of a convergence model of concurrent triangulation had a number of benefits in the study. Firstly, separate quantitative and qualitative methods were employed as a means to offset the weaknesses inherent in one method by the strengths of the other method. Thus, in this study, the weakness associated with qualitative data, such as the difficulty in generalizing findings to a large group, were complemented by the strength of the quantitative method of the data collection from a large population and their rigid statistical analysis. In addition, the qualitative method provided richer meanings to the quantitative findings, since the quantitative data are weak in understanding the complex and dynamic context or setting from the participant's own frame of reference. Therefore, the use of a convergence model of triangulation in mixed-method research provides a more complete picture for studying a research problem. However, the main weakness of this approach is that the researcher needs to put in greater time and effort for extensive data collection as well as during analyzing both text and numeric data (Creswell 2003). Nevertheless, Patton (2002) argued that the investment of time and effort required in the mixed-method approach is worthwhile because different methods have different strengths and weaknesses. Triangulation strengthens a study by combining methods. Therefore, the researcher can be confident that his/her research findings will provide a deeper and better understanding of the phenomenon in the study.

Importantly, Creswell and Plano (2007) suggest that the convergence model is the traditional model of the triangulation methodology; it is useful in confirming, cross-validating, or corroborating findings in a single study. In addition, this one-phase timing triangulation strategy is shorter and suitable for PhD studies, as compared with the other mixed-method strategies.

Therefore, two traditional methods of data collection were combined in this study. In the quantitative method, primary data were collected by means of a mail survey. Objective data, such as demographic profiles, environmental conditions, organizational strategy and structure, performance resulting from engagement in corporate entrepreneurship activity were all analyzed and compared, while the study's hypotheses were tested. Concurrently, a qualitative method which explored the real-life meaning concerning the entrepreneurial behaviour of Thai auto parts manufacturing firms was utilized by means of interviews.

The process of the data collection and implementation using the triangulation strategy with a convergence model is presented in Figure 5.2.

Figure 5.2: Summary of the Research Methodology of the Current Study



5.5 The Quantitative Method

In the formal study, a mail survey approach was employed for quantitative data collection. A structured questionnaire was used to test whether the theoretical hypothesized model of corporate entrepreneurship antecedents and effects was applicable to the Thai context and to identify appropriate determinant and performance variables of corporate entrepreneurship. To achieve a satisfactory response rate the decision was therefore made that the use of a mail survey approach with a supporting letter from Thailand's Automotive Institute would be the most appropriate approach for collecting a large amount of data, especially from the CEOs or senior executives of Thai auto parts manufacturing firms.

5.5.1 Population Definition

The population of the study consisted of auto parts manufacturing firms established in Thailand. There are about 1,800 auto parts manufacturing firms locating in Thailand (Crawford 2005; Porter 2003).

The reason for choosing this sector was three-fold. Firstly, this sector plays an important role in economic development. The Thai automotive industry is one of the five sectors in which Thailand aims to be a regional manufacturing hub in Asia (Panthong 2005) and the auto parts manufacturing sector plays a major role in the development of Thailand's automotive industry (Runckel 2005). Therefore, the focus on upgrading the capabilities of Thai auto parts manufacturers is critical. Also, exploring corporate entrepreneurship may be one way of having a better understanding of sector operation, which could result in greater attention to increasing competitiveness. Finally, the presence of a number of firms in this sector would provide an adequate sample for the collection of information and provide statistical significance in the study. With internationalization and given Thailand's stage of economic development, the focus on the auto parts manufacturing population is acknowledged as being of importance to the Thai national economy. These entrepreneurial companies are also seen as crucial to the

survival and growth of the Thai automotive industry. It is for these reasons the study focused on the entrepreneurial nature of the auto parts manufacturing industry, an important link to Thailand's economic prosperity.

The Thailand Automotive Industry directory 2006–2007 was used to source information on names and addresses of Thai auto parts manufacturing companies. This is a public document provided by the Thai Auto parts Manufacturers Association (TAPMA) and approved by the Ministry of Commerce. TAPMA, formed in June 1978, is a union of auto parts manufacturing companies from the private sector and serves as the central voice for auto parts industrialists in the country. Moreover, TAPMA is entrusted by the government to represent the automobile parts industry and raise the country's industry to greater heights.

The following criteria were used in selecting the companies in the sample for this study:

1. Company that has operated in Thailand for at least five years since the study focused on entrepreneurship in established firms (Antoncic & Hisrich 2001).
2. Company that has 100 percent Thai ownership or majority ownership, because the study aims to enhance the competitiveness of local companies for the country's economic development (Bunyamanee 2005).
3. The company "must have been standing business or division of larger corporation". This criterion was chosen because the study focused on corporate-level (vs. business-level) strategic management issues (Covin, Slevin & Heeley 1999, p. 190).

The study was conducted in a field setting in a single industry. Single informants which involve one participant per organization were selected to complete the questionnaire. The advantages and potential shortcomings of these basic design decisions have been discussed and debated for research involving managerial respondents (Snow & Hambrick 1980). Although the generalizability of findings of single-industry-based studies is limited as opposed to other industries, a desirable feature of such studies is that they provide a greater degree of control over market and environmental characteristics (Snow & Hambrick 1980; Wang & Li-Hua 2006). Although the use of

multiple informants may be generally preferable for accurate responses when measuring organizational level constructs, the use of a single informant allows for a larger number of organizations to be surveyed by reducing the strain on the research budget (Conant, Mokwa & Varadarajan 1990; Lyon, Lumpkin & Dess 2000). Moreover, CEOs, who were chosen to complete the questionnaires, are expected to be the most knowledgeable in the organization (Fitzsimmons et al. 2005; Lyon, Lumpkin & Dess 2000).

5.5.2 Sampling Design

Sampling design refers to that part of the research plan that indicates how cases are selected for investigation (Singleton & Straits 1999). According to Singleton and Straits (1999, p. 141), sampling designs are classified into two groups: probability and non-probability. “Probability sampling is scientifically more acceptable, although it is not always feasible or economical”. Its main characteristics are that all cases in the population are randomly selected and a probability of being included in the sample is known. On the other hand, “in non-probability sampling, the chances of selecting any case are not known because cases are non-randomly selected”.

Probability sampling has some advantages over non-probability sampling. First, it removes the possibility that researcher biases will affect the selection of cases. Second, “the law of mathematical probability may be applied to estimate the accuracy of the sample” (Singleton & Straits 1999, p. 141). Third, it allows confident generalization from a sample to a wider population (Patton 2002). Thus, the aim of probability-based random sampling is generalization from the sample to a population and control of selectivity errors.

Random selection refers to the process that gives each subject in a population an equal chance of being selected. This study used systematic random sampling that consisted of selecting every fifth case from a complete list of the population, starting with a randomly chosen case from the first case on the list. This study drew a sample of 400 companies from 1,800 companies listed in the Thailand Automotive Industry directory 2006–2007. Dividing 1,800 by 400, a sample interval of 4.5 was obtained. The

respondents were selected based on a random number between 1 and 5, and starting with that number, every fifth company was selected thereafter. A systematic random sample was used because this procedure does not require a list of the population in a computer file and it is suitable when a list is not numbered and is fairly long. For these instances, it is much easier to draw a systematic sample (Singleton & Straits 1999).

After the process of screening and selection using the above criteria, four hundred (400) auto parts manufacturing firms were identified for the sample. To collect quantitative data, survey questionnaires were mailed out to all sample firms. This enabled all firms to have an equal chance to be selected and to represent the entire population.

CEOs of Thai auto parts manufacturing firms (approximately 400) were selected to participate as they would be most knowledgeable about the overall situation, activities and orientations of the firm (Fitzsimmons et al. 2005). A deputy assigned by a CEO and who was familiar with the company's operating environment, strategy, culture, performance and top management's collective management style or strategic decision-making styles was also acceptable as a participant. Only one respondent from each firm was selected due to time and cost constraints.

5.5.3 Survey Questionnaire

Close-ended questions were used because they are easier and quicker for respondents to answer and the researcher to code and statistically analyze, and sensitive topics such as performance may be more accurately measured with closed questions (Neuman 2003). The questionnaire was originally developed in English and was then translated into Thai. The Thai version was reviewed by two native Thai speakers in order to ensure the accuracy of the translation. Both reviewers had a master's degree in English literature from universities in the United States and had more than 10 years' experience in professional translation. They worked for translation companies which are approved by Thailand's Ministry of Foreign Affairs. Then the translated questionnaire was re-translated back into English in order to confirm that the translation process was correct.

The questionnaire was designed based on the following requirements:

1. It should be clear and easily understood, as some CEOs might be less well-educated, so technological terms would be difficult for them to understand
2. It should be short; otherwise CEOs would find it too time-consuming.
3. It should produce data meaningful to the Thai auto parts manufacturing industry.
4. It should produce sufficient data for a meaningful analysis and interpretation.

The questionnaire consisted of 72 questions which were measured through scales previously validated and used more than once by researchers. The seven-point Likert-type scale was used in the research. The seven-point scale was chosen over a five-point scale, as a longer scale difference was needed to capture the information, for example when quantifying innovativeness, growth and profitability (Antoncic & Hisrich 2004). There were 11 demographic questions relating to both the firm and the participant. The other 61 questions had all been tested and used in previous research, and were organized into 6 categories: environment, strategy, culture, corporate entrepreneurship and organizational performance (see Table 5.1).

Table 5.1: Summary of Number of Questions

Sections	Scales	No. of Items
1	Environmental	13
2	Strategy	4
3	Organizational Culture	12
4	Corporate Entrepreneurship	24
5	Organizational Performance	8
6	Demographics	11

5.5.4 Instrument Measurements

This section discusses the survey instrument by which the independent and dependent variables were operationalized and measured. The scales were used to check for convergent and discriminating validity after the data were collected. Measures of environmental conditions, organizational strategy and culture, entrepreneurship as firm behaviour, and financial as well as non-financial performance were employed in this

research. “To minimize social desirability bias in the measurement of constructs, the respondents were reminded that there were no right or wrong answers to the questions being asked of them, and they were guaranteed confidentiality” (Covin, Slevin & Heeley 1999, p. 191). Specific references were provided for each measure, is discussed below.

Table 5.2: Overall Summary of the Instrument Measurements Used in the Study

Measurements	Source of Scale	No. items
1. Environmental conditions		
Dynamism	Zahra (1991)	5
Hostility	Miller and Friesen (1983)	5
Heterogeneity	Miller 1988	3
2. Organizational strategy		
Defender	James and Hatten (1995)	0 and
Prospector	Nominal or categorical variables,	1
Analyzer	dummy variable used as	
Reactor	replacement	
3. Organization culture		
Management support	Hornsby et al. (1993)	3
Autonomy/work discretion		2
Reward/reinforcement		2
Training	Zahra (1993b)	1
Participative decision-making	Angkasuvana (2005)	1
Open and cooperative		2
Teamwork		1
4. Corporate Entrepreneurship		
New business venturing	Antoncic and Hisrich (2001)	4
Innovativeness		5
Self-renewal		11
Proactiveness		3
5. Firm performance		
Financial	Hart and Quinn (1993)	3
Non-financial		5

Environmental Conditions

A 13-item scale was used to measure environmental conditions. Respondents were requested to report their perception of their company’s external environments on a seven-point Likert scale (1= ‘strongly disagree’ to 7= ‘strongly agree’). This Likert-type instrument consisted of five items measuring environmental dynamism, five items

measuring environmental hostility, and three items measuring environmental heterogeneity. This scale was developed by Miller (1988), Miller and Friesen (1982) and Zahra (1991) based on the work of Miller and Friesen (1984) which are widely used by many researchers. The overall results of this study supported the construct validity of the environmental measures and reaffirmed the measures' reliability.

Organizational Strategy

This study used Miles and Snow's (1978) strategy typology for the measurement of corporate strategy. Respondents were asked to indicate their opinion on the most appropriate description from four paragraph descriptions as Prospector, Analyzer, Defender and Reactor in this study. To ensure respondents were not biased, the four paragraph descriptions were not entitled as Prospector, Analyzer, etc., and the instructions also indicated that no type was considered superior to any other type. This instrument was developed by James and Hatten (1995) based on the Miles and Snow classification to measure four strategy types: Prospector, Analyzer, Defender and Reactor. This approach is considered both logical appealing, as senior managers' (or the respondents') perceptions and opinions largely determined strategy. Also, it allows rapid collection of a substantial database (Snow & Hambrick 1980). Furthermore, it enables firms to give an objective response and avoids any unnecessary bias, where firms might try to give preferable responses. Several studies indicated that the self-typing paragraph approach was a useful measurement instrument which allows a reasonable convergent validity (Conant, Mokwa & Varadarajan 1990; James & Hatten 1995; Shortell & Zajac 1990).

Organizational Culture

A 12-item scale was used to measure organizational culture. The respondents were requested to indicate a supportive entrepreneurial environment in their organizations on a seven-point Likert-type scale (1= 'minor emphasis' to 7= 'major emphasis'). Seven items measured management support, autonomy/work discretion, and reward/

reinforcement. These items were developed by Hornsby et al. (1993) based on Kuratko, Montagno and Hornsby (1990). The Intrapreneurial Assessment Instrument (IAI) was developed as a multidimensional scale based on an analysis of the most consistent elements in the existing literature. One item that measured training was developed by Zahra (1993b), reflecting support activities for creativity and innovation. Another four items were developed by Angkasuvana (2005) based on Christodoulou (1984) reflecting involvement of all members of the firm for creativity and innovation. These items dealt with participative decision making, being open and cooperative and teamwork.

Corporate Entrepreneurship

A 23-item corporate entrepreneurship scale was used. Respondents were asked to identify entrepreneurship activities or orientations within their organization. The respondents were first asked to indicate on a seven-point Likert-type scale (1= 'minor emphasis' to 7= 'major emphasis') four items measuring new business venturing, eleven items measuring self-renewal, and three items measuring proactiveness. Then the respondents were asked to indicate on another seven-point Likert-type scale (1= 'decreased significantly' to 7= 'increased significantly') five items measuring innovativeness. All items were developed by Antoncic and Hisrich (2001) by integrating two key measures of intrapreneurship which have been used in previous studies. This refined multidimensional measure of intrapreneurship was developed to be cross-culturally generalizable by integrating ENTRESALE from Knight (1977) and the corporate entrepreneurship scale from Zahra (1993).

Firm Performance

Financial performance was measured with an 8-item scale that was developed by Hart and Quinn (1993) who operationalized the work of Venkatraman and Ramanujam (1986). The subjective data refers to CEOs' perception of the multiple dimensions of organizational performance compared to their main industry competitors over the past three years. In order to account for any lagged effect, measurement items for these

variables were reported measures for the previous three years. The respondents were asked to indicate on a seven-point Likert-type scale (1= 'low' to 7= 'high'). This Likert-type instrument consisted of three items measuring financial performance (profitability), three items measuring business performance (market share, quality of product/service, and technical product/service design and development), and two items measuring organizational effectiveness (employee satisfaction and overall company performance). These scales addressed both financial and non-financial aspects, providing a more holistic conceptualization of performance. To capture different aspects of small and private enterprises' business performance, subjective measures were used (Dess, Lumpkin & Covin 1997).

5.5.5 Pre-testing

The questionnaire was pre-tested twice. First, it was pre-tested with three Thai managers of manufacturing companies in Thailand. The questionnaires were sent to them via email to complete. All respondents were contacted by telephone from Australia to arrange time for follow-up interviews after they sent back the questionnaires. A telephone interview was chosen due to time and financial resource limitations. The results of the pre-test suggested some minor changes in the wording of certain questionnaire items to improve the understanding of the questions. Moreover, the interviews led to some changes to the clarity of the questions and prepared the researcher for the interview process.

Second, the questionnaire was pre-tested with five Thai CEOs of Thai auto parts manufacturing firms (not included in the final sample) in order to check whether a mail survey approach was appropriate for this study. They were randomly selected from the Thailand Automotive Industry directory 2006–2007 (publicly available from the Thai Auto parts Manufacturers Association or TAPMA). Initial contact with each firm was by telephone to verify the correct address, title and name of the appropriate senior manager. This was to ensure that the invitation letter was culturally acceptable. The questionnaires were sent via airmail to these respondents. Three of them agreed to

participate and all of them also allowed the researcher to interview them after the completion of the questionnaire.

All pre-tested respondents were satisfied with the questionnaire. However, they made suggestions on what problems may be encountered, how to overcome these obstacles and how to get agreement from the most senior executives in Thailand to participate in the survey. In addition, they provided advice on what other specific questions should be added in order to produce meaningful data relevant to the Thai auto parts manufacturing industry. The results of this pre-test showed that a mail survey approach was appropriate for this study.

In summary, the pre-test showed that:

1. The questions were clearly and easily understood
2. The format was clear and logical
3. The questionnaire could be completed within 20 minutes
4. A high degree of creditability was maintained
5. The interview should take about half an hour to one hour.

5.5.6 Data Collection Procedure

The data was collected in Thailand from February to June 2008 after the researcher obtained Ethics approval from the Swinburne Human Research Ethics Committee (HREC). The target population of the study was auto parts manufacturing companies in Thailand. The database of the respondents was obtained from the Thailand Automotive Industry directory 2006–2007 (publicly available from the Thai Auto parts Manufacturers Association or TAPMA).

Self-administered questionnaire packages were mailed out to 400 CEOs, or a deputy, of auto parts manufacturing firms in Thailand. The self-administered questionnaire packages were mailed out from Thailand, the home nation of the researcher. The self-administered questionnaire package comprised the following items:

1. The self-administered questionnaire titled ‘The Relationship between Entrepreneurship as Firm Behaviour and Firm Performance in Thai Auto parts Manufacturing Firms’
2. A consent statement
3. An industry support letter
4. A reply paid envelope with the researcher’s name and address

Initial contact with each firm was checked by telephone to verify the correct title and name of the appropriate senior manager. This was to ensure that the invitation letter to participate was addressed in the acceptable cultural format. Each firm was sent a research support letter from the Automotive Institute of Thailand along with the questionnaire and a consent information statement. A follow-up letter was sent to participants who had not responded within four weeks after the specified due date for the return of the questionnaire. Participation was on a voluntary basis, and when no response was received after the follow-up letter no further contact was made with the firm.

The consent statement had the following information: the purpose of the research; the benefits to the Thai auto parts manufacturing sector and to the Thai national economy; the estimated time required to fill out the questionnaire; assurances of confidentiality and anonymity; information about a follow-up interview invitation after questionnaire completion; and the last date for returning the questionnaire. Copies of the consent statement, industry support letter, and survey questionnaire are provided in appendix A.

5.5.7 Response to the Survey

A total of 220 questionnaires were returned out of the 400 that were distributed, yielding a 55 percent response rate. This is higher than the normal response rate of past research in the field which ranges from 20 to 35 percent (e.g., Antoncic & Hisrich 2001; Baum, Locke & Smith 2001; Bhuian, Menguc & Bell 2005; Covin, Green & Slevin 2006; Moreno & Casillas 2008; O'Regan & Ghobadian 2004). Thirteen firms were excluded because (1) they failed to provide essential performance data and these data

could not be found in secondary sources, (2) the firm's age was below the pre-established cut-off of five years, and (3) the firms were classified as having reactor type strategic orientation which was not a variable used in the study. Thus, a total of 207 questionnaires were usable after responses were examined for missing data and eliminated. The high response rate could be as a result of the support letter from the Thailand Automotive Institute and the consent statement attached to the survey questionnaires assuring confidentiality and emphasizing the importance of individual responses to the study's outcomes and the contribution to the Thai auto parts manufacturing sector and to the Thai national economy.

A reminder was sent after the four-week deadline for the return of completed questionnaires to all participants who had not yet posted their completed questionnaires. It seems that the reminder had some impact, as 60 more completed questionnaires were returned. Furthermore, the mail survey allowed the respondents time to give thoughtful answers and complete the questionnaires when it was convenient for them. The above reasons may have been motivating factors for the respondents.

5.5.8 Statistical Data Analytic Techniques

This section presents an overview of the statistical tool employed in this research. The statistical techniques were selected with attention being paid to the nature of the data and the purpose of the study (Creswell & Clark 2007). Structural equation modeling (SEM) with AMOS 16 and the Statistics Package for Social Sciences (SPSS) version 16 were used to analyze the questionnaire data for relationships between corporate entrepreneurship antecedents and performance.

SEM was employed in this study for the quantitative data analysis in order to test the theoretical framework of antecedents and effects of corporate entrepreneurship, including the hypotheses, as it "combines the principles of factor analysis and multiple regression in one procedure" (Hair et al. 2006, p. 724). SEM extends on traditional multivariate statistical analyses at some important aspects of procedure. It allows for simultaneous estimation of multiple and interrelated dependence relationships, has

ability to represent unobservable (latent) concepts, and accounts for measurement error in the estimation process as well as defines a model to explain the entire set of relationships. In addition, it provides tests of goodness-of-fit that can be viewed as confirming and disconfirming the construct validity (Kline 2005).

SEM was developed from the combination of two statistical approaches, namely path analysis and confirmatory factor analysis. Path analysis models examine the structural relationship between observed variables of interest, similar to a series of multiple regression analyses. On the other hand, confirmatory factor analysis (CFA) involves the measurement of theoretical constructs. The factor analysis models the relationships between measured items or indicators and theoretical constructs as latent variables that are not directly observed. Full structural modeling uses both path analysis and factor analysis by examining both measured variables (measurement model) and latent variables, and the relationship between latent constructs (structural model).

SEM is a complex statistical technique that provides some advantages over traditional multivariate statistical analyses such as multiple regression analysis. Firstly, multiple regression approaches can only deal with single independent variables, not constructs, whereas SEM allows for the use of multiple latent constructs. Each multivariate technique can examine only a single relationship between the dependent and independent variables at a time (Hair et al. 2006). None of the previous techniques can assess measurement properties and test the key theoretical relationships in one technique, unlike SEM. SEM can examine multiple dependent relationships simultaneously. It is useful in testing theories that depict all of the relationships among constructs (the dependent and independent variables) involved in the analysis.

Secondly, multiple regression techniques assume error is only present in the dependent variable, not in the independent variable. Thus, independent variables are assumed to be perfect measure of the construct of interest. However, from both practical and theoretical perspectives, a concept cannot be measured perfectly and that some degree of measurement error is always presented (Hair et al. 2006). In contrast, SEM allows researchers to account for the error that is inherent in the measures they use to

operationalize their constructs. Then SEM can measure how well a set of measures represents the concept (its reliability).

Finally, multiple regression approaches can only handle single dependent variables and show problems dealing with indirect relationships. On the other hand, SEM is able to deal with multiple relationships and handle indirect relationships with simplicity.

Therefore, SEM is an appropriate statistic tool in this study for data analysis because it examines a series of interdependent relationships simultaneously. It is particularly useful when one dependent variable becomes an independent variable in subsequent relationships. This study first aimed to predict the effects of antecedents, including external and internal environments, on corporate entrepreneurship, which in turn was used to predict firm performance. Thus, the dependent variable becomes an independent variable in subsequent relationships, giving rise to the interdependent nature of the structural model. Moreover, this study aimed to test theory and SEM provides a conceptually appealing way to test theory and assesses how well the theory fits reality as represented by data.

Prior to testing the model of corporate entrepreneurship antecedents and performance, confirmatory factor analysis (CFA) was used to refine the corporate entrepreneurship scales, its antecedent scales (environmental conditions and organizational culture) and its consequence scales (financial and non-financial performance). The approach adopted sought to obtain the best representation of the latent factors while reducing the number of observed indicators to manageable level for robust estimates.

Consequently, the procedures used to analyze the responses included the determination of the reliability of the instrument. Internal consistency was established using Cronbach's alpha. Then the assessment path analysis, which represents one approach to the other component, SEM, was performed to test relationships between corporate entrepreneurship and its antecedents as well as its effects.

Another statistical tool is multivariate analysis of variance (MANOVA). MANOVA was employed in this study to detect any significant difference in the relationship between firm size (SMEs and large firms) and the dependent variables corporate entrepreneurship and performance. The aim was to investigate whether the mean differences between the groups on the combination of dependent variables (more than one dependent variable) were likely to have happened by chance.

5.6 Qualitative Method

As indicated earlier, a quantitative approach provides a limited set of questions thus limits knowledge about the research topic. Moreover, the validity of the instruments in quantitative research is critical and required. Therefore, a qualitative method was employed in this study as well to validate the quantitative results and gain a rich understanding from the participants' own perspectives.

According to Patton (2002), a qualitative method allows the researcher to enter into the respondent's perspective. The researcher usually will be able to draw a fuller, more complete response than will a questionnaire requiring respondents to write out answers. Some respondents' writing skills are weak or they are less motivated to make the effort to respond fully. In addition, Singleton and Straits (1999) note that the researcher is able to clarify or restate questions that the respondent did not at first understand. The researcher can also help respondents clarify their answers by using probes, such as "I am not sure exactly what you mean" or "Can you tell me more about that?"

The interview technique used in this study had unique advantages in that it provided both more complete and more accurate information than other techniques (Ridenour & Newman 2008). The researcher was able to notice and clarify the respondents' misunderstandings, to probe inadequate or vague responses, and to answer questions and relieve concerns, which is important in obtaining complete and meaningful responses. In addition, the researcher was able to control the order of questions, which is not possible with self-administered questionnaires. Also, the researcher was able to control the context of interview, including the possible bias presented by other people.

However, there are some drawbacks to this method. Interviewers may introduce bias into the data. For example, the interviewer's gender, race, manner of dress, or personality can influence a respondent's reaction (Hoyle, Harris & Judd 2002). In addition, it is high cost and depends on the geographic coverage required by the study. For larger geographic areas, travel and subsistence costs for interviews are high (Singleton & Straits 1999).

5.6.1 Sampling Procedure

As the sample firms are spread over Thailand and CEOs are busy people, the researcher selected sub-samples that were conveniently available. Convenient sampling was used in this method because it is easy, quick and inexpensive. Moreover, generalization is not an issue in this method as typically found in quantitative research (Singleton & Straits 1999).

In order to validate the survey data and provide better understanding of entrepreneurship as firm-level phenomena in the Thai context, ten (10) CEOs or senior managers who also participated in the quantitative research were selected for the interviews. Due to time and cost constraints, a sample of firms located in Bangkok and the metropolitan areas of Bangkok were invited by telephone to participate in the interview.

The researcher went only to those participants who were willing to share their opinions, experiences and provide the required information. All the respondents who were available and allowed the researcher to meet for an interview showed that they were interested in the research and willing to discuss the research questions further.

5.6.2 The Interview Protocol Design

Semi-structured questions were used as an instrument for the interview. The open-ended questions were designed to capture the point of view of the respondents on the issues of

interest and clarify any issues raised. They were originally constructed in the English language then back translated into Thai. The final interview questions are shown in Appendix A (English version and Thai version).

In addition, the interview questions were pre-tested with three senior managers to assess question clarity and validity as well as enable the researcher to practise interview skills. The pre-tests showed that, on average, interviews took approximately 30 to 60 minutes (see section 5.5.5).

5.6.3 Data Collection Procedure

To collect the qualitative data, a consent information statement was enclosed with the survey questionnaire informing the respondents that some would be invited by telephone after the questionnaires were returned to participate in an interview.

A random sample of firms which were located in Bangkok and metropolitan areas (using the cover sheets from returned questionnaires) was chosen to be invited by telephone for an interview lasting 30 to 60 minutes. The researcher had to match the name of the company on the returned questionnaire coversheet with the electronic contact details. The researcher was the only person with access to all data sources to ensure confidentiality, privacy and anonymity of participants. Convenient sampling was therefore used to select 10 companies for the interviews. The convenient sampling method ensured that the senior managers were available and were willing to be interviewed. Most importantly, it offered the opportunity to interview those interested in the study and willing to share their ideas and experiences, and provide the required information.

The participants were contacted via telephone to arrange an interview time. The interviews were conducted at a time and place that was convenient for the participants. Nine (9) out of ten (10) interviews took place at their workplaces and only one interview took place at a public place (coffee shop) chosen by the respondent.

The researcher made hand-written notes of the interviews. According to Patton (2002), note taking has a number of purposes. First, it helps pace the interview by giving non-verbal cues about what is important, giving feedback to the interviewee about what kinds of things are noteworthy literally. Second, taking notes about what is said will facilitate later analysis, including locating major points made by the interviewee and key terms or words shown in quotation marks that capture the interviewee's own language. Moreover, the interviewer can go over the interview notes by checking back with the interviewee for clarification. For the accuracy, completeness, and validity of the interview data, the interviewees checked the transcripts for accuracy. This ensured the credibility of the findings and showed that the interviewer took the responses seriously and respected the respondents as giving valuable time and information. In addition, the interview text was transcribed into electronic format. No identifiers were used in either recording or transcribing the interviews.

5.6.4 Interview Process

The researcher is an important research instrument in the collection of qualitative data and conducting a good interview requires that the interviewee is not led by the interviewer (Veal 2005). The researcher followed the interview skills according to the suggestions of research methodologists such as Patton (2002), Singleton and Straits (1999) and Veal (2005) and practised these skills during the pre-test phase. Therefore, in interviewing, the researcher kept making friendly gestures and contributing to the conversation. The researcher maintained a friendly conversational atmosphere and tried not to influence the interviewee's responses by agreeing and disagreeing with the interviewee. Moreover, the researcher carefully planned the sequencing of questions built into formal questionnaires by being very sensitive and quick thinking. The researcher was meant to listen and encourage the respondent to talk, not to engage in debate or suggest answers.

In addition, the researcher is from the same nation as the participants and understands the cultural norms, expectations and the language very well. This was helpful in bridging etiquette and social barriers. Becoming the good manner of speech and dress of

the researcher, the participants trusted the researcher and were willing to discuss the survey questions in depth. The researcher was therefore able to obtain rich in-depth information on entrepreneurship in an existing organization from Thai auto parts manufacturers' point of view. The two sets of data collected, quantitative and qualitative, enabled the study to obtain wide-ranging, in-depth information on entrepreneurship as firm behaviour in auto parts manufacturing firms in Thailand.

5.6.5 Data Analytic Techniques

Notes from the interviews were transcribed and translated into English for analysis. Content analysis was employed in the study for qualitative data analysis in the interpretative framework. Smith (in Veal 2005, p. 397) defines content analysis as “a process of extracting desired information from a text by systematically and objectively identifying specified characteristics of the text”. According to Patton (2002, p. 463), content analysis involves “identifying, coding, categorizing, and labeling the primary patterns in the data”. This means analyzing the core content of interviews to determine what is really significant and meaningful. Content analysis is commonly utilized to interpret text interviews (Berg 2004; Hair et al. 2007). According to Hair et al. (2007, p. 195), “through systematic analysis, the researcher examines the frequency that words and main themes occur and identifies information content and characteristics embedded in the text and the end result often is to quantify qualitative data”.

In the process of content analysis, the researcher carefully reviewed the interview transcripts or notes and looked for emergent themes that were the equivalent of variables in quantitative research. These patterns were then represented as categories, and the number of cases that fell into each category were counted (Hair et al. 2007; Holsti 1969). The following four dimensions or categories were identified in the study for content analysis: the environmental conditions, organizational strategy, organizational culture, and firm performance.

5.7 Chapter Summary

The research design and methodology, the population, and various approaches to the study have been outlined and justified. The research objectives of the study supported a mixed-method approach which allowed the use of both quantitative and qualitative methods of data collection and analysis. The qualitative results were used in determining the strength of evidence in support of the findings of the quantitative data. Statistical techniques were employed to analyze the quantitative data and content analysis was used to analyze the qualitative data. Both data sets were integrated for the interpretation. This approach allowed the investigation and exploration of the multifaceted variables to increase and deepen understanding of the phenomenon studied, as well as the testing of hypotheses to determine the applicability of existing theories in the Thai context. The interview results and the survey findings of the study will be presented in the next chapter.

PART FOUR

ANALYSIS AND RESULTS

Chapter 6: Preliminary Analysis

Chapter 7: Model Development

Chapter 8: Hypotheses Testing and Results

Part four presents a detailed report on the results from both the quantitative and qualitative data. The findings are in relation to the 72 questions contained in each of the 207 returned useable questionnaires, and the interviews with 10 senior managers of Thai auto parts manufacturing firms. These results are presented in a structured manner according to the sequence of the sections in the questionnaire survey and the interviews, reflecting the five factors: environmental conditions, organizational strategy and culture, corporate entrepreneurship, and firm performance.

This part consists of three chapters. Chapter 6 conducts a preliminary analysis of the survey data, which is the initial step required before the application of any of the multivariate techniques. Chapter 7 provides the results and findings from the survey using structural equation modeling (SEM). These results are further analyzed and interpreted in Chapter 8, when the hypotheses are tested and the findings arising from the interview results are also analyzed using content analysis. Chapter 8 also explores the differences between small-sized and medium-sized enterprises (SMEs) and large companies on variables of corporate entrepreneurship and firm performance, using multivariate analysis of variance (MANOVA).

Chapter Six

Preliminary Analysis of the Survey Data

6.1 Introduction

This chapter presents the preliminary analysis of the survey data for the whole group of 207 returned useable questionnaires. Prior to undertaking the statistical analysis, confirmatory factor analysis (CFA), structural equation modeling (SEM) and multivariate analysis of variance (MANOVA), the preliminary assumption testing is performed to check that the data set is not violating any assumptions. Although considerable time and effort can be expended in these activities, careful examination of data ensures that the multivariate methods are applied in appropriate situations and assist in a more thorough and insightful interpretation of the results.

This chapter is structured as follows. It begins with the respondent information and firm characteristics. Next, data screening is performed to test assumptions by obtaining descriptive statistics on variables of interest. These descriptive statistics include the missing data, outliers, sample size, mean, standard deviation, skewness and kurtosis, and dummy variables. The correlation techniques conducted to explore the association between pairs of variables will be presented in the final section. SPSS 16 and AMOS 16 are used to perform the preliminary analyses.

6.2 Characteristics of the Participants

This section provides information regarding the sample drawn from the Thailand Automotive Industry directory 2006–2007 provided by the Thai Auto parts Manufacturers' Association (TAPMA). Information concerning the respondents' characteristics is presented, followed by the firms' characteristics. These characteristics of the participants are used to examine the representativeness of the sample.

6.2.1 Respondent Information

The broad characteristics of the participating CEOs or their nominated senior managers and their companies are shown below in Table 6.1. There were more males (69.1%) than females (30.9%) in the sample. The participants' ages ranged from 35 years or less to over 56 years. Most respondents were aged 36–45 years (36.7%), followed by those aged 35 years or less (32.4%). The remainder was aged 46–55 years (23.2%) and over 56 years (7.7%). They worked as general managers (49.3%), managing directors (MD) (25.1%), directors (5.8%), sales and marketing managers (5.3%), accounting and finance managers (4.8%), overseas managers (3.4%), deputy MDs (2.4%), vice-presidents (1.9%), presidents (1.4%), and heads of planning and policy (0.5%). The highest level of education achieved for the respondents was bachelor's degree (55.1%), followed by master's degree (33.3%). Other degrees reported by respondents were certificate/diploma (8.2%), high school (2.9%), and doctorate (0.5%). On the whole, sample respondents appear to represent targeted senior executives.

Their main functional backgrounds were engineering and production (29.9%), sales and marketing (29.9%), human resources and personnel (22.0%), finance and accounting (13.4%), planning and management (2.7%), and others e.g., quality assurance and standard systems, purchasing and warehouse etc. (2.1%). The majority (74.9%) of respondents were specialized in only one area. The remainder were specialized across different disciplines (12.1%), related to three disciplines (10.1%), and four disciplines (2.9%).

According to senior executive tenure in their current firm, the majority (35.7%) of respondents had had senior executive tenure in their current firms for 5 years and less. The shortest senior executive tenure was approximately one year, and twelve respondents were classified in this category. The longest senior executive tenure was for one respondent, which was 34 years. The average respondents' senior executive tenure in their current organization was 9.37 years, with a standard deviation of 6.40 years. The majority (30.9%) of respondents had 6-10 years senior executive experience in this industry. The shortest senior executive experience in the current industry was one year,

and four respondents were in this category. The longest senior executive experience in this industry was 49 years for one respondent. The average senior executive experience in this industry was 12.24 years, with a standard deviation of 7.70 years.

Table 6.1: Demographic Characteristics of Respondents

Description	%
<i>Gender of respondents</i>	
Male	69.1
Female	30.9
<i>Ages of respondents</i>	
35 years or less	32.4
36-45 years	36.7
46-55 years	23.2
over 56 years	7.7
<i>Position of respondents</i>	
President	1.4%
Vice-president	1.9%
Managing director (MD)	25.1%
Deputy MD	2.4%
Director	5.8%
General manager (GM)	49.3%
Sales & marketing manager	5.3%
Accounting and finance manager	4.8%
Overseas manager	3.4%
Head of planning and policy	0.5%
<i>Functional background of respondents</i>	
Finance and accounting	13.4%
Engineering and production	29.9%
Human resources and personnel	22.0%
Sales and marketing	29.9%
Planning and management	2.7%
Others (e.g., quality assurance and standard systems, purchasing and warehouse etc.)	2.1%
<i>Education level of respondents</i>	
High school	2.9%
Certificate/diploma	8.2%
Bachelor's degree	55.1%
Master's degree	33.3%
Doctoral degree	0.5%
<i>Length in years of respondents' tenure in current firm</i>	
< 5 years	35.7%
6-10 years	30.4%
11-15 years	16.9%
16-20 years	13.0%
Above 20 years	3.9%
<i>Length in years of respondents' tenure in current industry</i>	
< 5 years	21.7%
6-10 years	30.9%
11-15 years	20.8%
16-20 years	15.0%
Above 20 years	11.6%

6.2.2 Firm Characteristics

There were more small-sized and medium-sized enterprises or SMEs (59.9%) than large companies (40.1%), with an average number of full-time employees of 445.45 ($SD = 1,965.59$). The cases were split at the number of full-time employees: cases below 200 employees were classified as SMEs and above 200 employees as large. The firm size (number of employees) ranged from 12 to 27,500. The majority of firms were purely Thai-owned companies (62.3%) and the rest were joint ventures (37.7%). The companies had been in business for between five and 56 years, with a mean of 17.99 years ($SD = 10.80$) and a median of 16 years ($N = 207$). This shows that some of the companies covered in this study were not early start-up businesses but could be considered to be in the later stages of business development. They were classified as original equipment manufacturers (OEM) and replacement equipment manufacturers (REM) (see Table 6.2).

Table 6.2: Demographic Characteristics of Responding Firms

Description	%
<i>Number of employees</i>	
SMEs (less than 200)	59.9
Large companies (over 200)	40.1
<i>Ownership status of firms</i>	
Thai-owned	62 %
Joint ownership	37.7%
<i>Range of years in business</i>	
	4-56
<i>Classification of firms</i>	
OEM	70.5%
REM	21.3%
Both	8.2%

6.3 Data Screening for Assumptions of SEM

Prior to the statistical analysis, the data were carefully screened for missing values, identification of outliers, sample size, and testing of the assumptions underlying most multivariate techniques such as normality. The aim was to check that the data set was not violating any assumptions. Violation of statistical assumptions may cause biases or

non-significance in the results that cannot be differentiated from the true results (Hair et al. 2006). The statistical analysis was conducted using the Statistical Package for Social Sciences (SPSS) version 16 and AMOS version 16.

6.3.1 Missing Data

Missing data creates problems in data analysis. Cases with missing data for dependent variables were deleted to avoid any artificial increase in relationships with independent variables (Hair et al. 2006). Cases with more than 25 percent missing data were also eliminated (Byrne 2001). However with such deletions, the number of cases with no missing data must be sufficient for the selected analysis technique (Byrne 2001; Hair et al. 2006; Kline 2005). Given the validity of this assumption, there is consistent estimation of model parameters. Failing such validity, the estimates are severely biased (Byrne 2001).

6.3.2 Outliers

The data were also screened for outliers. An outlier is a case with such an extreme value on one variable (a univariate outlier), or such a strange combination of scores on two or more variables (multivariate outlier) that the outcome of any multivariate analysis may be influenced or distorted (Tabachnick & Fidell 2007).

Univariate outliers were detected by checking the histogram, box-plot, and z-score values in each variable. The criterion of a z-score value exceeding a magnitude of 3.29 ($p < 0.001$) determined a univariate outlier (Tabachnick & Fidell 2007). In addition, the 5 percent trimmed mean of variables was inspected to indicate how much of a problem extreme values were likely to be (Pallant 2007). To obtain this value, SPSS removes the top and bottom 5 percent of the cases and recalculates a new mean value. Then the original mean and this new trimmed mean are compared to see whether the extreme scores have a strong influence on the mean. If the results indicate very similar mean

values, then the extreme case is retained in the data set because the values are not different from the remaining distribution.

On the other hand, multivariate outliers were identified by the Mahalanobis distance (D) statistic with $p < 0.001$ (Kline 2005). This analysis evaluates the position of each case compared with the centre of all cases on a set of variables. The outliers were retained if they were considered representative of the population to ensure generalizability to the entire population (Hair et al. 2006).

6.3.3 Sample Size

Sample size plays a critical role in the estimation and interpretation of SEM results because SEM techniques in general require large sample sizes in order to obtain stable parameter estimates (Byrne 2001; Hair et al. 2006; Kline 2005). One critical issue in SEM is how large a sample is required for producing reasonably stable results.

According to Kline (2005), absolute sample sizes in estimation methods are classified into small ($N < 100$), medium (N between 100 and 200) and large ($N > 200$). The recommended minimum sample sizes to ensure stable solutions are 100 to 150, and a sample size of 200 is suggested for providing a sound basis for estimation (Hair et al. 2006; Schumacker & Lomax 2004). Sample size provides a basis for the estimation of sampling error as it has the effect of statistical power by reducing sampling error. The larger sample sizes reduce the harmful impacts on non-normality. In small samples, significant departures from normality can have substantial effects on the results. Moreover, SEM is based on covariance, which is less stable when estimated from small samples. However, these same effects may be negligible for sample sizes of 200 or more.

Another consideration is model complexity. A more complex model, which generally has more parameters, requires larger samples than more parsimonious models in order for the estimates to be comparably stable. Thus, a sample size of 200 or larger is recommended for a very complicated path model. Although there are no absolute

standards about the relation between sample size and number of parameter estimates in the SEM model, Kline (2005) suggests that a desirable ratio of the number of cases to the number of free parameters should be 20:1, which should have a minimum sample size of 200 cases. However, a 10:1 ratio may be a more realistic target, and a 5:1 ratio would usually still result in stable parameter estimates. Given the recommended sample size of 200 or more, the sample size in this study was considered adequate to perform SEM analysis.

6.3.4 Assessment of Normality

The final step in examining data involves testing for the assumptions underlying the statistical bases for multivariate analysis. Screening continuous variables for normality is an important step prior to almost every multivariate analysis, particularly CFA in SEM. This assumption is particularly important for maximum likelihood (ML) estimation because it is derived directly from the expression of the multivariate normal distribution. The result is usually quite a bit better if the variables are normally distributed. The result is degraded if the variables are non-normally distributed (Tabachnick & Fidell 2007).

Univariate normality of variables was assessed by either statistical or graphical methods. Two components of normality are skewness and kurtosis. Skewness reflects the symmetry of the distribution. Kurtosis refers to the peakedness of distribution; a distribution is either too peaked (with short, thick tails) or too flat (with long, thin tails). Tests for univariate normality of the variables were provided by critical ratio from skewness and kurtosis indices. Morgan et al. (2007) suggest that both skewness and kurtosis statistics between -1.0 to 1.0 are acceptable.

The most fundamental assumption in multivariate analysis is multivariate normality, particularly multivariate kurtosis (Kline 2005; Tabachnick & Fidell 2007). Multivariate normality is the assumption that each variable and all linear combinations of the variables are normally distributed. The detection of multivariate normality was utilized for confirmatory factor analysis using AMOS version 16. Multivariate normality was

identified by examining Mardia's coefficient for multivariate kurtosis. Considering the assumption of multivariate normality, there are no clear guidelines for a suggested absolute cut-off value for deciding violation of multivariate normality. However, a conservative rule of thumb, according to Kline (2005), is that absolute values of the kurtosis index exceeding 10.0 may indicate a problem and values greater than 20.0 may suggest a more serious one.

The means, standard deviations, univariate skewness and kurtosis, and multivariate skewness and kurtosis of all the variables of interest in the study were examined for the whole group. Table 6.3 displays the means, standard deviations and univariate skewness and kurtosis for each variable and Table 6.4 provides the multivariate skewness and kurtosis for the variables for the whole data set.

Table 6.3: Descriptive Statistics for Measures of Corporate Entrepreneurship and Its Antecedents and Its Consequences for the Whole Group (N=207)

Variables	N	Mean	SD	Skewness		Kurtosis	
				Statistic	Std. Error	Statistic	Std. Error
Dynamism	207	11.88	3.82	-0.15	0.17	-0.73	0.34
Hostility	207	9.64	2.43	-0.62	0.17	-0.09	0.34
Heterogeneity	207	14.57	3.54	-0.60	0.17	0.28	0.34
Management Support	207	19.72	4.29	-0.57	0.17	0.19	0.34
Autonomy	207	9.77	2.60	-1.24	0.17	1.59	0.34
Reward	207	9.96	2.44	-0.97	0.17	0.94	0.34
Involvement	207	21.91	3.69	-0.66	0.17	0.28	0.34
New Business Venturing	207	17.00	6.10	-0.35	0.17	-0.78	0.34
Self-renewal	207	17.80	5.55	-0.44	0.17	-0.48	0.34
Innovativeness	207	20.07	3.73	-0.27	0.17	0.53	0.34
Proactiveness	207	13.46	3.80	-0.71	0.17	0.48	0.34
Finance	207	12.76	3.25	-0.33	0.17	0.54	0.34
Non-finance	207	15.00	2.48	-0.02	0.17	-0.19	0.34

Univariate tests of normality examined each variable individually for departures from normality by assessing skewness and kurtosis values whether the scores were significantly differently from zero. If the skewness and kurtosis are more than +1.0 or less than -1.0, the variables are not normally distributed (Morgan et al. 2007). As inspection of table 6.3 shows, all variables were normally distributed; only autonomy

had a skewness statistic of -1.24 and a kurtosis statistic of 1.59, which indicated that the distribution was not normal. However, it is not a major problem due to the values of less than +/-2.0 (Field 2000).

Table 6.4: Assessment of Normality for Multivariate Skewness and Kurtosis

Variable	min	max	skew	c.r.	kurtosis	c.r.
Dynamism	3.000	21.000	-.151	-.887	-.741	-2.177
Hostility	3.000	14.000	-.617	-3.622	-.114	-.336
Heterogeneity	3.000	21.000	-.597	-3.509	.246	.722
Management Support	7.000	28.000	-.570	-3.348	.155	.456
Autonomy	2.000	14.000	-1.232	-7.238	1.519	4.461
Reward	2.000	14.000	-.963	-5.656	.888	2.607
Involvement	9.000	28.000	-.657	-3.862	.239	.703
New Business Venturing	4.000	28.000	-.346	-2.033	-.787	-2.312
Self-Renewal	4.000	28.000	-.435	-2.555	-.497	-1.460
Innovativeness	7.000	28.000	-.264	-1.551	.492	1.444
Proactiveness	3.000	21.000	-.702	-4.126	.439	1.290
Finance	3.000	21.000	-.327	-1.920	.496	1.458
Non-finance	8.000	21.000	-.019	-.111	-.215	-.632
Multivariate					26.295	7.882

In addition, assessment of normality in table 6.4 indicates significant deviations from normality. Variables with absolute values of multivariate skew index greater than 3.0 and absolute values of multivariate kurtosis index greater than 8.0 indicate non-normal distribution in the data (Kline 2005). The seven bolded figures indicate that variables were skewed, with critical ratios greater than 3. The Mardia's coefficient of multivariate kurtosis had a critical ratio of 7.88, which indicates that the data set was multivariate non-normal. However, it is not a major problem due to the value of less than 10.00 (Kline 2005).

6.3.5 Incorporating Non-Metric Data with Dummy Variables

SEM requires metric data or continuous variables as dependent and independent variables. In this study, the organizational strategy variable was categorically variable or non-metric variable and used an independent variable to predict the corporate

entrepreneurship variable. Thus, the dummy variable, which was employed as a method for using the dichotomous variable, acted as a replacement variable of the non-metric variable. Hair et al. (2006, p. 96) define a dummy variable as “a dichotomous variable that represents one category of a non-metric independent variable”. Any non-metric variable with k categories can be represented as a k-1 dummy variable. Under this principle, a value of 1 was arbitrarily assigned to one level of the variable and a value of 0 was assigned to the other level. Organizational strategy was measured with three categories: Defender, Prospector and Analyzer; thus two dummy variables represented Defender and Prospector, with Analyzer as reference.

6.4 Comparison of Correlation Matrices

This section presents correlation techniques to explore the association between pairs of variables (correlation) as presented in table 6.5. Pearson product-moment correlation coefficient for all variables of interest in the study was investigated for the whole group. Correlation analysis was used to describe the direction and the strength of the linear relationship between two variables.

Table 6.5: Pearson Correlation Coefficient for Corporate Entrepreneurship and its Antecedents and its Consequences for the Whole Group (N=207)

	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Dynamism (1)	0.23**	0.34**	0.11	-0.14*	-0.05	0.04	-0.05	0.07	-0.07	0.13	0.10	0.14*	0.14*	-0.09	0.02
Hostility (2)		0.39**	0.07	-0.07	-0.01	0.11	0.13	0.11	0.17*	0.04	0.07	-0.05	0.14	-0.17*	-0.07
Heterogeneity (3)			0.04	-0.02	-0.01	0.14*	0.09	0.06	0.08	0.10	0.15*	0.20**	0.19**	-0.01	0.13
Prospector (4)				-0.55**	-0.31**	0.19**	0.08	-0.21**	0.41**	0.17**	0.22**	0.26**	0.22**	0.27**	0.23**
Analyzer (5)					0.44**	0.22**	-0.10	-0.08	0.25**	0.11	0.15*	0.15*	0.17*	0.02	0.04
Defender (6)						0.17*	-0.03	-0.06	0.42**	0.31**	-0.28**	-0.25**	-0.35	-0.14*	-0.13
Management support (7)							0.50**	0.77*	0.70**	0.21**	0.62**	0.28**	0.43**	0.22**	0.41**
Autonomy (8)								0.47**	0.44**	0.09	0.28**	0.12	0.26**	0.22**	0.23**
Reward (9)									0.63**	0.17*	0.49**	0.19**	0.30**	0.09	0.27**
Involvement (10)										0.22**	0.46**	0.23**	0.36**	0.19**	0.37**
New business venture (11)											0.37**	0.49**	0.36**	0.23**	0.28**
Self-renewal (12)												0.34**	0.59**	0.30**	0.37**
Innovativeness (13)													0.41**	0.45**	0.57**
Proactiveness (14)														0.20**	0.42**
Finance (15)															0.53**
Non-finance (16)															

Note: **Correlation is significant at the 0.01 level (2-tailed), *Correlation is significant at the 0.05 level (2-tailed)

The results from table 6.5 using Pearson correlation coefficient can be presented as follows. Firstly, the relationship between environment (dynamism, hostility and heterogeneity) and corporate entrepreneurship (new business venturing, self-renewal, innovativeness and proactiveness) shows that there was a small and positive correlation between dynamism and two dimensions of corporate entrepreneurship, namely innovativeness and proactiveness, $r = 0.14$, $p < 0.05$. On the other hand, there was a small and positive correlation between heterogeneity and three dimensions of corporate entrepreneurship, comprising innovativeness, proactiveness and self-renewal, $r = 0.20$, $r = 0.19$, $p < 0.01$, and $r = 0.15$, $p < 0.05$ respectively.

Secondly, the relationship between organizational strategy (Prospector, Analyzer and Defender) and corporate entrepreneurship demonstrated that Prospector was positively correlated with all dimensions of corporate entrepreneurship, ranging from 0.17 to 0.26, $p < 0.01$. Analyzer was significant and positively correlated with self-renewal, innovativeness and proactiveness, ranging from 0.15 to 0.17, $p < 0.05$. On the other hand, Defender was significant but negatively correlated with new business venturing, self-renewal and innovativeness, $r = -0.31$, $r = -0.28$, $r = -0.25$, $p < 0.01$ respectively.

Thirdly, the relationship between organizational culture (management support, autonomy, reward and involvement) and corporate entrepreneurship indicates that management support, reward and involvement were all positively correlated with all dimensions of corporate entrepreneurship, ranging from 0.17 to 0.62, $p < 0.01$ and $p < 0.05$. There was a strong correlation only between management support and self-renewal, $r = 0.62$, $p < 0.01$. On the other hand, autonomy was significant and positively correlated with self-renewal and proactiveness, $r = 0.28$, $r = 0.26$, $p < 0.01$ respectively.

Finally, the relationship between corporate entrepreneurship and firm performance indicates that corporate entrepreneurship, consisting of new business venturing, self-renewal, innovativeness and proactiveness, was significant and positively correlated with financial performance, $r = 0.23$, $r = 0.30$, $r = 0.45$, $r = 0.20$, $p < 0.01$ respectively as well as positively correlated with non-financial performance, $r = 0.28$, $r = 0.37$, $r = 0.57$, $r = 0.42$, $p < 0.01$ respectively. Innovativeness had a strong, positive correlation with non-financial aspects and a moderate correlation with financial criteria.

6.5 Chapter Summary

In this chapter, preliminary analyses were performed prior to running the main analyses, including confirmatory factor analysis (CFA), structural equation modeling (SEM) and multivariate analysis of variance (MANOVA). The objective of the preliminary analyses of the data was to ensure no violation of assumptions of normality and linearity, and homogeneity for use in further statistical analyses. Thorough examination of the data before the application of any of the multivariate techniques is fundamental to obtaining true results. The statistical analysis was conducted using the Statistical Package for Social Sciences (SPSS) version 16 and AMOS version 16.

This chapter firstly presented the respondent information and firm characteristics regarding the sample drawn from the Thailand Automotive Industry directory 2006–2007 provided by the Thai Auto parts Manufacturers Association (TAPMA). The characteristics of the participants were used to examine the representativeness of the sample. On the whole, sample respondents appeared to represent targeted senior executives, and firms covered in this study appeared to meet the selection criterion that they had 100 percent Thai ownership or majority ownership and were not early start-up business but could be considered to be in the later stages of business development.

Next, initial analysis of the whole group (207 returned useable questionnaires) included evaluation of missing values, identification of outliers, measurement of sampling adequacy, and testing of the normality. The fit of the sample data with the statistical assumptions underlying the multivariate technique was assessed and no serious violations were reported related to missing value, sample size, normality, linearity, univariate and multivariate outliers, homogeneity of variance-covariance matrices, and multicollinearity.

In addition, the method of incorporating non-metric variables in applications that require metric variables through the creation of a special type of metric variable known as “dummy variables” was utilized in this study. The reason was that SEM technique requires metric data or continuous variables as dependent and independent variables. In this study, the organizational strategy variable was categorically variable or non-metric

variable and used as an independent variable to predict the corporate entrepreneurship variable.

Lastly, correlation analysis was employed to assess the association between pairs of variables (correlation). Pearson correlation coefficient for all variables of the interest in the study was investigated for the whole group in order to describe the direction and the strength of the linear relationship between two variables.

The main statistical tool, SEM, is used for the survey data analysis in the next chapter. This technique is utilized firstly to refine the corporate entrepreneurship scales, its antecedent scales (environmental conditions, organizational strategy and culture) and its effect scales (financial and non-financial performance), and then to test relationships between corporate entrepreneurship and its antecedents as well as its effects.

Chapter Seven

Model Development

7.1 Introduction

The previous chapter examined the fit of the sample data with the assumptions underlying Structural Equation Modeling (SEM) and no serious violations were found. In this chapter, SEM with AMOS 16 is employed in the study as the main technique for quantitative data analysis in order to test the theoretical framework, including hypotheses proposed by antecedents and effects of the corporate entrepreneurship model. SEM is an appropriate statistic tool in this study for data analysis because it examines a series of interdependence relationships simultaneously. It is particularly useful when one dependent variable becomes an independent variable in subsequent relationships. Furthermore, SEM provides a conceptually appealing way to test theory and assesses how well the theory fits reality as represented by data.

The application of SEM follows a two-step approach. The measurement model is firstly analyzed and subsequently re-specified and then the structural model is assessed. This approach enhances the reliability and validity and reduces error associated with each factor. This is important as a first step in fitting structural models (Anderson & Gerbing 1988). The purpose of the model development effort is to improve a theoretical framework of corporate entrepreneurship antecedents and effects in auto parts manufacturing firms in Thailand through evaluations and modifications of the measurement and structural models. When the measurement model is validated, the results indicate that the sample data support and fit well to the model. Once the structural model is satisfied, the final structural model is presented. The findings of the final model will be analyzed and interpreted for hypotheses testing in the next chapter.

This chapter is organized into five sections. Following this introductory section, the model development approach is presented in section 2. The development of the measurement model to refine the corporate entrepreneurship scales, its antecedent scales

(environmental conditions, organizational strategy and culture) and its effect scales (financial and non-financial performance) will be presented in subsequent sections. Finally, in the last section, the assessment of the structural model is performed to test relationships between corporate entrepreneurship and its antecedents as well as its effects.

7.2 Approach to Model Development

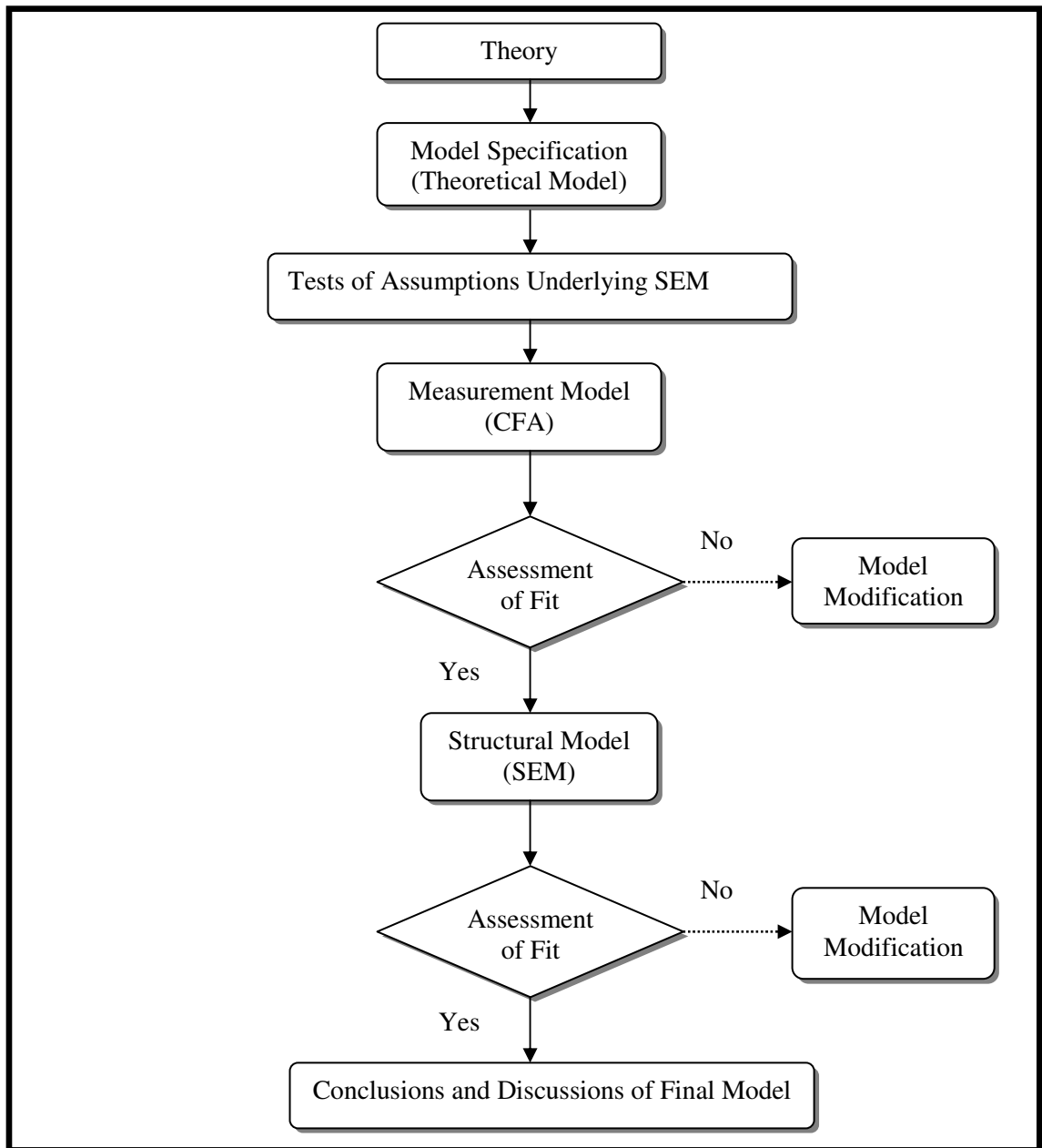
As discussed previously, SEM which is utilized to test the theoretical framework and the hypotheses of corporate entrepreneurship antecedents and effects comprised two parts: a measurement model and a structural model. Anderson and Gerbing (1988) suggest a two-step modeling approach which involves firstly developing the measurement model then developing the structural model. The measurement model or confirmatory factor analysis (CFA) refers to the specification and testing of the constructs that will later form the full model. The structural model refers to the testing of the causal relationships between these constructs that were developed from the first step of SEM.

Anderson and Gerbing (1988) argue that there is much to gain in theory testing and the assessment of construct validity from separate estimation and re-specification of the measurement model prior to the simultaneous estimation of the measurement and structural sub-models. The aim in developing the measurement model prior to the full structural model is to assess the validity and reliability of the constructs before their use in the full model. Without an adequate measurement model, the structural model will have fit difficulties.

When acceptable convergent and discriminant validities of measurement model are given, then the test of the structural model represents an assessment of nomological validity. These constructs are then used in the structural model, allowing the researcher to achieve valid and reliable constructs used in the full model. Therefore, analyzing the measurement model separately from the structural model makes clearer the interpretation of the final model and permits the researcher a degree of confidence in the constructs used within the model.

The summary of the two-step approach of SEM suggested in this study is illustrated in Figure 7.1.

Figure 7.1: Structural Equation Modeling Approach in the Study



Source: Adapted from Hair et al. (2006) and Kaplan (2000)

Figure 7.1 provides a summary of procedures involved in testing a SEM model. Theory was firstly reviewed from the literature, and a theoretical model was then developed and presented in the form of the structural equation model and represented in a path diagram (the relationship between variables or factors). This hypothesized path diagram was clearly identified based on the proposed theoretical model. Before the application of the

SEM technique, the assumptions underlying SEM were examined to ensure that the data met all of the requirements for SEM analysis.

After the hypothesized model was specified and all assumptions were met, the two-step approach was used, after which the estimation of the model parameters was performed. At this stage, the measurement model (CFA) for each construct was inspected and refined separately before the combination with other constructs was inspected in the full model of CFA. Next, the goodness-of-fit of the model was assessed. If the model was not accepted, model modification was conducted until the decision was made that the model fit was adequate.

Finally, the structural model was analyzed using the same process as with the measurement model. Once the structural model was satisfied, the final structural model was presented and the findings were discussed. Details of the measurement and structural models are discussed in the following section.

7.3 Measurement Model

Confirmatory factor analysis (CFA) consists of the measurement modeling part of the structural equation modeling. It is another approach to factor analysis. It tests theories about measurement models that depict what measured variables or items should define each factor. The CFA estimates factor loadings for those items that are predicted to load onto the specific underlying factor for which they are intended. The primary goal of CFA is to provide convergent and discriminant validity for the selected measures (Anderson & Gerbing 1988).

In CFA, factor loadings are usually interpreted as regression coefficients that may be in standardized or unstandardized form. The results of a CFA comprise estimates of covariances between the factors, loadings of the indicators on their respective factors, and the amount of measurement error (unique variance) for each indicator. If the researcher's priori measurement model is reasonably correct then the pattern of results is as follows: (1) indicators specified to measure a common underlying factor all have relatively high standardized loadings on that factor, and (2) estimated correlations

between factors are not extremely high (> 0.85). The former result indicates convergent validity; the latter, discriminant validity (Kline 2005).

In the measurement model analyses, a series of one-factor congeneric models for each construct in the model that comprises four or more indicator items were tested and evaluated separately before being tested in combination with other constructs. In these models, the variance of the latent variable was set to unity because the primary interest was whether each of the item indicators was a significant reflective indicator of the latent construct.

Constructs with two or three indicators can be tested in pairs in first-order models (Kline 2005). Once one-factor congeneric models were accepted, a full independent cluster factor measurement model or first-order CFA model, in which the factor inter-correlations were freely estimated, was subsequently specified. Finally, SEM analysis was utilized to test the relations amongst the latent variables. Appendix B provides details on the items, consisting of the one-factor models, first-order models, and the AMOS output for each SEM analysis performed.

Modification of Measurement Model

According to Cunningham (2008), misspecification of a measurement model can be analyzed according to the following statistical information from AMOS output.

Firstly, the standardized residuals covariance matrix was inspected. Any value in this matrix exceeding a magnitude of 2 suggests that the model is failing to account for the shared variance between the particular item pairs. To improve the model fit, an item was considered for deletion if it had large standardized residuals (greater than + and - 2). Thus, large standardized residuals were carefully examined to identify which variable or set of variables was responsible for model misspecification.

Secondly, modification indices (MIs) were inspected and the only meaningful MIs were considered, such as correlated error terms indicating a positive parameter change for one-factor congeneric models and regression weights indicating possible cross-loadings

when multi-factorial models are analyzed. For each fixed parameter specified, AMOS provides an MI, the value of which represents the expected reduction in overall χ^2 value if the parameter were to be freely estimated in a subsequent run; all freely estimated parameters automatically have MI values equal to zero. Thus, the MIs were used to locate sources of misfit and model re-specification based on a theoretical justification.

Thirdly, the sample correlations and the eigenvalues listed below this matrix were inspected. Item correlations exceeding 0.8 were considered as possible item redundancy, and the eigenvalues provided an indication of the number of factors that might be appropriate.

Finally, the magnitude and significance of the factor coefficients parameter estimates were inspected. Items with non-significant factor coefficients were removed and items with low factor coefficients (less than 0.3, which suggests a lack of convergent validity) were considered for removal.

7.3.1 Analysis of One-factor Congeneric Measurement Models

One-factor congeneric models were estimated for each of the constructs of interest used in this study. AMOS 16 was employed to perform these analyses. The one-factor model was firstly computed using all items from the relevant sub-scale from corporate entrepreneurship, its antecedents as well as its effects, using maximum likelihood estimation. The χ^2 test results together with standardized factor loadings were inspected to identify those indicator variables on factors that were intended in the model. If items were identified as poor measures of the latent construct, they were removed from the subsequent model development for parsimonious model improvement.

Each model is reported below; with goodness-of-fit statistics and reliability (see Table 7.1). The one-factor congeneric models for each of the environmental constructs (dynamism and hostility); the corporate entrepreneurship constructs (new business venturing, self-renewal and innovativeness); the culture constructs (management support and involvement); and firm performance construct (non-financial aspect) are presented below.

Table 7.1: Summary of Analysis of One-Factor Congeneric Measurement Models

	χ^2	GFI	CFI	RMSEA	SRMR
Environment Constructs					
<i>Dynamism ($\alpha = 0.73$)</i>					
Initial Model (5 items)	89.34 (5), $p = 0.00$	0.84	0.73	0.29 (0.24, 0.34)	0.13
Final Model (3 items)	6.35 (4), $p = 0.18$	0.99	0.99	0.05 (0.00, 0.13)	0.02
<i>Hostility ($\alpha = 0.66$)</i>					
Initial Model (5 items)	42.48 (5), $p = 0.00$	0.92	0.79	0.19 (0.14, 0.25)	0.08
Final Model (4 items)	4.99 (2), $p = 0.08$	0.99	0.98	0.09 (0.00, 0.18)	0.03
<i>Heterogeneity (3 items)** ($\alpha = 0.80$)</i>					
Culture Constructs					
<i>Management Support ($\alpha = 0.78$)</i>					
Final Model (4 items)*	1.73 (2), $p = 0.42$	1.00	1.00	0.00 (0.00, 0.13)	0.02
<i>Involvement ($\alpha = 0.84$)</i>					
Final Model (4 items)*	0.31 (2), $p = 0.86$	1.00	1.00	0.00 (0.00, 0.07)	0.01
<i>Autonomy (2 items)** ($\alpha = 0.87$)</i>					
<i>Rewards (2 items)** ($\alpha = 0.74$)</i>					
CE Constructs					
<i>New Business Venturing ($\alpha = 0.79$)</i>					
Final Model (4 items) *	2.01 (2), $p = 0.36$	1.00	1.00	0.01 (0.00, 0.14)	0.02
<i>Innovativeness ($\alpha = 0.90$)</i>					
Initial Model (5 items)	39.08 (5), $p = 0.00$	0.93	0.95	0.18 (0.13, 0.24)	0.04
Final Model (4 items)	3.37 (2), $p = 0.19$	1.00	0.99	0.06 (0.00, 0.16)	0.01
<i>Self-renewal ($\alpha = 0.85$)</i>					
Initial Model (11 items)	206.58 (44), $p = 0.00$	0.82	0.86	0.13 (0.12, 0.15)	0.07
Final Model (5 items)	7.47 (5), $p = 0.19$	0.99	0.99	0.05 (0.00, 0.12)	0.02
Performance Construct					
<i>Finance Performance (3 items)** ($\alpha = 0.82$)</i>					
<i>Non-finance Performance ($\alpha = 0.81$)</i>					
Initial Model (5 items)	57.06 (5), $p = 0.00$	0.91	0.89	0.23 (0.18, 0.28)	0.06
Final Model (4 items)	0.73 (2), $p = 0.70$	1.00	1.00	0.00 (0.00, 0.10)	0.01

Note: * initial model was retained without modification; ** constructs were not estimated in one-factor congeneric model due to saturated (3 items) and unidentified (2 items) models; α value was reported from the final model

Environmental Construct

The one-factor congeneric model of dynamism was estimated as a latent variable with five reflective indicators. The data of the initial model did not fit the model well, χ^2 (5) = 89.34, $p = 0.00$. The eigenvalues listed under the sample correlations suggested two factors. Eigenvalues greater than 1 provide an indication of the number of factors that might be appropriate. The model was re-specified with two separate factors rather than one factor, with DYNAM1 to DYNAM3 as indicators of dynamism and DYNAM4 and DYNAM5 as indicators of a second factor. The data fitted the model well, χ^2 (4) = 6.350, $p = 0.18$, SRMR = 0.02, RMSEA = 0.05 (0.00, 0.13), GFI = 0.99 and CFI = 0.99. The first of these factors was related to instability and continuing changes in the firm's market, resulting in the dynamic construct, while the second factor was related to

unpredictability. Thus, two items were excluded from the one-factor model as they loaded onto different factors. The reliability of the construct was 0.73, which was higher than 0.70, the recommended threshold value. The significant factor coefficients ranging from a low of 0.56 (item DYNAM1) to a high of 0.82 (item DYNAM3) suggest that DYNAM3 (“degree of change in marketing practices”) is an important aspect defining the dynamic construct.

The one-factor congeneric model of hostility was estimated as a latent variable with five reflective indicators. The data of the initial model did not fit the model well, $\chi^2 (5) = 42.48, p = 0.00$. Item HOST1 was omitted from the model according to the value of standardized residuals above 2 and the suggestion of modification indices. The model was re-specified with four reflective indicators. The data fitted the model well, $\chi^2 (2) = 4.99, p = 0.08, SRMR = 0.03, RMSEA = 0.09 (0.00, 0.18), GFI = 0.99$ and $CFI = 0.98$. The reliability of the construct was 0.66, which was lower than the recommended threshold value of 0.70. However it was greater than 0.60, which is an acceptable lower reliability coefficient (Hair et al. 2006). The significant factor coefficients ranging from a low of 0.40 (item HOST2) to a high of 0.74 (item HOST4) suggest that HOST4 (“competition in product quality”) highlights the threat condition of the environment.

As a rule, a measurement model requires at least four or more indicator items to be tested. However, the heterogeneity factor comprises only three items. It is a saturated model with no degrees of freedom. Thus it could not be tested in this section, but the construct could be tested in pairs for the full cluster measurement model in the first-order model of the environmental construct. SPSS 16 was used to generate the scree plot to test the unidimensionality of the construct; it suggested that the construct was a one-factor solution. The reliability of the construct was 0.80.

Organizational Culture Construct

The one-factor congeneric model of management support was estimated as a latent variable with four reflective indicators. The initial model of the construct was retained without modification, $\chi^2 (2) = 1.73, p = 0.42, SRMR = 0.02, RMSEA = 0.00 (0.00, 0.13), GFI = 1.00$ and $CFI = 1.00$. The reliability of the construct was 0.78. The

significant factor coefficients ranging from a low of 0.52 (item SUPPT4) to a high of 0.76 (item SUPPT2 and 3) suggest that SUPPT2 and 3 (“support for experimental projects” and “seeding money to get projects off the ground”) are the best items representing this construct.

The one-factor congeneric model of involvement was estimated as a latent variable with four reflective indicators. The initial model of the construct was retained without modification, $\chi^2 (2) = 0.31$, $p = 0.86$, SRMR = 0.01, RMSEA = 0.00 (0.00, 0.07), GFI = 1.00 and CFI = 1.00. The reliability of the construct was 0.84. The significant factor coefficients ranging from a low of 0.65 (item INVOL1) to a high of 0.92 (item INVOL3) suggest that INVOL3 (“communication and cooperation between different departments”) is the best item describing this construct.

The autonomy and reward constructs consists of two items, and so they were unidentified. Thus they could not be tested in this section but the constructs could be tested in pairs for the full cluster measurement model in the first-order model of the organizational culture construct. SPSS 16 was used to generate the scree plot to test the unidimensionality of both constructs; the constructs were reported as one-factor solutions. The reliability of the autonomy and rewards constructs was 0.87 and 0.74 respectively.

Corporate Entrepreneurship Construct

The one-factor congeneric model of new business venturing was estimated as a latent variable with four reflective indicators. The initial model of the construct was retained without modification, $\chi^2 (2) = 2.07$, $p = 0.36$, SRMR = 0.02, RMSEA = 0.01 (0.00, 0.14), GFI = 1.00 and CFI = 1.00. The reliability of the construct was 0.79. The significant factor coefficients ranging from a low of 0.31 (item NBV3) to a high of 0.87 (item NBV1) suggest that NBV1 (“broaden business lines in current industries”) highlights an important contribution to the latent construct of new business venturing.

The one-factor congeneric model of self-renewal was estimated as a latent variable with eleven reflective indicators. The data of the initial model did not fit the model well, χ^2

(44) = 206.58, $p = 0.00$. The eigenvalues listed under the sample correlations suggested two factors. The model was re-specified with two separate factors rather than one factor, with SR1 to SR5 as indicators of self-renewal and SR6 to SR11 as indicators of a second factor. The first factor related to organizational restructuring, resulting in the self-renewal construct, whereas the second factor related to organizational changes, resulting in organizational support. Thus, the first factor was retained due to theoretical reasons. The one-factor congeneric model of self-renewal was re-specified as a latent variable with five indicators. The data fitted the model well, $\chi^2 (5) = 7.47$, $p = 0.19$, SRMR = 0.02, RMSEA = 0.05 (0.00, 0.13), GFI = 0.99 and CFI = 0.99. The reliability of the construct was 0.85. The significant factor coefficients ranging from a low of 0.62 (item SR1) to a high of 0.79 (item SR3) suggest that SR3 (“coordination among units”) best defines the self-renewal construct.

The one-factor congeneric model of innovativeness was estimated as a latent variable with five reflective indicators. The data of the initial model did not fit the model well, $\chi^2 (5) = 39.08$, $p = 0.00$. Item INNO1 was omitted from the model as suggested by a modification index, and item content INNO1 (“new product development”) and INNO2 (“spending on new product development activities”) were perceived as redundant in relation to the construct of innovativeness. The model was re-specified with four reflective indicators. The data fitted the model well, $\chi^2 (2) = 3.37$, $p = 0.19$, SRMR = 0.01, RMSEA = 0.06 (0.00, 0.16), GFI = 0.99 and CFI = 1.00. The reliability of the construct was 0.90. The significant factor coefficients ranging from a low of 0.74 (item INNO2) to a high of 0.88 (item INNO5) suggest that INNO5 (“product changes”) signifies the importance of product newness to the construct.

The proactiveness factor comprised only three items; thus it was a saturated model with no degrees of freedom. Thus, it could not be tested in this section but the construct could be tested in pairs for the full cluster measurement model in the first-order model of the corporate entrepreneurship construct. SPSS 16 was used to generate the scree plot to test the unidimensionality of the construct and it suggested that the construct was one-factor solution. The reliability of the construct was 0.84.

Firm Performance Construct

The one-factor congeneric model of non-financial performance was estimated as a latent variable with five reflective indicators. The data of the initial model did not fit the model well, $\chi^2 (5) = 57.06, p = 0.00$. Item NON-FIN5 was omitted from the model as suggested by a modification index and NON-FIN5 (“overall performance”) was perceived as the whole performance rather than an individual indicator within the non-financial aspect. The model was re-specified with four reflective indicators. The data fitted the model well, $\chi^2 (2) = 0.73, p = 0.70, SRMR = 0.01, RMSEA = 0.00 (0.00, 0.11), GFI = 1.00$ and $CFI = 1.00$. The reliability of the construct was 0.81. The significant factor coefficients ranging from a low of 0.63 (item NON-FIN1) to a high of 0.85 (item NON-FIN3) suggest that NON-FIN3 (“quality of product/service”) highlights the important aspect of the non-financial performance construct.

The financial performance construct consisted of three items, thus it was a saturated model with no degrees of freedom. Thus it could not be tested in this section, but the construct could be tested in pairs for the full cluster measurement model in the first-order model of the firm performance construct. SPSS 16 was used to generate the scree plot to test the unidimensionality of the construct and the construct was suggested as a one-factor solution. The reliability of the construct was 0.82.

7.3.2 Analysis of First-Order Measurement Models

A first-order CFA model is examined to test the multidimensionality of a theoretical construct (Byrne 2001). This application was utilized to test the multidimensional constructs of interest: environment, organizational culture, corporate entrepreneurship and firm performance. In this model-generating phase, a full independent cluster factor measurement model in which the factor inter-correlations were freely estimated was specified. The establishment of this model provides evidence of construct reliability and discriminant validity. Each model is reported below, with goodness-of-fit statistics, as shown in Table 7.2. The analysis of the first-order measurement models of the environment, organizational culture, corporate entrepreneurship and firm performance constructs are presented below.

Table 7.2: Summary of Analysis of First-Order Models

	χ^2	GFI	CFI	RMSEA	SRMR
Environment Constructs: Dynamism ($\alpha = 0.73$), Hostility ($\alpha = 0.68$), Heterogeneity ($\alpha = 0.80$)					
<i>Initial Model</i>	83.26 (32), $p = 0.00$	0.93	0.91	0.09 (0.07, 0.11)	0.07
<i>Final Model</i>	22.48 (17), $p = 0.17$	0.97	0.99	0.04 (0.00, 0.08)	0.03
Culture Constructs: Management support ($\alpha = 0.78$), Autonomy ($\alpha = 0.87$), Reward ($\alpha = 0.74$), Involvement ($\alpha = 0.84$)					
<i>Initial Model**</i>	87.99 (48), $p = 0.18^*$	0.93	0.97	0.06 (0.04, 0.08)	0.05
CE Constructs: New Business Venturing ($\alpha = 0.79$), Innovativeness ($\alpha = 0.90$), Self-renewal ($\alpha = 0.80$), Proactiveness ($\alpha = 0.84$)					
<i>Initial Model</i>	186.91 (113), $p = 0.00$	0.91	0.96	0.06 (0.04, 0.07)	0.06
<i>Final Model</i>	116.73 (84), $p = 0.13^*$	0.93	0.98	0.04 (0.02, 0.06)	0.05
Performance Constructs: Finance ($\alpha = 0.82$), Non-finance ($\alpha = 0.82$)					
<i>Initial Model</i>	63.34 (13), $p = 0.00$	0.92	0.92	0.14 (0.10, 0.17)	0.07
<i>Final Model</i>	18.15 (8), $p = 0.05^*$	0.97	0.98	0.08 (0.03, 0.13)	0.04
* Bollen-Stine Bootstrap; **Initial model was retained without modification					

Environment Construct

The hypothesized three-factor measurement model of the environment construct was specified. The data did not fit the model well, $\chi^2 (32) = 83.27$, $p = 0.00$. An inspection of the standardized residual covariance matrix and an examination of the modification indices suggested that the removal of HOST5 and HOST2 resulted in a more parsimonious and more reliable construct. The data was a good fit to the model, $\chi^2 (17) = 22.48$, $p = 0.17$, SRMR = 0.03, RMSEA = 0.04 (0.00, 0.08), GFI = 0.97 and CFI = 1.00. The factor loadings were all significant at $p = < 0.001$ and ranged from a low of 0.59 to a high of 0.83, which supported convergent validity. Table 7.3 shows that the factors were all moderately and significantly inter-correlated, with the correlations ranging from 0.41 to 0.52, which is less than the recommended value of 0.85 (Kline 2005). Therefore, the structure coefficients show that the three hypothesized constructs ‘dynamism’, ‘hostility’ and ‘heterogeneity’ display discriminant validity.

Table 7.3: Structure Coefficients for Environmental Construct

	COMPLEX	HOSTILE	DYNAMIC
COMPLEX ($\alpha = 0.80$)	1.000		
HOSTILE ($\alpha = 0.68$)	.522	1.000	
DYNAMIC ($\alpha = 0.73$)	.410	.334	1.000
Degree of diversity of customers' buying habits	.780		
Degree of diversity of competitors' activity	.834		
Degree of diversity of required methods of production and service	.661		
Government policies		.789	
Competition in product quality		.650	
Degree of diversity of customers' buying habits			.780
Degree of diversity of competitors' activity			.834
Degree of diversity of required methods of production and service			.661

Notes: 8 items were retained and 5 items were removed during confirmatory factor analysis

Organizational Culture Construct

The hypothesized four-factor measurement model for the organizational culture construct was specified and evaluated. The initial model was retained without modification, $\chi^2 (48) = 87.99$, Bootstrap $p = 0.18$, SRMR = 0.05, RMSEA = 0.06 (0.04, 0.08), GFI = 0.93 and CFI = 0.97. The factor loadings were all significant at $p = < 0.001$ and ranged from a low of 0.57 to a high of 0.94, which confirmed the convergent validity of the hypothesized four-factor CFA model of organizational culture. Table 7.4 shows that the factors were moderately to highly significantly inter-correlated, with the correlations ranging from 0.50 to 0.84. None of the correlation shows greater than 0.85, indicating that the discriminant validity of the four hypothesized constructs of 'management support', 'autonomy', 'reward' and 'involvement' was supported.

Table 7.4: Structure Coefficients for Cultural Construct

	REWARD	AUTONO	SUPPORT	INVOLVE
REWARD ($\alpha = 0.74$),	1.000			
AUTONOMY ($\alpha = 0.87$)	.594	1.000		
SUPPORT ($\alpha = 0.78$)	.837	.580	1.000	
INVOLVEMENT ($\alpha = 0.84$)	.771	.496	.775	1.000
Rewards contingent on performance	.767			
Recognition of ideas	.793			
Avoiding criticizing employees		.944		
Allowing employees to make decisions		.808		
Training for creativity and innovation			.569	
Seeding money for projects			.690	
Support for small experimental projects			.676	
Management encouragement			.829	
Teamwork				.794
Communication and cooperation				.914
Wide communication of the company's mission, strategy and objectives to employees				.721
Participative decision-making processes				.659
Note: All items were retained during confirmatory factor analysis				

Corporate Entrepreneurship

The hypothesized four-factor measurement model of corporate entrepreneurship was specified and evaluated. The data did not fit the model well, $\chi^2(113) = 186.91, p = 0.00$. An inspection of the standardized residual covariance matrix and the modification indices suggested that the removal of SR7 and SR11 would result in a more parsimonious and more reliable construct, $\chi^2(84) = 116.73$, Bollen-Stine bootstrap $p = 0.13$, SRMR = 0.05, RMSEA = 0.04 (0.02, 0.06), GFI = 0.93 and CFI = 0.98. Table 7.5 shows that the factor loadings were all significant at $p < 0.001$ and ranged from a low of 0.32 to a high of 0.88, indicating convergent validity. The factors were moderately to highly significantly inter-correlated, with the correlations ranging from 0.37 to 0.74. The correlations were below 0.85; thus discriminant validity of the four hypothesized constructs of 'new business venturing', 'self-renewal', 'innovativeness' and 'proactiveness' was obtained.

Table 7.5: Structure Coefficients for Corporate Entrepreneurship Construct

	PROACT	NBV	INNO	SELF-RE
PROACTIVENESS ($\alpha = 0.84$)	1.000			
NEW BUSINESS VENTURE ($\alpha = 0.79$)	.367	1.000		
INNOVATIVE ($\alpha = 0.90$)	.474	.546	1.000	
SELF-RENEWAL ($\alpha = 0.80$)	.735	.439	.392	1.000
Risk-taking proclivity	.743			
Decision-making style (bold, aggressive posture)	.855			
Competitive posture ('undo-the-competitors' posture)	.803			
New lines and products offered in new businesses		.796		
Finding new niches for products in current markets		.320		
Pursuing new businesses in new industries related to current business		.797		
Broaden business lines in current industries		.867		
Product changes			.882	
Product lines			.871	
New products added			.843	
Spending on new product development activities			.743	
Flexible organizational structures				.600
Coordination among units				.775
Units and divisions reorganization				.833
Business concept revision				.614

Notes: 15 items were retained and 8 items were removed during confirmatory factor analysis

Firm Performance Construct

The hypothesized two-factor measurement model of firm performance was specified and evaluated. The data did not fit the model well, $\chi^2(13) = 63.34$, $p = 0.00$. An inspection of the standardized residual covariance matrix and the modification indices suggested that NON-FIN1 should be omitted from the model. When the content of items NON-FIN1 ("market share") was examined in relation to the performance construct, this item was perceived as a financial aspect rather than non-finance performance and indicated as redundant in item content. The re-specified model indicated that the data fitted the model well, $\chi^2(8) = 18.15$, Bollen-Stine bootstrap $p = 0.05$, SRMR = 0.04, RMSEA = 0.08 (0.03, 0.13), GFI = 0.97 and CFI = 0.98. Table 7.6 shows that the factor loadings were all significant at $p < 0.001$ and ranged from a low of 0.70 to a high of 0.88, indicating convergent validity. The factors were highly significantly inter-correlated between the latent constructs of financial performance and non-financial performance ($r = 0.59$, $p < 0.001$). Thus, the structure coefficients show that the two hypothesized constructs of 'financial performance' and 'non-financial performance' display discriminant validity.

Table 7.6: Structure Coefficients for Performance Construct

	NON-FINANCE	FINANCE
NON-FINANCE ($\alpha = 0.82$)	1.000	
FINANCE ($\alpha = 0.82$)	.592	1.000
Profitability level/return on assets		.882
Cash flow		.770
Sales growth		.697
New product/service development	.797	
Quality of product/service	.837	
Employee satisfaction	.702	
Notes: 6 items were retained and 2 items were removed during confirmatory factor analysis		

7.4 Structural Model of Corporate Entrepreneurship Antecedents and Effects Constructs

In the previous sections, measurement models that specified a priori the hypothesized relationship of the observed measures to the latent variables representing the underlying constructs were examined. These models were then assessed in terms of goodness-of-fit to the data using CFA techniques. Following the establishment of measurement models, a full structural equation model was evaluated. The hypothesized pathways between the selected constructs in the study, that is the structural model, were assessed through structural equation modeling (SEM). In SEM, a theoretical model consisting of hypothesized causal relations among latent variables is specified a priori; SEM techniques are used to evaluate the goodness-of-fit of the hypothesized model to the sample data in order to provide support for the theoretical model (Cunningham 2008). In this study, the direct relationships between the latent variables were examined within the structural model.

Model Estimation

In SEM, there is more information in the sample data than is required to estimate all the parameters. In these situations, an iterative estimation procedure is needed to estimate an approximate value for each parameter that has more than one possible solution. These iterative procedures converge on a set of parameter estimates that, when substituted back into the set of equations that explain the relationship between the sample variances and covariances and the parameters to be estimated, yield the smallest

difference between the sample variances and covariances and the implied variances and covariances derived from the parameter estimates. A model is assessed as a good fit if the difference between the sample variances and covariances and the implied variances and covariances obtained from the parameter estimates is small.

Maximum likelihood (ML) estimation is the most common estimation method for fitting function (Byrne 2001; Hair et al. 2006). It is available in all SEM software packages because it is a method that improves parameter estimates to minimize specific fit functions (Hair et al. 2006). Moreover, it is more efficient and unbiased when the assumption of multivariate normality is met and the model is specified correctly and the sample size is sufficiently large (Bollen 1989; Byrne 2001; Schumacker & Lomax 1996). Thus, ML estimation was utilized in this study for the model estimations.

The effects of non-normality could be minimized by using goodness-of-fit indices in SEM that are less biased by distributional assumptions in the overall test of fit (Bollen 1989). Many scholars (e.g., Byrne 2001; Curran, West & Finch 1996; Hair et al. 2006; Kline 2005) recommend that multiple criteria are used to assess the goodness-of-fit of SEM, including CFA and structural models. The fit indices for each measurement and structural model are presented in next section. These can be used to determine whether the models being tested should be accepted or rejected (Byrne 2001; Curran, West & Finch 1996; Hair et al. 2006; Hu, Bentler & Kano 1992; Kline 2005; Shook et al. 2004).

Another technique used in this study for handling the presence of multivariate non-normal data is a procedure known as “the bootstrap”, recommended by Byrne (2001). AMOS generates the Bollen-Stine bootstrap p and appropriate standard errors through its powerful bootstrapping routines. The Bollen-Stine bootstrap p is a bootstrapped modification of the model chi-square employed to test model fit, adjusting for distributional misspecification of the model (Bollen & Stine 1992). In other words, it adjusts for the lack of multivariate normality.

The key procedure underlying the bootstrap technique is that multiple sub-samples are created from an original data base, then drawn randomly with replacement from this population to provide the data from an empirical investigation of the variability of

parameter estimates and indices of fit (Byrne 2001). An adjusted p -value is then compared and the model is accepted if the Bollen-Stine $p > 0.05$. The number of the bootstrap samples is typically in the range of 1,000 to 2,000 (Cunningham 2008). Therefore, bootstrapping was performed in this study to transform the original sample to a 2000 sample size, using the maximum likelihood estimation to fit the model by remedying the violated assumption of multivariate normality.

Assessment of Model Fit

The validity of the measurement and structural models of SEM depends on goodness-of-fit for both the measurement model and the structural model. The assessment of goodness-of-fit is one of the primary goals in the application of SEM. The goodness-of-fit measures can be viewed as confirming or disconfirming the construct validity (Kline 2005).

Chi-square (χ^2) is the fundamental measure of fit used in SEM to specify “how well the specific model reproduces the covariance matrix among the indicator items” (Hair et al. 2006, p. 745). The model fit compares the theory to reality as represented by the data. The model evaluation is assessed by the χ^2 test and its associated significance test. If the associated p value is not significant ($p > 0.05$), then there is no significant difference between the sample variance/covariance matrix and the model-implied variance/covariance matrix; thus the data fit the model well.

However, the χ^2 statistic has been subject to much criticism and many researchers argue that it is not a reliable guide to model adequacy (Hu, Bentler & Kano 1992; Marsh, Wen & Hau 2004). The assessment of χ^2 is sensitive to sample size and deviations from normality (Hair et al. 2006; Tabachnick & Fidell 2007). If the observed variables do not have a multivariate normal distribution, two problems will arise when using ML estimation. Firstly, the χ^2 goodness-of-fit test is not expected to produce an accurate assessment of fit, rejecting too many true models. Secondly, tests of all parameter estimates are expected to be biased, yielding too many significant results (Anderson & Gerbing 1988). For this reason, the χ^2 goodness-of-fit test is difficult to use as a sole indicator of SEM fit.

According to Byrne (2001, p. 81), “one of the first fit statistics to address this problem” is to divide the χ^2 value by the degrees of freedom (χ^2/df), which appears as CMIN/DF and is generally called as the “normed chi-square (NC)” (Kline 2005). However, “there is no clear-cut guideline about what value of NC is minimally acceptable” (Kline 2005, p. 137). According to Bollen (1989), values of the NC of 2.0, 3.0, or even as high as 5.0 are recommended as indicating reasonable fit. Nonetheless, the NC does not completely correct the effect of sample size (Kline 2005). Other more sophisticated fit indices described next are less influenced by sample size and are commonly referred to as “subjective”, “practical” or “ad hoc” indices of fit and are typically used in addition to the χ^2 statistic (Byrne 2001).

Therefore, a number of alternative measures were proposed to determine whether the data supported a hypothesized model in SEM. They were developed to correct for the bias against large samples and increased model complexity. Some of the most commonly reported fit indices briefly discussed here are the goodness-of-fit index (GFI), the comparative fit index (CFI), the root mean square error of approximation (RMSEA), and the standardized root-mean-square residual (SRMR).

Both GFI and CFI should be between 0 and 1, with value exceeding 0.90 considered a satisfactory fit of the model to the data (Hair et al. 2006). However, the GFI is sensitive to sample size and the CFI is minimally sensitive to lack of model fit. In contrast, SRMR and the RMSEA provide an advantage (they decrease) when a model contains more variables. Values of SRMR less than 0.08 and values of RMSEA below 0.10 are considered acceptable (Hair et al. 2006). The RMSEA is highly recommended as a fit index as it is less sensitive to distribution and sample size and very sensitive to model misspecification; as well, the confidence interval is available. This confidence interval provides important information about the accuracy of the estimate of fit, which is not available for almost all other fit indices (MacCallum & Austin 2000). The summary of the goodness-of-fit indices using in this study is presented in table 7.7.

Table 7.7: Summary of the Goodness-of-Fit Indices Used in the Study

Name and Abbreviation	Accepted Value	Remarks
Chi-Square (χ^2)	$p > 0.05$	The estimated likelihood chi-square statistic is assessed to the statistical fit of the model. A non-significant value indicates an adequate representation of the data. The Bollen-Stine bootstrap p -value is calculated if the χ^2 is significant.
Goodness-of-Fit (GFI)	GFI > 0.90	The GFI is used to measure the amount of variance and covariance in the observed correlation matrix that is predicted by the model-implied correlation matrix. Values between 0.90 and 1.0 are indicated acceptable fit.
Comparative Fit Index (CFI)	CFI > 0.90	This is based on the comparison of the hypothesized model with the independence model (i.e., a model in which all variables are uncorrelated and only error variances are estimated). Values of greater than 0.90 indicate an acceptable fit.
Standard Root Mean Square Residual (SRMR)	SRMR < 0.08	The SRMR is the average difference between the observed and hypothesized correlation matrices. Values of less than 0.10 are acceptable.
Root-Mean-Square Error of Approximation (RMSEA), with 90 percent confidence interval	RMSEA < 0.10	The RMSEA assesses how poorly the model fits the data by considering the error of approximation, which concerns the lack of fit of the researcher's model to the population covariance matrix. Values up to 0.08 indicate reasonable fit to the data. If the samples are large, values of less than 0.10 are also acceptable.

Hair et al. (2006) suggest that using three or four fit indices provides adequate evidence of model fit. However, at least one incremental fit index (i.e., CFI or TLI etc.), and one absolute fit index (e.g., GFI, RMSEA or SRMR etc.), in addition to the χ^2 value and the associated degrees of freedom (df), should be reported. Also, at least one of the indices should be a badness-of-fit index (e.g., RMSEA or SRMR etc.). As suggested by Hair et al. (2006), the χ^2 value and degrees of freedom, the GFI, CFI, RMSEA and SRMR were used in this study to evaluate a model.

Modification of the Structural Model

An additional step might include model re-specification when the model is not acceptable. Model re-specification is a controversial issue in structural equation modeling literature. The aim in structural equation modeling is generally to develop the most parsimonious model that compares the theory to reality as represented by the data (Raykov & Marcoulides 1999). Structural equation modeling programs, such as AMOS, provide two types of information that can be helpful in detecting model misspecification: the standardized residuals and the modification indices. However, changes based only on the modification indices should be made with caution because they are purely statistically driven and hence the generalization of the results is problematic (MacCallum, Roznowski & Necowitz 1992). Thus, it is important for the researcher to be prudent when examining the possibilities of re-specifying the model, and to ensure that the final model accepted is a parsimonious model based on theory and content, not an over-specified model based on statistical chance.

For structural modeling, when the hypothesized model does not fit, a model can be improved by undertaking a number of approaches in the model testing process. The first approach in re-specifying each of the structural models was to inspect modification indices in the evaluation of the overall model. Modification indices were used to guide model re-specification, as they indicate significant paths between factors that have not been included in the model. Paths suggested through modification indices were only added if they were corroborated by theory or logic. Therefore, modification indices were used only as guides for improvement of the relationships that could theoretically be justified as possible modifications (MacCallum & Austin 2000).

Another approach was to delete paths from the model that were not statistically significant. A probability level of 0.01 was adopted for this study ($CR \leq 3.29$) (Tabachnick & Fidell 2007). Significant paths were retained (i.e. $p < 0.01$). After the deletion of insignificant paths in the models, variables that were not significant predictors of the outcome variables were removed from the model.

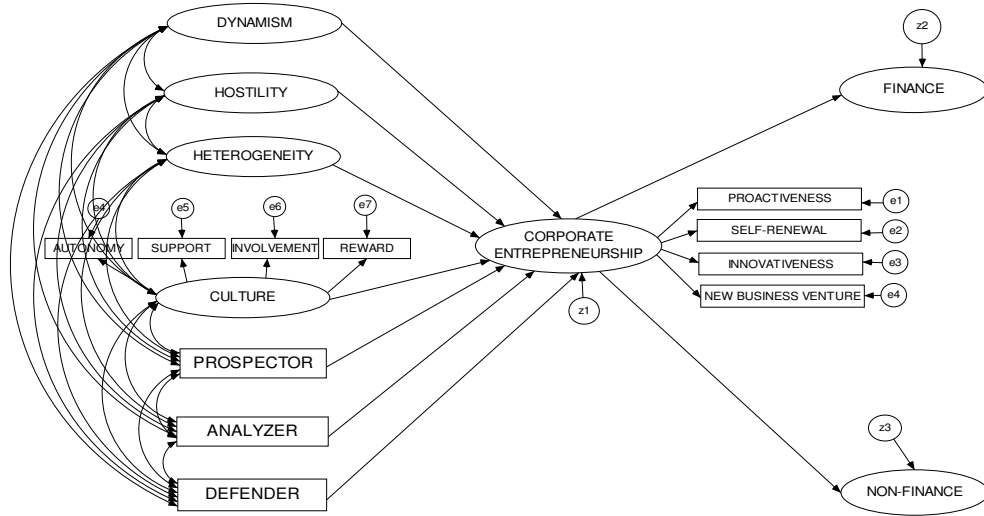
7.4.1 Initial Structural Model

The full structural model illustrated in Figure 7.2 was tested in the first instance. A model was proposed in which environmental factors (dynamism, hostility and heterogeneity) and organizational factors (strategy and culture) were hypothesized to influence corporate entrepreneurship which, in turn, influences firm performance (financial and non-financial aspects). Figure 5.1 depicted the results for the initial model of corporate entrepreneurship antecedents and effects, highlighting standardized structural regression coefficients. The model was found not to fit the data well, $\chi^2 (82) = 228.85$, $p = 0.00$, $\text{CMIN/DF} = 2.79$, $\text{SRMR} = 0.07$, $\text{RMSEA} = 0.09 (0.08, 0.11)$, $\text{GFI} = 0.88$ and $\text{CFI} = 0.89$. The χ^2 value, GFI and CFI were a less satisfactory fit.

The χ^2 statistic is sensitive to large sample size (207 respondents) and to deviations from normality (Anderson & Gerbing 1988; Hair et al. 2006). As described in the screening for normality section, if the variables used in the study are not multivariate normally distributed and the sample size exceeds 200 respondents, the χ^2 has a greater tendency to indicate a significant value even though only a slight discrepancy exists between model and data (Hair et al. 2006). Therefore, the χ^2 value is probably a less useful indicator in comparison with other fit measures for a model based on a large sample size and non-normality. When a significant χ^2 result is obtained ($p < 0.05$), alternative measures have been proposed to determine whether the data supports a hypothesized model in SEM.

In the structural model analysis for the current study, there is an issue in that the χ^2 test shows a significant result ($p < 0.01$). Therefore, the current study follows the practice of other researchers and de-emphasizes the p value associated with the χ^2 value. Although the p value was less than 0.05, which may not be desirable, it was not considered a problem (Hair et al. 2006).

Figure 7.2: Proposed Model of CE Antecedents and Effects



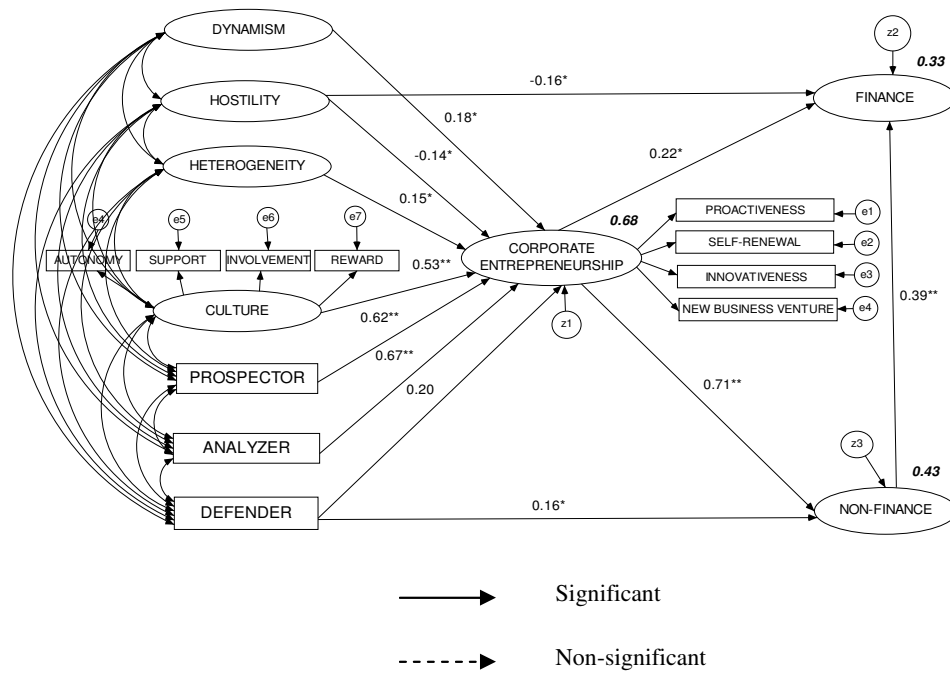
7.4.2. Final Structural Model of Corporate Entrepreneurship Antecedents and Effects

The model was re-specified to examine possible sources of model misfit. An inspection of the modification indices recommended that the only meaningful changes that would be made based on the modification indices for the regression weights in a SEM model would be to the structural path between latent variables. Hence modification indices with theory justification suggested that adding structural paths from ‘environmental hostility’ to ‘financial performance’, ‘Defender strategy’ to ‘non-financial performance’ and ‘non-financial performance’ to ‘financial performance’ could improve the model.

On further examination, the theory also supports the suggestions that external environments have a direct impact on firm performance. Research from the environmental management perspective affirms that firms can design strategies corresponding to the operating environment in order to stay competitive (Dess, Lumpkin & Taylor 2004; Miller 1988). In addition, research from strategy and strategic management perspectives suggests that non-financial performance is a prerequisite for a firm’s financial performance (Atkinson, Waterhouse & Wells 1997; Mair & Rata 2004). Therefore, the three paths added above to the final model were theoretically grounded.

When three structural paths were added to in the model as shown in Figure 7.3, with the exception of the significant χ^2 value, the goodness-of-fit indices of the adjusted model were reasonably acceptable, $\chi^2 (79) = 193.79, p = 0.00, CMIN/DF = 2.45, SRMR = 0.06, RMSEA = 0.08 (0.07, 0.10), GFI = 0.90$ and $CFI = 0.91$. Thus, the following adjusted model is preferable.

Figure 7.3: Results for Final Model of CE Antecedents and Effects



Note: ** significant at $p < 0.01$, *significant at $p < 0.05$

7.5 Chapter Summary

In this study, structural equation modeling (SEM) with AMOS 16 for quantitative data analysis followed a two-step approach. Firstly, each of the measurement models (CFA) or a one-factor congeneric model was evaluated separately and refined prior to testing the full model of CFA. When the models were validated, the results indicated that the sample data supported and fitted the models well. Research findings also suggest high validity and reliability of the measurement models. Then the structural model was assessed and modified until the decision was made that the model fit was adequate. The overall structural model was found to be statistically valid and reliable.

In the next chapter, the final model will be further analyzed and interpreted for testing the four main hypotheses of the study. The remaining two data techniques for analysis, multivariate analysis of variance (MANOVA) and content analysis, will be also presented in the next chapter. MANOVA is utilized to explore any significant difference in the variables of corporate entrepreneurship and firm performance between small-sized and medium-sized enterprises (SMEs) and large companies. Moreover, content analysis is used for qualitative data analysis.

Chapter Eight

Hypotheses Testing and Results

8.1 Introduction

The previous chapter presented the findings of the survey using structural equation modeling (SEM) to test the theoretical model of the relationships between corporate entrepreneurship and its antecedents and effects in Thai auto parts manufacturing firms. This chapter will further analyze and interpret the final model for hypothesis testing in order to achieve the objective of the study.

The four main hypotheses of the study are as follows. (H1) Environmental factors will have an impact on corporate entrepreneurship in Thailand's auto parts manufacturing firms. (H2) Organizational strategy will have an impact on corporate entrepreneurship in Thailand's auto parts manufacturing firms. (H3) Organizational culture will have an impact on corporate entrepreneurship in Thailand's auto parts manufacturing firms. (H4) Corporate entrepreneurship will have a positive influence on firm performance in Thailand's auto parts manufacturing firms. These hypotheses are based on the five main factors of corporate entrepreneurship antecedents and effects identified for study, namely environmental conditions, organizational strategy and culture, corporate entrepreneurship, and firm performance

Another related statistical tool employed is multivariate analysis of variance (MANOVA), which is useful for detecting any significant difference in dependent variables in terms of corporate entrepreneurship and firm performance between groups, in this case, company size: small-sized and medium-sized enterprises (SMEs) and large companies. MANOVA was used in this study because of the nature of the different groups of independent variables involved. This chapter also reports on the results from the qualitative data. The qualitative findings are in relation to the interviews with ten senior managers of Thai auto parts manufacturing firms.

This chapter is structured as follows. It begins with the testing of the hypotheses of the survey data, followed by the findings from the survey using MANOVA to compare the differences in variables between the two groups. In the final section, frequency data will illustrate the themes and findings arising from the interview results.

These results are further interpreted and discussed in Chapter 9, which covers the overall discussion of the results. The integrated quantitative and qualitative presentation of the results is also covered in that chapter. Finally, in Chapter 10, the findings are summarized leading to the concluding remarks on the antecedents and effects of corporate entrepreneurship in auto parts manufacturing firms in Thailand.

8.2 Hypothesis Testing Results

After the full structural path model illustrated in figure 7.3 was accepted based on the various fit indices as discussed in the previous chapter, hypothesis testing of all paths in the conceptual model was used to determine whether the hypothesized relationships were statistically significant.

Corporate entrepreneurship is critical to explaining two types of performance: namely financial and non-financial performance. These two performance measures represent the consequence of corporate entrepreneurship. Corporate entrepreneurship also depends upon two antecedents: namely environmental and organizational factors. Thus, a model was proposed in which environmental factors and organizational factors were hypothesized to influence corporate entrepreneurship which, in turn, influences firm performance.

The model accounts for 68 percent of the variance in corporate entrepreneurship, 43 percent of the variance in non-financial performance, and 33 percent of the variance in financial performance. Thus, 68 percent of the variance in corporate entrepreneurship is explained by environmental factors and organizational factors in terms of organizational strategy and culture, and 43 percent of the variance in non-financial performance and 33 percent of the variance in financial performance are explained by corporate entrepreneurship.

The results of the hypothesis testing in terms of standardized coefficients and levels of significance (p -value) for the relationships between the constructs are summarized in Table 8.1. All antecedents are found to be significant predictors of corporate entrepreneurship, and corporate entrepreneurship is a significant predictor of firm performance. The Analyzer strategy is the most important determinant of corporate entrepreneurship, followed by the Prospector strategy and organizational culture. The standardized coefficients of all paths range from 0.53 to 0.67. In addition, corporate entrepreneurship has the most important impact on non-financial performance, with a standardized coefficient of 0.71.

Therefore, most hypotheses in the study were supported. The four most significant paths are H4b (corporate entrepreneurship determining non-financial performance); H2b (organizational strategy in terms of the Analyzer strategy determining corporate entrepreneurship); H2a (organizational strategy in terms of the Prospector strategy determining corporate entrepreneurship); and H3 (organizational culture determining corporate entrepreneurship). The standardized coefficients were 0.71, 0.67, 0.62, 0.53 respectively.

The four strongest paths (H4b, H2b, H2a, and H3) have been noted. The other paths found to be significant include environmental dynamism, hostility and heterogeneity as determinants of corporate entrepreneurship. Environmental dynamism and heterogeneity have a significant impact on corporate entrepreneurship (H1a and H1c supported), but a negative effect on environmental hostility (H1b partially supported). Corporate entrepreneurship was found to have a significant influence on financial performance (H4a supported). H2a is also supported, indicating that organizational strategy in terms of the Defender strategy does not have an impact on corporate entrepreneurship ($p = 0.06$).

There are three additional results from the model. The study found non-financial performance to have a significant impact on financial performance. Furthermore, a significant result was that environmental hostility has a negative impact on financial performance. This means that as threat levels of environmental conditions decrease,

firm performance increases and vice versa. The Defender strategy was also found to be a significant factor influencing non-financial performance.

Table 8.1: Summary of Hypothesis Testing Using Total Population Data

Model Hypotheses	Standardized Effect	Results
H1: Environmental factors and CE		
H1a: Environmental dynamism and CE	0.18*	Support
H1b: Environmental hostility and CE	-0.14*	Partial Support
H1c: Environmental heterogeneity and CE	0.15*	Support
H2: Organizational factors and CE		
H2a: Prospector strategy and CE	0.62**	Support
H2b: Analyzer strategy and CE	0.67**	Support
H2c: Defender strategy and CE	0.20	Support
H3: Organizational culture and CE	0.53**	Support
H4: CE and firm performance		
H4a: CE and financial performance	0.22*	Support
H4b: CE and non-financial performance	0.71**	Support
Note: ** $p < 0.01$, * $p < 0.05$		

Summary of Hypothesis Testing

All hypotheses were found to be statistically significant at the 0.05 level. The results indicated very strong specified relationships between the constructs. It can be concluded from the findings that the structural model is valid. In other words, both external environments (H1a, H1b, and H1c) and internal environments (H2a, H2b, H2d, and H3) of an organization affect corporate entrepreneurship, and these in turn impact positively on a firm's performance (H4a and H4b). Although the coefficients of the internal factors are higher than those of the external factors, both are important. However, internal factors are somewhat more important in the overall model.

8.3 Comparison between SMEs and Large Firms

This section presents the results of the multivariate analysis of variance (MANOVA) to compare the differences in variables in the study between two groups of companies: large firms and SMEs. This aims to investigate whether the mean differences between

the groups on the combination of dependent variables (more than one dependent variable) are likely to have happened by chance. MANOVA is a statistical technique that was used to identify whether there is a significant difference between the groups on this composite dependent variable, and also provide the univariate findings for each of the dependent variables separately. In addition, it provides an advantage in controlling or adjusting for increased risk of Type 1 error (Pallant 2007). However, it is a much more complex set of procedures than a series of univariate analysis of variance tests (ANOVA) as well as a requirement for a number of additional assumptions such as sample size, normality and outliers.

Prior to proceeding with the MANOVA analysis, preliminary assumption testing was performed to check for normality, outliers and homogeneity of variance-covariance matrices. The testing of both univariate and multivariate normality and outliers is the same as the assumption requirement in SEM. For the assumption of homogeneity of variance-covariance matrices, this test was generated in the MANOVA output. Box's M Test of Equality of Covariance Matrices was used to assess whether the data violated the assumption of homogeneity of variance-covariance matrices. If the significant value is greater than 0.01, the assumption is not violated. In addition, Wilk's Lambda, which is one of the most commonly reported statistical criteria to test significance of main effects and interactions (Kline 2005) and recommended for general use (Tabachnick & Fidell 2007), was used to indicate whether there was a significant difference among the groups on a linear combination of the dependent variables. If the significance level is less than 0.05, there is a difference among the groups (Pallant 2007).

This research compared the differences for the variables in terms of corporate entrepreneurship and firm performance between two groups: SMEs and large companies. The cases were split at the number of full-time employees: cases below 200 employees were classified as SMEs and above 200 employees as large firms. This classification is based on the regulations of the Thai Ministry of Industry in defining Thai manufacturing firms (OSMEP 2005), and the number of employees is commonly used to define SMEs across countries (Hew 2004; Rodriguez 2004). The results of this MANOVA are presented below.

8.3.1 Comparison between SMEs, Large Firms and CE Variables

A one-way between-groups multivariate analysis of variance was conducted to investigate differences for corporate entrepreneurship variables between SMEs and large companies. Four dependent variables were used: new business venturing, self-renewal, innovativeness and proactiveness. The independent variable was company size. Preliminary assumption testing was performed to check for normality, linearity, univariate and multivariate outliers, homogeneity of variance-covariance matrices, and multicollinearity, with no serious violations reported. There was a statistically significant difference between SMEs and large firms on the combined dependent variables, $F(4, 202) = 3.27, p = 0.01$; Wilks' Lambda = 0.94; $\eta^2 = 0.06$. When the results for the dependent variables were considered separately, the only difference to reach statistical significance was self-renewal, $F(1, 205) = 4.78, p = 0.03$. An inspection of the mean scores indicated that large companies reported slightly higher levels of self-renewal ($M = 18.82, SD = 5.49$) than SMEs ($M = 17.11, SD = 5.51$), as shown in Table 8.2.

Table 8.2: Descriptive Statistics of CE Variables for Groups of Company Size

Variables	Size	Mean	Std. Deviation	N
New Business Venturing	SME	17.3065	6.13159	124
	Large	16.5301	6.05934	83
	Total	16.9952	6.09989	207
Innovativeness	SME	20.0645	3.92975	124
	Large	20.0723	3.43505	83
	Total	20.0676	3.73065	207
Self-renewal	SME	17.1129	5.51452	124
	Large	18.8193	5.48645	83
	Total	17.7971	5.55357	207
Proactiveness	SME	13.5968	3.79756	124
	Large	13.2651	3.82573	83
	Total	13.4638	3.80309	207

8.3.2 Comparison between SMEs, Large Firms and Firm Performance Variables

A one-way between-groups multivariate analysis of variance was conducted to investigate size differences in response to firm performance factors. Two dependent variables were used: financial and non-financial performance. The independent variable

was company size. Preliminary assumption testing was performed to check for normality, linearity, univariate and multivariate outliers, homogeneity of variance-covariance matrices, and multicollinearity, with no serious violations reported. There was a statistically significant difference between SMEs and large firms on the combined dependent variables, $F(2, 204) = 4.00$, $p = 0.02$; Wilks' Lambda = 0.96; $\eta^2 = 0.04$. When the results for the dependent variables were considered separately, the only difference to reach statistical significance was financial performance, $F(1, 205) = 8.03$, $p = 0.01$. An inspection of the mean scores showed that large companies reported slightly higher levels of financial performance ($M = 13.53$, $SD = 2.76$) than SMEs ($M = 12.24$, $SD = 3.47$), as shown in Table 8.3.

Table 8.3: Descriptive Statistics of Firm Performance Variables for Groups of Company Size

Variables	Size	Mean	Std. Deviation	N
Financial Performance	SME	12.2419	3.47200	124
	Large	13.5301	2.75565	83
	Total	12.7585	3.25899	207
Non-financial Performance	SME	14.7984	2.52783	124
	Large	15.3133	2.39882	83
	Total	15.0048	2.48392	207

8.4 Interview Findings

This section presents results from the qualitative data. The findings are in relation to the interviews with ten senior managers of Thai auto parts manufacturing firms. Results are presented using frequency percentages, with the intention of developing patterns of agreement and themes across cases. The interview data are used to enhance the survey findings in the previous section. The systematic presentation of the qualitative results results in greater depth and richness of data within the context of corporate entrepreneurship in Thai auto parts manufacturing firms than would be obtained from purely quantitative data.

The results are presented in a structured manner according to the sequence of the questions, reflecting the dimensions of environmental conditions, organizational strategy and culture and firm performance. Each section of this chapter begins with a

brief introduction, followed by the results and findings, and then concludes with a table comparing the key themes and findings arising from the qualitative results and quantitative findings.

8.4.1 Environmental Conditions as Determinants of Corporate Entrepreneurship in Thai Auto parts Manufacturing Firms

8.4.1.1 Introduction

This section explores the environmental factors which impact on corporate entrepreneurship in Thai auto parts manufacturing firms. The environmental conditions are historically viewed as the external factors enhancing entrepreneurship in existing organizations. Environmental conditions, particularly dynamism, hostility and heterogeneity, are widely investigated in the literature on corporate entrepreneurship. This section therefore addresses the questions relating to the impact of the external environment on entrepreneurial activities and orientations.

8.4.1.2 Results

The interviews indicated that environmental conditions play a critical role in enhancing entrepreneurial activities and orientations in organizations. The range of responses is listed in Table 8.4.

Table 8.4: Key Themes of Environmental Factors

Themes	Companies reporting	Frequency
Environmental Dynamism		
Degree of change in market practices	1,2,3,4,6,7,8,9,10	9
Methods of production change	1,2,6,7,9	5
Rate of product obsolescence	1,2,6	3
Environmental Hostility		
Competition in product quality	1,4,3,5,6,7,8,9,10	9
Skilled labour	2,3,4,8,10	5
Government policies	5,6,8,10	4
Environmental Heterogeneity		
Required methods of production/service	1,2,6,7,8,9,10	7
Customers' buying habits	1,2,6,7,9,10	6
Nature of competition	1,2,9,10	4

Environmental Dynamism

Environmental dynamism, which refers to rapid changes of a firm's market, was investigated in the study as a determinant of corporate entrepreneurship. Hence, questions were asked relating to the current impact of uncertainty or rapid changes in the business environment on the company's operation. The results indicated that most (9) of the participants agreed that their firms had to change their market practices frequently because of high competition from both domestic and international competitors as well as uncertain market conditions. Half (5) agreed that methods of production change often and in major ways because the demand of global competition has intensified the need for high quality products and cost reduction. Some (3) participants agreed that the rate of product obsolescence is high in regard to changes in the market's needs.

Environmental Hostility

Another environmental condition influencing the entrepreneurship behaviour of companies was hostility. This refers to threats to a firm's mission through rivalry. Questions were asked relating to the current impact of threats in the business environment on the company's operation. The results showed that most (9) of the participants agreed that competition in product quality is a major challenge in their industry since world auto makers search for high quality parts at reasonable prices. Also, some (4) agreed that government policies impact on their operations. Liberal policies and free trade agreements lead to intensified competitions from the entry of foreign auto parts manufacturers. Therefore, the threats of the business environment on the company's operation forces firms to emphasize new technology and processes to improve or maintain product and service quality, as well as develop new products and services to exploit arising opportunities.

On the other hand, some (5) participants suggested that skilled labour was another factor that impacted on corporate entrepreneurship. Lack of skilled labour could impede product and technological innovations as well as cost and quality control. Moreover, two participants indicated that political uncertainty would deter their investments because of high risk.

Environmental Heterogeneity

The final environmental condition enhancing entrepreneurial activities and orientation was heterogeneity. Questions were asked relating to the current impact of the complexity or diversity of the business environment on the operation of the company. The results indicated that the majority (7) of the participants agreed that required methods of production/service vary a great deal from one line of their business to another. Also, many (6) participants agreed that customers' buying habits and required methods of production/service vary a great deal from one line of their business to another. Some (4) agreed that the nature of competition varies a great deal from one line of their business to another. These firms therefore purposefully create new business

ventures and products and services which are unique to them or set them off from the competition.

This section therefore explores and presents the results of the environmental conditions that influence entrepreneurial behaviour. The findings show that external forces play a significant role in entrepreneurial activities and orientations in auto parts manufacturing firms in Thailand. The environment provides the initial condition and the context that either facilitates or constraints entrepreneurial behaviour.

8.4.2 Organizational Strategy as a Determinant of Corporate Entrepreneurship in Thai Auto parts Manufacturing Firms

8.4.2.1 Introduction

Organizational strategy has been highlighted in the corporate entrepreneurship literature as a very important factor driving entrepreneurial activities. Innovation lies at the heart of entrepreneurship so that the firm's strategy for entrepreneurship serves to stimulate innovation, which is the key to developing and successfully exploiting competitive advantages. Thus, the question of what strategies are essential to achieving growth and innovation in an organization are explored in this section.

8.4.2.2 Results

The study found that organizational strategy plays an important role in encouraging entrepreneurial behaviour. The interview results indicated that managers seek to formulate strategies that are congruent with the external environment. They perceive that external factors (customers, suppliers, environments, etc.) dictate their strategies. Guided by two types of strategies (Prospector and Analyzer) influencing corporate entrepreneurship from Miles and Snow's typology, the range of responses is listed in Table 8.5.

Table 8.5: Key Themes of Organizational Strategy

Themes	Companies reporting	Frequency
Prospector Strategic Orientation		
Broad product-market domain	1,2,6,9	4
Respond rapidly to opportunity	1,2,6,9	4
First in the market	1,2,9	3
Aggressive product and market innovation	1,9	2
Take calculated risks	6	1
Analyzer Strategic Orientation		
Monitor the actions of major competitors for new ideas	3,5,7,8,10	5
Careful product development and market penetration	3,7,10	3
Stable product-market domain	3,8	2
Risk-adjusted efficiency	5	1

The strategies for enhancing entrepreneurial activity identified by participants were classified into two types based on Miles and Snow's typology: Prospector and Analyzer. The majority (5) of participants classified their strategies in the Analyzer category, that is, not endeavouring to be a market leader but carefully watching competitors and learning from their mistakes. Firms were attempting to maintain a stable line of products or services with an emphasis on cost control and efficiency, while at the same time trying to move out quickly to carefully selected more capable new developments in the industry.

Another strategic orientation was Prospector (4 respondents), which is depicted as one that operates within a broad product-market area and tries to respond rapidly to opportunity. Such firms constantly attempt to be first in offering new products or services. They aggressively develop new products and markets and take calculated risks in entrepreneurial projects.

However, one interviewee chose the Defender strategic orientation, which emphasizes tight control and continual maintaining of operating efficiency rather than effectiveness in order to lower costs in a narrowly defined product-market domain. This type avoids

taking risks and rarely makes major adjustments in their technology, structure, or production methods.

The results therefore suggest that well defined and effective strategies for innovation enhance entrepreneurial activities. A firm's strategy for entrepreneurship stimulates innovation, such as bringing something new into products, internal processes and markets. It can facilitate companies to bring products more rapidly to the market, to customize those products, and to add new functionality to those products.

8.4.3 Organizational Culture as a Determinant of Corporate Entrepreneurship in Thai Auto Parts Manufacturing Firms

8.4.3.1 Introduction

Organizational culture is viewed as a critical force that impacts on behaviour in organizations and as a key determinant for fostering entrepreneurial activities within an organization. Thus, organizational culture is also explored in this section. The questions were about the cultural factors that were considered important in cultivating an innovative corporate environment.

8.4.3.2 Results

The results indicated that organizational culture plays an important role in enhancing entrepreneurship activities. The range of responses is listed in Table 8.6.

Table 8.6: Key Themes of Organizational Culture

Themes	Companies reporting	Frequency
Management support		
Training	1,2,3,4,5,6,7,9,10	9
Management encouragement for innovation	1,2,6,7,9	5
Financial support	2,6,9	3
Rewards		
Providing rewards contingent on performance	1,2,6,7,9,10	6
Involvement and Participation		
Teamwork	1,2,3,4,5,6,7,8,9,10	10
Communication and cooperation	1,2,3,5,6,7,9,10	8
Communicating the company's mission, strategy, objectives to employees	1,2,6,8,9,10	6
Participative decision-making process	2,9	2

Management Support

Results from the interviews suggested that top managers play a critical role in formulating and implementing an innovative culture for their firms. The majority of participants (9) agreed that training employees in creative and innovative skills is important for research and development, as is proactively searching for new opportunities, and quality control. Another factor of management support was top management encouragement for creative and innovative activities (5 respondents). Leadership needs to set the tone for innovation and needs to encourage employees to believe that innovation is part of the role for all people in the company. Also, these firms are willing to facilitate entrepreneurial projects. Thus, resource availability such as financial support to get projects off the ground (3) was another management support condition that impacts on entrepreneurship activities such as new product and service development or new business venturing.

Involvement

The interview results suggested that although top management's role is critical, innovation always involves getting people to change the way they work. The more people are involved, the more they tend to have a positive attitude toward innovation and so engage in innovative behaviour. All participants agreed that teamwork rather

than individual contribution stimulates innovation in organizations by tapping the talent and commitment of members. In addition, most of the participants (8) indicated that communication and cooperation between different departments helps capture collaborative endeavours of people with different skills to produce innovative results and innovative products. Also, widely communicating the company's mission, strategy and objectives to employees (6 respondents), and participative decision-making processes in and between different organizational levels (2 interviewees) enhanced entrepreneurial behaviour of the firms. An open and widely communicated culture helps guide the daily activities of workers to meet certain goals. It enables the organization to respond rapidly to customer needs or the moves of a competitor. Changes on multiple dimensions such as new products, processes, services, markets and organizational approach are likely to succeed when employees at all levels are committed to opportunity-seeking.

Reward

The findings from the interviews suggest that rewards are critical incentives for entrepreneurial initiatives. Many participants (6) indicated that rewards contingent on performance tend to motivate people to engage in innovative behaviour. Rewards facilitate employees' willingness to work on new projects. Appropriate rewards enable innovations to happen faster and better.

Therefore, this section explores and presents the results of the organizational culture that influences entrepreneurship activities and orientations. The results also show that the entrepreneurial behaviour of a firm can be enhanced by a supportive culture.

8.4.4 Corporate Entrepreneurship Influencing Firm Performance in Thai Auto Parts Manufacturing Firms

8.4.4.1 Introduction

It has been demonstrated in the literature that corporate entrepreneurship leads to superior firm performance. This section presents firm performance, in terms of financial and non-financial aspects, that the companies aimed to achieve by engaging in corporate entrepreneurship activities. Thus, the questions relating to the companies' performance criteria seen as important over the last three years are addressed.

8.4.4.2 Results

The findings indicate that entrepreneurship activities impact on firm performance in terms of both financial and non-financial criteria. The range of responses is listed in Table 8.7.

Table 8.7: Key Themes of Firm Performance

Themes	Companies reporting	Frequency
Financial performance		
Profitability	2,4,5,6,7,8,9,10	8
Sales growth	1,2,3,5,7,9	6
Non-financial performance		
Customer satisfaction	1,2,3,4,5,6,7,8,9,10	10
Quality of products/services	1,2,3,4,5,7,9,10	8
Employee satisfaction	1,2,4,6,9,10	6
Technical product/service design and development	9	1

Financial Performance

Two key financial performance components were rated as highly important by the interviewees. These are profitability (8 cases) and sales growth (5 cases). The interviewees revealed that profitability could be accomplished by focusing on productivity and cost reduction. This could be controlled by using new machines and technology. In addition, new product design and development was another factor that contributed to profit. The interviewees further indicated that sales growth could be achieved by engaging in corporate entrepreneurship activities that involve new product and market development, re-definition of business, and proactive searching for new opportunities.

Non-Financial Performance

Four components of non-financial performance were also seen as important: customer satisfaction, quality of products/services, employee satisfaction, and technical product or service design and development. All participants agreed that customers would be satisfied if the quality of the product met their expectation and new products and services were introduced. The majority (8) of respondents suggested that the quality of products and services could be controlled and maintained by spending on new product, process and technology development activities as well as coordination among units. In addition, some (6) participants indicated that employee satisfaction could be increased by developing new product, process and administrative techniques, enabling employees to develop their skills, learning and creative thinking. Also, one participant pointed out that product and service design and development could be achieved by identifying and exploiting the untapped opportunities which arise from areas of uncertainty both inside and outside the organization, such competitors' actions and new demands in existing and new markets.

Furthermore, five participants also suggested that non-financial performance could be a critical factor in improving financial performance. Customer and employee satisfaction was the most important factor as it reflected overall performance. When their employees were happy they would generate more effective and efficient products and services to

customers. The quality of products/services was also important, because not only was cost-based strategy required, but also a high quality of products and services was needed for firms to become competitive in world markets. As such, the firms that offer higher quality products and superior services are likely to be successful. Also, product and service design and development create new market development, resulting in profit and sales growth.

This section therefore addresses the outcomes that were expected to be achieved by the Thai auto parts manufacturing firms from engaging in entrepreneurial activities and orientations. The results suggest that entrepreneurial activities help firms to improve performance in terms of both financial and non-financial aspects.

8.5 Concluding Findings of Quantitative and Qualitative Data

This section presents concluding findings from both the quantitative and qualitative results. Table 8.8 illustrates the confirmation of the quantitative findings by the qualitative results. The results confirm that the linkage between factors and indicator variables for each factor of corporate entrepreneurship in Thai auto parts manufacturing firms, including environmental conditions, organizational strategy and culture, corporate entrepreneurship and firm performance, is well supported statistically and conceptually. Those factors and indicator variables could be used directly for the evaluation of the corporate entrepreneurship antecedents and effects model. They are considered as key characteristics that help drive Thai auto parts manufacturing firms to cultivate and implement entrepreneurial processes and behaviours in order to achieve excellent performance and competitive advantage.

The findings of the qualitative study not only validate the results of the quantitative study but also discover unanticipated findings. For example, skilled labour and customer satisfaction are indicator variables to measure environmental hostility and non-financial performance respectively (see Table 8.8). Therefore, data collection based on quantitative and qualitative approaches can help improve both the reliability and validity of corporate entrepreneurship research, and provide more insight into information concerning the objectives under study.

A detailed discussion of the combination of the findings from both the quantitative and qualitative results will be discussed in the next chapter, leading to an overall understanding of the precursors to and effects of corporate entrepreneurship in Thai auto parts manufacturing firms.

Table 8.8: Quantitative Findings' Confirmation of Qualitative Findings

Factors	Dimensions	Indicator Variables	Quantitative Findings	Qualitative Findings
Environmental Conditions	Dynamism	Degree of change in technology	✓	✓
		Degree of change in products and services	✓	✓
		Degree of change in marketing practices	✓	✓
	Hostility	Competition in product quality	✓	✓
		Government policies	✓	✓
		Skilled labour	-	✓
	Heterogeneity	Degree of diversity of customers' buying habits	✓	✓
		Degree of diversity of competitors' activity	✓	✓
		Degree of diversity of required methods of production and service	✓	✓
Organizational Strategy	Prospector	First in the market	✓	✓
		Broad product-market domain	✓	✓
		Rapid response to opportunity	✓	✓
		Aggressive product and market innovation	✓	✓
		Take calculated risks	✓	✓
	Analyzer	Monitor the actions of major competitors for new ideas	✓	✓
		Relatively stable product-market domain	✓	✓
		Careful new product development and market penetration only after their feasibility has been proved	✓	✓
	Defender	Risk-adjusted efficiency	✓	✓
		Limited and narrow product-market domain	✓	✓
		Tight control	✓	✓
		Emphasis on efficient operation for lower cost	✓	✓
		Risk-averse	✓	✓
		Seldom change their technology, structure, and production method	✓	✓

Table 8.8: Quantitative Findings' Confirmation of Qualitative Findings (Continued)

Factors	Dimensions	Indicator Variables	Quantitative Findings	Qualitative Findings
Organizational Culture	Management Support	Management encouragement for creative and innovative activities	✓	✓
		Support for small experimental projects	✓	✓
		Seeding money to get projects off the ground	✓	✓
	Autonomy	Training	✓	✓
		Allowing employees to make decisions about their work processes	✓	-
		Avoiding criticizing employees for making mistakes when being innovative	✓	-
		Reward	Recognition of the ideas of innovative people	✓
	Involvement	Providing rewards contingent on performance	✓	✓
		Participative decision-making processes in and between different organizational levels	✓	✓
		Wide communication of the company's mission, strategy and objectives to employees	✓	✓
		Communication and cooperation between different departments	✓	✓
		Teamwork rather than individual contributions	✓	✓
		Financial	Profitability level/return on assets	✓
Firm Performance	Financial	Cash flow	✓	-
		Sales growth	✓	✓
		Market share	✓	-
		Non-financial	New product/service development	✓
	Quality of product/service	✓	✓	
	Employee satisfaction	✓	✓	
	Overall performance	✓	-	
Customer satisfaction	-	✓		

8.6 Chapter Summary

This chapter presents a systematic investigation into antecedents and effects of corporate entrepreneurship in Thailand by examining the extent to which the existing corporate entrepreneurial theories are applicable in a developing country context. The results from the final model and the testing of the proposed hypotheses of the study, including four main hypotheses with eight sub-hypotheses, show that all of the existing theories apply to the Thai context, with partial support found for one of them. For example, external environments in terms of dynamism, hostility and heterogeneity (H1a, H1b, and H1c) were partially supported in the Thai context since Thai auto parts manufacturing firms are likely to engage in corporate entrepreneurship in dynamic and heterogeneous environments but not in hostile environments. In addition, the association of organizational strategy in terms of Prospector, Analyzer and Defender (H2a, H2b, and H2d) and corporate entrepreneurship, as well as the association of organizational culture (H3) and corporate entrepreneurship, were confirmed in the Thai context. Likewise, the linkage of corporate entrepreneurship to firm performance in terms of financial and non-financial aspects (H4a and H4b) was confirmed in the Thai context. In summary, the current study confirms that external and internal environments influence corporate entrepreneurship, which in turn impact on firm performance in terms of both financial and non-financial aspects.

This study also compares the difference between small and medium firms (SMEs) and large firms in terms of corporate entrepreneurship and firm performance. Large Thai auto parts manufacturing firms are found to have a higher level of corporate entrepreneurship practice, particularly self-renewal in the form of business concept revision, unit and division reorganization, coordination among units, and flexible organizational structures than are smaller firms. Furthermore, large firms are found to perform better financially than small ones. This study has provided insight into how dynamism and performance in corporate entrepreneurship can be applied to firms of all sizes in the Thai context.

Interviews were also utilized in this study, with the primary purpose of validating the survey findings and providing richer details on the topic (see Table 8.8). It is noted that

the two approaches were completed at the same time and independently of each other. The study adopted an interview technique to explore qualitative data from ten senior managers of Thai auto parts manufacturing firms. The data were analyzed using content analysis to categorize themes of interviewees' opinions in relation to corporate entrepreneurship antecedents and effects. In order to achieve comparability with Table 8.8, all indicator variables were classified according to the identified factors described in chapters 3 and 4.

In the next chapter, the interview results and the survey findings will be integrated combined and discussed to provide a comprehensive understanding of the corporate entrepreneurship antecedents and outcomes model of Thai auto parts manufacturing firms.

PART FIVE

DISCUSSION AND CONCLUSION

Chapter 9: Discussion

Chapter 10: Conclusion and Implications

The final part consists of the broad context discussion of the overall results and a summary of the major research findings. Chapter 9 discusses the overall results from both the quantitative and qualitative data. The findings from the survey and the interview are merged in order to gain richer information than by using a single method, which enhances the overall quality of the study. Chapter 10 presents a brief overview of the objectives of the study, a summary of research findings about the four key hypotheses and a comparison between SMEs and large firms, a section on the implications of the study, and also limitations and recommendations for further research.

Chapter Nine

Discussion

9.1 Introduction

The previous chapter presented a detailed report on the findings of the survey and interviews. This chapter further integrates these findings to discuss in a broad context the overall results of the study. Firstly, the influence of external environments on corporate entrepreneurship will be discussed, followed by the influence of organizational factors, with the emphasis on strategy and culture, on corporate entrepreneurship. Then the relationships between corporate entrepreneurship and firm performance in terms of both financial and non-financial aspects will be discussed. This will be followed by the dimensionality of corporate entrepreneurship. Finally, a comparison between SMEs and large firms for dependent variables regarding corporate entrepreneurship and firm performance will be presented.

9.2 The Influence of External Environments on Corporate Entrepreneurship

The results of this study from both qualitative and quantitative data showed that the external environment is an important determinant of corporate entrepreneurship. This affirms that from environmental management and entrepreneurship perspectives, the external environment cannot be separated from the entrepreneurial process (Dess, Lumpkin & Taylor 2004; Zahra 1993b). In this study, the Thai auto parts manufacturing firms adopted entrepreneurship corresponding to the operating environment in order to stay competitive. The results of this study indicated that environmental dynamism and heterogeneity have a positive and significant influence on corporate entrepreneurship but environmental hostility has a negative but significant effect on corporate entrepreneurship. The more dynamic and heterogeneous the environment, the more firms are likely to engage in corporate entrepreneurship. On the other hand, the more hostile the environment, the less the firms are likely to engage in corporate

entrepreneurship. Thus, hypothesis H1 that environmental factors play a key role in enhancing the entrepreneurial behaviour of Thai auto parts manufacturers is partly supported by the findings from this study.

The results from the survey indicate that the Thai auto parts manufacturing firms appear to enhance their entrepreneurial activities in a dynamic environment. This is highlighted when firms change their market practices frequently, when methods of production change often and in major ways, and when product obsolescence is high. The interviews support these findings and suggest that the firms need to change their market practices frequently, that is, every three to six months, due to high competitions from domestic and international competitors and due to uncertain market conditions such as oil price, currency, and economic fluctuations. These external pressures from the environment force them to be proactive in searching for opportunities and being competitive in the industry. Moreover, the firms are forced to enhance their production methods and procedures by adopting new processes, techniques and technology in order to meet high quality standards and cost reduction requirements. Finally, the firms pursue new business venturing and develop new products and services in both existing markets and new markets when their products become obsolete or less competitive because of changes in market demands.

The Thai auto parts manufacturing firms tend to adopt entrepreneurial activities in an environment that is heterogeneous, where customers' buying habits, competitors' activity, and methods of production and service influence innovation and market development. The interviews confirm that the diversity in customers' buying habits, the nature of competition, and required methods of production and service influence the firms to be innovative. Different markets and demands provide opportunities for new product and service developments as well as business concept revision. Moreover, the firms can learn from their broad experience with their customers and competitors. As such, the companies can use ideas from a market in which they are successful and apply them to a new market that has a similar potential for success. These firms, therefore, purposefully create new business ventures as well as products and services which are unique to them or which enhance competition.

Environmental dynamism and heterogeneity offers opportunities that can be derived from the development of new products and technologies and from access to new markets. These types of environment also support carrying out radical and strategic innovations, in accordance with the life cycle models of the sectors (Bierly & Daly 2007; Porter in Moreno & Casillas 2008). The findings from interviews support the arguments that entrepreneurial firms not only respond to the challenges in those environment variables but also create changes in such environments (Lumpkin & Dess 2001; Miller & Friesen 1982; Wheelen & Hunger 2008). For example, changes in technology such as electronics systems require firms to commit to R&D and develop new products and technology if they do not want to be surpassed by their competitors. Furthermore, consumer demands such as for small cars require firms to develop new products and technology in order to take advantage of the expected continued growth of the market for energy efficient cars. New product, market and technology added by the firms also create changes in the environments, since those leading firms create new competition in the market.

The results of this study also show that the more hostile the environment, the more likely the Thai auto parts manufacturing firms are to become conservative rather than entrepreneurial and vice versa. This is contrary to the arguments in the literature and findings reported in past research (Covin & Slevin 1989; Zahra 1991; Zahra & Garvis 2000), suggesting that a hostile environment is positively associated with corporate entrepreneurship. Hostility is likely to create threats for an organization and stimulate the pursuit of corporate entrepreneurship (Zahra 1991). However, the finding of this study is consistent with the results of Antoncic and Hisrich (2001). In their cross-cultural comparison between two diverse and contrasted economies – the United States as a representative of a leading developed economy and Slovenia as representative of a transition economy from Eastern Europe – Antoncic and Hisrich (2001) found that environmental hostility had a negative influence on corporate entrepreneurship in both samples.

This study's unexpected research finding reveals that industry and country specific as well as measurement issues may be the reasons for different research findings reported in the literature. Government policies and competition in product quality are found as

the major challenges to survival in the auto parts manufacturing industry in Thailand. During the field survey from February to June 2008, political conditions were unstable due to frequent government changes and complexity caused by the international financial crisis impacting both domestic and international markets. The interviews support that firms are more cautious in such unfavourable conditions and tend to pursue more conservative options for survival rather than high growth and profit. They emphasize marketing (e.g., strength of brand and image), customer service, product quality, and operational efficiency. They perceive such environmental conditions as too risky and high cost for any innovation and change. This is consistent with the argument by Miller and Friesen (1983, p. 223) that “extensive risk taking, forceful proactiveness, and a strong emphasis on novelty can be very hazardous when competitive conditions are becoming more taxing”.

Russell’s argument (1999, p. 81) is also supported. He claims that in hostile environments, innovation may not result in performance enhancement because of a lack of opportunities for innovation and its relatively high cost. Thus, the perceived efficacy of entrepreneurial strategies may decline and entrepreneurial orientation may weaken. In such environments, an entrepreneurial orientation may be replaced by a conservative orientation “where innovation is sought only as a last option after implementation; the firm may revert to seeking stability rather than continued change”.

Furthermore, the results from the interviews indicate that a lack of skilled labour, which is not included in the environmental hostility measurement of the survey questionnaire, impedes the development of entrepreneurial projects. The qualified workforce, particularly technicians, engineers and management personnel, are not sufficient for the needs of Thai auto parts manufacturing companies. The scarcity of labour has not been widely measured in past research. However, this finding is consistent with studies of Miles and Friesen (1982) and Zahra and Garvis (2000), which measure labour as an environmental hostility construct.

Interestingly, the findings of this study reveal that environmental hostility has a negative impact on financial performance. The effect of external environment on performance is consistent with the strategic management theory and market-based view, where the

external environment plays an important role in explaining an organization's financial performance (Dess, Lumpkin & Taylor 2004; Ricceri 2008). Firms, therefore, can earn higher returns by identifying opportunities in their external environments and then developing competitive advantages to exploit them (Ireland, Hitt & Simon 2003). The interviews suggest that when environmental conditions such as government policies and competition in product quality are stable and predictable and there is low competition, profits and sales tend to increase. However, firms tend to focus on survival rather than growth when they are operating in a highly hostile environment, since the profit level and growth rate appear to decrease.

The finding of this study is consistent with the findings of Baum, Locke and Smith (2001) and Moreno and Casilla (2008) that a hostile environment has a negative effect on firm growth, suggesting that firm growth tends to be greater when environmental hostility is low. Benign environments are characterized by relatively high profit margins, low competitive intensity, high customer loyalty, and a general tolerance for poor managerial decisions by industry and market forces. Thus, the failure rate of firms operating in benign environments is likely to be relatively low (Covin, Slevin & Heeley 1999). Conversely, when environmental hostility intensifies, profits might decline because the cost of a firm's operations can increase due to its attempts to build a stronger market position, establish its brand name recognition, and develop customer loyalty, as was found in past research (Zahra 1993b; Zahra & Garvis 2000).

Overall, the external environment represents an important initial step in selecting entrepreneurial activities. Thai auto parts manufacturing companies implement entrepreneurial processes and behaviour patterns corresponding to external environments in order to stay competitive. To be successful over time, the firms engage in new business venturing, are innovative, increase their self-renewal effort, and are proactive when contextual conditions are dynamic and heterogeneous. However, such entrepreneurial orientations and activities may not suit Thai auto parts manufacturing firms in a hostile environment.

9.3 The Influence of Strategy on Corporate Entrepreneurship

The results from both the survey and the interviews confirm the important role of organizational strategy in enhancing corporate entrepreneurship. As expected, the Prospector and Analyzer strategies have a positive and significant influence on corporate entrepreneurship. The study also found that there is no significant association between the Defender strategy and corporate entrepreneurship. Therefore, hypothesis H2 that there is an impact of organizational strategy on corporate entrepreneurship in Thai auto parts manufacturing firms is supported in this study.

Interestingly, the Analyzer strategy exhibits a slightly greater impact on corporate entrepreneurship than the Prospector strategy; however, a high degree of similarity between the Prospector and Analyzer strategies in determining corporate entrepreneurship in Thai auto parts manufacturing firms was revealed. This high degree of similarity is consistent with past research such as that by Matsuno and Mentzer (2000), McDaniel and Kolari (1987) and Shortell and Zajac (1990), indicating that the Prospector and Analyzer strategies are similar to each other but are significantly different to the Defender strategy. Furthermore, Matsuno and Mentzer (2000) suggest that firms that adopt the Analyzer strategy may engage in an equally high level of market orientation to avoid falling too far behind companies that pursue the Prospector strategy.

The findings from this study indicate that the Analyzer strategy is slightly stronger in predicting corporate entrepreneurship than the Prospector strategy. The Analyzer strategy has potentially greater applicability to corporate entrepreneurial firms in this study since competitive advantage in the auto parts industry is determined by lower cost, high quality and innovation. The interviews suggest that the demand of global competition has intensified the need for cost-based strategy whilst advances in technology are requiring Thai auto parts manufacturing firms to become innovative. Consequently, the firms need to cut costs, increase quality and gain access to technology in order to stay competitive. Both efficiency and effectiveness are the main focus for achieving competitive advantage in this industry. The Analyzer strategy combines the strengths of both the Prospector and the Defender into a single system,

which corroborates the argument from management theory and empirical studies (Dess, Lumpkin & McGee 1999). Dess, Lumpkin and McGee (1999) suggest that a combination of low cost and innovation is an important aspect of successful strategies in the context of corporate entrepreneurship and is becoming common management practice of the world's leading companies, such as IBM and Procter and Gamble (Wheelen & Hunger 2008). This strategic approach is essentially similar to the Analyzer strategy.

The interviews revealed common practices such as core process redesign, business process improvement, and the use of state-of-the-art technologies, which support the view of Dess, Lumpkin and McGee (1999). These activities not only exploit the latest technologies and innovations, but also serve to enhance a company's cost reduction, production efficiency, and quality improvement. Thus, the results reveal that the companies employ a range of strategies in unique combinations that may drive corporate entrepreneurship in the organizations successfully. Luo (1999) reports the same result and proposes that firms adopting the Prospector strategy will be innovative, risk-taking and proactive but his field study found that Chinese small businesses appear to defend their existing product markets through efficiency-oriented strategies while cautiously penetrating new markets where suppliers, producers, buyers, and competitors interact with each other in a fairly complicated manner. According to this result, Chinese entrepreneurial small firms appear to be successful when adopting the Analyzer strategy rather than the Prospector type. Subsequent study based on fifty-five Chinese private enterprises by Zhang and Li (2007) also reports the same results. This thesis's result confirms the findings of Luo's (1999) and Zhang and Li's (2007) studies.

Additionally, the results of this study confirm the basis of the Analyzer strategic orientation proposed by Miles and Snow (1978). The interviews indicate that Thai auto parts manufacturing firms adopting the Analyzer strategy do not attempt to be a market leader, but instead carefully watch their competitors' actions and learn from their mistakes. This type of strategy emphasizes both efficiency and innovation. Firms adopting this orientation protect their existing products and markets through efficiency-oriented strategies while cautiously penetrating new markets through intensified product or market innovation. These firms frequently consist of a large group of engineers or

their equivalent who are rotated among teams charged with the task of rapidly adapting new product designs to fit their existing technology; this is consistent with the suggestions of Miles et al. (1978) and the study of Olson and Carries (1992).

The results of this study confirm that the Prospector strategy enhances entrepreneurial orientations and activities in Thai auto parts manufacturing companies' operations and are consistent with prior studies (Hambrick 1983; James & Hatten 1995; Matsuno & Mentzer 2000; Miles & Snow 1978; O'Regan & Ghobadian 2005). The interviews reveal that the firms adopting the Prospector strategy aim to be market leaders, to be first in the market for the development and introduction of new products and services. These pioneering product and market introductions allow the companies to benefit from first mover advantage. Some of the advantages of being the first to enter a new market are that "the company is able to establish a reputation as an industry leader, move down the learning curve to assume the cost-leader position" (Wheelen & Hunger 2008, p. 154) if learning can be kept proprietary and the firm can maintain leadership in market share, and charge high prices and earn temporarily high profits from premium market segment (Covin, Slevin & Heeley 1999; Wiklund & Shepherd 2005). Also, a successful first mover is able to "set the standard for all subsequent products in the industry" (Wheelen & Hunger 2008, p. 154). To achieve this, firms compete aggressively with their competitors and take risk on projects with expected high returns. They consistently search for new product and market opportunities. Their product-market domain is usually broad and continuously developing. They seek to grow through the development of new markets and expansion of product offerings. These characteristics of the Prospector strategy found in this study validate the basis of the Prospector strategic orientation originally proposed by Miles and Snow (1978).

In contrast, the Defender strategy does not have an impact on corporate entrepreneurship. Results from the interviews indicate that the firms embracing the Defender strategy tend to reflect an orientation toward conservatism and survival rather than high growth and profit. These firms, particularly SMEs, do not have resources and access to modern machines and new technologies. Thus, they are more likely to rely on more traditional products in their industry, rather than emphasizing newer technology and product types. They focus on overall low cost by improving the efficiency of their

existing production and operations while maintaining quality. They seek to maintain their market share and to avoid introducing new products for as long as possible. This outcome is consistent with prior studies stating that firms using the Defender strategy show a tendency to avoid risk in favour of protecting the company's market (Kald, Nilsson & Rapp 2000; Miles & Snow 1978; Miller & Friesen 1982; Olson & Currie 1992). Their strategies focus on the maximization of efficiency in their operations. Such firms tend to be non-entrepreneurial (Brown, Davidsson & Wiklund 2001; Stevenson & Jarillo 1990).

This study found additional insights into the effect of the Defender strategy on non-financial performance. Such a relationship was not included in the initial model but the path was added in the final model based on a theoretical justification. Miles and Snow (1978) suggest that any of the three strategic styles (Defender, Prospector and Analyzer) tend to perform equally well if they respond consistently to the challenges in all areas of operation. The findings of Conant, Mokwa and Varadarajan (1990) supported this notion. Although the influence of the Defender strategy on market competencies is comparatively weak, overall performance is comparatively favourable. Conant, Mokwa and Varadarajan (1990) found that the Defender strategy possesses distinctive operational competencies such as 'knowledge of customers' and 'effectiveness of cost control'. They further explain this finding regarding the concept of equifinality suggested by Hrebiniack and Joyce (1985) and propose that the same outcomes can be accomplished in multiple ways with different resources, diverse transformation processes, and various methods or means.

The Defender strategy strives to maintain efficient operations by continuously improving manufacturing capabilities and quality. Therefore, this type of strategy may contribute to non-financial implications such as product quality, product development and employee satisfaction if the strategy is well implemented and internal structures are consistent (Miles & Snow 1978) and internal characteristics are aligned with market niche position (Flamholtz & Randle 2007).

Overall, the Defender, Prospector and Analyzer strategies can all be proactive to their environments, but each is proactive in a different way. At the extremes, the Defender

strategy continually endeavours to develop greater efficiency in existing operations while the Prospector strategy explores environmental change in seeking new opportunities (Miles et al. 1978). Narrowness and stability of the product-market domain as features of the Defender strategic orientation proposed by Miles and Snow (1978) is certainly confirmed in this study. Likewise, their affirmation that the Prospector strategy is oriented toward searching and exploiting new product and market opportunities and that Analyzer strategic type has a high level of adaptive capability are supported. In general, the Prospector and Analyzer strategies drive entrepreneurial activities in the Thai auto parts manufacturing organizations but the Defender strategy does not.

9.4 The Influence of Culture on Corporate Entrepreneurship

The overall result of the study derived from the quantitative and qualitative data was that organizational culture plays an important role in motivating and shaping entrepreneurial activities in Thai auto parts manufacturing firms. Findings from this study indicate that culture has a significant influence on corporate entrepreneurship. That is, the stronger the culture based on innovation, the higher the firm is likely to engage in corporate entrepreneurship. In this study, management support, autonomy/work discretion, reward/reinforcement and involvement are demonstrated to facilitate organizational members engaging in entrepreneurial initiatives and efforts. This finding supports the theory and empirical research (Antoncic & Hisrich 2004; Covin & Slevin 1991; Duobiene 2008; Kuratko et al. 1993; Russell 1999; Zahra, Jennings & Kuratko 1999). Therefore, hypothesis H3 that organizational culture has an impact on corporate entrepreneurship is supported in this thesis.

Top managers have been claimed to be critical in formulating and implementing an innovative culture for their firm (Cohen 2002; Kuratko, Ireland & Hornsby 2001). This study found that management support, including management encouragement for innovation and creativity, support for small experimental projects, seeding money to get projects off the ground, and training for innovation and creativity, enhances corporate entrepreneurship in Thai auto parts manufacturing firms. The interviews indicate that top managers need to set the tone for innovation and need to encourage employees to

believe that innovation is part of a role set for all people in the company. Moreover, they need to be willing to facilitate entrepreneurial projects by providing resources such as human and financial resources that make innovation possible. Also, training the creative and innovative skills of employees is important for research and development, proactive searching for new opportunities, and quality control. If the necessary skilled people and funds are available to do what it takes to innovate, entrepreneurial activities such as product, process and market innovations or new business venturing are likely to result. The results of this thesis corroborate the findings of previous studies (Antoncic & Hisrich 2004; Antoncic & Zorn 2004; Greenberg & Baron 2008; Zahra 1991).

Human resource management practice is another mechanism that enhances entrepreneurial culture in Thai auto parts manufacturing companies. Entrepreneurial culture also depends upon the contribution of people throughout the organization (Chen, Zhu & Anquan 2005; Cohen 2002). Employees at all levels can contribute to achieving competitive advantage by developing creative ideas and adopting innovative behaviour such as the development of new products, processes, services and markets (Kuratko, Ireland & Hornsby 2001). The findings from this study suggest that autonomy and work discretion impact corporate entrepreneurship in Thai auto parts manufacturing firms. It was found that people are creative when they are given freedom to control their own behaviour or when they have autonomy and are empowered to make decisions. Moreover, organizations should avoid criticizing their employees for making mistakes when being innovative. These results confirm the findings of past research (Cohen 2002; Greenberg & Baron 2008; Hornsby et al. 1993).

Involvement is another means to influence corporate entrepreneurship in Thai auto parts manufacturing firms. It includes participative decision-making at and between different organizational levels, communication of the company's mission, strategy and objectives to employees, communication and cooperation between different departments, and teamwork rather than individual contributions. The interviews revealed that direct communication and participative decision-making between managers and workers in organizations appear to foster trust and commitment towards innovation. Furthermore, open access to information and the communication of a clear entrepreneurial vision to employees help guide the daily activities of workers to meet certain goals. As such, the

organization is able to respond rapidly to changes from external forces such as customer needs or the moves of a competitor. Also, effective teamwork and collaborative problem-solving stimulate entrepreneurial activities where valuable skills and talents are learned. Thus, the development of new products, processes, markets and organizational approaches are likely to succeed when employees at all levels are committed to innovation. These results support past studies (Cohen 2002; Daft 2007; Gray, Densten & Sarros 2003; Kaya 2006; Kuratko, Ireland & Hornsby 2001; Lau & Ngo 2004; Morris, Kuratko & Covin 2008; Tushman & O'Reilly III 1997; West 2002a).

Reward/reinforcement was found to be another powerful way to influence entrepreneurial activities in Thai auto parts manufacturing firms. The findings from this study indicate that companies must provide rewards contingent on performance and make ideas of innovative people known to others in the organization in order to motivate organizational members to engage in entrepreneurial behaviour. The interviews suggest that employees behave entrepreneurially when incentives are introduced to elicit and reinforce their behaviour. Moreover, rewards facilitate employees' willingness to work on new projects. Also, appropriate rewards enable innovations to happen faster and better. These results support the argument of Hornsby et al. (1993) and empirical studies (Gray, Densten & Sarros 2003; Kuratko, Ireland & Hornsby 2001; Saleh & Wang 1993).

This study captures the important role of both top management and human resource management in creating a culture of corporate entrepreneurship. Both leadership and human resources management (HRM) practices have been highlighted in the literature as creating a culture of corporate entrepreneurship (Chung & Gibbons 1997; Cohen 2002; Kollmann & Stockmann 2008; Ricceri 2008; Zahra 1999). Dess, Lumpkin and Taylor (2004) and Gamble (2009) suggest that a firm's success in engaging in corporate entrepreneurship occurs when the spirit of entrepreneurship permeates every part of the organization. In this thesis, it is found that companies become entrepreneurial where the strategic leaders and the HRM practices together generate a strong culture for innovation and entrepreneurship.

9.5 The Influence of Corporate Entrepreneurship on Performance

Findings from the quantitative and qualitative data of this study show that corporate entrepreneurship has positive and significant influences on both financial and non-financial performance in Thai auto parts manufacturing firms. When comparing the coefficients of corporate entrepreneurship on financial and non-financial performance, it was found that corporate entrepreneurship has a greater direct impact on non-financial performance than on financial performance. In other words, corporate entrepreneurship can enhance non-financial outcomes, such as new product/service development, quality of product/service and employee satisfaction to a greater extent than financial criteria such as profitability (return on assets), cash flow and sales growth. This means that high levels of new product/service development, quality of product/service, and employee satisfaction can be accomplished when entrepreneurship is enhanced. Furthermore, the findings also indicate that corporate entrepreneurship implications should include both financial and non-financial measures because the specification in the final model revealed that non-financial performance has a positive and significant effect on financial performance. Overall, the results suggest that firms engaging in corporate entrepreneurship appear to achieve both efficient and effective operations, resulting in superior performance and competitiveness. Therefore, hypothesis H4 that corporate entrepreneurship has a positive influence on firm performance is supported in this thesis.

The findings of this study confirm that corporate entrepreneurship is beneficial to non-financial performance in Thai auto parts manufacturing firms. The interviews provided in-depth insights into how entrepreneurial orientations and activities impact on non-financial criteria. For example, employee satisfaction tends to be high when companies pursue self-renewal activities such as coordination among units for innovation and a flexible organizational structure. This enables the workers to be clear about the firm's objectives and to feel involved in collaborative problem-solving approaches due to the synergy of work among the organizational members. In addition, new machines, technologies and production processes are important for better quality products and services. Also, new product/service design and development can be achieved by adopting opportunity-seeking behaviour. Opportunity-seeking behaviour represents the

pursuit to identify and exploit the untapped opportunities which arise from areas of uncertainty both inside and outside an organization, such as competitors' actions and new demands in existing and new markets. The pursuit of opportunity exploration and exploitation represents proactive behaviour relating to consistently searching for new opportunities and aggressively competing with competitors and taking calculated risks for new entrepreneurial projects. The business concept revision of self-renewal activities engaged in by firms also contributes to new product/service design and development.

In relation to the greater impact of corporate entrepreneurship on non-financial performance than on financial aspects, the findings of this study are consistent with the study of Mair and Rata (2004), which explores the link between the strategic role of middle managers in the corporate entrepreneurship context and multiple dimensions of performance of a large European financial service firm. The researchers found that corporate entrepreneurship has a stronger influence on non-financial than on financial performance. Mair and Rata (2004) suggest that performance measurement based primarily on financial performance measures lacks the focus needed for internal and management control. Thus, there is a strong need for the multidimensional nature of the performance construct when exploring the relationship between corporate entrepreneurship and performance (Kollmann & Stockmann 2008) because the association between corporate entrepreneurship and company performance is complex and the results should be interpreted with caution. Some corporate entrepreneurship ventures require extensive investments and so will take several years before they pay off. Moreover, short-term profitability may suffer from engaging in entrepreneurial activities (Kollmann & Stockmann 2008; Wiklund 1999; Wiklund & Shepherd 2005; Zahra 1991; Zahra & Covin 1995).

The interviews indicate that non-financial performance is critical for firm performance in Thai auto parts manufacturing firms. For example, the firms may create significant outcomes when their employees are satisfied and help develop new products and services with high quality in response to customers' needs, even though the actual realization of the cash flows underlying that wealth creation may not happen for quite some time. Thus, the primary advantage of using non-financial performance measures

in conjunction with financial performance measures is when they provide information about opportunities that have been created, but not yet financially realized (Carton & Hofer 2006; Zahra & Covin 1995).

Interestingly, the results from both quantitative and qualitative approaches of this study reveal that non-financial performance, including quality of product/service, new product/service development and employee satisfaction, has a positive influence on financial performance in terms of profit, cash flow, and sales growth. The interview results suggest that employees are considered as a valuable source of sustainable competitive advantage and organizational effectiveness. The findings of this study support both theoretical and empirical studies (e.g., Atkinson, Waterhouse & Wells 1997; Carton & Hofer 2006; Holt, Rutherford & Clohessy 2007). Atkinson, Waterhouse and Wells (1997, p. 28) assert that “a company’s success is created by monitoring and managing its performance on the secondary objectives, since success in achieving performance on the primary objectives follows from the secondary objectives”. The primary objective of a firm is usually financial aspects relevant to maximizing shareholders’ wealth such as profit, whereas the secondary objectives are usually non-financial aspects and involve process performance such as quality, product and process innovation, social acceptance, and public image and reputation (Dess, Lumpkin & McGee 1999; Venkatraman & Ramanujam 1986; Zakliki 1996). Mair and Rata (2004) suggest that all relevant stakeholders are prerequisite for a firm’s performance. The company designs and manages to achieve employee and customer satisfaction which, in turn, achieves higher profit. In regard to this approach, this study therefore implies that a company must focus on both results and causes.

Furthermore, the findings from the interviews reveal that customer satisfaction, which is not included in the firm performance measurement of the survey, is very important regarding non-financial performance. Moreover, customer satisfaction reflects the overall performance because it can impact on financial performance in terms of profitability and growth. The interviews indicate that customer satisfaction is the primary justification resulting from entrepreneurial initiatives. Also, it contributes to financial outcomes. For example, entrepreneurial projects such as new products and services serve new needs in both existing and new markets, resulting in customer

satisfaction, which in turn results in profit and growth. Moreover, high product quality resulting from production and process innovations appears to maintain customer loyalty. This confirms prior studies suggesting that all relevant stakeholders such as satisfied customers in addition to satisfied employees are prerequisite for a firm's performance (Atkinson, Waterhouse & Wells 1997; Mair & Rata 2004; Zahra, Jennings & Kuratko 1999).

On the other hand, the financial performance index is a compound measure, comprising indicators of growth and profitability performance indicators. The results of this study indicated that corporate entrepreneurship contributes to both growth and profitability, suggesting that it has a 'double payoff' (Wiklund 1999; Zahra 1993a; Zahra & Covin 1995; Zahra & Garvis 2000). Growth is not a trade-off for economic implication, as suggested by some researchers (Lumpkin and Dess 1996; Zahra 1991). As such, "one should not presume a priori that tradeoffs exist between growth and profitability" when the firm engages in corporate entrepreneurship (Zahra & Garvis 2000, p. 485). This study suggests that firms adopting corporate entrepreneurship are likely to perform well financially and tend to grow in the long run.

The rich information from the interviews revealed that profitability can be accomplished by focusing on cost and delivery time reduction as well as quality improvement. These can be controlled from production methods and processes by finding new machines and technology. New machines and technology are developed for quick production, high productivity, and good quality. In addition, self-renewal can improve profit by coordinating activities among units to enhance the company's innovation. The coordination of activities among units not only helps to reduce defects in manufacturing processes, due to careful monitoring and inspection of all processes, but also increases the rate of product and market development. Overall, improved production processes and procedures with new machines and technology as well as new product and market introduction enable the firms to improve profit, which then leads to sustainable growth.

The interviews further provided rich information about the impact of entrepreneurial activities on sales growth. The results indicated that sales growth can be achieved by engaging in corporate entrepreneurship activities such as new business venturing,

innovativeness, self-renewal and proactiveness. The first activity is related to new business venturing, which involves seeking new markets, pursuing new businesses in new industries, and broadening business lines in current industries. The second activity is related to innovativeness, which involves spending on new product development and new products introduced and marketed by the companies. The third activity is related to self-renewal, which involves revising the business concept and coordinating activities among units to enhance company innovation. The last activity is related to proactiveness, which involves being an industry leader, aggressively competing with competitors and favouring calculated-risk projects with chances of very high returns and competitiveness. Consistently searching for new products and market expansion helps companies to grow in the long run.

Therefore, the quantitative and qualitative results of this study corroborate that corporate entrepreneurship has a positive effect on both financial and non-financial aspects. The findings of this thesis support the results of Kaya (2006), who investigated the impact of corporate entrepreneurship on firm performance in Turkish firms. He suggests that corporate entrepreneurship has a direct effect on multidimensional firm performance including sales and market share growth, profitability (ROA and ROS), overall profitability, product/service quality, new product/service development capability, job satisfaction of employees and customer satisfaction.

The finding of this study support the theory and empirical evidence that corporate entrepreneurship leads to improved firm performance (Antoncic & Scarlat 2005; Entrialgo, Fernandez & Vazquez 2001; Fitzsimmons et al. 2005; Kaya 2006; Kollmann & Stockmann 2008; Luo 1999) and that the financial and non-financial outcomes of entrepreneurship should be recognized in corporate entrepreneurship study (Dess & Lumpkin 2005; Dess, Lumpkin & McGee 1999; Zahra 1993a).

9.6 The Dimensionality of Corporate Entrepreneurship

This study extends the work of Antoncic and Hisrich (2001) by the empirical testing and validating of a measurement of corporate entrepreneurship in a developing country, Thailand. The findings demonstrated that the corporate entrepreneurship construct has

high reliability and validity. In contrast to Antoncic and Hisrich (2001), this study performed confirmatory factor analysis and found that 11 items related to the self-renewal dimension loaded onto two factors, which is consistent with the study of Fitzsimmons et al. (2005). They argue that the first of these factors related to organizational restructuring, resulting in the self-renewal construct, whereas the second factor related to organizational changes to increase innovation within the company. They separate these items into two factors, self-renewal and organizational support, for the remaining analysis. In contrast to Fitzsimmons et al. (2005), only the first factor was retained for the remaining analysis in this study in order to validate the measurement developed by Antoncic and Hisrich (2001), which suggested that corporate entrepreneurship consists of four dimensions. Moreover, some studies (e.g., Antoncic & Hisrich 2004; Antoncic & Zorn 2004; Holt, Rutherford & Clohessy 2007) use the second factor as the predictor of corporate entrepreneurship rather than a separate dimension of the corporate entrepreneurship construct.

The findings from this study indicated that the corporate entrepreneurship sub-dimensions of new business venturing, innovativeness, self-renewal and proactiveness exhibited moderate to high correlations with one another. The factors were moderately to highly significant and inter-correlated, with the correlations ranging from 0.39 to 0.74. Such moderate-to-high average correlations between dimensions of corporate entrepreneurship are consistent with empirical studies of Covin and Slevin (1989), Covin, Green and Slevin (2006) and Miller (1983), who found that the entrepreneurial orientation scale tended to exhibit high Cronbach alphas across samples. Thus, this study supports the theory proposed by Miller (1983) that entrepreneurial orientation is valid and reliable.

According to Lumpkin and Dess's (1996) work, various researchers have supported the multidimensionality of entrepreneurial orientation and the independence of the dimensions encompassing it (Lumpkin & Dess 1996; Lumpkin & Dess 2001; Moreno & Casillas 2008). The results of this thesis corroborate this suggestion. In support of the multidimensionality of corporate entrepreneurship, the second order CFA of corporate entrepreneurship construct was generated, including each one of the first-order variables, corresponding to the four dimensions that define it. As a consequence, in the

final model, the loadings of the four indicators are quite different from one another when explaining their influence on firm performance, being higher in the case of propensity for innovation than in the case of new business venturing or self-renewal or proactiveness. Also, the results from Pearson's correlation indicated that innovativeness had a strong and significantly positive correlation with non-financial aspects and a significantly moderate correlation with financial criteria. Therefore, innovativeness is the most important dimension of corporate entrepreneurship in that it promotes the use of strategies aimed at profitability and growth as well as efficient operation. Moreno and Casillas (2008) also report the same result.

9.7 Comparison between SMEs and Large Firms

The findings of this study provide insight into how small-sized and medium-sized enterprises (SMEs) and large firms are different regarding corporate entrepreneurship and performance. The cases were split at the number of full-time employees; cases below 200 employees were classified as SMEs and above 200 employees as large. This classification is based on the regulations of the Thai Ministry of Industry in defining Thai manufacturing firms (OSMEP 2005); also, the number of employees is commonly used to define SMEs across countries (Hew 2004; Rodriguez 2004).

The results indicate that there is no difference between SMEs and large companies in three dimensions of corporate entrepreneurship, namely new business venturing, innovativeness, and proactiveness, and only a slight difference in the self-renewal dimension of corporate entrepreneurship. This research suggests that both SMEs and large organizations engage in entrepreneurial orientations and activities in order to enhance their competitiveness through product innovation, venturing activities and proactiveness. This study supports the theory that corporate entrepreneurship can be applied to firms of all sizes (Aloulou & Fayolle 2005; Carrier 1994; Covin & Slevin 1989; Morris, Kuratko & Covin 2008).

However, the findings of this research show large firms appear to have a higher level of corporate entrepreneurship, particularly the self-renewal construct, which includes business concept revision, unit and division reorganization, coordination among units,

and flexible organizational structures, than do SMEs. The results suggest that self-renewal helps large organizations to overcome their rigid structures and multiple management decision-making processes in order to develop and maintain strategic flexibility. Moreover, the self-renewal effort enables the firms to revitalize their operations and recognize and pursue entrepreneurial opportunities in order to remain competitive, since self-renewal leads to internal innovation pertaining to significant changes to business strategy and structure. On the contrary, smaller firms are considered as possessing an “ability to act with quickness and flexibility concerning the introduction of innovations” (Claver et al. 1998, p. 59). A distinctive attribute of these firms is that they usually have a decentralized or simple organizational structure, which is managed by owners or a few management teams (Claver et al. 1998; Deakins & Freel 2003; Mintzberg 1973); thus CEOs or executive managers may not perceive the self-renewal construct as important to them.

Large organizations frequently tend to be conservative, so that their excessively bureaucratic organizational structures may also impede any seeking of new opportunities and ideas, and consequently innovation (Deakins & Freel 2003; Miller & Friesen 1982; Mintzberg 1973; Morris, Kuratko & Covin 2008). Thus, “they are very slow in reaction in many activities, and various departments and divisions might not be able to take risks individually due to decisions being made by corporate management; which frequently prevents the detection of some possibilities for useful innovation” (Claver et al. 1998, p. 59). However, Pearson (1989) states that there is no ideal firm size when it comes to innovating, which depends on other organizational aspects such as organizational structure and culture. Therefore, even if it is large, a company may develop a successful policy based on innovation with a great cohesion among its members. Furthermore, “these values must play a predominant role and a flexible rather than a rigid organizational structure is needed” (Claver et al. 1998, p. 63). Thus, self-renewal in terms of business concept revision, unit and division reorganization, coordination among units and flexible organizational structures can help corporations in innovation.

In relation to firm performance, the findings suggest that there is no difference between SMEs and large companies in non-financial criteria, and only a slight difference in

financial aspects including profitability (ROA), cash flow and sales growth. This indicates that large firms perform financially at a higher level than small firms. The results in this study are consistent with the argument that large companies have competitive advantages in terms of market power, economies of scale, reduced costs on inputs, and more abundant resources for product and technology development (Deakins & Freel 2003; OIE 2006; Porter 2003; Tiasiri 2002), whereas small firms are usually seriously lacking in resources for technological innovation (Aloulou & Fayolle 2005; Claver et al. 1998; Deakins & Freel 2003; TFRC 2002).

Overall, small and medium firms differ from larger firms in terms of their entrepreneurial practice, particularly self-renewal, and their financial performance. Large Thai auto parts manufacturing firms are found to be able to renew themselves for opportunity exploration and exploitation. This helps them to overcome rigid structures and divergent decision-making processes by management. Therefore, innovation is likely to enhance the organizations, since strategic renewal leads to significant changes to business strategy and structure in order to gain and maintain competitive advantage in a dynamically changing environment. On the other hand, SMEs must overcome size disadvantages by creating advantages in flexibility of production, speed of attack, niche strategies focusing on price and quality and disrupting the status quo through innovation (Bierly & Daly 2007). Furthermore, SMEs may overcome resource constraints by engaging in innovation networks in order to access resources for innovation through external linkages e.g., suppliers, customers etc. (Deakins & Freel 2003). Thus, this study supports the theory that corporate entrepreneurship is the most effective means for firms to stay competitive.

9.8 Chapter Summary

This chapter presents a systematic investigation into antecedents and effects of corporate entrepreneurship in Thai auto parts manufacturing firms by examining the extent to which corporate entrepreneurial theory is applicable in a developing country context. The results from the testing of the four main hypotheses, and the eight sub-hypotheses, show that all hypotheses were supported in this study, with the exception of environmental hostility, which was partially supported. Environmental hostility was

related to corporate entrepreneurship but had a negative effect, in contrast to the theoretical perspective (see Table 8.1).

This study suggests that environmental and organizational factors are important determinants of corporate entrepreneurship, which in turn improves firm performance in terms of both financial and non-financial aspects. Furthermore, the corporate entrepreneurship measurement instrument had high reliability and validity. Overall, corporate entrepreneurship antecedents and the suggested performance model can apply to the Thai context.

In addition, the comparison between SMEs and large firms suggests that large firms have higher levels of corporate entrepreneurship practice, particularly self-renewal and financial performance, than do small and medium firms. Thus, the corporate entrepreneurship theory is supported that self-renewal helps large organizations to overcome rigid structures and multiple decision-making processes by management for innovation. The argument that large companies have competitive advantages in terms of market power, economies of scale, reduced costs on inputs, and more abundant resources for product and technology development is also supported. This study therefore supports the theory that corporate entrepreneurship can be implied to firms of all sizes.

This study provides an overall understanding of the complexity and dynamism of corporate entrepreneurship antecedents and outcomes in the auto parts manufacturing sector in Thailand. The next chapter presents the concluding findings of the antecedents and effects of the corporate entrepreneurship model in Thai auto parts manufacturing companies, and highlights the contributions of this study to the theory of corporate entrepreneurship. This thesis concludes with a summary of the major findings, implications for the body of knowledge, research methodology and practices, and makes recommendations for policy-makers. The research limitations and suggestions for further research are also presented in the final chapter.

Chapter Ten

Conclusion

10.1 Introduction

This study tested empirically a model of corporate entrepreneurship antecedents and effects by focusing on the impact of environmental and organizational factors on corporate entrepreneurship as well as the relationship between corporate entrepreneurship and firm performance in Thailand, particularly the auto parts manufacturing sector. The study's findings from both the quantitative and qualitative data present rich information about the antecedents and effects of corporate entrepreneurship in the Thai auto parts manufacturing firms.

The purpose of this chapter is to present the implications for theory, methodology, management practices and policy makers within specified limitations of the study. Before this is done, the research objectives and their status given the results of the study will be revisited. A summary of the major research findings in relation to the objectives is also presented.

10.2 Revisiting the Objectives of the Study

This thesis's main objectives were to investigate the impacts of environmental and organizational factors on corporate entrepreneurship and to examine the relationship between corporate entrepreneurship and firm performance in Thai auto parts manufacturing firms. This research aimed to contribute to knowledge about firm-level entrepreneurship in Thailand, an Asian developing economy.

There has been very little research in antecedents and effects of corporate entrepreneurship in developing countries, particularly Thailand. Also, the literature has lacked an integrative framework that conceptualizes and operationalizes corporate

entrepreneurship. Furthermore, CE–performance relationships have been examined mainly based on financial aspects, particularly growth and profitability, while non-financial criteria have not been explicitly examined. This study aimed to fill these gaps in the literature. The study attempted to address these problems by investigating and exploring both external and internal environments that stimulate entrepreneurship inside established organizations, and entrepreneurial activities’ outcomes in terms of both financial and non-financial performance. This study also tried to make specific contributions to the development of Thailand’s economy through providing an understanding of particular needs and relevant issues concerning the promotion and development of entrepreneurial activities that result in competitive advantage.

In support of those views, five variables of a model of corporate entrepreneurship antecedents and effects in auto parts manufacturing firms in Thailand were investigated: environmental conditions, organizational strategy, organizational culture, firm-level entrepreneurial orientations and activities, and firm performance. These five variables of the corporate entrepreneurship antecedents and effects in Thailand, particularly the auto parts manufacturing sector, were examined with regard to existing corporate entrepreneurship theory. This helped to develop more detailed information of firm-level entrepreneurship in Thailand and to determine the extent to which the existing corporate entrepreneurship theory is applicable in the Thai context.

An integrated framework that conceptualizes and operationalizes corporate entrepreneurship was constructed and a model of antecedents and effects of corporate entrepreneurship was developed to test the hypotheses in relation to five factors. As such, information pertaining to corporate entrepreneurship practices in auto parts manufacturing firms in Thailand was obtained. In addition, a mixed-method research strategy, which combined quantitative and qualitative methods, was employed to collect, analyse and interpret data for the study. This approach also enabled the four main hypotheses with their eight associated sub-hypotheses to be tested to examine the extent to which the existing corporate entrepreneurship theory applied to developing countries.

Moreover, the interview data were utilized to corroborate the quantitative data and provide in-depth insights into corporate entrepreneurship antecedents and effects. This approach helped to strengthen the research results and the knowledge and understanding of corporate entrepreneurship practices and performance in auto parts manufacturing firms in Thailand. This study's major research findings are summarized in the next section.

10.3 Summary of the Major Findings

This study tested empirically a theoretical framework of corporate entrepreneurship antecedents and effects in auto parts manufacturing firms in Thailand. The study also extended the literature by investigating the impact of environmental and organizational factors on corporate entrepreneurship and by examining the relationship between corporate entrepreneurship and firm performance in Thailand, a developing country. The overall structural model was found to be statistically valid and reliable. Most hypotheses in this study were supported, with the exception of the environmental hostility measure which is partially supported as having a negative effect on corporate entrepreneurship (see Table 8.1).

The findings indicated that both external and internal environments influence corporate entrepreneurship. The study suggests that firms need to anticipate change and opportunities in dynamic, hostile and heterogeneous environments and develop their internal capabilities such as strategy and culture for enhancing entrepreneurship inside their organizations. Internal organizational factors, particularly strategy and culture, have a greater impact on corporate entrepreneurship than external environments, suggesting that internal environments of firms are the main drivers of corporate entrepreneurship. Corporate entrepreneurship is a complex phenomenon that involves the entire firm, rather than exclusively individuals or parts of firms, acting in entrepreneurial ways. Therefore, clear and effective strategies for innovation from top management and an entrepreneurial culture shared among organizational members tend to cultivate corporate entrepreneurship successfully. Although external environmental conditions have less impact on corporate entrepreneurship, they are also important because external forces influence a company's choice of direction and action and,

ultimately, the firm's internal process. Entrepreneurial firms not only respond to the challenges in those environmental variables but also create changes in such environments.

This thesis's findings also found additional links between environmental hostility and financial performance and between the Defender strategy and non-financial performance. The findings revealed that environmental hostility had a negative impact on financial aspects, which suggests that a decrease in threats to the environment leads firms to earn higher and grow, and vice versa. On the other hand, the Defender strategy, which emphasizes doing the best job possible in its area of expertise by focusing on maintaining market share through low cost and efficiency in narrowly defined market segments, tends to perform well in terms of operational efficiency if firms respond consistently to the challenges in all areas of their operation.

The results of this study demonstrated that corporate entrepreneurship is a good direct predictor of firm performance in terms of both financial and non-financial aspects; this supports the corporate entrepreneurship literature mainly based on Western and other developed countries. Therefore, corporate entrepreneurship is an effective means by which Thai auto parts manufacturing firms can improve their performance and achieve competitive advantage through new business venturing, self-renewal, innovativeness and proactiveness. Therefore, corporate entrepreneurship has the potential to contribute to Thailand's drive to transform its economy into a knowledge-based and innovative global competitor, especially in the automobile industry.

This study highlights the multidimensionality and critical importance of firm performance, which includes both financial and non-financial criteria as outcomes of corporate entrepreneurship. The findings from this research suggest that corporate entrepreneurship has a stronger effect on non-financial aspects than financial outcomes. Furthermore, non-financial or operational performance (quality of product and service, new product and service design and development, and employee satisfaction) also has a significant impact on accounting-based performance (profit, cash flow and sales growth). Thus, this research enriches corporate entrepreneurship literature by showing that the CE-performance relationship is complex and corporate entrepreneurship is

important not only for wealth creation but also for efficient processes and operations, all of which reflect on overall performance. Therefore, corporate entrepreneurship is an effective means for achieving efficient and effective operations in Thai auto parts manufacturing companies, resulting in superior performance and competitiveness. More importantly, this research is a pioneering study that enlarges the understanding of such relationships.

Furthermore, this research reports that with regard to corporate entrepreneurship activity, particularly self-renewal and financial performance, small-sized and medium-sized firms are different to large firms. Large companies appear to have higher levels of self-renewal endeavours, including business concept revision, unit and division reorganization for innovation, coordination among units for innovation, and flexible organizational structures to overcome inflexible structures and the multiple decision-making processes of management. Large companies also have higher profit, cash flow and sales growth due to size advantage and resource availability for innovation and advanced technology.

Therefore, this study not only helps overcome the limitations of extant studies in corporate entrepreneurship, but also the findings of the study contribute to the understanding of corporate entrepreneurship antecedents and effects in the Thai context. This thesis's results reveal that existing corporate entrepreneurship theory can be applied to developing countries, including Thailand. The contributions of this thesis with regard to knowledge, methodology and practices are presented as follows.

10.4 Implications for Theory, Methodology and Practice

This section presents the implications of the findings from this study for both researchers and practitioners. The implications for research methodology are also highlighted. The Thai auto parts industry is mainly made up of feeder firms to the automobile industry which is located in Thailand and in neighbouring Asian countries, especially ASEAN. These feeder firms subcontract to larger international automotive firms located in Thailand and other countries, and are often small- to medium-sized businesses. Therefore, from the national perspective at least, there is a need to

understand, recognize and support Thai auto parts manufacturing firms so that their potential for success can be developed through entrepreneurial orientations and activities to the benefit of the industry and the nation and other developing economies. Recommendations for the Thai government and policy makers will also be presented in this chapter.

10.4.1 Implications for Theory

This study makes several contributions to the corporate entrepreneurship literature. First, there has been limited research in the understanding of entrepreneurship inside established organizations or of corporate entrepreneurship in developing countries such as Thailand, particularly the auto parts manufacturing industry. This research helps overcome the limitation that corporate entrepreneurship literature lacks an integrative framework that conceptualizes multifaceted antecedents of corporate entrepreneurship and the significance of corporate entrepreneurship in relation to firm performance in developing countries. The findings of this research, therefore, make a significant contribution to the theory of corporate entrepreneurship and provide a foundation for further research in this field in developing countries.

Second, the findings can be generalized to some extent. Prior empirical studies (Antoncic & Hisrich 2001; Knight 1997) point out that corporate entrepreneurship research-related findings are valid in a cross-cultural setting between the US and Canada as well as other transitional economic contexts such as in Slovenia. The antecedents and effects of corporate entrepreneurship can be studied across contexts since the measurement instrument appears applicable across many different types of firms (Brown, Davidsson & Wiklund 2001). Thus, in this study, corporate entrepreneurship has been demonstrated to relate meaningfully to business contexts and performance for firms in Thailand, and possibly in countries that follow similar transition patterns.

Third, this research study supports the theoretical viewpoint proposed by Miller (1983) that the corporate entrepreneurship construct is valid and reliable. The findings from this study indicate that corporate entrepreneurship's sub-dimensions of new business

venturing, innovativeness, self-renewal and proactiveness exhibit moderate to high correlations with one another. Such moderate to high average correlations between dimensions of corporate entrepreneurship are consistent with empirical studies of Antoncic and Hisrich (2001), Covin, Green and Slevin (2006), Covin and Slevin (1989) and Knight (1997), where the corporate entrepreneurship scale tends to exhibit high Cronbach alphas across samples.

Fourth, this study corroborates the multidimensionality of corporate entrepreneurship suggested by Lumpkin and Dess (1996). In the final model, the loadings of the four indicators are quite different from one another when explaining their influence on firm performance, being higher in the case of propensity for innovativeness than in the case of new business venturing or self-renewal or proactiveness. The results from Pearson's correlation highlights that innovativeness has a strong and significantly positive correlation with non-financial aspects and a significantly moderate correlation with financial criteria. Therefore, innovativeness is the most important dimension of corporate entrepreneurship in promoting new products and services, ranging from new-to-the-world products and services to minor improvements or adjustments, or new applications of an existing product or process aimed at profitability, growth and efficient operation. The findings of Moreno and Casillas (2008) also report the same result.

Fifth, the findings from this study are not limited to large organizations; they are also relevant for smaller firms. Thus, this study supports corporate entrepreneurship as being relevant to both large and small firms. The results in this research confirm that entrepreneurial behaviour supports competitive advantage and improved performance in firms of all sizes (Antoncic & Hisrich 2001; Carrier 1994; Covin & Slevin 1989; Morris, Kuratko & Covin 2008).

Sixth, this study provides insights into external and internal factors as determinants of corporate entrepreneurship. By incorporating these important drivers, this study advances understanding of the dynamic and complex nature of corporate entrepreneurship in different social and economic environments. The findings in the study correspond with the literature suggesting that both external and internal factors are

important determinants of corporate entrepreneurship (Antoncic & Hisrich 2001; Covin & Slevin 1991; Guth & Ginsberg 1990; Lumpkin & Dess 1996; Morris, Kuratko & Covin 2008; Zahra 1991). Thus, focusing on problem solving for internal organizational factors (strategy and culture) and external environments (dynamism, hostility, and heterogeneity) should be part of successful corporate entrepreneurship engagement.

Seventh, this study contributes to the understanding of the internal drivers of corporate entrepreneurship. The findings of this study confirm theoretical and empirical studies where internal organizational factors in terms of strategy and culture play a critical role in encouraging corporate entrepreneurship (Dess, Lumpkin & McGee 1999; Duobiene 2008; Ireland, Hitt & Simon 2003; Kuratko et al. 1993; Miles & Snow 1978; Morris, Kuratko & Covin 2008; O'Regan & Ghobadian 2005; Russell 1999; Zahra 1991). The results suggest that internal factors have greater impact on corporate entrepreneurship than external factors, which is consistent with the study of Antoncic and Hisrich (2001). This illustrates that organizational factors are the most important determinants of corporate entrepreneurship.

Furthermore, the study contributes to the understanding of the environments that represent a principal first-step in engaging in corporate entrepreneurship activities (Covin & Slevin 1991; Garg, Walters & Priem 2003; Miller & Friesen 1982; Morris, Kuratko & Covin 2008; Pearce & Robinson 2009; Stewart, May & Kalia 2008; Zahra 1993b). The findings of this study reaffirm the necessity of understanding the environmental conditions in terms of dynamism, hostility and heterogeneity which may influence entrepreneurial activities inside established organizations. The results of this research support the view that firms that are more adaptable, flexible, proactive, aggressive and innovative are better positioned not only to adjust to a dynamic, hostile and complex external environment, but also to create change in that environment (Morris, Kuratko & Covin 2008).

Another theoretical implication is related to CE–performance relationships. The results of this study support theoretical and empirical evidence from the US and other developed countries that corporate entrepreneurship has a positive impact on financial performance. This study employs a financial performance index that includes both

growth and profitability performance indicators. The research revealed that corporate entrepreneurship contributes to both growth and profitability, suggesting that it has a “double payoff” (Wiklund 1999; Zahra 1993a; Zahra & Covin 1995). Thus, corporate entrepreneurship is confirmed as an effective means for superior financial performance in the Thai context.

In addition, this study addresses the limitation of the existing literature, which is based mainly on the examination of relationships between corporate entrepreneurship and financial performance. This thesis makes a pioneering effort to respond to the call for an understanding of complex CE–performance relationships and for the empirical testing of such relationships, which include various aspects of financial and non-financial performance. The results of this research provide added support to the existing literature, in that a combination of non-financial and accounting-based measures may be necessary to represent the overall performance construct as well as contribute to a better understanding of CE–performance relationship implications. Similarly, the study confirms performance as a multidimensional construct.

Finally, this research provides additional insights into the impact of non-financial performance on financial performance; there is no existing empirical research in this area in corporate entrepreneurship. However, the findings of this study support the management and strategic management theories that non-financial performance may be a critical factor in improving financial performance. Non-financial outcomes may be useful in assessing short-term outcomes, and could then be used with longer-term financial measurements to assess potential causal relationships (Carton & Hofer 2006; Dess, Lumpkin & McGee 1999; Zahra 1993a). Thus, this study helps distinguish the two performance constructs and delineates the relationship between them in corporate entrepreneurship. Also, the results in this research establish new ground for further research to study the relationship.

10.4.2 Implications for Methodology

This study also makes several methodological contributions. Firstly, it employs structural equation modeling (SEM) to test hypotheses. This technique is more powerful

than traditional multivariate statistical analysis such as multiple regression analysis, since it allows for simultaneous analysis of multiple and interrelated dependence relationships, is able to represent unobservable (latent) concepts, and accounts for measurement error in the estimation process. This highlights the advantages of evaluating the whole model rather than examining only one relationship between the dependent and independent variables at a time, as in multiple regression analysis. It is useful in testing theories that describe all of the relationships among variables (the dependent and independent variables) involved in the analysis. It is an advancement on methodology in comparison to many studies on corporate entrepreneurship, which are based mainly on multiple regression analysis (e.g., Covin, Green & Slevin 2006; Holt, Rutherford & Clohessy 2007; Kaya 2006; Luo 1999; Wiklund & Shepherd 2003; Zahra 1991). However, this technique has been previously employed in a few studies of the CE–performance relationship, for example Antoncic and Hisrich (2001, 2004), Yiu and Lau (2008).

In addition, all four constructs, i.e., environmental conditions, organizational culture, corporate entrepreneurship and firm performance, in this study were evaluated carefully through a series of statistical analyses to test their convergent and discriminant validities. Normally, researchers tend to use the simplest tests in terms of a correlation matrix and exploratory factor analysis, which is largely statistically driven rather than theoretically driven (Cunningham 2008). However, in this study, the chi-square statistic and tests of goodness-of-fit from confirmatory factor analysis (CFA) and SEM software were used to determine the validity of the construct in the measurement model and the theoretical model. The convergent validity was assessed using standardized loadings of the indicators on their respective factors. On the other hand, discriminant validity examined the estimated correlation between the factors. When acceptable convergent and discriminant validities of measurement models are given, then the test of the theoretical model represents an assessment of nomological validity. Thus, the use of these tests to examine convergent and discriminant validities of the constructs in one study creates an additional option for other researchers to study these validities.

Finally, this study overcomes the shortcomings of the literature, which is based mainly on quantitative studies. This research responds to the suggestion that the combination of

quantitative and qualitative studies can generate rich and comprehensive understandings of firm-level entrepreneurship (Lyon, Lumpkin & Dess 2000; Yiu & Lau 2008; Zahra 1999). The triangulation strategy in this study used mixed-methodology research that integrates quantitative (survey) and qualitative (interview) methods in exploring antecedents and effects of corporate entrepreneurship. The interview was utilized for validating the findings of the survey and for providing richer information concerning the objectives under study, resulting in strengthening the research results and contributing to theory and knowledge development. Furthermore, the findings of this research help clarify the role of determinant variables in entrepreneurial orientations and activities and the effects of these activities on firm performance. Therefore, data collection based on the mixed-methodology approach provides a broader or more complete understanding of the issues being studied and enhances both the reliability and validity of corporate entrepreneurship research.

10.4.3 Implications for Management Practice

This study offers some implications that inform managerial practice. Firstly, top management should shape and activate corporate entrepreneurship in order to improve performance, since rapid change in the business environment and uncertainty in the global economy has led auto parts manufacturing companies to focus on efficiency, quality and cost-cutting. Consequently, growth, particularly growth via innovation, is viewed as the key priority in the firm's long-term survival and prosperity. Innovation is most important not only to improving existing products or services, reducing cost, and meeting customer needs through quality management or improvement, but also to newness in terms of product and market innovation, business innovation, and operational innovation. Corporate entrepreneurship, therefore, is viewed globally as a key driver of sustainable growth and competitive advantage in companies and of economic development in nations.

Secondly, this study suggests that not only is financial performance a fundamental objective of corporate entrepreneurship initiative, but also it is becoming increasingly important to non-financial criteria. The findings in this study highlight that corporate entrepreneurship benefits the multiple facets of firm performance, since corporate

entrepreneurship appears to lead firms to not only enjoy high returns and grow in the long run, but also achieve efficient operations such as quality of product and service, new product and service design and development, and employee satisfaction. In order to achieve superior business performance, Thai auto parts manufacturing firms may need to be more proactive in searching out and exploiting emerging business opportunities in markets. They need to compete aggressively with competitors, increase their new business venturing activities to much higher levels, develop more product and process innovation, and continuously renew themselves.

Thirdly, the results in this study suggest that non-financial performance contributes to better financial performance. This highlights the importance of non-financial aspects that usually involve process or operation performance. The process implications, including quality of products and services, new products, service design and development, and employee satisfaction appear to improve profit, cash flow and sales growth. Thus, companies should focus not only on financial outcomes but also on non-financial aspects to achieve superior overall performance and competitive advantage in highly competitive business environments. Corporate entrepreneurship is seen to help companies in such a process.

Fourthly, top management needs to identify effective ways to stimulate and spur organizational members' entrepreneurial thinking and acting. The findings in the study suggest that organizational strategy and culture are crucial to encourage individual and collective entrepreneurial behaviour. Organizational strategy emerged as the most important determinant of corporate entrepreneurship in this research, suggesting an adaptation strategy is preferable on the grounds that the business environment is highly volatile and uncertain. Thus, top management should focus on the Analyzer or Prospector strategies depending on the organization's objectives. The Analyzer strategy is suitable for firms that emphasize both efficiency and innovation. This type of strategy aims to defend existing products and markets through formal planning processes, cost control and efficiency, while cautiously penetrating new markets and developing products and markets. This strategy enables firms not only to enhance their efficiency in production and their quality improvement, but also to exploit the latest technologies and innovations. On the other hand, the Prospector strategy is appropriate for companies

that aim to be first in the market and become market leaders for their products and services by consistently seeking new market opportunities. This type of strategy allows companies to benefit from being the first mover.

Though the Defender strategy was not found to be a determinant of corporate entrepreneurship in this study, it was found to influence non-financial performance. This study suggests that this type of strategy is a proper one for firms which do not have resources and capabilities for advancing technologies and innovation and so focus instead on tight control and continually seeking operating efficiencies to lower costs and maintain higher quality for survival rather than growth. They concentrate on maintaining customer satisfaction with higher quality and superior service. In addition, they do not carry high risk in investment, nor do they put pressure on or overload their employees. Thus, when the strategy is well implemented and internal structures are consistent, they possess distinctive operational competencies such as knowledge of customers and efficiency in cost control and quality improvement, resulting in achieving high product quality, product development and employee satisfaction.

Organizational culture is another important internal condition for the development of entrepreneurial activities inside firms because entrepreneurial culture appears to encourage entrepreneurial initiatives throughout the organization. Organizational innovation requires cultures that encourage it. To do so, managers need to stimulate entrepreneurial culture in their organization by the following activities: supporting money and resources for creative and innovative activities; giving workers autonomy and discretion in their work-related decisions; training their workers for technical, management, creative and innovative skills; providing rewards contingent on performance; widely communicating the company's mission, strategy, and objectives to employees; encouraging cooperation and teamwork among different departments; and allowing people to be involved in decision-making processes. As such, corporate entrepreneurship can be enhanced in their organizations through shared values, norms and assumptions of organizational members, leading not only to the creation of new business ventures but also to other innovative activities and orientations such as the development of new products, markets, technologies, administrative techniques, and

competitive posture. Thus, the dispersion of entrepreneurship throughout the company needs mindful endeavours to create and maintain an entrepreneurial culture.

Another implication for management practice is that firms need to recognize the importance of external environments for the pursuit of corporate entrepreneurship. External forces play a principal role in determining the opportunities and threats that firms face in ensuring their survival and growth in a highly competitive landscape. Firms need to engage in corporate entrepreneurship, specifically when facing certain conditions. This study suggests that when environmental conditions are becoming more dynamic and heterogeneous but less hostile, firms need to cultivate corporate entrepreneurship. A firm's entrepreneurial activity is enhanced by anticipating changes in the environments and acting according to these changes and future needs. Action can include, for example, venturing activities, new product, process and market development, and strategic renewal.

In a dynamic environment, firms should develop entrepreneurship and innovation to grasp business opportunities generated by changes in technology, products and services, and market orientation. Consistently seeking out such opportunities for innovation enables companies to gain competitive advantage. In a heterogeneous or complex environment, firms also need to innovate in products and processes, and new market development to deal with diversity in customers' buying habits, competitors' activity, and methods of production and service. Such diversity also helps firms to learn from their broad experiences in the market. Companies are able to borrow ideas from one market and apply them to another market, resulting in product and market development. Hostile environments, however, tend to threaten a firm's survival due to a lack of opportunities for innovation, high levels of rivalry between industry competitors, and vulnerability to outside influences such as unstable and unpredictable government policies as well as high competition in product quality. In such unfavourable conditions, entrepreneurial activities may be relatively high cost and risky for Thai auto parts manufacturing firms aimed at profit and growth.

In addition, environmental hostility is found to have a significant negative impact on a firm's financial performance. This suggests that growth and profit tend to be greater

when firms are operating in stable and benign environments. In less hostile environments, it is easy to predict the competition in product quality and government policies, thus firms can successfully maximize efficiency in their operations and realize growth and profit.

Finally, the findings of this research may help drive competitive advantages of foreign firms that have invested heavily in the Thai market and other local enterprises outside the auto parts manufacturing sector. The findings from this research may provide useful suggestions about the main concerns shaping corporate entrepreneurship, with an aim of superior performance and competitive advantage. Furthermore, this study may also provide valuable insights on how foreign firms can adapt to the environment in Thailand and make full use of their entrepreneurial resources and practices to improve their performance in the Thai market.

10.4.4 Policy Recommendations

This research may assist the Thai government and policy makers in supporting and promoting the development of one of their targeted industries, namely the auto parts manufacturing sector. The primary goal in supporting the auto parts manufacturing industry is to make this industry a manufacturing hub in Asia. The purpose of the government initiative is to sustain growth and enhance competitiveness and subsequently move Thailand towards a knowledge-based economy. Corporate entrepreneurship can be a critical driver for achieving this goal. Therefore, it is important for the Thai government and policy makers to develop this industry and also the economy, and corporate entrepreneurship is viewed as a means to achieving national goals.

This study's findings indicate that the external environment is an important determinant of corporate entrepreneurship. The Thai government can play a key role in driving the competitiveness of the sector by creating business opportunities with effective and stable policies as well as supporting investment. Political and macroeconomic stability provided by the government can help maintain business confidence over both the short and the long term. Policies and incentives intended to support entrepreneurship

activities should focus on developing activities that have high potential for competitiveness. The commitment of the government will increase the sector's competitiveness.

In addition to fostering a sound macroeconomic framework, the Thai government should increase the sophistication of auto parts manufacturing firms and local competition. Entrepreneurial activities and technology developments should be promoted by providing funds and support for R&D, technologies, marketing and business management and innovation. For example, resource availability, such as in financial resources, is very important for business growth through entrepreneurial projects, since entrepreneurial activity is a resource-consuming strategic orientation needing extensive investment. This thesis has identified lack of access to funds as one of the major business problems that Thai auto parts manufacturing firms, particularly SMEs, have encountered. Easy access to funds is required for enhancing productivity, innovation and sustainable growth in developing economies. This suggests that more financial resources will result in higher levels of corporate entrepreneurship, which in turn could lead to greater economic and non-economic benefits to businesses as well as to the nation.

Also, support for improving and strengthening labour and human resource management in Thai auto parts manufacturers will be needed for technological and industrial development and the growth of local and international markets. The findings in this study show that lack of the skilled labour impedes business investment and expansion. Adequate labour supply and qualified skills to match companies' needs are required for the sector's competitiveness; this is one of the main drivers of the country's knowledge-based economy initiative. Education programs to serve specific industry needs, such as entrepreneurship, research and development or design, and proprietary or advanced technology development, are another area that needs the attention of policy makers and education institutes. Other areas of future policy interest should include training, such as technical, marketing and management. This study's findings show that auto parts manufacturing companies, particularly SMEs, have very poor knowledge of and expertise in identifying specialized training needs. Training and support of SMEs is another area that needs the attention of policy makers and training institutes.

Another important area which needs attention from the Thai government and policy makers is SMEs' lack of access to and utilization of R&D, modern technology and machinery in the operation of their businesses. This study demonstrated that Thai small and medium auto parts manufacturing firms lack modern machines and technological innovation to facilitate innovative capability and R&D and improve production, product quality and cost control. Their production and management procedures are based mainly on outdated technological machines and are hampered by narrow product-market domains. High technology is therefore not required, and this limits their production capacity. These drawbacks are exemplified by trade liberalization policies and free trade agreements where, without access to modern machines and technological innovation to assist them in quality improvement, SMEs are hampered in competing in both domestic and international markets. Modern machinery and R&D will increase their capabilities as well as their productivity and competitiveness.

Similarly, this study indicates that only very few of the Thai auto parts manufacturing firms surveyed have access to government institutions. The use of external business support is also important to advance entrepreneurial activities, particularly in SMEs. Business support in production, design, feasibility studies, marketing, and management services will be very helpful to such firms in developing and expanding their businesses through entrepreneurial initiatives. Consequently, entrepreneurial activities help small and medium firms to improve their performance and gain competitive advantage. In all these areas, public policy proposals, educational programs and sufficient financial support may be needed to ensure access to markets by Thai auto parts manufacturing firms.

10.5 Limitations of the Study

The first limitation of the study is its generalizability. The study was conducted with empirical data collected from a single industry: auto parts manufacturing firms in Thailand. Interpretation should be done with caution when generalizing to other industries and countries. Relationships may vary in some aspects. For example, the Thai auto parts manufacturing business environment probably differs from what is found in

other industries and countries. The economy and challenges for firms may be different. Nonetheless, studies emphasizing a specific industry may capture that industry's distinct features and particular patterns of corporate entrepreneurship (Zahra 1993b) and may be useful because they provide industry-specific suggestions for promoting and making full use of corporate entrepreneurship (Fitzsimmons et al. 2005; Wang & Li-Hua 2006).

The second limitation is that the survey research design in this study relies on data collection from only one informant or respondent per organization, which has reliability concerns. The use of single informants can create the possibility of single-source bias (Fitzsimmons et al. 2005; Lyon, Lumpkin & Dess 2000). However, CEOs who are chosen to complete questionnaires are expected to be knowledgeable about the overall situation, entrepreneurial activities and orientations of the firm (Fitzsimmons et al. 2005). They might delegate completion of the questionnaire to nominated senior managers who are also familiar with the company's operating environment. They also play an important role in shaping the success of corporate entrepreneurship (Hornsby, Kuratko & Zahra 2002). Furthermore, small firms often rely on the response of a single key player who is typically the business owner and represents the views of whole organization (Brush & Vanderwerf 1992; Chandler & Hanks 1993). Also, "the use of a single informant helps to increase sample size by reducing the strain on the research budget" and allows the researcher to target more firms (Lyon, Lumpkin & Dess 2000, p. 1058)

The third limitation is that this research measures performance over a three-year period, which does not capture the long-term effects of corporate entrepreneurship. However, this limitation is of little concern given Carton and Hofer's (2006) assertion. They assessed performance measurement in entrepreneurship and strategic management research between 1996 and 2001 published in five journals, and concluded that the three-year timeframe was the most commonly used timeframe. Moreover, a longitudinal study may not be appropriate for doctoral study due to time and budget constraints.

The fourth limitation concerns the use of perceptual measures without cross-checking them with objective accounting data. However, prior research has found that top management's subjective assessment of performance is highly correlated with objective

measures (Dess, Lumpkin & Covin 1997; Vajanapoom 2005; Zahra 1991), suggesting that researchers may consider using subjective measures of performance when there are no publicly available data sources for non-public and small companies. Carton and Hofer (2006) found that the high dependence on primary data sources is typical in entrepreneurship research when objective measures are not available.

In addition, simple relationships to explain direct effects of antecedents such as environmental conditions and internal organizational characteristics in predicting corporate entrepreneurship, which in turn influences a firm's financial and non-financial performance, has its own limitations. The direct effects between corporate entrepreneurship and its antecedents and effects may not be empirically conclusive (Thoumrungroje & Tansuhaj 2005) and may be overly simplistic (Wiklund & Shepherd 2005). However, this research was initiated to explore, clarify and refine these main relationships and measurements, within an objective contextualizing of the Thai auto parts manufacturing environment.

Another limitation is that the variables studied in this research cannot include all the multiple organizational system elements, environmental conditions, and financial and non-financial performance aspects. Too numerous and complex interrelationships between corporate entrepreneurship and other contextual variables would be difficult or problematic to test in their entirety in a single research study from a practical point of view (Brown, Davidsson & Wiklund 2001; Covin & Slevin 1991). This study employs variables that are consistent with early research as well as theory building. The frequently used measures are believed to best capture the antecedents and effects of corporate entrepreneurship and are most relevant to the objectives of the study.

Finally, this study explores the relationship between the overall measures of the corporate entrepreneurship construct and performance. Thus, it may not have captured additional insights into how performance is affected by the individual dimensions of corporate entrepreneurship since a company may be high only on some dimensions, but not necessarily high on any particular dimension (Dess & Lumpkin 2005; Lumpkin & Dess 1996). However, the study found that the corporate entrepreneurship construct was robust predictor of business performance, which is consistent with conceptualizations

originally proposed by Miller (1983) and supports empirical studies (Antoncic & Hisrich 2001; Barringer & Bluedorn 1999; Covin, Green & Slevin 2006; Covin & Slevin 1989; Knight 1997).

Despite these limitations, this study has discovered important differences in the relationships of the antecedents and effects of corporate entrepreneurship in the Thai context and provided a base for further research in this area.

10.6 Future Research

Several additional future research directions can be suggested on the basis of the limitations of this study. Firstly, since this study focuses only on one industry, future research would be useful to test the model of the antecedents to and effects of corporate entrepreneurship in other industries in order to validate measures, test hypotheses, and develop theories. Moreover, future researchers need to explore the stability of the results, how environmental and organizational factors affect the rates and types of firm-level entrepreneurship and the resultant outcomes of entrepreneurial activities by collecting data from other countries.

Secondly, a survey research design that relies on a single informant per organization has reliability concerns, one being common method bias. The use of multiple informants and multiple methods should be considered in the future to enable researchers to examine closely the extent to which such a bias is present (Matsuno & Mentzer 2000) so that greater measurement accuracy might be achieved and the validity of findings confirmed (Bierly & Daly 2007; Lyon, Lumpkin & Dess 2000). Furthermore, perceptions of senior managers obtained from self-reported questionnaires create functional biases and an inability to identify sources of variation in response (Lyon, Lumpkin & Dess 2000). According to Lyon, Lumpkin, and Dess (2000), top management team members from different functions such as production, marketing and finance might perceive the dimensions of corporate entrepreneurship differently. As such, different views might lead to inconsistent findings when corporate entrepreneurship is assessed using perceptual measures. Thus, future research using objective sources of data such as industry reports, financial statements and other

archival data, in conjunction with subjective data, may help eliminate single-source bias in the data and provide more accurate results (Bierly & Daly 2007).

Thirdly, for the cause and effect relationships explored in the corporate entrepreneurship model presented, it may be more appropriate to include a time component, such as a longitudinal study design. As previous research suggests (Zahra, Jennings & Kuratko 1999), the effects of corporate entrepreneurship on performance tend to be stronger after a few years (longitudinal component) than when examined in the same time period (without a longitudinal component). Thus, research emphasizing only short-term implications may produce misleading results and confound descriptive and normative theory-building development (Dess, Lumpkin & McGee 1999). The examination of the longitudinal effects may provide stronger support for the findings in this field and may better clarify the nature of the relationship between corporate entrepreneurship and firm performance.

The fourth implication for future research is fundamentally a theoretical one. Simple relationships may be inadequate to explain the relationship between corporate entrepreneurship and performance according to environmental challenges and organizational complexities (Dess, Lumpkin & Covin 1997). Thus, contingency and configuration models are needed for further exploring how the competitive environment and strategies used to compete in a given environment may influence the CE–performance relationship. As such, both contingency and configuration models will better address the question of performance implications (Dess, Lumpkin & McGee 1999; Wiklund 1999).

In addition, the relationship between corporate entrepreneurship and performance is complex due to the multidimensional construct of business performance (Lumpkin & Dess 1996; Venkatraman & Ramanujam 1986). The literature generally supports the notion that entrepreneurial activities may lead to favourable outcomes on one performance dimension and unfavourable outcomes on others (Carton & Hofer 2006; Dess, Lumpkin & McGee 1999). For example, heavy investment in new technology or new products may enable a firm to achieve a competitive advantage and sales growth over the long term, but the resource required for investment may detract from short-term

profitability. Thus, future research should capture the temporal aspects of corporate entrepreneurship by including multiple measures of the same performance construct, such as multiple indicators of profitability and growth (Dess, Lumpkin & McGee 1999).

Additional research incorporating other non-financial criteria is also needed to investigate corporate entrepreneurship implications. These include, but are not limited to, customer satisfaction, social acceptance, and public image and reputation (Dess, Lumpkin & McGee 1999; Zakliki 1996). Customer satisfaction is the central focus for overall success (Pearce & Robinson 2009). Thus, the relationship between corporate entrepreneurship and these non-financial performance measures should be explored in future studies. This will also provide insight into short-term and long-term outcomes and assess potential causal relationships for the use of non-financial outcome measures with longer-term financial measures (Carton & Hofer 2006; Zahra & Covin 1995). The study of how non-financial outcomes of corporate entrepreneurship affect overall organizational performance will advance the theory (Dess, Lumpkin & McGee 1999).

Numerous other aspects need to be addressed as well. For example, other external variables such as product and industry life cycle (Covin & Slevin 1991; Kald, Nilsson & Rapp 2000), national cultures (Morris & Lewis 1995; Zahra & Bogner 1999), other internal variables such as an enterprise's stage of development (Olson & Currie 1992), age of the company (Entrialgo, Fernandez & Vazquez 2001; Luo, Zhou & Liu 2005), industry type (Hornsby, Kuratko & Zahra 2002), organizational structure (Covin & Slevin 1991; Naman & Slevin 1993; Pearce & Robinson 2009), business resources and capability (Wiklund & Shepherd 2003; Yiu & Lau 2008), and competencies of CEOs (Aloulou & Fayolle 2005) should be considered in order to investigate further how these impact corporate entrepreneurship and in turn improve performance.

Another challenge is to consider the relationship between entrepreneurial orientations and activities and firm performance in regard to context and process. This should explain how performance is affected over time by each dimension of corporate entrepreneurship and how each dimension of corporate entrepreneurship is enhanced by contextual factors such as organizational and environmental contexts. In a study based on such an approach, one requirement is that the rate and level of entrepreneurial

activities may vary independently depending on different contextual factors. Furthermore, it might be possible to identify the differential effects of the corporate entrepreneurship dimensions on firm performance. Given these considerations, it is probably necessary to show how the contextual factors change over time (Epstein & Crane 2007; Kald, Nilsson & Rapp 2000). A number of previous studies suggest a multidimensional conceptualization of corporate entrepreneurship (Dess & Lumpkin 2005; Lumpkin & Dess 1996; Wang & Li-Hua 2006). Such conceptualizations are essential “to understand the commonalities and any tradeoffs in managerial responses to environment forces” (Zahra 1993b, p. 334). Some firms that are strong in only a few characteristics of corporate entrepreneurship can achieve superior performance (Lumpkin & Dess 2001). Thus, there is a need for studies empirically establishing the link among corporate entrepreneurship dimensions and performance. This will pave the way for examinations that thoroughly document the performance implications of organizations’ engagement in corporate entrepreneurship (Zahra 1993b).

Another implication for future research is that the innovative dimension scale in this study is limited mostly to product innovation, which is mainly investigated in the literature and is used to validate the corporate entrepreneurship construct developed by Antoncic and Hisrich (2001). Antoncic and Hisrich’s (2001) developed a cross-culturally comparable construct of corporate entrepreneurship for use in entrepreneurship research, and items related to technological innovation were excluded during the exploratory analysis. They found that items related to technological innovation did not hold together with product innovativeness items or as a separate dimension in comparison across two different countries (the US and Slovenia). However, Zahra (1993b) includes technological innovation as a facet of innovativeness but does not test this construct for dimensionality. Thus, future research incorporating other aspects of innovation such as technological innovation would further refine the corporate entrepreneurship construct.

Furthermore, the self-renewal scale should be explored because the results of this study contradict that of Antoncic and Hisrich (2001). This thesis found that 11 items related to the self-renewal dimension loaded onto two factors during confirmatory factor analysis. This finding is consistent with Fitzsimmons et al. (2005). They suggest that the first of

these factors is related to organizational restructuring, resulting in the self-renewal construct, whereas the second factor is related to organizational changes to increase innovation within the company. Fitzsimmons et al. separate these items into two factors, self-renewal and organizational support, for the remaining analysis. In contrast to Fitzsimmons et al. (2005), some studies (e.g., Antoncic & Hisrich 2004; Antoncic & Zorn 2004) use the second factor as the predictor of corporate entrepreneurship rather than as a separate dimension of the corporate entrepreneurship construct. Future research is therefore needed to refine the self-renewal scale.

Additionally, further studies are needed to explore the environmental hostility construct, which includes a lack of skilled labour in predicting corporate entrepreneurship. The results from interviews in this study suggest that the lack of skilled labour influences corporate entrepreneurship. This finding supports the empirical study of Miles and Friesen (1982), which measures this item in the hostility construct.

Finally, the use of cases studies and quantitative studies should seek in future research to enhance understandings of existing theory and contribute to further theory development. Fine-grained methodologies including extensive field research and case studies would also help improve the quality of outcome measures (Dess, Lumpkin & McGee 1999). Subsequently, quantitative studies may once again be used to verify the relationships which will have been identified. Thus, there is a need for interplay and discussion between qualitative and quantitative approaches (Kald, Nilsson & Rapp 2000).

Therefore further studies that consider complex links among corporate entrepreneurship, its antecedents and its effects are suggested for future research.

10.7 Chapter Summary

Corporate entrepreneurship has received considerable recognition from both scholars and practitioners. Its popularity stems from varied contributions. Firm-level entrepreneurship can be beneficial to both business enterprises and the economy. Entrepreneurial activities of existing organizations help improve business performance

and achieve competitive advantage in a highly competitive marketplace. Given the advantages associated with corporate entrepreneurship, a model of corporate entrepreneurship antecedents and effects was explored in Thai auto parts manufacturing firms, because the success of the Thai auto parts manufacturing sector will strengthen Thailand's automotive industry as a major hub of automotive manufacturing in Southeast Asia and facilitate the industry to be more competitive globally. Sustained growth and competitive advantage through entrepreneurial activities of Thai auto parts manufacturing firms may result in shifting Thailand to a knowledge-based economy driven by innovation and cutting-edge technology.

In effectively modeling firm-level entrepreneurship, key variables in environmental and organizational aspects stimulate organizational members' entrepreneurial thinking and acting, which in turn affect firm performance in terms of both financial and non-financial outcomes. Thai auto parts manufacturing firms stimulate entrepreneurial activities in their organizations through new business venturing, self-renewal, innovativeness and proactiveness by responding to changes and diversity in dynamic and heterogeneous environments while developing adaptive organizational strategies and innovative organizational cultures. Through their entrepreneurial activities, Thai auto parts manufacturing firms have been able not only to earn higher profits and increase sales but also achieve new product/service development, quality of product/service and employee satisfaction. They make substantial economic and social contributions to the economic growth of Thailand through reducing poverty and unemployment, and by being exemplars for other local industries and foreign companies.

The Thai auto parts manufacturing sector is a new example of firm-level entrepreneurship for developing countries and extends the boundaries of the theory of corporate entrepreneurship. The empirical study of corporate entrepreneurship antecedents and effects in Thailand shows that entrepreneurial firms can perform better in the market. This research area is important and interesting and deserves more attention from academics, practitioners and policy makers.

This concluding chapter presents the conclusions, significance and limitations of this research. Several directions for further research are also discussed. A model of corporate entrepreneurship antecedents and effects was empirically tested in auto parts manufacturing sector in Thailand, a developing country. The findings of this study fill research gaps by providing three types of contributions, namely theory, methodology and practice.

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APPENDIX A: SURVEY PACKAGE

Appendix 1a: The Ethics Approval Letter

SUHREC Project 0708/109 Fostering Corporate Entrepreneurship (CE): An examination of the relationship between CE and firm performance in SMEs in Thailand

Prof Chris Christodoulou FBE Ms Laddawan Lekmat

Approved Duration: From 26/11/2007 To 31/12/2008

I am pleased to advise that the Chair of SHESC3 or delegated member has approved the revisions and clarification as emailed by you on 21 November 2007 in response to previous communication (SHESC email of 19 November 2007). Unless otherwise notified, human research activity in the project may commence in line with standard or any special conditions for on-going ethics clearance.

The standard conditions for ethics clearance include the following:

- *All human research activity undertaken under Swinburne auspices must conform to Swinburne and external regulatory standards, including the current National Statement on Ethical Conduct in Research Involving Humans and with respect to secure data use, retention and disposal.*
- *The named Swinburne Chief Investigator/Supervisor remains responsible for any personnel appointed to or associated with the project being made aware of ethics clearance conditions, including research and consent procedures or instruments approved. Any change in chief investigator/supervisor requires timely notification and SUHREC endorsement.*
- *The above project has been approved as submitted for ethical review by or on behalf of SUHREC. Amendments to approved procedures or instruments ordinarily require prior ethical appraisal/clearance. SUHREC must be notified immediately or as soon as possible thereafter of (a) any serious or unexpected adverse effects on participants and any redress measures; (b) proposed changes in protocols; and (c) unforeseen events which might affect continued ethical acceptability of the project.*
- *At a minimum, an annual report on the progress of the project is required as well as at the conclusion (or abandonment) of the project.*
- *A duly authorised external or internal audit of the project can be undertaken at any time.*

Please contact me if you have any queries or concerns about on-going ethics clearance. The SUHREC project number should be cited in communication.

Anne Cain

Acting Secretary, SHESC3

Ms Anne Cain
Acting Research Administrator
Faculty of Business and Enterprise
Swinburne University of Technology
H95, PO Box 218 Hawthorn Vic 3122 Australia
Telephone +61 3 9214 8605
Fax +61 3 9214 8381
email: AnCain@swin.edu.au
Mon. - Thurs., unavailable Fridays

Appendix 2a: A Consent Information Statement



Faculty of Business and Enterprise

Project Consent Information Statement

Project Title: Fostering Corporate Entrepreneurship (CE): An examination of the relationship between CE and firm performance in Thai Auto Parts Manufacturing Firms in Thailand

(Date) February 2008

Dear [name to be added],

This letter is to invite you (or a senior manager you nominate) to participate in my PhD research project. The name of your business has been obtained from the Thailand Automotive Industry directory 2006-2007 available from the Thai Auto-Parts Manufacturers Association (TAPMA). I telephoned your company earlier and they provided me with your name.

A summary of the findings from this study will be sent to TAPMA to distribute to members.

I am a doctoral candidate at the Swinburne University of Technology, Melbourne Australia. I am doing research on entrepreneurship in Thai auto parts manufacturing firms which are established in Thailand. 400 auto parts manufacturers will be sent invitations to take part in this research. The study aims to identify factors that might influence firm performance so that I can provide locally appropriate guidelines to increase competitiveness.

Attached to this letter is a survey of 72 questions asking about your enterprise. If you agree to participate in this survey, completing the questionnaire will take about 30 minutes. Please seal the completed survey in the pre-addressed and stamped envelope enclosed and return it to me. If you have not returned the questionnaire by [date to be added] you will receive a second letter to remind you of the possibility of participating in the study.

Your completion and return of the questionnaire is taken as your Informed Consent to participate in this research which means:

- Your participation is voluntary.
- All information collected will be strictly confidential and anonymous.
- No data matching of your name or your company name will be made with the answers to the questions.

- It will not be possible to identify any individual or company in the published results.

The results of this survey will be used in my PhD thesis and possibly other academic publications. Following the completion of the study, all information will be retained and disposed of according to the Swinburne University Policy on the Conduct of Research.

Between 10 and 15 firms will also be contacted by telephoned after the returned questionnaires are received. I will be seeking volunteers to participate in a 45 minute interview. The interview is intended to provide some confirmation the researcher analysis.

If you have any questions please contact me on 66-84-3366994 (Thailand) or 61-4-01581503 (Melbourne, Australia) or E-mail: laddawan@student.swin.edu.au or Professor Chris Christodoulou, my doctoral thesis supervisor on 61-3-92145863 or E-mail: cchristodoulou@groupwise.swin.edu.au

If you chose not to participate, thank you for taking the time to read this letter.

If you chose to completed and return the questionnaire we would like to take this opportunity to express our gratitude.

Yours sincerely,

Laddawan Lekmat
PhD candidate

Professor Chris Christodoulou
Supervisor

This project has been approved by or on behalf of Swinburne's Human Research Ethics Committee (SUHREC) in line with the *National Statement on Ethical Conduct in Research Involving Humans*.

If you have any concerns or complaints about the conduct of this project, you can contact:

Research Ethics Officer, Swinburne Research (H68),
Swinburne University of Technology, P O Box 218, Hawthorn, Melbourne, Victoria,
AUSTRALIA 3122.
Tel +61 3 9214 5218

or resethics@swin.edu.au

Please retain this information for future reference



Faculty of Business and Enterprise

ข้อมูลแจ้งขอความอนุเคราะห์สนับสนุนงานวิจัยปริญญาเอก

หัวข้องานวิจัย: สนับสนุนให้เกิดนวัตกรรมใหม่ๆ ในด้านต่างๆขึ้นภายในองค์กร: การศึกษาความสัมพันธ์ระหว่าง
ความเป็นผู้ประกอบการขององค์กรและผลดำเนินงานของบริษัทผู้ผลิตชิ้นส่วนยานยนต์ในประเทศไทย

(วันที่)

เรียน [name to be added],

ข้าพเจ้า นางสาว ลัดดาวัลย์ เลขมาศ นักศึกษาปริญญาเอก จาก Swinburne University of Technology ประเทศ
ออสเตรเลีย กำลังทำการศึกษางานวิจัยภายใต้หัวข้อข้างต้น จึงมีความประสงค์ขอความอนุเคราะห์จากท่านซึ่งเป็น
ผู้บริหารระดับสูงขององค์กรและเป็นผู้คุ้นเคยในรูปแบบการบริหาร กลยุทธ์องค์กร โครงสร้างองค์กร วัฒนธรรม
องค์กร และผลดำเนินงานขององค์กรของท่าน ในการตอบแบบสอบถามที่แนบมากับจดหมายฉบับนี้พร้อมด้วยของ
ติดอากรแสตมป์จ่ายหน้าซองถึงข้าพเจ้า ท่านสามารถส่งต่อให้ผู้บริหารระดับสูงท่านอื่นตอบแบบสอบถามแทนท่าน
ได้

ชื่อของท่านและที่อยู่ขององค์กรท่านได้มาจาก CD-ROM ทำเนียบอุตสาหกรรมยานยนต์ไทยปี 2006-2007 ของ
สมาคมผู้ผลิตชิ้นส่วนยานยนต์ (TAPMA) ข้อมูลที่ได้รับจะเป็นประโยชน์อย่างยิ่งต่อการศึกษาครั้งนี้ ข้าพเจ้าจะจัดส่ง
ข้อสรุปที่ได้จากการศึกษาครั้งนี้ให้กับสมาคมผู้ผลิตชิ้นส่วนยานยนต์ (TAPMA) เพื่อแจกให้กับสมาชิก หลังจาก
งานวิจัยนี้เสร็จสมบูรณ์

ผลที่ได้จากการวิจัยดังกล่าว คาดว่าจะเป็นประโยชน์ต่อการพัฒนาอุตสาหกรรมการผลิตชิ้นส่วนยานยนต์ของ
ประเทศไทย และสะท้อนภาพรวมความเป็นผู้ประกอบการขององค์กรหรือหมายถึงการเน้นให้เกิดนวัตกรรมใหม่ๆ
(innovation) ในด้านต่างๆขึ้นภายในองค์กร เช่น สินค้า/บริการ การตลาด เทคโนโลยีการผลิต การบริหารการ
จัดการ การปฏิบัติการต่างๆ ฯลฯ โดยวิเคราะห์สภาพแวดล้อมทั้งภายใน/ภายนอกองค์กร ที่มีผลต่อการพัฒนาผล
ดำเนินงานขององค์กร เพื่อเพิ่มขีดความสามารถการแข่งขัน

งานวิจัยนี้จะมีการสุ่มเลือก 400 บริษัทผู้ผลิตชิ้นส่วนยานยนต์ในประเทศไทย เพื่อขอความอนุเคราะห์ในการตอบ
แบบสอบถามงานวิจัยนี้

หากท่านยินดีที่จะให้ความอนุเคราะห์ในการตอบแบบสอบถามงานวิจัยนี้ ซึ่งใช้เวลาประมาณ 30 นาที กรุณาส่งกลับถึงข้าพเจ้าโดยแนบใส่ซองจดหมายติดแสตมป์ที่เจ้าหน้าที่ของถึงข้าพเจ้า ภายในวันที่ [date to be entered] ท่านสามารถเลือกที่จะตอบหรือไม่ตอบคำถามที่ท่านคิดว่าเป็นข้อมูลส่วนตัว และไม่อาจเปิดเผยได้

ข้อมูลทั้งหมดที่ได้จากการวิจัยครั้งนี้ จะถูกเก็บในรูปแบบรายงานวิทยานิพนธ์ปริญญาเอกและอาจถูกตีพิมพ์ลงในวารสารเพื่อการศึกษา ข้อมูลทั้งหมดจะถูกเก็บเป็นความลับ ทุกคำตอบของท่านจะถูกนำไปใช้ในลักษณะของตัวเลข โดยไม่สามารถระบุเจาะจงข้อมูลต่างๆและจะไม่สามารถระบุได้ว่ามาจากองค์กรใด

นอกจากนั้น งานวิจัยนี้จะมีการสุ่มเลือก 10-15 บริษัท เพื่อทำการสัมภาษณ์ ซึ่งใช้เวลาประมาณ 30 นาที หลังจากที่ท่านตอบแบบสอบถามงานวิจัยนี้และได้ส่งแบบสอบถามกลับ เพื่อเช็คความถูกต้องของข้อมูลจากแบบสอบถาม

หากท่านมีความประสงค์ต้องการข้อมูลเพิ่มเติม หรือหากมีข้อสงสัยประการใด ติดต่อข้าพเจ้าได้ที่เบอร์ 66-84-3366994 (ประเทศไทย) หรือ 61-4-0158-1503 (ออสเตรเลีย) (E-mail: laddawan@student.swin.edu.au) หรือ ศาสตราจารย์ ดร. คริส ครอสโตดูลู ได้ที่เบอร์ 61-3-9859-6072 (E-mail: cchristodoulou@swin.edu.au)

ขอขอบพระคุณอย่างสูง ที่ท่านให้ความกรุณาพิจารณางานวิจัยนี้ ไม่ว่าจะท่านจะยินดีที่จะให้ความอนุเคราะห์ในการตอบแบบสอบถามงานวิจัยนี้หรือไม่

ขอแสดงความนับถือ

ลัดดาวัลย์ เลขมาศ

ศาสตราจารย์ ดร. คริส ครอสโตดูลู

นักศึกษาปริญญาเอก

อาจารย์ที่ปรึกษา

งานวิจัยนี้ได้รับการรับรองจากคณะกรรมการด้านจรรยาบรรณงานวิจัยของมหาวิทยาลัย Swinburne หากท่านมีข้อสงสัยหรือต้องการร้องเรียนเกี่ยวกับงานวิจัยนี้ ท่านสามารถแจ้งมาได้ที่

Research Ethics Officer, Swinburne Research (H68),
Swinburne University of Technology, P O Box 218, Hawthorn, Melbourne,
Victoria, AUSTRALIA 3122.
Tel + 61 3 9214 5218
หรือ resethics@swin.edu.au

“โปรดเก็บข้อมูลนี้ไว้เพื่ออ้างอิง”

Appendix 3a: Industry Support Letter



ที่ สยอ. 292/50

23 สิงหาคม 2550

เรื่อง ขอบความอนุเคราะห์สนับสนุนข้อมูลเพื่องานวิจัย

เรียน กรรมการผู้จัดการบริษัท

ด้วย นางสาวกัตติกาวัลย์ เลขมาศ นักศึกษาปริญญาเอก จาก Swinburne University of Technology ประเทศออสเตรเลีย ปัจจุบันกำลังทำการศึกษางานวิจัยภายใต้หัวข้อ "ความเป็นผู้ประกอบการขององค์กรและผลค่านิงานของบริษัทผู้ผลิตชิ้นส่วนยานยนต์ในประเทศไทย"

ในการนี้ สถาบันฯ พิจารณาแล้วเห็นสมควรว่า งานวิจัยดังกล่าวจะเป็นประโยชน์โดยตรงต่อการพัฒนาผลค่านิงานเพื่อเพิ่มขีดความสามารถการแข่งขันของอุตสาหกรรมการผลิตชิ้นส่วนยานยนต์ไทย จึงขอความร่วมมือจากท่านในการออกแบบสอบถาม หรือให้นางสาวกัตติกาวัลย์ เลขมาศ เข้าพบเพื่อสัมภาษณ์ และขอข้อมูลจากท่าน ทั้งนี้ข้อมูลทั้งหมดจะเก็บไว้เป็นความลับ และใช้เพื่อการศึกษาวิจัยเท่านั้น

จึงเรียนมาเพื่อโปรดพิจารณาให้ความอนุเคราะห์ด้วย จักขอบคุณยิ่ง

ขอแสดงความนับถือ

(นายวัลลภ เดียศิริ)

ผู้อำนวยการสถาบันยานยนต์

สำนักผู้อำนวยการ

โทรศัพท์ 0-2712-2414 ต่อ 101

โทรสาร 0-2712-2422

Appendix 4a: A reminder Letter



Faculty of Business and Enterprise

A Reminder Letter

Project Title: Fostering Corporate Entrepreneurship (CE): An examination of the relationship between CE and firm performance in Auto Parts Manufacturing Firms in Thailand

(Date)

Dear [name to be added],

This letter is to remind you (or a senior manager you nominate) of the possibility of participating in my PhD research project. The name of your business has been obtained from the Thailand Automotive Industry directory 2006-2007 available from the Thai Auto-Parts Manufacturers Association (TAPMA). I telephoned the company earlier and they provided me with your name.

This research aims to identify environmental and organizational factors that might influence entrepreneurship within an organization. I am also attempting to discover whether or not entrepreneurial behaviour contributes directly or indirectly to firm performance. It is expected that the findings of this research will enhance competitiveness by providing locally appropriate entrepreneurial behaviour guidelines for Thai auto-parts manufacturers.

A random sample of 400 auto parts manufacturers will be sent invitations to participate in this research. Thai auto parts manufacturing firms for the purpose of this study are defined as business firms which are established in Thailand.

Previously I sent a survey of 72 questions. The questionnaire is organized into 6 parts: environmental conditions, strategy, culture, corporate entrepreneurship, firm performance, and general questions. The answers to the questions will be about your manufacturing enterprise.

If you agree to participate in this survey, completing the questionnaire will take about 30 minutes. Please seal the completed survey in the pre-addressed and stamped envelope enclosed and return it to me. Please take your time to complete the questionnaire by [date to be entered]. If you have not returned the questionnaire by [add date], no further contact with you will be made.

If you chose not to participate, thank you for taking the time to read this letter.

If you chose to completed and return the questionnaire we would like to take this opportunity to express our gratitude.

Yours sincerely,

Laddawan Lekmat
PhD candidate

Professor Chris Christodoulou
Supervisor

This project has been approved by or on behalf of Swinburne's Human Research Ethics Committee (SUHREC) in line with the *National Statement on Ethical Conduct in Research Involving Humans*.

If you have any concerns or complaints about the conduct of this project, you can contact:

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Swinburne University of Technology, P O Box 218, Hawthorn, Melbourne, Victoria,
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Please retain this information for future reference



Faculty of Business and Enterprise

จดหมายแจ้งเตือนการตอบแบบสอบถามงานวิจัยปริญญาเอก

หัวข้องานวิจัย: สนับสนุนให้เกิดนวัตกรรมใหม่ๆ ในด้านต่างๆขึ้นภายในองค์กร: การศึกษาความสัมพันธ์ระหว่าง
ความเป็นผู้ประกอบการขององค์กรและผลดำเนินงานของบริษัทผู้ผลิตชิ้นส่วนยานยนต์ในประเทศไทย

(วันที่)

เรียน [name to be added]

เนื่องด้วยข้าพเจ้า นางสาว ลัดดาวัลย์ เลขมาศ นักศึกษาปริญญาเอก จาก Swinburne University of Technology ประเทศออสเตรเลีย กำลังทำการศึกษางานวิจัยภายใต้หัวข้อข้างต้น ไม่ได้รับการตอบกลับแบบสอบถามจากท่าน จึงมีความประสงค์ขอความอนุเคราะห์จากท่านในการตอบแบบสอบถามที่ได้ส่งถึงท่านเมื่อเดือนกุมภาพันธ์ที่ผ่านมา ท่านสามารถส่งต่อให้ผู้บริหารระดับสูงท่านอื่นตอบแบบสอบถามแทนท่านได้

ผลที่ได้จากการวิจัยดังกล่าว คาดว่าจะเป็นประโยชน์ต่อการพัฒนาอุตสาหกรรมการผลิตชิ้นส่วนยานยนต์ของประเทศไทย และสะท้อนภาพรวมความเป็นผู้ประกอบการขององค์กรหรือหมายถึงการเน้นให้เกิดนวัตกรรมใหม่ๆ (innovation) ในด้านต่างๆขึ้นภายในองค์กร เช่น สินค้า/บริการ การตลาด เทคโนโลยีการผลิต การบริหารการจัดการ การปฏิบัติการต่างๆ ฯลฯ โดยวิเคราะห์สภาพแวดล้อมทั้งภายใน/ภายนอกองค์กร ที่มีผลต่อการพัฒนาผลดำเนินงานขององค์กร เพื่อเพิ่มขีดความสามารถการแข่งขัน

งานวิจัยนี้จะมีการสุ่มเลือก 400 บริษัทผู้ผลิตชิ้นส่วนยานยนต์ในประเทศไทย เพื่อขอความอนุเคราะห์ในการตอบแบบสอบถามงานวิจัยนี้ หากท่านยินดีที่จะให้ความอนุเคราะห์ในการตอบแบบสอบถามงานวิจัยนี้ ซึ่งใช้เวลาประมาณ 30 นาที กรุณาส่งกลับถึงข้าพเจ้าโดยแนบใส่ซองจดหมายติดแสตมป์ที่จำหน่ายซองถึงข้าพเจ้า ภายในวันที่ [date to be entered] ทางเราจะไม่ส่งแบบสอบถามให้ท่านอีกหากไม่ได้รับการตอบกลับแบบสอบถามจากท่าน หลังจากที่ท่านได้รับจดหมายฉบับนี้

ขอขอบพระคุณอย่างสูง ที่ท่านให้ความกรุณาพิจารณางานวิจัยนี้ ไม่ว่าท่านจะยินดีที่จะให้ความอนุเคราะห์ในการตอบแบบสอบถามงานวิจัยนี้หรือไม่

ขอแสดงความนับถือ

ลัดดาวัลย์ เลขมาศ

ศาสตราจารย์ ดร. คริส โครส โทดดู

นักศึกษาปริญญาเอก

อาจารย์ที่ปรึกษา

งานวิจัยนี้ได้รับการรับรองจากคณะกรรมการด้านจรรยาบรรณงานวิจัยของมหาวิทยาลัย Swinburne หากท่านมีข้อสงสัยหรือต้องการร้องเรียนเกี่ยวกับงานวิจัยนี้ ท่านสามารถแจ้งมาได้ที่

Research Ethics Officer, Swinburne Research (H68),
Swinburne University of Technology, P O Box 218, Hawthorn, Melbourne, Victoria,
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Tel + 61 3 9214 5218
หรือ resethics@swin.edu.au

“โปรดเก็บข้อมูลนี้ไว้เพื่ออ้างอิง”

Appendix 5a: Survey Questionnaire

Survey to Examine the Relationship between Entrepreneurship as Firm Behaviour and Firm Performance in Auto Parts Manufacturing Firms in Thailand

Thank you for agreeing to participate in this survey into how entrepreneurship as firm behaviour contributes to firm performance. The company in this questionnaire means the entity of which you are a senior executive of Thai auto parts manufacturer.

In this questionnaire we shall be asking a series of questions about entrepreneurship within your organization in respect to the following aspects:

- Environmental conditions
- Organizational strategy
- Organizational culture
- Corporate Entrepreneurship
- Firm performance
- General questions

All responses that you provide will be **strictly confidential**. The results of the survey will be presented as aggregated data from all respondents. **This questionnaire will be used for academic purposes only**. When the results are published, it will not be possible to identify any individual or company.

Company: _____ [to be added]

Date: _____



Faculty of Business and Enterprise
Swinburne University of Technology
Melbourne, Australia

Section I: Environmental Conditions

1. This section concerns your perceptions of your company’s external environments. Please circle the number that best measures the situation in your main industry:

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Somewhat disagree	Neither disagree/agree	Somewhat agree	Agree	Strongly agree

1. The rate of product obsolescence is high	1	2	3	4	5	6	7
2. Methods of production change often and in major ways	1	2	3	4	5	6	7
3. Our firm must change its market practices frequently	1	2	3	4	5	6	7
4. Actions of competitors are unpredictable	1	2	3	4	5	6	7
5. Demand and customer tastes are unpredictable	1	2	3	4	5	6	7
6. Declining markets for products are a major challenge in our industry	1	2	3	4	5	6	7
7. Tough price competition is a major challenge in our industry	1	2	3	4	5	6	7
8. Government policies are a major challenge in our industry	1	2	3	4	5	6	7
9. Competition in product quality is a major challenge in our industry	1	2	3	4	5	6	7
10. Competition in product novelty is a major challenge in our industry	1	2	3	4	5	6	7
11. Customers’ buying habits vary a great deal from one line of our business to the other lines	1	2	3	4	5	6	7
12. The nature of the competition varies a great deal from one line of our business to the other lines	1	2	3	4	5	6	7
13. Required methods of production/service vary a great deal from one line of our business to the other lines	1	2	3	4	5	6	7

Section: II: Organizational Strategy

2. Given below are descriptions of several alternative mission strategies. Please indicate which one of the following statements that best describes your firm:
1. We have attempted to locate and maintain a secure niche in a relatively stable product or service area. We have tried to offer a more limited range of products or services than our competitors and we have tried to protect our domain by offering higher quality and superior service. We may not be at the forefront of developments in the industry but have attempted to concentrate instead on doing the best job possible in our market
 2. We have tried to operate within a broad product-market domain that undergoes periodic redefinition. We have wanted to be 'first in' with new products and market areas even if not all of these efforts have proven to be highly profitable. We have tried to respond rapidly to early signals concerning areas of opportunity, and these responses have often led us to a new round of competitive actions.
 3. We have attempted to maintain a stable, limited line of products or services, while at the same time have tried to move out quickly to follow a carefully selected set of the more promising new developments in the industry. We are seldom 'first in' with new products or services but by carefully monitoring the actions of major competitors in areas compatible with our stable product-market base we try to be 'second in' with a more cost-efficient product or service.
 4. We have not been able to have a consistent product-market orientation. We have not been able to be as aggressive in maintaining established products and markets as have our competitors and we have not been able to take as many risks as they have. We have been forced to respond to environmental pressures.

Other, please specify:

Section III: Organizational Culture

3. This section concerns a supportive entrepreneurial environment in your organization. Please indicate the number that best describes the emphasis of your organizational culture:

1	2	3	4	5	6	7
---	---	---	---	---	---	---

Minor Emphasis

Major Emphasis

1. Management encouragement for creative and innovative activities	1	2	3	4	5	6	7
2. Support for small experimental projects	1	2	3	4	5	6	7
3. Seeding money to get projects off the ground	1	2	3	4	5	6	7
4. Providing training for creative and innovative activities	1	2	3	4	5	6	7
5. Allowing employees to make decisions about their work processes	1	2	3	4	5	6	7
6. Avoiding criticizing employees for making mistakes when being innovative	1	2	3	4	5	6	7
7. Providing rewards contingent on performance	1	2	3	4	5	6	7
8. Making the ideas of innovative people known to others in the organizational hierarchy	1	2	3	4	5	6	7
9. Encouraging participative decision-making processes in and between different organizational levels	1	2	3	4	5	6	7
10. Widely communicating the company's mission, strategy and objectives to employees	1	2	3	4	5	6	7
11. Encouraging communication and co-operation between different department	1	2	3	4	5	6	7
12. Encouraging teamwork rather than individual contributions	1	2	3	4	5	6	7

Other major procedures or processes used for shaping entrepreneurial or innovative culture in your organization please specify:

Section IV: Corporate Entrepreneurship

4. This section will explore entrepreneurship within your organization. Please indicate the extent to which your company places emphasis on each of the following items:

1	2	3	4	5	6	7
---	---	---	---	---	---	---

Minor Emphasis

Major Emphasis

1. Broaden your business lines in your current industries	1	2	3	4	5	6	7
2. Pursuing new businesses in new industries that are related to your current business	1	2	3	4	5	6	7
3. Finding new niches for your products in your current markets	1	2	3	4	5	6	7
4. Entering new businesses by offering new lines and products	1	2	3	4	5	6	7
5. Revising the business concept	1	2	3	4	5	6	7
6. Reorganizing units and divisions to increase innovation	1	2	3	4	5	6	7
7. Coordinated activities among units to enhance company innovation	1	2	3	4	5	6	7
8. Increasing the autonomy (independence) of different units to enhance their innovation	1	2	3	4	5	6	7
9. Adopting flexible organizational structures to increase innovation	1	2	3	4	5	6	7
10. Training employees in creativity techniques	1	2	3	4	5	6	7
11. Rewarding employees for creativity and innovation	1	2	3	4	5	6	7
12. Establishing procedures to solicit employee ideas for innovations	1	2	3	4	5	6	7
13. Establishing procedures to examine new innovation ideas	1	2	3	4	5	6	7
14. Designing formal idea (project or venture) champions	1	2	3	4	5	6	7
15. Making resources available for experimental projects	1	2	3	4	5	6	7
16. Competitive posture is "undo-the-competitors" posture	1	2	3	4	5	6	7
17. Decision-making style is a bold, aggressive posture	1	2	3	4	5	6	7
18. Favouring high risk projects with chances of very high returns	1	2	3	4	5	6	7

5. Please indicate the extent of changes that have taken place in your company over the past three years:

1	2	3	4	5	6	7	
Decreased Significantly						Increased Significantly	

1. Company's emphasis on developing new products	1	2	3	4	5	6	7
2. Company's spending on new product development activities	1	2	3	4	5	6	7
3. The number of new products added by the company	1	2	3	4	5	6	7
4. The number of new lines of products or services marketed by the company	1	2	3	4	5	6	7
5. Dramatic changes in product or service lines marketed by the company	1	2	3	4	5	6	7

Section V: Firm Performance

6. Over the past 3 years, how would you rate your company's performance against your industry? Please select the number that best represents your opinion:

1	2	3	4	5	6	7
Very Low						Very High

1. Profitability level / return on assets	1	2	3	4	5	6	7
2. Cash flow (liquidity and ability to raise financial resources)	1	2	3	4	5	6	7
3. Sales growth	1	2	3	4	5	6	7
4. Market share	1	2	3	4	5	6	7
5. Quality of products / services	1	2	3	4	5	6	7
6. Technical product/service design and development	1	2	3	4	5	6	7
7. Employee satisfaction	1	2	3	4	5	6	7
8. Overall company performance	1	2	3	4	5	6	7

Section VI: Demographics

7. Your company is considered as a:
- Foreign majority owned company Pure Thai company
 Thai majority owned company Other (please specify)_____
8. Your company is classified as a/an:
- OEM (Original Equipment Manufacturing)
 REM (Replacement Equipment Manufacturing)
 Other (please specify) _____
9. What is the approximately number of full-time employees in your company?
_____person
10. How long has your company operated in this industry?
_____years
11. Please specify your gender
- Male Female
12. Please specify your age range
- 35 years or less 46-55 years
 36-45 years 56 or more years
13. What is your main functional background?
- Financial and Accounting Engineering and Production
 Sales and Marketing Other (please specify) _____
 Human Resource Management
14. What is your educational background?
- Bachelor Degree in _____
 Master Degree in _____
 Doctoral Degree in _____
 Certificate/Diploma _____
 Others (please specify)_____
15. How long have you served as a senior executive?
- In this organization _____years
In this industry _____years

Thank you very much for your participation in the survey and for giving us your valuable cooperation.

การวิจัยความสัมพันธ์ระหว่างนวัตกรรมใหม่ๆ ในด้านต่าง ๆ ภายในองค์กรและผล
ดำเนินงานของบริษัทผู้ผลิตชิ้นส่วนยานยนต์แห่งประเทศไทย

ขอขอบพระคุณท่านที่ให้ความอนุเคราะห์ในการตอบแบบสอบถามงานวิจัยเกี่ยวกับปัจจัยต่างๆทางด้านสภาพแวดล้อมภายนอกและภายในองค์กรต่อความเป็นองค์กรที่เน้นการก่อให้เกิดนวัตกรรมใหม่ๆ (innovation) ในด้านต่างๆขึ้นภายในองค์กร เช่น สินค้า/บริการ การตลาด เทคโนโลยีการผลิต การบริหารการจัดการ การปฏิบัติงานต่างๆ ฯลฯ งานวิจัยนี้มีจุดมุ่งหมายที่จะค้นหาบทบาทการสนับสนุนให้เกิดนวัตกรรมใหม่ๆ ในด้านต่างๆขึ้นภายในองค์กรที่มีผลกระทบต่อผลดำเนินงานขององค์กร องค์กรในแบบสอบถามฉบับนี้หมายถึงบริษัทผู้ผลิตชิ้นส่วนยานยนต์ที่ท่านดำรงตำแหน่งผู้บริหารระดับสูง

ในแบบสอบถามนี้ คำถามแบ่งออกเป็น 6 ส่วนคือ

- สภาพแวดล้อมขององค์กร
- กลยุทธ์องค์กร
- วัฒนธรรมองค์กร
- นวัตกรรมใหม่ๆ ในด้านต่างๆ ภายในองค์กร
- ผลการดำเนินงานขององค์กร
- เรื่องทั่วไปขององค์กรของท่าน และประวัติการทำงานของท่าน

ข้อมูลทั้งหมดที่ได้จากงานวิจัยครั้งนี้จะ“ถูกปกปิดไว้เป็นความลับและถูกใช้เพื่อวัตถุประสงค์ในการศึกษาเท่านั้น” ข้อมูลต่างๆ ที่ได้จากการตอบคำถามของท่านจะถูกรายงานเป็นภาพรวมและ“ไม่สามารถระบุเจาะจงได้ว่ามาจากองค์กรใด”

บริษัท: _____

วันที่: _____



Faculty of Business and Enterprise
Swinburne University of Technology
Melbourne, Australia

ส่วนที่ 1: สภาพแวดล้อมขององค์กร

1. ท่านมีความคิดเห็นอย่างไรต่อสภาพแวดล้อมภายนอกขององค์กรท่าน?

1= ไม่เห็นด้วยอย่างยิ่ง 2 = ไม่เห็นด้วย 3 = ค่อนข้างไม่เห็นด้วย 4 = ไม่คิดว่าเห็นด้วยหรือไม่เห็นด้วย
5 = ค่อนข้างจะเห็นด้วย 6 = เห็นด้วย 7 = เห็นด้วยอย่างยิ่ง

1. อัตราการล้ำสมัยของสินค้า/บริการสูงมาก	1	2	3	4	5	6	7
2. เทคโนโลยีในการผลิต/การบริการเปลี่ยนแปลงบ่อยครั้ง	1	2	3	4	5	6	7
3. องค์กรของเราต้องเปลี่ยนวิธีปฏิบัติทางการตลาดบ่อยครั้งมาก	1	2	3	4	5	6	7
4. การปฏิบัติการของคู่แข่งไม่สามารถคาดการณ์ได้	1	2	3	4	5	6	7
5. ความต้องการและรสนิยมของผู้บริโภคแทบจะไม่สามารถคาดการณ์ได้	1	2	3	4	5	6	7
6. ความถดถอยทางด้านตลาดสินค้าเป็นปัญหาใหญ่ต่อองค์กรของท่าน	1	2	3	4	5	6	7
7. การแข่งขันทางด้านราคาเป็นปัญหาใหญ่ต่อองค์กรของท่าน	1	2	3	4	5	6	7
8. นโยบายของรัฐเป็นปัญหาใหญ่ต่อองค์กรของท่าน	1	2	3	4	5	6	7
9. การแข่งขันทางด้านคุณภาพของสินค้าเป็นปัญหาใหญ่ต่อองค์กรของท่าน	1	2	3	4	5	6	7
10. การแข่งขันทางด้านความใหม่ของสินค้าเป็นปัญหาใหญ่ต่อองค์กรท่าน	1	2	3	4	5	6	7
11. พฤติกรรมการบริโภคของลูกค้ามีลักษณะแตกต่างกันมากตามแต่ละประเภทสินค้า	1	2	3	4	5	6	7
12. ธรรมชาติการแข่งขันมีลักษณะแตกต่างกันมากตามแต่ละประเภทสินค้า	1	2	3	4	5	6	7
13. วิธีการผลิตสินค้า/บริการมีลักษณะแตกต่างกันมากตามแต่ละประเภทสินค้า	1	2	3	4	5	6	7

ส่วนที่ 2: กลยุทธ์องค์กร

2. กรุณาเลือกกลยุทธ์ที่ระบุข้างล่างนี้เพียงข้อเดียว ตามที่ท่านคิดว่าเหมาะสมกับองค์กรของท่าน โปรดพิจารณาองค์กรเป็นภาพรวม (หมายเหตุ ไม่มีกลยุทธ์ใดทั้ง 4 รูปแบบ ถูกพิจารณาว่า ดี หรือ ไม่ดี)
 1. องค์กรลักษณะนี้พยายามวางรูปแบบและช่องทางธุรกิจทั้งสินค้า/บริการที่เฉพาะเจาะจง และมีแนวโน้มที่จะเสนอสินค้า/บริการที่จำกัดมากกว่าคู่แข่ง รวมถึงป้องกันขอบเขตทางธุรกิจของตนเองโดยเสนอคุณภาพและการให้บริการที่เป็นเลิศ อีกทั้งราคาที่ต่ำกว่าคู่แข่ง องค์กรลักษณะนี้ไม่จัดว่าอยู่ในแนวหน้าของการพัฒนาในอุตสาหกรรม กล่าวคือองค์กรไม่สนใจต่อการเปลี่ยนแปลงในอุตสาหกรรมที่ไม่มีอิทธิพลโดยตรงต่อการปฏิบัติการขององค์กร และให้ความสำคัญต่อการดำเนินงานให้ดีที่สุดเฉพาะขอบเขตของตนเองเท่านั้น
 2. องค์กรลักษณะนี้ดำเนินงานภายในขอบเขตของสินค้า/ตลาดที่หลากหลายซึ่งมีการเปลี่ยนแปลงอยู่เสมอ คุณค่าขององค์กรอยู่ที่การเป็นรายแรกในสินค้า/ตลาดใหม่ๆ ถึงแม้ว่าจะได้ผลลัพธ์ในรูปแบบกำไรไม่สูงมากก็ตาม องค์กรลักษณะนี้จะตอบสนองอย่างรวดเร็วกับโอกาสที่เข้ามาซึ่งการตอบสนองดังกล่าวมักจะนำไปสู่การแข่งขันในอุตสาหกรรม อย่างไรก็ตาม องค์กรอาจจะไม่สามารถรักษาความแข็งแกร่งทางการตลาดในทุกกรณีที่เขาดำเนินการได้
 3. องค์กรลักษณะนี้พยายามรักษาสินค้า/บริการที่มีชนิดจำกัดและมั่นคงแล้วในตลาด ขณะเดียวกันองค์กรมีการเคลื่อนไหวอย่างรวดเร็วเพื่อติดตามการพัฒนาใหม่ๆ ในอุตสาหกรรมอย่างระมัดระวัง น้อยครั้งมากที่องค์กรจะเข้ามาเป็น “รายแรก” ในสินค้า/บริการใหม่ๆ อย่างไรก็ตาม โดยการตรวจตราการปฏิบัติการของคู่แข่งหลักๆ ที่มีฐานสินค้า/ตลาดในลักษณะที่เป็นไปในทางเดียวกันอย่างพิถีพิถัน องค์กรสามารถเข้ามาเป็น “รายที่สอง” ในสินค้า/บริการใหม่ๆ ซึ่งมีต้นทุนที่มีประสิทธิภาพมากกว่าคู่แข่งได้บ่อยครั้ง
 4. องค์กรลักษณะนี้ไม่มีความแน่ชัดในสินค้า/ตลาด โดยปกติแล้วองค์กรจะไม่ใช้วิธีการแข่งขันที่รุนแรงในการรักษาสินค้า/ตลาดและไม่ยินดีที่จะรับความเสี่ยงสูงเหมือนคู่แข่งอื่นๆ ในทางกลับกัน องค์กรมักจะโต้ตอบในเรื่องดังกล่าวเฉพาะเมื่อเผชิญเหตุการณ์คับขันจากสภาพแวดล้อม

ถ้าไม่มีข้อใดใกล้เคียง กรุณาระบุ:

ส่วนที่ 3: วัฒนธรรมองค์กร

3. วัฒนธรรมองค์กรของท่านเป็นอย่างไร?

1 = เห็นน้อยอย่างยิ่ง 2 = เห็นน้อย 3 = ไม่ค่อยจะเห็น 4 = ไม่เห็นเลย
5 = ค่อนข้างจะเห็น 6 = เห็นมาก 7 = เห็นมากอย่างยิ่ง

1. ผู้บริหารให้การสนับสนุนการพัฒนาและกิจกรรมใหม่ๆที่สร้างสรรค์	1	2	3	4	5	6	7
2. ให้การสนับสนุนโครงการทดลองเล็กๆ	1	2	3	4	5	6	7
3. สนับสนุนทางการเงินเพื่อให้เริ่มดำเนินโครงการต่างๆได้	1	2	3	4	5	6	7
4. สนับสนุนการฝึกอบรมพนักงานเพื่อให้เกิดความชำนาญด้านความสร้างสรรค์	1	2	3	4	5	6	7
5. อนุญาตให้พนักงานของท่านตัดสินใจในเรื่องขั้นตอนการทำงานของพวกเขานเอง	1	2	3	4	5	6	7
6. หลีกเลี่ยงที่จะตำหนิพนักงานของท่านหากทำผิดพลาดเมื่อมีแนวคิดใหม่ๆ	1	2	3	4	5	6	7
7. พนักงานได้รับผลตอบแทนจากการการปฏิบัติงานที่มีความสร้างสรรค์และก่อให้เกิดนวัตกรรมใหม่ๆ	1	2	3	4	5	6	7
8. มีการเผยแพร่แนวคิดใหม่ๆ ของพนักงานให้ผู้อื่นในองค์กรได้รับรู้	1	2	3	4	5	6	7
9. สนับสนุนการร่วมตัดสินใจระหว่างระดับต่างๆขององค์กร	1	2	3	4	5	6	7
10. มีการสื่อสาร ภารกิจหลัก กลยุทธ์และเป้าหมาย แก่พนักงาน	1	2	3	4	5	6	7
11. สนับสนุนการสื่อสารและความร่วมมือระหว่างฝ่ายต่างๆ	1	2	3	4	5	6	7
12. สนับสนุนการทำงานเป็นทีมมากกว่าการทำคนเดียว	1	2	3	4	5	6	7

มีขั้นตอนหลักอื่นๆในองค์กรท่าน ที่มีการสร้างวัฒนธรรมองค์กรที่ก่อให้เกิดนวัตกรรมใหม่ๆ (innovation) ที่ไม่ได้กล่าวมาข้างต้นหรือไม่?

ส่วนที่ 4: นวัตกรรมใหม่ ๆ (innovation) ในด้านต่าง ๆ ภายในองค์กร

4. องค์กรของท่านเน้นในเรื่องความเป็นองค์กรที่ก่อให้เกิดนวัตกรรมใหม่ ๆ (innovation) ในด้านต่าง ๆ ภายในองค์กร เช่น สินค้า/บริการ การตลาด เทคโนโลยีการผลิต การบริหารการจัดการ การปฏิบัติงานต่าง ๆ ฯลฯ มากน้อยเพียงใด? (ท่านสามารถข้ามไม่ตอบคำถามบางข้อได้ หากไม่เกี่ยวกับองค์กรท่าน และโปรดระบุว่าไม่เกี่ยวกับองค์กรท่าน)

1 = เห็นน้อยอย่างยิ่ง 2 = เห็นน้อย 3 = ไม่ค่อยจะเห็น 4 = ไม่เห็นเลย
5 = ค่อนข้างจะเห็น 6 = เห็นมาก 7 = เห็นมากอย่างยิ่ง

1. เพิ่มธุรกิจประเภทใหม่ๆในอุตสาหกรรมปัจจุบันของท่าน	1	2	3	4	5	6	7
2. ดำเนินธุรกิจใหม่ๆในอุตสาหกรรมใหม่ๆซึ่งเกี่ยวข้องกับธุรกิจปัจจุบันของท่าน	1	2	3	4	5	6	7
3. หาดตลาดเฉพาะเจาะจงให้แก่สินค้าในตลาดปัจจุบันของท่าน	1	2	3	4	5	6	7
4. เข้าสู่ธุรกิจใหม่ๆโดยเสนอสินค้าประเภทใหม่ๆ	1	2	3	4	5	6	7
5. มีการปรับเปลี่ยน ทบทวนแนวคิดในเชิงธุรกิจ	1	2	3	4	5	6	7
6. มีการจัดหน่วยงานและฝ่ายต่างๆใหม่เพื่อเพิ่มนวัตกรรมให้กับองค์กร	1	2	3	4	5	6	7
7. มีกิจกรรมที่ประสานงานกันระหว่างหน่วยงานเพื่อเพิ่มนวัตกรรมให้กับองค์กร	1	2	3	4	5	6	7
8. เพิ่มการปกครองตนเอง ให้ความสำคัญอิสระแก่ของหน่วยงานต่างๆเพื่อก่อให้เกิดนวัตกรรมในองค์กร	1	2	3	4	5	6	7
9. มีการปรับเปลี่ยนโครงสร้างองค์กรเพื่อเพิ่มนวัตกรรมให้กับองค์กร	1	2	3	4	5	6	7
10. สนับสนุนการฝึกอบรมพนักงานเพื่อให้เกิดความชำนาญด้านความสร้างสรรค์	1	2	3	4	5	6	7
11. พนักงานได้รับผลตอบแทนจากการการปฏิบัติงานที่มีความสร้างสรรค์ และก่อให้เกิดนวัตกรรมใหม่ๆ	1	2	3	4	5	6	7
12. กำหนดขั้นตอนต่างๆ เพื่อให้ได้มาซึ่งแนวคิดใหม่ๆจากพนักงานและก่อให้เกิดนวัตกรรมใหม่ๆ	1	2	3	4	5	6	7
13. กำหนดให้มีกระบวนการในการตรวจสอบแนวคิดใหม่ๆ	1	2	3	4	5	6	7
14. กำหนดให้มีผู้สนับสนุนแนวคิด (โครงการหรือธุรกิจ) อย่างเป็นทางการ	1	2	3	4	5	6	7
15. สนับสนุนด้านทรัพยากรต่างๆเพื่อให้เกิดโครงการทดลองใหม่ๆ	1	2	3	4	5	6	7
16. พฤติกรรมการแข่งขันที่เป็นผู้นำ โดยมีความเคลื่อนไหวอย่างรวดเร็วในการแข่งขัน มักจะเริ่มดำเนินการต่างๆซึ่งบรรดาคู่แข่งตอบสนองในภายหลัง	1	2	3	4	5	6	7
17. ผู้บริหารในองค์กรของท่าน มีแนวคิดที่กล้าในเชิงรุกเพื่อเพิ่มความเป็นไปได้ในการตอบสนองต่อโอกาสที่เข้ามาในอนาคต	1	2	3	4	5	6	7
18. ผู้บริหารในองค์กรของท่านนิยม โครงการต่างๆที่มีความเสี่ยงสูงซึ่งมีโอกาสที่จะได้ผลตอบแทนสูงมาก	1	2	3	4	5	6	7

5. ในระยะ 3 ปีที่ผ่านมา องค์กรของท่านมีการเปลี่ยนแปลงอย่างไรบ้าง? (ท่านสามารถข้ามไม่ตอบคำถามบางข้อได้ หากไม่เกี่ยวกับองค์กรท่าน และโปรดระบุที่ไม่เกี่ยวกับองค์กรท่าน)

1 = ลดลงมาก 2 = ลดลง 3 = ค่อนข้างจะลดลง 4 = ไม่มีการเปลี่ยนแปลงใดๆ
 5 = ค่อนข้างจะเพิ่มขึ้น 6 = เพิ่มขึ้น 7 = เพิ่มขึ้นมาก

1. องค์กรของท่านเน้นในเรื่องการพัฒนาสินค้าใหม่ๆ	1	2	3	4	5	6	7
2. องค์กรของท่านใช้จ่ายในกิจกรรมการพัฒนาสินค้าใหม่ๆ	1	2	3	4	5	6	7
3. องค์กรของท่านเพิ่มจำนวนสินค้าใหม่ๆ	1	2	3	4	5	6	7
4. จำนวนการวางตลาดสินค้าหรือบริการประเภทใหม่ๆขององค์กรของท่าน	1	2	3	4	5	6	7
5. การเปลี่ยนแปลงของสินค้าและบริการประเภทต่างๆขององค์กรของท่าน	1	2	3	4	5	6	7

ส่วนที่ 5: ผลการดำเนินงานขององค์กร

6. ในระยะ 3 ปีที่ผ่านมา ท่านคิดว่าผลการดำเนินงานขององค์กรท่านเป็นอย่างไรเมื่อเทียบกับองค์กรอื่นๆ ในอุตสาหกรรมนี้

1 = ต่ำมาก 2 = ต่ำ 3 = ค่อนข้างต่ำ 4 = ไม่ต่ำและไม่สูง
5 = ค่อนข้างสูง 6 = สูง 7 = สูงมาก

1. ระดับผลกำไรและผลตอบแทนต่อสินทรัพย์	1	2	3	4	5	6	7
2. กระแสเงินสดหมุนเวียน	1	2	3	4	5	6	7
3. การเจริญเติบโตของยอดขาย	1	2	3	4	5	6	7
4. ส่วนแบ่งทางการตลาด	1	2	3	4	5	6	7
5. คุณภาพสินค้าและบริการ	1	2	3	4	5	6	7
6. การพัฒนาสินค้าและบริการ	1	2	3	4	5	6	7
7. ความพึงพอใจของพนักงาน	1	2	3	4	5	6	7
8. ผลการดำเนินงานโดยรวมขององค์กร	1	2	3	4	5	6	7

ส่วนที่ 6: คำถามทั่วไปขององค์กรของท่าน และประวัติการทำงานของท่าน

7. ข้อใดอธิบายองค์กรท่านได้ดีที่สุด

- บริษัทที่มีชาวต่างชาติเป็นเจ้าของเป็นส่วนใหญ่ บริษัทที่มีชาวไทยเป็นเจ้าของเป็นส่วนใหญ่
- บริษัทที่มีชาวไทยเป็นเจ้าของ อื่นๆ (กรุณาระบุ) _____

8. องค์กรของท่านจัดว่าเป็น

- ผู้ผลิตประเภท OEM
- ผู้ผลิตประเภท REM
- อื่นๆ (กรุณาระบุ) _____

9. องค์กรของท่านมีพนักงานเต็มเวลาประมาณเท่าใด?

_____ คน

10. องค์กรของท่านประกอบธุรกิจในอุตสาหกรรมนี้มานานเท่าใด?

_____ ปี

11. กรุณาระบุเพศของท่าน

- ชาย หญิง

12. กรุณาระบุกลุ่มอายุของท่าน

- 35 ปีหรือน้อยกว่านั้น 46-55 ปี
- 36-45 ปี 56 ปี หรือมากกว่านั้น

13. ท่านมีประสบการณ์ทำงานหลักในสาขาใดดังต่อไปนี้

- การเงินและการบัญชี วิศวกรรมและการผลิต
- การขายและการตลาด อื่นๆ (กรุณาระบุ) _____
- บริหารบุคลากร

14. กรุณาระบุการศึกษาของท่าน

- ประกาศนียบัตร ด้าน _____
- ปริญญาตรี ด้าน _____
- ปริญญาโท ด้าน _____
- ปริญญาเอก ด้าน _____
- อื่นๆ _____

15. ท่านทำงานในตำแหน่ง _____

ในองค์กรนี้ _____ ปี

ในอุตสาหกรรมนี้ _____ ปี

ขอขอบพระคุณอย่างสูงที่ท่านกรุณาใช้เวลาอันมีค่าในการตอบแบบสอบถามการวิจัยนี้ ข้อมูลที่ได้รับจะเป็นประโยชน์อย่างยิ่งต่อการศึกษา

APPENDIX B: THE INTERVIEW QUESTIONS

Survey of an Examination of the Relationship between Entrepreneurship as Firm Behaviour and Firm Performance in Thailand's Auto Parts Manufacturing Firms

Thank you for agreeing to participate in this interview into how entrepreneurship as firm behaviour contributes to firm performance. The company in this questionnaire means the entity of which you are a senior executive of Thai auto parts manufacturer.

In this questionnaire we shall be asking a series of questions about entrepreneurship within your organization in respect to the following aspects:

- Environmental conditions
- Organizational strategy
- Organizational culture
- Firm performance
- Other Aspects

All responses that you provide will be **strictly confidential** and all analysis of data collection will be undertaken with aggregated data from all respondents. The data will be coded to ensure that no unauthorized person can identify or interpret an organization's return. **This questionnaire will be used for academic purposes only.** Once again, when the results are published, it will not be possible to identify any individual company data

Company code: _____

Date: _____



Faculty of Business and Enterprise
Swinburne University of Technology
Melbourne, Australia

Section I: Environmental Conditions

Could you please describe the current impact of uncertainty or rapidly changes of business environment on your company's operation?

Could you please describe the current impact of complexity or diversity of business environment on your company's operation?

Could you please describe the current impact of threats of business environment on your company's operation?

Section II: Organizational Strategy

In your opinion, what strategies are essential to achieve growth and innovation in an organization?

Section III: Organizational Culture

In your opinion, what are major procedures or processes used for shaping entrepreneurial or innovative culture in an organization?

Section IV: Firm Performance

What company's performance criteria do you think are important for your company over the last three years?

Section IV: Additional Questions

What do you believe are the most important factors in cultivating entrepreneurial or innovative activities in your organization?

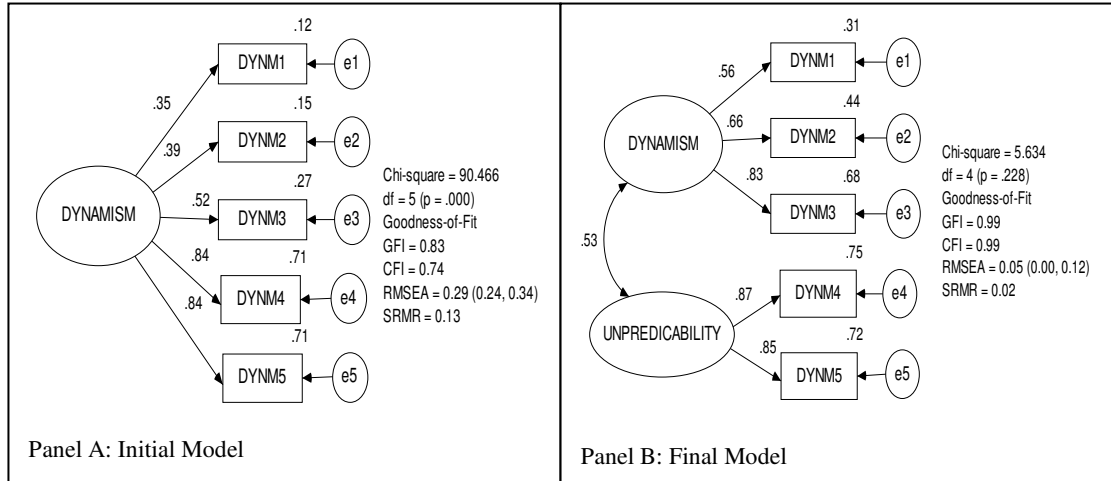
Are there any other comments you would like to make with regard to the subjects covered in this interview or with regard to your company that you consider relevant to this research?

APPENDIX C: FINDINGS

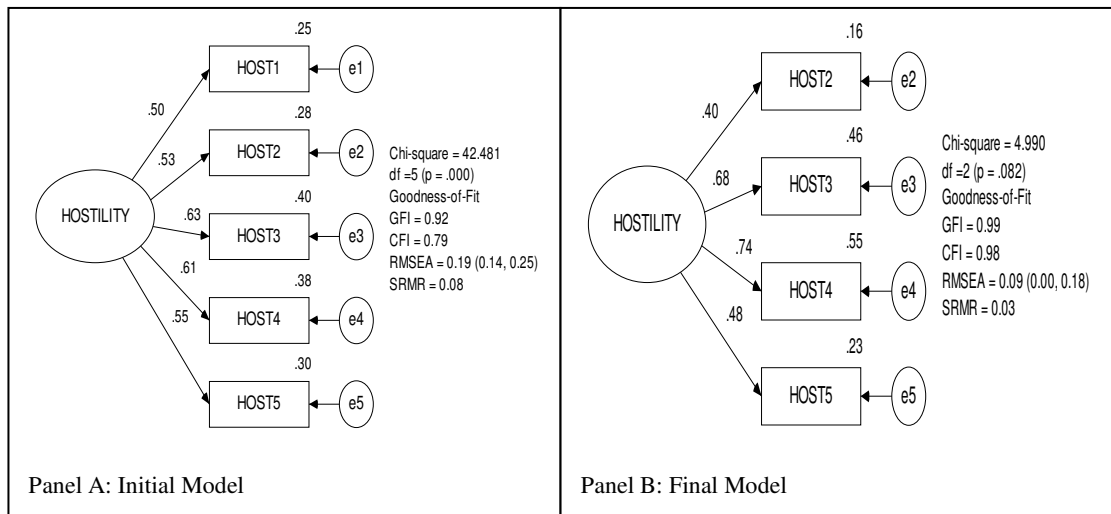
APPENDIX 1c: Findings of Confirmatory Factor Analysis Output

One-Factor Congeneric Measurement Models

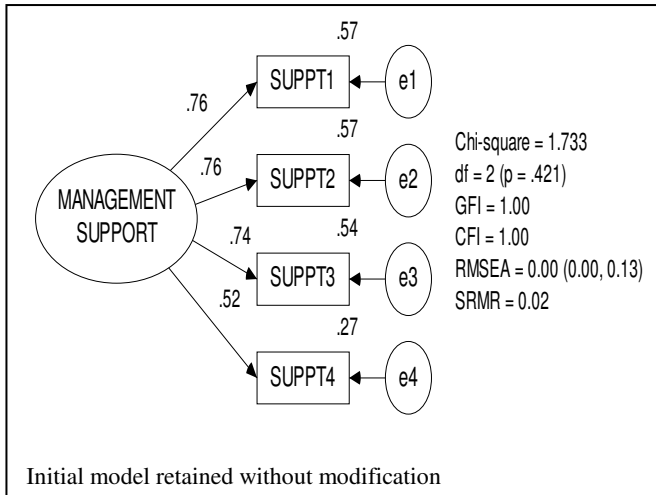
Environmental Conditions *Environmental Dynamism*



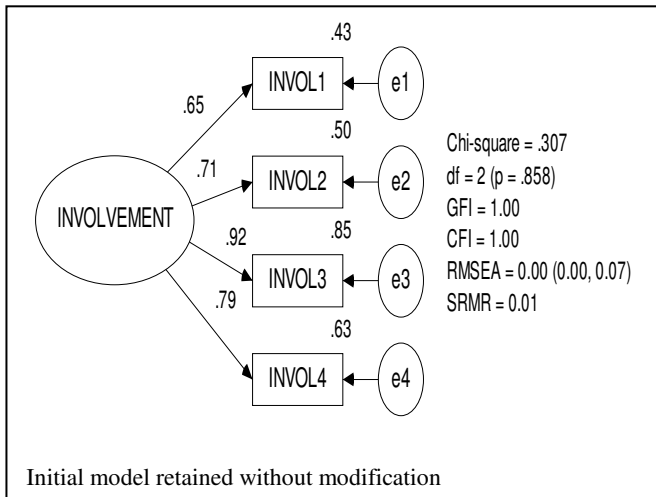
Environmental Hostility



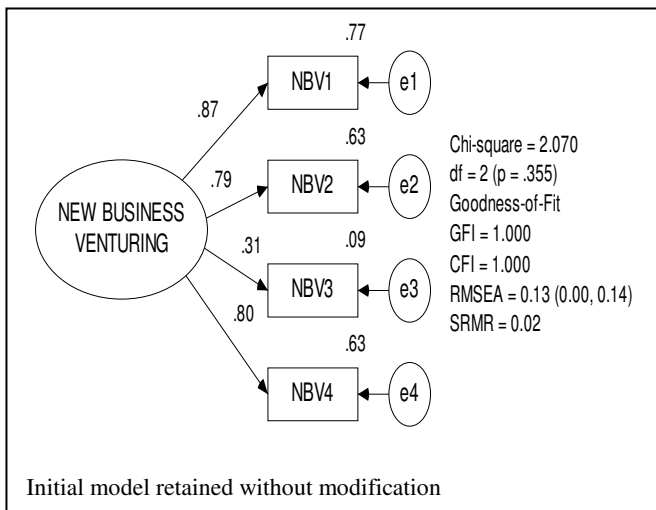
Organizational Culture
Management support



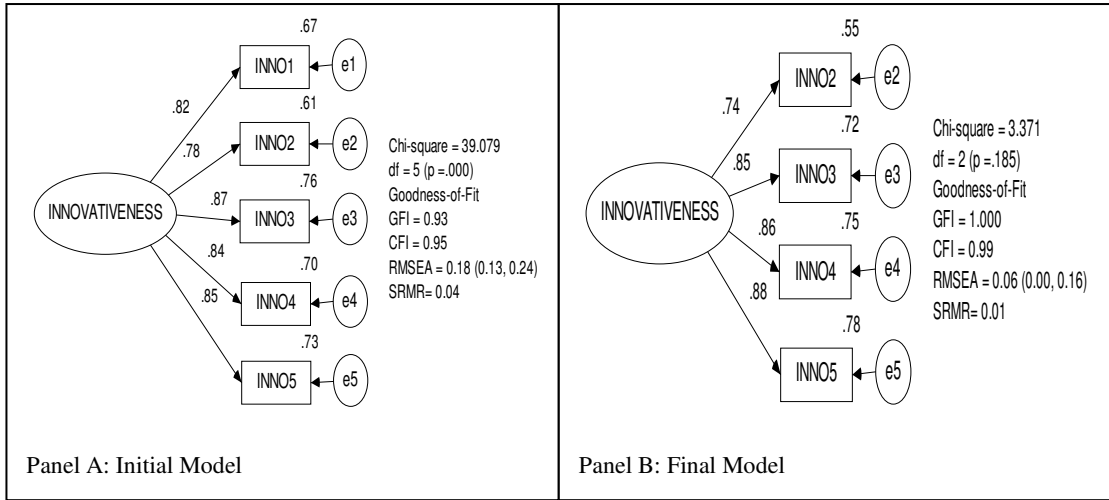
Involvement



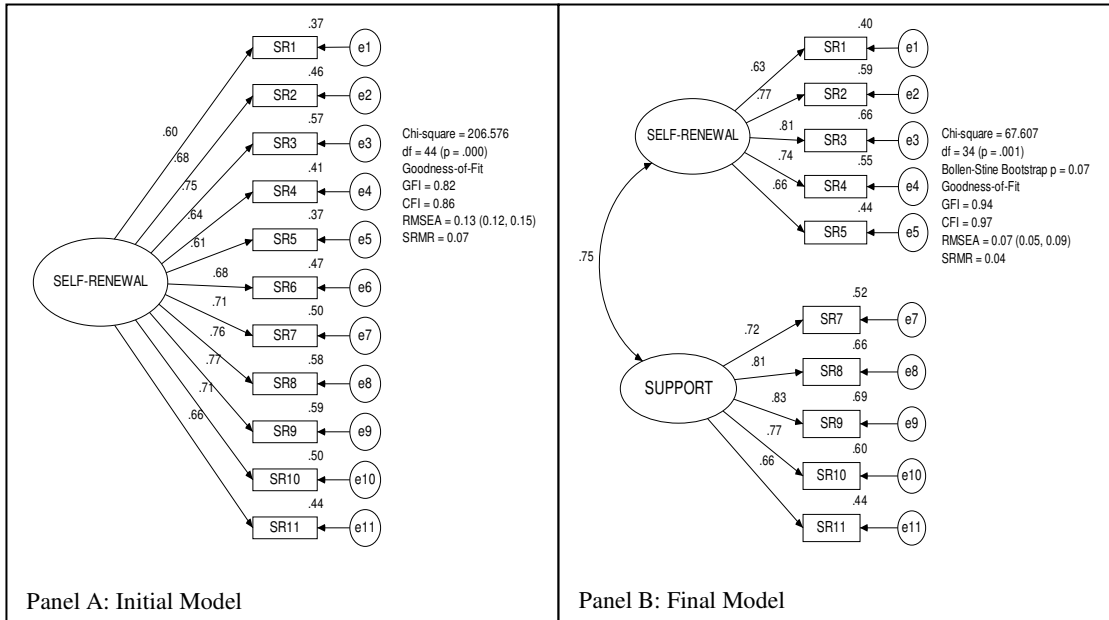
Corporate Entrepreneurship
New Business Venturing



Innovativeness

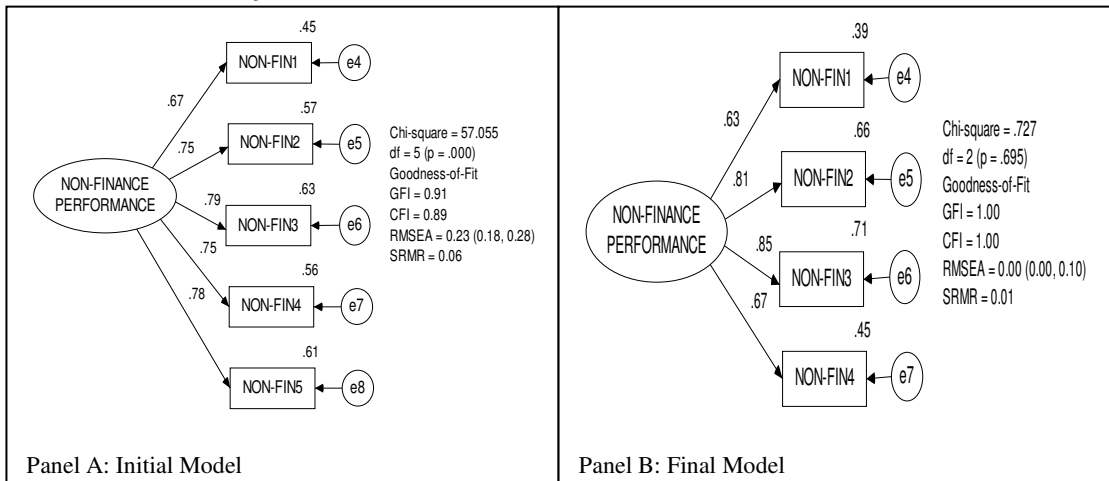


Self-Renewal

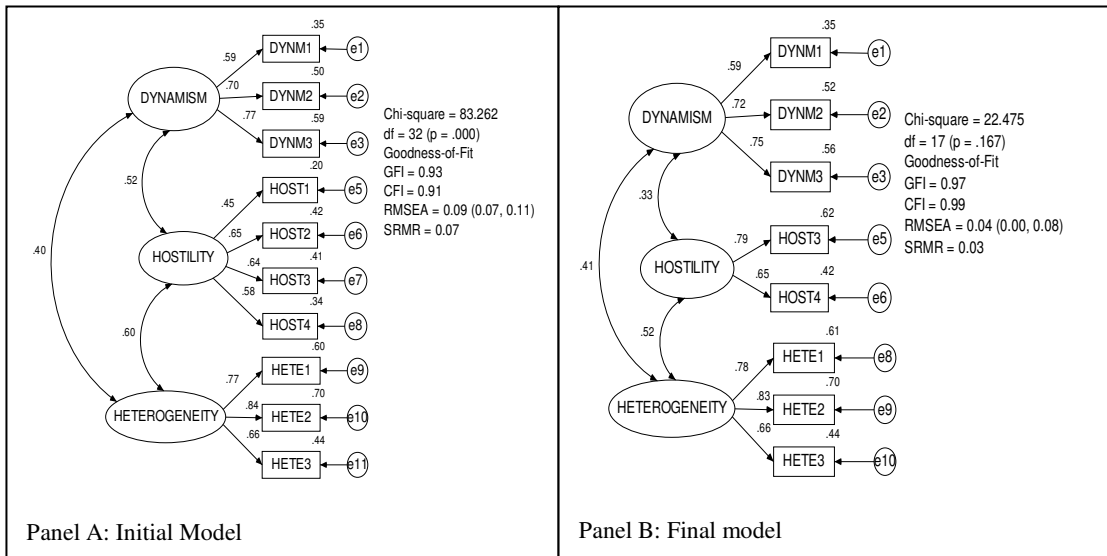


Firm Performance

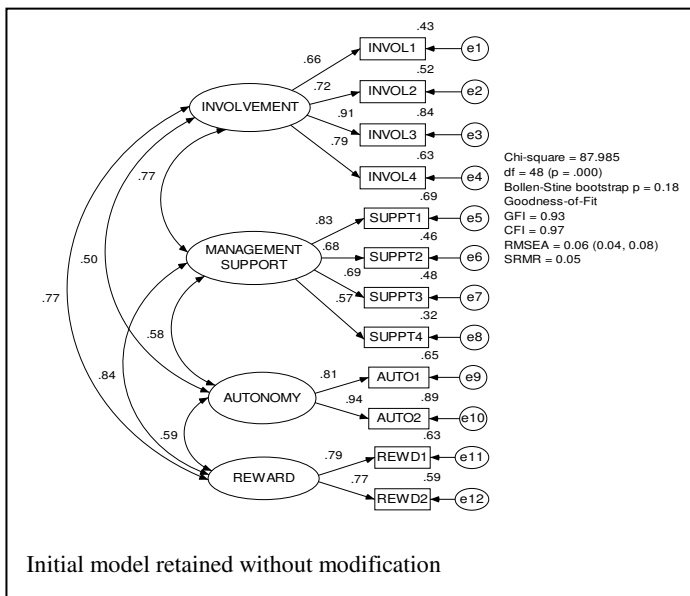
Non-Financial Performance



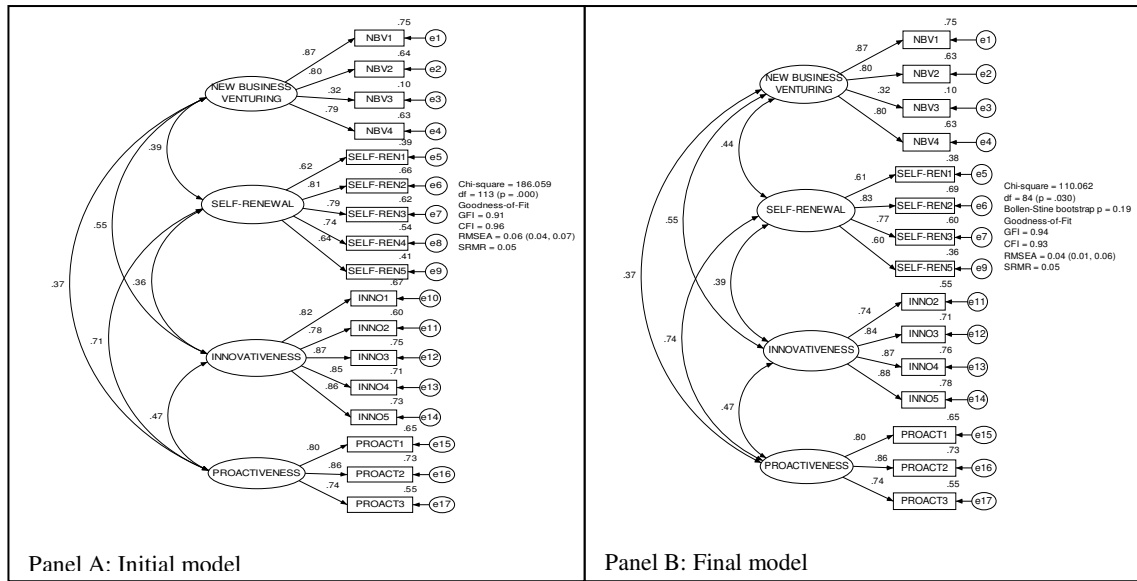
First-Order Measurement Models Environmental Conditions



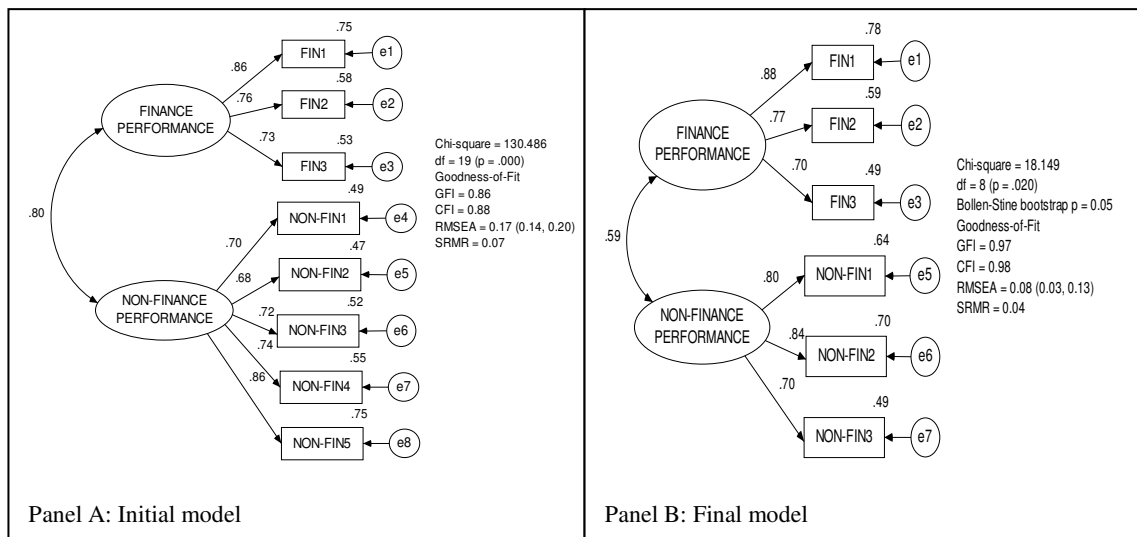
Organizational Culture



Corporate Entrepreneurship



Firm Performance



APPENDIX 2c: SEM Output

Final Model of Corporate Entrepreneurship Antecedents and Effects

Regression Weights

		Estimate	S.E.	C.R.	P
CE	<--- DYNAMIC	.201	.072	2.787	.005
CE	<--- CULTURE	.713	.106	6.720	***
CE	<--- PROSPECTOR	5.635	1.085	5.193	***
CE	<--- DEFENDER	1.958	1.036	1.889	.059
CE	<--- HOSTILITY	-.242	.111	-2.174	.030
CE	<--- HETEROGENEITY	.177	.077	2.291	.022
CE	<--- ANALYZER	5.271	1.024	5.148	***
NON_FINANCE	<--- CE	.584	.073	7.994	***
NON_FINANCE	<--- DEFENDER	1.299	.544	2.387	.017
FINANCE	<--- CE	.183	.074	2.468	.014
FINANCE	<--- NON_FINANCE	.387	.082	4.714	***
FINANCE	<--- HOSTILITY	-.223	.086	-2.587	.010

Standardized Regression Weights

		Estimate
CE	<--- DYN	.176
CE	<--- CULTURE	.535
CE	<--- PROSPECTOR	.623
CE	<--- DEFENDER	.203
CE	<--- HOST	-.142
CE	<--- COMPLX	.149
CE	<--- ANALYZER	.666
NON_FINANCE	<--- CE	.705
NON_FINANCE	<--- DEFENDER	.162
FINANCE	<--- CE	.222
FINANCE	<--- NON_FINANCE	.388
FINANCE	<--- HOST	-.159
NBV	<--- CE	.517
self-renew	<--- CE	.713
innovative	<--- CE	.666
proactive	<--- CE	.694
dynamic	<--- DYN	.984
hostile	<--- HOST	.959
heterogeneity	<--- COMPLX	.989
involvement	<--- CULTURE	.804
management-support	<--- CULTURE	.821
autonomy	<--- CULTURE	.573
reward	<--- CULTURE	.762
finance	<--- FINANCE	.990
non-finance	<--- NON_FINANCE	.990

Squared Multiple Correlations

	Estimate
CE	.685
NON_FINANCE	.428
FINANCE	.328
dynamic	.969
hostile	.920
heterogeneity	.978
autonomy	.329
management support	.673
involvement	.647
reward	.580
NBV	.267
proactive	.482
innovative	.443
self-renew	.508
finance	.980
non-finance	.981