PROACTIVE CORPORATE SUSTAINABILITY PRACTICES AND PERFORMANCE IN SMALL AND MEDIUM ENTERPRISES.

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Submitted in fulfilment of the requirements for the degree of

Doctor of Philosophy

University of Tasmania

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DECLARATION

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STATEMENT OF ETHICAL CONDUCT

The research associated with this thesis abides by the international and Australian codes on human and animal experimentation, the guidelines by the Australian Government’s Office of the Gene Technology Regulator and the rulings of the Safety, Ethics, and International Biosafety Committees of the University.

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ABSTRACT

Proactive corporate sustainability practices (CSPs) are normally delimited as voluntary practices in which a firm engages, and that go beyond regulatory requirements, in order to: reduce or minimize negative economic, social and environmental impacts that might affect its competitive position; and thereby enhance performance and competitive advantage.

Proactive CSPs have been well researched in large enterprises; however, so far little attention has been given to the challenge that the adoption of such practices poses for small and medium enterprises (SMEs). It is conventionally assumed that SMEs have constrained or inadequate resources to engage in proactive CSPs, and that this means SMEs are unlikely to reap the benefits that proactive CSPs offer. Nevertheless, evidence has been presented in recent research into sustainable environmental practices (EnvPs) (Aragon-Correa, Hurtado-Torres, Sharma & Garcia-Morales, 2008), that SMEs possess distinctive organizational capabilities which can aid in the adoption of proactive business practices and which in turn can contribute positively to SME financial performance. However, there is a need for research that extends this work to include the two other constituent dimensions of proactive CSPs – economic practices (EconPs) and social practices (SocPs) – with the aim of developing an integrative strategy model and holistic view of proactive CSPs and SME financial performance.

This empirical study addresses that research need. The study aims to develop an understanding of the role that proactive CSPs play in mediating the relationship
between three specific organizational capabilities (shared vision, stakeholder management and strategic proactivity) and SME financial performance. Two hypothesized models, showing how proactive CSPs and the interaction between its three constituent dimensions (EconPs, SocPs and EnvPs) might mediate that relationship in SMEs, are proposed. Using longitudinal survey data collected from a sample of 171 Australian SMEs in the machinery and equipment manufacturing industry sector, structural equation modeling is used to test the research hypotheses derived from the theoretical models. Qualitative data collected through open-ended survey questions is also used in order to help explain the quantitative data findings in greater depth.

This study has several key findings. These include that: proactive CSPs, and the interaction that occurs between EconPs, SocPs and EnvPs, represent a necessary and sufficient mechanism through which the specified three capabilities are able to influence SME financial performance positively; and the adoption of each dimension of proactive CSPs by SMEs is influenced differently by each capability. The study also presents evidence that SMEs which deploy all three capabilities are more likely to engage in the wide range of proactive CSPs. The study concludes that each dimension of proactive CSPs influences financial performance differentially.

These findings contribute to a more comprehensive understanding of proactive CSPs in the SME context. They show that SMEs, even with constrained resources, are able to adopt proactive CSPs when the three capabilities of shared vision, stakeholder management and strategic proactivity are used in tandem.
Recognizing the importance of the interaction between proactive EconPs, SocPs and EnvPs is a critical factor in enabling SMEs to understand how to make best use of these capabilities and to achieve an improvement in financial performance.
ACKNOWLEDGEMENTS

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<td>CEO</td>
<td>Chief Executive Officer</td>
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<td>CS</td>
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CHAPTER 1: INTRODUCTION

CHAPTER OBJECTIVES

This chapter provides an overview of the rationale for, and objectives of, the study. Firstly, the issue of proactive sustainable business practices in small and medium enterprises (SMEs) is introduced. This is followed by a discussion of addressing the question of what are proactive corporate sustainability practices (CSPs). The concept of SMEs is defined, and previous approaches to the study of proactive CSPs in SMEs are discussed. This is followed by a description of the economic importance of SMEs in the Australian context, the challenges facing SMEs in the adoption of proactive CSPs, and the strategic advantage that such business practices might provide for SMEs. The overall study aim of developing a theoretical understanding of the mediating role of proactive CSPs, and the interaction between their economic, social and environmental dimensions, on the relationship between the specific organizational capabilities and firm financial performance is discussed. The specific research objectives and research questions for the study are then specified. Lastly, the structure of the thesis is outlined.
BACKGROUND AND RATIONALE

Introduction
Since the emergence of industrialization, there has been tremendous growth in global population, food production and economic activity, and great achievements in material prosperity (Goldies, Douglas & Furnass, 2005). Although such industrial and economic development has markedly enhanced life expectancy and human well-being in general, a cost of this progress has been widespread environmental degradation and inequalities in opportunity and wealth distribution with attendant social impacts between and within developed and developing nations (Dunphy, 2003; Marcus, Geffen & Sexton, 2002). The task of addressing these and other costs associated with economic growth is made more complex by the effects of globalization. Businesses, perceived as the fundamental cells of modern economic life, now face challenges arising from fierce global competition, new and powerful forms of technology, worldwide political changes, social and environmental controversies, and uncertainty stemming from international economic events (Frederick, Post & Davis, 1992). To cope effectively with these challenges, businesses must focus on long-term sustainable value creation through the implementation of proactive corporate sustainability practices (Dyllick & Hockerts, 2002; Porter & Kramer, 2006; Wolf, 2008).

What are Corporate Sustainability Practices (CSPs)?
CSPs are practices based on the heuristic, multi-criteria triple bottom line perspective which aims to integrate economic, social and environmental dimensions of business management (Elkington, 1999; Wilson, 2003). At the intersection of these three sustainability dimensions, CSPs are achieved (Bansal,
In today’s business climate, as progressively more research suggests the need for businesses to address sustainability issues in order to resolve economic, social and environmental problems they have helped create (Bebbington, 2001), a singular emphasis on business practices that maximize profitability, whilst ignoring their wider negative impacts, is no longer sufficient. Instead, businesses face increasing calls to adopt CSPs that allow them to perform well against a broader range of economic, social and environmental indicators (Bebbington, 2001; Starik & Marcus, 2000). As warned by Porter and Kramer (2006), any business that pursues its ends at the expense of the economy, society and environment in which it operates, will find its success to be illusory and ultimately temporary.

CSPs can be classified along a continuum that ranges from reactive (aimed at compliance with regulatory requirements) to proactive (actively and voluntarily managing all sustainability dimensions as the significant competitive priority) (see Aragon-Correa & Sharma, 2003; Bianchi & Noci, 1998; Hart & Ahuja, 1996; Muller & Koechin, 1992; Newman, 1993). With regard to the long-term survival and well-being of the society, businesses are increasingly expected to take the initiative, recognize their responsibility, and make their contribution to ensure sustainability (Bowen, 2007; Dunphy, 2003). This implies that a simple ‘following the rules’ approach is no longer considered to be sufficient for business (Wolf, 2008). Instead, a more active involvement and investment in sustainability that goes beyond mere regulatory compliance has been called for by society, and increasingly supported by strategy scholars as one of the best ways for business to achieve superior performance in a highly competitive business environment (e.g. Aragon-Correa et al., 2008; Berry & Rondinelli, 1998; Klassen & Whybark,
The nature and implementation of proactive CSPs have been well researched in large enterprises; however, SMEs have received less research attention for basically three reasons: their presumed lack of interest in going beyond regulatory compliance, a lack of publicly available and inclusive data, and the low degree of public interest in SMEs (Fuller, 2003; Hillary, 1995; Jenkins, 2004; Merrit, 1998; Scott, 1990; Sharma & Vredenburg, 1998). This lack of a research focus on proactive CSPs in SMEs has also arisen partly because the impact of size on a firm’s ability to adopt proactive CSPs has been ambiguous (Lepoutre & Heene, 2006), and partly because of the lack of empirical evidence that demonstrates in the case of SMEs a clear causal link between CSPs and firm performance (Burke & Logsdon, 1996; Castka, Balzarova, Bamber & Sharp, 2004; Salzmann, Ionescu-Somers & Steger, 2005). However, recent calls have been made in the literature for a reorientation of the research focus away from large firms, based on the idea that proactive CSPs may be a pathway to competitive advantage for SMEs (e.g. Jenkins, 2006; Spence & Rutherfoord, 2003; Tilley, Hooper & Walley, 2003).

Although researchers usually define an SME in relation to measures such as total assets, total number of employee, annual turnover, and so on. The threshold levels chosen along these measures vary considerably between studies (Hillary, 2000; Spence, 1999). For example, the European Commission (2003a) sets out a definition of SMEs applied to all industries, as firms with fewer than 250
employees and either an annual turnover not exceeding €50 million or an annual balance sheet total not exceeding €43 million. On the other hand, in the United States, an SME includes firms with less than 500 employees for manufacturing and mining industries, and firms with $US31 million of annual turnover for construction industries (U.S. Small Business Administration, 2008). Storey (1994) suggests, that as there is no uniformly acceptable definition of an SME, researchers should use a definition that is appropriate to their particular target firms, purpose of the study, and the context of the country in which those target firms operate. Hence, for the purpose of this research study conducted in the Australian context, the Australian Bureau of Statistics (ABS) definition of an SME is used i.e. an SME is a firm which has up to 199 employees (ABS, 2001).

SMEs are a significant part of every economy, and in most industrialized nations are accepted as being the predominant employers and wealth generators collectively (Hawkins, 2006). According to the United Nations Industrial Development Organization (UNIDO) (2002: 2), ‘SMEs make up over 90 per cent of business worldwide and account for between 50 per cent and 60 per cent of employment’. Research suggests that generally SMEs often employ more labour-intensive production processes than large enterprises; therefore, they contribute significantly to the provision of productive employment opportunities, the generation of income and ultimately, the reduction of poverty (Jenkins, 2004; Lepoutre & Heene, 2006). It is also evident that SMEs help absorb productive resources at all levels of the economy and contribute to the creation of resilient economic systems where small and large firms are interlinked (see UNIDO, 2002). Because of this, it is hardly surprising that the prosperity of the SME sector
is inextricably linked to a nation’s economic and social health (Saee, 2004; Tilley, 2000).

At the same time, however, the cumulative impact of SMEs on the environment and society, when viewed from a sustainability perspective, raises some concerns. Research suggests that globally SMEs produce approximately 60 per cent of global carbon dioxide emissions from business (Marshall, 1998), around 70 per cent of the total global pollution (Groundwork, 1995; Smith & Kemp, 1998), and the sum total of SMEs’ environmental impacts globally outweighs the combined environmental impacts of large firms (Hillary, 2000). What available research also suggests is that generally there is a limited ability and willingness on the part of SMEs to be proactive in managing the economic, social and environmental effects of their business operations (Bianchi & Noci, 1998). However, it is also important to recognize that generally the primary focus of SMEs is on sustaining financial viability, and SMEs prefer to invest their limited resources in ways that yield an immediate financial return (Beaver & Jennings, 2000). This implies that uptake of proactive CSPs by SMEs will remain less likely until such practices are linked to enhanced competitive financial performance (see Jenkins, 2006; Spence & Rutherfoord, 2003; Tilley et al., 2003). Indeed, this is arguably the key challenge for researchers examining proactive CSPs in SMEs.

### Challenges Faced by Australian SMEs in Adopting Proactive CSPs

In the Australian context, SMEs are ‘not only major employers (70 per cent of Australian employment), they are also viewed as being major drivers of innovation, and as such, key players in making the Australian economy competitive in the global marketplace’ (Temperley, Galloway & Liston, 2004:
However, research suggests that for many Australian SMEs meeting economic, social and environmental objectives is a low priority, contradictory and near impossible challenge to meet, particularly in the face of the recent global financial crisis and high competitive pressures from import penetration of products from lower-cost economies (Nayak, 2006). For example, a survey of 800 Australian SMEs across 14 industry sectors (Australian Fieldwork Solution, 2009) shows that over 85 per cent of the SMEs surveyed are reactive rather than proactive in regard to environmental issues, and that their commitment to making environmental improvements is generally low. It is interesting to note that 72 per cent of the SMEs surveyed also indicated their business operations did not harm the environment (Australian Fieldwork Solution, 2009).

While in general Australian SMEs increasingly appear to pay lip service to the need to adopt proactive CSPs, limited resources and expertise as well as die-hard perceptions that doing so is antagonistic to maximizing profits, remain a stumbling block to wider acceptance of sustainability principles (Allen Consulting Group, 2008; Condon, 2004). However, it should be noted that many large Australian enterprises, especially in the mining and resources industries, have engaged with the task of managing their environmental impacts, and are seeking to manage their economic and social impacts to create value for the mutual benefit of themselves and their community (Allen Consulting Group, 2008). Given that many Australian SMEs are part of the supply chains for such large enterprises, they too are facing increasing pressure to behave more responsibly and go beyond mere compliance with legislated sustainability standards. Those that do not respond positively to this pressure may find themselves at a competitive disadvantage to those SMEs that do (Allen Consulting Group, 2008).
A number of scholars claim that the pursuit by SMEs of proactive CSPs is not only good for the planet and its people, but it can also make SMEs more competitive, more resilient to economic shocks, more likely to attract and hold customers and good employees in a fast changing world, and lead to greater favour with regulators, bank, insurers and financial markets (e.g. Jenkins, 2006; Lepoutre & Heene, 2006; Tilley et al., 2003; Wolf, 2008). However, to date there is a lack of empirical studies done in Australia to support these claims (Allen Consulting Group, 2008; Nayak, 2006). The shortage of persuasive evidence might explain in part why Australian SMEs appear generally reluctant to embrace proactive CSPs as central to the business process. However, Australian SMEs are arguably at a crossroads. SME owner-managers and executives are now faced with the need to master a steep learning curve if they are to seize the new global opportunities, implement business practices in line with a proactive sustainability agenda, and survive and indeed prosper under difficult economic conditions. Importantly, the UNIDO (2002: ix) warns that the long-term success of business is dependent on the incorporation of proactive CSPs within the core of business strategy as part of ‘business as usual’. A well-thought-out strategic approach to proactive CSPs would thus appear essential if Australian SMEs are to cope with the complex challenges they face and thus generate wealth in a manner that is economically, socially and environmentally responsible.

**Strategic Advantage, SMEs and Proactive CSPs**

Strategy scholars have long debated the strategic advantages associated with firm size. Initially, a widely held view in the literature (Gale, 1972; Strategic Planning Institute, 1977) was that large firms possess numerous advantages over SMEs that
enable growth-oriented strategies designed to capture economies of scale, brand recognition and market power. SMEs, in contrast, were considered as having less strategic advantages due to their lesser and limited resource base, constrained organizational learning opportunities, restricted production capacity, and narrower range of markets (Gibb & Scott, 1985; Stanworth & Curran, 1976). Furthermore, SMEs were often marginalized in the literature as a residual class of enterprises that had failed to become large, and were less likely to use advanced managerial approaches, strategic analysis and planning practices (e.g. Robinson & Pearce 1984; Sexton & van Auken 1985; Shuman, Shaw & Sussman, 1985).

In recent times, the strategic management literature has reflected increasing interest in the proposition that, in comparison to large firms, SMEs are better able to develop particular characteristics that can provide a distinct basis for strategic advantage. Such characteristics include the flexibility to respond more rapidly to changes in the business environment, closer interaction between employer and employees, and an entrepreneurial orientation and innovativeness with which to respond with agility to their competitors’ actions (Fiegenbaum & Karnani, 1991; Man, Lau & Chan, 2002; Rangone, 1999; Smallbone & Wayer, 2000; Vossen, 1998; Yu, 2001). Research suggests that these characteristics allow SMEs to gain strategic advantages via focused strategies for producing specialty products and services for niche markets, which for many may be the only viable competitive option given their limited resources (Chen & Hambrick, 1995; Dean, Brown & Bamford, 1998; Lee, Lim & Tan, 1999; Lescure, 1999; Porter, 1980, 1985). It is argued that by seeking out protected market niches that are too small or not worth the bother for larger enterprises, SMEs can avoid head-on confrontation with larger firms (Dean et al., 1998; Tilley et al., 2003). Jenkins (2006) supports this
argument by suggesting that SMEs have certain attributes that may enable them to gain a competitive advantage in emerging niche markets for products/services that offer economic, social and environmental benefits as part of the value proposition to the customer.

However, despite this increasing recognition of the importance of sustainability-oriented strategies for SMEs’ competitiveness, the debate about the adoption of proactive CSPs by SMEs is not entirely without controversy. Aside from the conventional wisdom in the extant literature that smaller firm size imposes major barriers to SMEs making the significant investments in CSPs that can be required (e.g. Bansal, 2005; Besser, 1999; Bianchi & Noci, 1998; Lepoutre & Heene, 2006; Murphy, Smith & Daley, 1992; Rutherford, Blackburn, & Spence, 2000; Schaper, 2002), small-firm specialists also generally contend that SMEs are not simply ‘little big firms’, and that the approach adopted by large firms cannot simply be scaled down to fit SMEs (Spence & Rutherford, 2003; Tilley et al., 2003). Indeed, this perspective implies the assumption that proactive CSPs may not be an appropriate alternative for SMEs (Russo & Fouts, 1997; Schaper, 2002).

A few descriptive studies on sustainable environmental practices, however, challenge this perspective by showing that SMEs may successfully adopt practices similar to the advanced environmental practices of large firms (e.g. Bianchi and Noci, 1998; Carlson-Skalak, 2000; Hillary, 2000). This argument is empirically supported by a recent study conducted by Aragon-Correa et al. (2008) that examined 108 Spanish SMEs in the automotive repair sector. Drawing on the resource-based view of the firm that organizational capabilities are the key considerations in formulating strategy (Barney, 1991; Connor, 2002; Grant, 1991;
Wernerfelt, 1984), Aragon-Correa et al. (2008) identified capabilities, based on a fit with SMEs’ particular characteristics discussed in the literature, that make it more likely for SMEs to adopt eco-efficient and innovative preventive practices. These capabilities were shared vision (relating to shorter lines of communication and closer interaction within the SMEs), stakeholder management (relating to SMEs’ flexibility in managing internal and external relationships) and strategic proactivity (relating to SMEs’ entrepreneurial orientation and innovativeness). Their research found that some Spanish SMEs had adopted environmentally related proactive practices and that such practices positively contributed to superior financial performance via the three capabilities specified.

However, while Aragon-Correa et al. (2008)’s research study reported finding a positive association, its contribution to the research literature is arguably limited in three important ways. Firstly, since the research was conducted in Spain, the results observed might not be generalized to SMEs in Australia and other nations due to differences in culture, demography, regulations and competitive realities. Secondly, because of limitations in the nature of the cross-sectional study design used in the research, the direction of causality could not be confirmed. Thirdly, as only one aspect of proactive CSPs, the environmental dimension, was examined, a less than holistic understanding of proactive CSPs and their impact on financial performance in SMEs was obtained. These limitations create a gap in the research literature and present an opportunity for longitudinal research that broadens the focus to include all three constituent dimensions of proactive CSPs – economic practices (EconPs), social practices (SocPs) and environmental practices (EnvPs) – with the aim of developing an integrative strategy model that presents an holistic view of proactive CSPs in SMEs in Australia.
The present study addresses that research need by building on and extending Aragon-Correa et al. (2008)’s approach. Using longitudinal survey data collected from a sample of Australian SMEs, the study aims to develop a theoretical understanding of the role that proactive CSPs (EconPs, SocPs and EnvPs) play in mediating the relationship between three specific capabilities (shared vision, stakeholder management and strategic proactivity) and SME financial performance. This study addresses this aim through two specific research objectives. An overview of these specific objectives and related research questions is presented in the forthcoming section.

**SPECIFIC OBJECTIVES AND RESEARCH QUESTIONS**

**Research Objective One**

*To examine the mediating effect of proactive CSPs on the relationship between the specified capabilities (shared vision, stakeholder management and strategic proactivity) and financial performance in SMEs*

The focus of this research objective is on proactive CSPs, defined as the wide range of proactive business practices across economic, social and environmental dimensions. This objective aims at contributing to a broad understanding of how proactive CSPs might influence the relationship between specific organizational capabilities and financial performance in SMEs. It is expected that SMEs which deploy the three capabilities of shared vision, stakeholder management and strategic proactivity are more likely to adopt proactive CSPs, and such practices,
in turn, will lead to improvement in financial performance. To achieve this objective, the following three related research questions are considered:

- **Research Question 1**: *To what extent is the adoption of proactive CSPs in SMEs influenced by shared vision, stakeholder management and strategic proactivity capabilities?*

- **Research Question 2**: *To what extent do proactive CSPs have an influence on SME financial performance?*

- **Research Question 3**: *To what extent do proactive CSPs mediate the relationship between shared vision, stakeholder management and strategic proactivity capabilities, and SME financial performance?*

**Research Objective Two**

*To examine the mediating effect of the interaction between proactive EconPs, proactive SocPs and proactive EnvPs on the relationship between the specified capabilities (shared vision, stakeholder management and strategic proactivity) and financial performance in SMEs*

The focus of this objective is on the interaction between the three dimensions of proactive CSPs. This objective aims at contributing to a deep understanding of how important the interaction between proactive EconPs, proactive SocPs and proactive EnvPs is in enabling SMEs to make the best use of the three specified capabilities and to achieve improvement in financial performance. To achieve this objective, the following four related research questions are considered:
• **Research Question 4**: To what extent is there a relationship between proactive EconPs, proactive SocPs and proactive EnvPs?

• **Research Question 5**: To what extent is the adoption of each of proactive EconPs, proactive SocPs and proactive EnvPs influenced by each of shared vision, stakeholder management and strategic proactivity capabilities?

• **Research Question 6**: To what extent does each of proactive EconPs, proactive SocPs and proactive EnvPs has an influence on SME financial performance?

• **Research Question 7**: To what extent does the interaction between proactive EconPs, proactive SocPs and proactive EnvPs mediate the relationship between shared vision, stakeholder management and strategic proactivity capabilities, and SME financial performance?

**Structure of the Thesis**

This thesis consists of six chapters. The first chapter has provided a brief overview of the rationale for undertaking research on proactive CSPs in Australian SMEs. Aragon-Correa et al. (2008)’s study of environmental practices provides a general orientation for the research, which is extended in this study to embrace social and economic business sustainability practices. Chapter Two provides background information relating to the development of theoretical framework for modeling proactive CSPs in SMEs. It includes a review of the literature related to: (i) strategy and competitive advantage where the emphasis is on the theoretical relationship between resources, capabilities, strategies and performance; (ii) the concept of corporate sustainability; and (iii) the nature of proactive CSPs, their capability foundations and performance outcomes in the
SME context. A model of capabilities, proactive CSPs and financial performance in SMEs is proposed. Chapter Three discusses the research objectives and research questions in detail, and presents hypotheses and proposes hypothesized models. Chapter Four details the methodological approach used in this thesis. It provides a discussion of research design, data collection procedure, and the statistical analysis technique employed for testing the research hypotheses. Chapter Five presents the results of data analysis and hypothesis testing. Finally, Chapter Six discusses the pattern of empirical results observed in this thesis; considers the theoretical and practical implications of the findings; and discuss the study limitations and directions for future research.
CHAPTER 2: LITERATURE REVIEW AND THEORETICAL MODEL

CHAPTER OBJECTIVES

This chapter provides the background information relating to the development of a theoretical model of proactive corporate sustainability practices (CSPs) in SMEs. The chapter begins with a review of the literature related to business strategy and competitive advantage, in which the emphasis is on the theoretical relationship between resources, capabilities, strategies and performance. The concept of corporate sustainability is then discussed. This is followed by the literature review which focuses on proactive CSPs, the way in which capabilities, specifically in the SME context, can influence a firm’s strategic choice to engage in such practices, and the performance outcomes of such practices. A model of capabilities, proactive CSPs and financial performance in SMEs is then proposed. The chapter concludes with a summary.

BUSINESS STRATEGY AND COMPETITIVE ADVANTAGE

Introduction

While strategy has been a topic of interest to scholars for centuries, business strategy has garnered considerable attention from management and organizational scholars in the second half of the 20\textsuperscript{th} century. In general terms, business strategy has been defined specifically as the firm’s unified, comprehensive and integrated plan designed to ensure that its business objectives are achieved (Glueck, 1984), and also more broadly conceived as not only a plan, but also as a ploy, pattern, position and perspective (Mintzberg, 1998). In these terms, a strategy becomes a
ploy when used as a maneuver to outwit a competitor, a pattern when it is viewed as a series of consistent actions over time, a position when efforts are directed to locating the firm in a competitive environment, and a perspective when it is ingrained in the way that a firm’s managers see the firm and the world around it (Mintzberg, 1998). In other words, business strategy is generally concerned with creating and maintaining competitive advantage to enable a firm to obtain superior performance over an extended period of time (Campbell, Stonehouse & Houston, 1999; Klein, 2002; Porter, 1985). Porter (1985: 3) asserts that ‘competitive advantage grows fundamentally out of value a firm is able to create for its buyers that exceeds the firm’s cost of creating it’. Barney (1991: 102) further argues that ‘a firm is said to have a competitive advantage, when it is implementing a value creating strategy not simultaneously being implemented by any current potential competitors’, and if those competitors are unable to duplicate the benefits of this strategy, such firm is said to possess sustained competitive advantage.

**Approaches to Business Strategy**

McKiernan (1997) organizes the various theoretical approaches used in business strategy into four schools: ‘planning and practice’, ‘learning’, ‘positioning’ and ‘resource-based’, each having long scholastic and practical traditions. McKiernan (1997) states that the scholars in the ‘planning and practice’ school view strategy as the process of engaging in long-term decisions, whereas those in the ‘learning’ school view strategy as the emergent and planned process that takes place within a firm in response to an unpredictable and complex external environment. Michael Porter is identified by McKiernan (1997) as the pioneer of the ‘positioning’ school which views strategy as the analytical process by which a firm can analyze the
industry structure in terms of five competitive forces and so establish the extent of 
competition and hence a profitable positioning within its industry (Porter, 1980). 
Lastly, McKiernan (1997) notes that scholars in the ‘resource-based’ school 
recognize that resources and capabilities are potential sources of competitive 
advantage and firm-specific and heterogeneous across firms in an industry. As 
such, this school views a firm’s distinctive resources and capabilities as the key 
determinant of successful strategies (Barney, 1991; McKiernan, 1997).

Generally research in business strategy has usually aimed at developing and 
testing theories, models or frameworks which firms can apply in choosing 
strategies that contribute to competitive advantage or generate superior 
performance (Henderson, 1979; Porter, 1980). To date much of this research has 
fallen into one of two broad approaches: industrial organization economics (IO) 
and the resource-based view of the firm (RBV).

On the one hand, research drawing on the IO approach rests on the observation 
that the nature and character of competitive conditions brought about by the 
industry structure determines a firm’s strategic opportunities and the return 
potential of exploiting those opportunities (e.g. Bain, 1956; Caves 1980; Mason, 
1939; Porter, 1980; Scherer, 1980; Spence 1979; Tirole, 1989). In line with this 
approach, strategy theorists have developed theoretical models, for identifying 
environmental threats and opportunities, to assist firms in obtaining superior 
financial returns on business investment (e.g. Barney, 1997; Caves, 1980; Porter, 
1980; Spence 1979). Perhaps, the most influential such model is the so-called 
‘five forces model’ developed by Porter (1980). According to Porter (1980) the 
state of competition in an industry depends on five competitive forces: threat of
entry, rivalry among existing firms, bargaining power of suppliers, bargaining power of buyers and threat of product substitutes. All five competitive forces jointly determine the intensity of industry competition and profitability, and indeed a proper understanding of these forces becomes crucial to the firm for the purposes of strategy formulation (Porter, 1980). Porter (1998) also contends that an effective competitive strategy must include offensive and/or defensive actions if a firm is to create a defendable position against the five competitive forces, and thus yield superior financial returns. At the generic level of strategy type, Porter (1998) identifies three potential strategies (cost leadership, differentiation and focus strategies) for creating such a defendable position and outperforming competitors in an industry.

Despite the IO approach being the dominant paradigm in the strategy field (Teece, Pisano & Shuen, 1997), critiques have appeared in the strategy literature directed mainly at its two basic assumptions: firstly, that firms within an industry are identical in terms of the strategically relevant resources they control and strategies they pursue (Porter, 1981; Rumelt, 1984; Scherer, 1980); and secondly, that the resources used to implement strategies are mobile and therefore relatively homogenous across firms in an industry (Barney, 1986a; Hirshleifer, 1980). These assumptions are criticized for overemphasizing the importance of industry structure as a determinant of a firm’s strategy and performance, and underemphasizing the impact of idiosyncratic firm attributes on strategy formulation and performance (Hill & Jones, 1995; Conner, 1991; Rumelt, 1984).

The second broad type of perspective, the RBV approach, also has two basic assumptions: firstly, it assumes a firm’s resources and capabilities may allow it to
implement strategies that alter structural aspects of its industry in ways that
uniquely benefit that firm (e.g. Barney, 1991; Kotler, 1976; Learned, Christensen,
Andrew & Guth, 1969; Rumelt 1984; Wernerfelt, 1984); and secondly, it assumes
that resources and capabilities are heterogeneously distributed and imperfectly
mobile among firms in an industry (Penrose, 1956; Ricardo, 1817; Selznick, 1957;
Wernerfelt, 1984). These two fundamental assumptions allow not only for the
existence of differences in firm resource endowments, but also for such
differences to persist over time (Barney, 1991). For these reasons, firms should
choose strategies that most completely exploit their resource distinctiveness to
advantage themselves over their competitors. By building a competitive advantage
in this way, a firm may generate superior returns (Learned et al., 1969; Lenz,
1980).

The RBV emphasis on distinctive resources and capabilities, however, does not
mean that the industry structure and external environment is unimportant (Barney,
1986a; Day, 1994; Grant, 1991; Wernerfelt, 1984). On the contrary, the choice of
which resources and capabilities to nurture and exploit must be guided by an
understanding of industry structure, the positional advantages being sought, and
the trends in the society and environment (Barney, 1986a; Barney & Zajęc, 1994;
Wernerfelt (1984: 171) puts it, ‘for the firm, resources and products are two sides
of the same coin’, meaning that distinctiveness in the product offering is tied to
distinctiveness in the resources and capabilities used to produce the product.
Resources and Capabilities, and Performance

In line with the RBV approach, the resources and capabilities of a firm can be seen as the primary constants upon which a firm can establish its identity and frame its strategy, as such they are the primary sources of a firm’s competitive advantage and profitability (Barney, 1986a, 1991; Connor, 2002; Dierickx & Cool, 1989; Grant, 1991; Prahalad & Hamel, 1990; Wernerfelt, 1984). Hence, the key to understanding a resource-based approach to strategy formulation, as indicated by Grant (1991: 133), is ‘understanding the relationships between resources, capabilities, competitive advantage and profitability … [and the] mechanisms through which competitive advantage can be sustained over time’.

Resources and capabilities are generally distinguished in the following way. Resources are considered the stocks of available tangible factors (e.g. financial resources, human resources, and physical capital resources including plant, location, equipment and raw materials) and intangible factors (e.g. intellectual property rights, know-how of personnel, informant networks, organizational culture and reputation) that are owned or controlled by the firm and which enable it to produce efficiently (Becker, 1964; Hitt & Ireland, 1986; Williamson, 1975). Capabilities on the other hand are considered to derive from the firm’s capacity to bring its resources together and deploy them advantageously (Amit & Schoemaker, 1993; Barney, 1991; Day, 1994). In essence, it is the way a firm uses its resources to create capabilities that form the main source of its competitive advantage and performance improvement (Amit & Schoemaker, 1993; Collis, 1994; Grant, 1991; Makadok, 2001; Peteraf, 1993).
According to Day (1994), a firm’s capabilities can operate in three ways: inside-out, outside-in, and spanning. Inside-out capabilities (e.g. financial management, integrated logistics and human resource management) are those that enable the firm to identify and exploit opportunities in the external environment in a manner that facilitates the firm’s viability over the long term. Outside-in capabilities are those (e.g. market sensing, stakeholder linking and technology monitoring) that enable the firm to forecast and act on changes in the external environment. Spanning capabilities (e.g. strategy development, price setting and purchasing) are those that integrate inside-out and outside-in capabilities (Day, 1994).

While all capabilities can be so classified, not all capabilities possessed by a firm are considered to be of equal significance; rather the focus is only on those capabilities which are distinctive and thus represent the basis for a firm’s sustained competitive advantage (Barney, 1991; Wernefelt, 1989). To determine such capabilities, various scholars have proposed a number of criteria (see Amit & Shoemaker, 1993; Barney, 1991; Collis & Montgomery, 1998; Grant, 1991; Hall, 1993; Porter, 1985; Prahalad & Hamel, 1994; Wernefelt, 1989). Rangone (1999: 234) summarizes the most important in the following terms:

- **Competitive superiority** (evaluating the extent to which the capability contributes to differentiating the firm from its rivals);
- **Imitability** (analyzing actual and potential competitors’ difficulty in imitating the capability due, for example, to its uniqueness, path dependency or causal ambiguity);
- **Duration** (measuring the long-term benefits of the capability);
- **Appropriability** (verifying the ability of the firm owning the capability to exploit the advantages and opportunities generated in the market);
Substitutability (assessing how difficult it is for rivals to replace the capability with an alternative that gives the same advantages).

The importance of resources and capabilities as the basic building blocks for strategy is reflected in the various frameworks and approaches that have been developed to support strategy analysis and planning (e.g. Amit & Shoemaker, 1993; Collis & Montgomery, 1998; Hall, 1993; Peteraf, 1993; Prahalad & Hamel, 1990; Quinn & Hilmer, 1994; Zahra & Das, 1993). Grant (1991) proposed five-stage framework for strategy formulation which integrates a number of the key themes arising in the literature (see Figure 2.1). The five stages are: (i) identifying the firm’s resource base; (ii) appraising the firm’s capabilities relative to competitors; (iii) analyzing the profit-earning potential of firm’s resources and capabilities; (iv) selecting a strategy which best exploits the firm’s resources and capabilities relative to the external environment; and (v) extending and upgrading the firm’s pool of resources and capabilities (Grant, 1991).

According to Grant (1991), successful strategy formulation for sustaining competitive advantage over time requires the design of a strategy that fits to the opportunities available in the competitive environment, makes the most effective use of the firm’s existing distinctive capabilities, and supports the development of new distinctive capabilities arising out of strategy implementation. In other words, competitive advantage and superior performance result from a strategy efficiently exploiting and enhancing a firm’s capabilities (Barney, 1986a, 1991; Collis & Montgomery, 1998; Newbert, 2007, 2008; O’Regan & Ghobadian, 2004).
Within the strategic management literature, the terms ‘competitive advantage’ and ‘performance’ are often used interchangeably (Porter, 1985); however, the two constructs are acknowledged to be distinct (Powell, 2001). Competitive advantage is generally conceptualized as resulting from the implementation of a strategy not currently being implemented by competitors and which facilitates the reduction of costs and/or the exploitation of market opportunities through product differentiation (Barney, 1991; Porter, 1985). Performance is generally conceptualized in financial terms as the rents a firm obtains as a result of the implementation of its strategies (Rumelt, Schendel & Teece, 1994). Barney (1997: 63), who defines it in terms of ‘comparing actual value created by a firm with its expected value’, explains that firms that earn just what is expected by owners generate a normal level of performance; firms that earn less than expected
generate a below-normal level of performance; and firms that earn more than expected generate a superior above-normal level of performance.

Linking implementation of a resource-based strategy to competitive advantage in this way implies that strategy is a sufficient condition for improved financial performance; however, it sometimes may not be (Coff, 1999; Durand, 2002; Rumelt, 1991). Specifically, even when a firm does effectively implement a strategy, it may often find it is unable to recover the resulting financial value at a cost lower than that required to create it (Coff, 1999; Peteraf & Barney, 2003). Coupled with the fact that many factors extraneous to the firm may negatively affect performance, a firm’s financial performance may reduce even in the existence of a well-executed strategy (Brush, Bromiley & Hendrickx, 1999; Datta, Guthrie & Wright, 2005; McGahan & Porter, 1997; Rumelt, 1991; Spanos & Lioukas, 2001). Therefore, to achieve superior above-average financial performance, a firm needs to consider not only what strategies will build competitive advantage, but also the costs and extraneous conditions at the time of implementing those strategies (Barney, 1986b; Dierickx & Cool, 1989).

By drawing on the literature that focuses on a firm’s distinctive capabilities as the critical foundations for value-creating strategies, competitive advantage and performance (e.g. Amit & Schoemaker, 1993; Barney, 1991; Day, 1994; Grant, 1991; Rangone, 1999), it becomes possible to model the relationship between capabilities, strategies, and performance as in Figure 2.2. According to this model, distinctive capabilities (inside-out, outside-in, and spanning) that derive from a firm’s resources and characteristics provide the foundation for successful strategy formulation and implementation which in turn promotes financial performance. In
other words, strategies mediate the relationship between capabilities and financial performance.

**Figure 2.2: Relationship between Capabilities, Strategies and Performance**

![Figure 2.2: Relationship between Capabilities, Strategies and Performance](image)

**Capabilities, Strategies and Performance in SMEs**

Although the RBV approach to strategy formulation is treated in the literature as generic in its applicability to all firms (Marsden and Forbes, 2003), Brush and Chaganti (1998) note the lesser amount of empirical research on the strategic management of SMEs as compared to large firms. Notwithstanding this perceived research gap, there is however a general agreement in the literature that: the distinctive organizational characteristics of SMEs mean they are likely to follow different paths from large firms in developing strategies for acquiring competitive advantage; and, if SMEs are to compete successfully with large firms then they must acquire and develop capabilities based on those distinctive characteristics (Aragon-Correa et al., 2008; Yu, 2001).

Yu (2001) argues that entrepreneurial alertness and judgment, and simple structures, are distinctive organizational characteristics possessed by SMEs. Also,
because SMEs have smaller numbers of employees, coordination issues are less of a problem, and the influence of the entrepreneur/owner’s vision on the direction of the firm is often greater than in large firms. Additionally, Yu (2001) contends that SMEs often have a more unified culture, a stronger collective identity, and better social relationships compared to large firms. The explanation for these cultural characteristics lies in the tendency of SME entrepreneur/owners to employ staff who they perceive to hold similar values or knowledge bases to their own, thus providing more straightforward synergies in internal communication and sharing of firm-specific routines (Yu, 2001). On this basis, human relationships facilitate organizational efficiency and flexibility, thereby contributing significantly to competitive advantage in SMEs (Yu, 2001).

In highlighting the importance of flexibility for SMEs, Yu (2001) is consistent with a view expressed generally in the literature: the competitive environment is dynamic, so successful SMEs must possess the managerial capabilities to respond rapidly and more flexibly to changing signals from the marketplace (Greiner, 1972; Jones, 2003). For example, in their empirical analysis of over 3000 firms in 83 industries in the U.S. during 1979-1987, Fiegenbaum and Karnani (1991) present evidence showing that SMEs are able to compete effectively against large firms by using volume flexibility to offset cost inefficiencies and increase profits. Similarly, other studies have focused on SMEs’ greater capacity for innovation generally when compared to large firms (e.g. Hitt, Hoskisson, & Harrison, 1991; Hoffman, Parejo, Bessant & Perren, 1997; Jenkins, 2006; Jones, 2003; Rangone, 1999; Woo, 1987). For example, Rangone (1999), in a study of 14 SMEs from different industries, develops a model of sustained competitive advantage based on three capabilities: innovation, production and market management. Similarly,
Cobbenhagen (2000: 244), examining the source of competitive advantage for SMEs in the Netherlands, concludes that ‘front runners’ are distinguished from ‘pack members’ by the way they combine three capabilities: market focus and customer links, research and technological development, and multidisciplinary project teams and policy.

All of this research suggests that SME innovativeness derives from flexible management structures that are more responsive to changes in the marketplace and customers’ needs, rather than from a commitment to research and development (Rothwell, 1989). Indeed, the limited resource and knowledge base of SMEs generally makes them highly dependent upon external knowledge sources and technological developments (Jones, 2003). Flexibility in acquiring external resources and knowledge therefore becomes an important organizational characteristic for SMEs in order to develop competitive advantage (Aragon-Correa et al., 2008; Jones, 2003). However, Jones (2003) notes that acquiring external knowledge must be accompanied by the creation of mechanisms for disseminating and managing knowledge within the firm. Thus, the ‘absorptive capacity’ of SMEs also becomes central to achieving competitive advantage as it ensures that the value of new knowledge (or innovations) is rapidly and widely disseminated within an SME (Jones & Craven, 2001).

Significantly, for an SME to be innovative does not necessarily involve the adoption of radical new technology or the introduction of major new products, services or process. Rather, research has shown that focusing on a range of incremental innovations, based on ideas adopted from customers, suppliers and competitors to improve both products and process, is a more effective way of
improving SMEs’ overall competitiveness (Jones, 2003). Research also indicates flexibility, responsiveness, and innovativeness are important requirements for SMEs seeking to pursue focused strategies in competitive markets (see Chen & Hambrick, 1995; Jones, 2003; Woo, 1987), where they can occupy fragmented or niche markets which large firms either cannot economically enter or are reluctant to enter because of unattractive risk-return considerations (Brouthers, Andriessen & Nicolaes, 1998). Indeed, the absence of large firms in such markets generally frees SMEs from significant competition and enables them to achieve competitive advantage (Marsden & Forbes, 2003).

The above discussion indicates that size, while relevant, is not a deterministic condition for developing competitive strategies in SMEs. Despite having resource constraints related to size, the distinctive characteristics of SMEs as identified by many researchers such as Yu (2001) and Jones (2003) (e.g. innovativeness, flexibility, responsiveness and absorptive capacity) allow for the development and deployment of distinctive capabilities to gain competitive advantage.

**Enhancing Performance**

While the study of business strategy has resulted in an impressive array of theories, until more recent times the common focus in the literature has been on explaining how businesses can develop competitive strategies to maximize profitability (Campbell *et al.*, 1999). This focus on short-term profit outcomes, without any consideration of longer-term outcomes, is increasingly under question (Roome, 1998). Significantly, there is growing acknowledgement in the literature that value-creating strategies and competitive advantage in the future will be rooted in specific capabilities that deliver not only profitable outcomes, but which
also support the principles of economic, social and environmental sustainability (Bansal, 2005; Brown, Kane, & Roodman, 1994; Gladwin, 1992; Meadows, Meadows, & Randers, 1992; Schmidheiny, 1992). This acknowledgement has led to a recognition that the constraints imposed and opportunities offered by these principles must also be taken into account in strategy formulation (Bansal, 2005; Hart, 1994, 1995; Kleiner, 1991).

To that end, research has focused largely on the environmental dimension of sustainability, and development of the so-called ‘natural resource-based view of the firm’ (Hart, 1995: 991), which now dominates in the environmental strategy literature (see Aragon-Correa & Sharma, 2003; Christmann, 2000; Cordano & Frieze, 2000; Klassen & Whybark, 1999; Marcus & Geffen, 1998; Sharma & Vredenburg, 1997; Russo & Fouts, 1997; Waddock & Graves, 1997). However, there is an increasing amount of research starting to appear that is extending and applying existing theories to integrate not only environmental values but also economic and social values, or ‘corporate sustainability’ principles, into business practices (e.g. Argyres & McGahan, 2002; Dunphy, Griffiths & Benn 2003; Hart, 1995; Porter & Kramer, 2006; Schaltegger, Burritt & Peterson, 2003; Wilson, 2003). This research reflects the growing strategic significance of corporate sustainability principles, and is of crucial importance in advancing understanding of how sustained competitive advantage might be built on sustainably-oriented capabilities (Bansal, 2005). Moreover, Narak (2006) calls for research that examines a broader set of issues relating to corporate sustainability in a range of business and changing competitive environments. Consistent with this call, the present study proposes and empirically tests a theoretical model for understanding
how sustainability-oriented capabilities, corporate sustainability strategy development, and superior performance in SMEs might be linked.

CORPORATE SUSTAINABILITY

Definition
As a highly abstract concept, ‘sustainability’ has been defined in many different ways which tend to vary relative to the proponents’ values, belief systems and self interests (Bebbington, 2001; Bosshard, 2000; Starik & Marcus, 2000). Gilding (2000: 39) points out that sustainability in its simplest form means ‘to keep in existence’, a meaning so broad as to have almost no meaning and likely, as a consequence, to have little significance as an objective for society. Blum-Kusterer and Hussian (2001), and van Marrewijk (2003), align sustainability with environmental and social outcomes. Gladwin, Kennelly and Krause (1995) consider sustainability to be the endpoint of a process to embrace the full conceptualization of political, civil, social, economic, and cultural human rights. Dunphy, Benveniste, Griffiths and Sutton (2000) contend the broad concept of sustainability is more a symbol than a scientific concept, and is a focus for a new value debate about the shape of the future. According to Dunphy et al. (2000: 6), sustainability results from activities which ‘enhance the planet’s ability to maintain and renew the viability of the biosphere and protect all living species; enhance society’s ability to maintain itself to solve its major problems; maintain a decent level of welfare for present and future generations of humanity; and, extend the productive life of organizations and maintain high level of corporate performance’.
Embedding the concept of sustainability into an organizational context has provided the basis for a new and evolving management paradigm known as ‘corporate sustainability’ (CS), offering an alternative to the traditional growth and profit-maximization model (Schaltegger, Burritt & Peterson, 2003; Sharplin, 2003; Starik & Rands, 1995; Wilson, 2003). However, like the concept of sustainability, CS has been defined in a variety of ways. For example, Dyllick and Hockerts (2002) define CS as an outcome that meets the needs of a firm’s current direct and indirect stakeholders without compromising its ability to meet the needs of future stakeholders. To achieve this goal, they suggest that firms must maintain and grow their economic, social and environmental capital bases while actively contributing to sustainability in the political domain. The Dow Jones Sustainability Index (DJSI, 2007), the first global indices tracking the financial performance of leading sustainability-driven companies worldwide, defines CS as a business approach that creates long-term shareholder value by embracing opportunities and managing risks deriving from economic, social and environmental developments. Another perspective is provided by Bell (2002: 4), who defines CS as ‘internalizing environmental and social responsibilities into a reinvented core business strategy in a phased manner that enables the corporation to deliver lasting benefits to current and future generations of shareholders, employees and other stakeholders’.

Despite these definitional variations, there is consensus in the literature that CS requires an integrated approach to economic, social and environmental concerns in decision making, recognizing that all three areas are equally important (Gilding, 2000). In other words, CS is generally seen in the literature as a corporate management approach that acknowledges the need for profitability, but
at the same time takes an integrated, holistic approach placing emphasis on goals relating to economic, social and environmental sustainability. Only when firms embed sustainability across all three dimensions – economic, social and environmental – in their products, policies and practices, will CS be achieved (Gilding, 2000).

The concept of CS borrows elements from a number of other concepts and theoretical frameworks, specifically sustainable development, corporate social responsibility, stakeholder theory, and corporate accountability theory (triple bottom line reporting) (see Branco & Rodrigues, 2007; Buysse & Verbeke, 2003; Elkington, 1999; Harrison & Freeman, 1999; Henriques & Sadorsky, 1999; Swift, 2001; Wilson, 2003). These related concepts and their contribution to CS are discussed in the following section.

**Sustainable Development (SD)**

The concept of ‘sustainable development’ (SD) was first embodied in 1987 in *Our Common Future*, the Brundtland Commission Report published by the World Commission on Environment and Development (WCED). The report defines SD as ‘development that meets the needs of the present without comprising the ability of future generations to meet their own needs’ (WCED, 1987: 43). This definition emphasizes the long term and introduces the ethical principle of achieving equity in the needs (for a sound environment, a just society and a healthy economy) of and between present and future generations (Diesendorf, 2000: 22).

Drawing on the WCED (1987) definition, SD can be seen to require the simultaneous pursuit of three principles: economic prosperity (promoting a reasonable quality of life through the productive capacity of firms and individuals
in the society); environmental integrity (ensuring that human activities do not erode the earth’s land, air, and water resources); and, social equity (ensuring that all members of society have equal access to resources and opportunities) (Bansal, 2002; Holliday, Schmidheiny & Watts, 2002; Tilley, Hooper & Walley, 2003). Each of these principles represents a necessary, but not sufficient condition for SD; that is, if any one of the principles is not supported, SD will not occur (Bansal, 2005). Importantly, the WCED (1987) note that the achievement of SD cannot be left simply to government regulators; rather, industries and businesses have a significant and legitimate role to play. The WCED (1987) state that while businesses have in the past been the engines for economic development, they must now be more proactive in balancing this aim with social equity and environmental protection, not only because they have been the cause of unsustainable conditions, but also because they have access to the resources necessary to address the problems.

Clearly, the concept of SD contributes to CS by setting out the performance areas on which business should focus, and by providing a common goal towards which society and business can work: economic, social and environmental sustainability (Wilson, 2003). However, SD in itself has not been used as the sole basis on which to argue why firms need to care about these issues; rather, the argument is also bolstered by the concepts of corporate social responsibility and stakeholder theory.

**Corporate Social Responsibility (CSR)**

The concept of ‘corporate social responsibility’ (CSR) relates to notion that the ethical and moral issues surrounding corporate decision-making and behaviors
and the economic, social and environmental impacts of business deserve proper consideration (Branco & Rodrigues, 2007). Most scholars point to the work of Bowen (1953) as the first attempt to theorize the relationship between corporations and society (Carroll, 1979; Preston, 1975; Wartick & Cochran, 1985). Bowen (1953: 6) defines the social responsibilities of business as ‘the obligations of businessmen to pursue policies, to make decisions, or to follow lines of action which are desirable in terms of the objectives and values of society’. Subsequent to Bowen (1953), many scholars have engaged in the discussion about CSR (see for example: Bansal, 2002; Buchholz, 2004; Cassel, 2001; Ledgerwood & Broadhurst, 2000; Phillips & Margolis, 1999; Purser, Park & Montuori, 1995; Starkey & Crane, 2003; Stead & Stead, 1994; Wood, 1991). Interest in the concept has also extended into the business world, with many firms actively participating in discussion about how the concept might best be understood. For example, the World Business Council for Sustainable Development (WBCSD, 1999: 3) has defined CSR as ‘the continuing commitment by business to behave ethically and contribute to economic development while improving the quality of life of the workforce and their families as well as of the local community and society at large’. Also, the European Commission (2001: 8) describes CSR as ‘a concept whereby companies integrate social and environmental concerns in their business operations and in their interaction with their stakeholders on a voluntary basis’.

In terms of the academic discussion, CSR has been conceptualized in a variety of ways in the literature. For example, while there is no one clear-cut definition of CSR (Perrini, 2006), a popular approach has been that of Carroll (1979) who developed a definition of CSR indicating that as good corporate citizens
businesses have four responsibilities to fulfill; these being to: (i) be productive and economically viable in producing goods and services, (ii) comply with the law, (iii) act ethically and acknowledge values and norms implicitly derived from society, and (iv) be proactive and give back to the society.

Scholars agree that the CSR concept is underpinned by aspects of social contract theory and social justice theory (Donaldson & Dunfee, 1999; Lantos, 2001; Moir, 2001; Wilson, 2003). The central tenet of social contract theory is that society consists of a series of social contracts between members of society and society itself (Gray, Owen & Adams, 1996), and thus businesses are governed by social contracts that describe their activities as terms of social expectation (Donaldson & Dunfee, 1999). Thus in relation to CSR, businesses need to act in an ethical and responsible manner not because it is in their commercial interests, but because it is a part of how society implicitly expects businesses to operate (Moir, 2001). Indeed, the social legitimacy that business requires for effective operation may be denied to firms that breach the social contract by operating unethically. In line with social justice theory, such a breach might result from a firm failing to recognize that ‘a fair society is one in which the needs of all members of society are considered’, or not fulfilling a moral duty to consider how society’s goods (wealth and other intangibles) can be most appropriately distributed in the society (Wilson, 2003: 3).

Nevertheless, despite this theoretical basis to the argument for business to be conducted in a moral way, the primary concern in CSR debates has been whether businesses should pursue CSR solely on the basis of financial performance gains or simply because doing so has intrinsic moral merit (Donaldson & Preston,
1995). Smith (2003) argues it is possible for a firm to engage in CSR activities because of a mixture of the two reasons. Unfortunately, little empirical evidence has been presented to justify CSR in terms of its intrinsic merit (Harrison & Freeman, 1999; Porter & Kramer, 2006); this makes CSR practices susceptible to the popular accusation of being a public relations and marketing gimmick (Amaeshi & Adi, 2003).

What empirical research does suggest, however, is that most firms engaging in CSR practices do so because they realize that such practices can have a direct positive impact on financial performance and reputation (Clark & Hebb, 2004). They do this by helping a firm to avoid accusations of social and environmental irresponsibility, accusations which can severely damage corporate reputation and cause unwanted commercial outcomes including consumer boycotts, loss of employee support, as well as create obstacles to raising finance (e.g. Clark & Hebb, 2004; Cuesta-Gonzalez & Valor-Martinez, 2004; Porter & Kramer, 2006; WBCSD, 1999). Such concerns about reputation clearly focus on external audiences. For this reason, in some stigmatized industries that face difficulties in maintaining social legitimacy (such as the chemicals and energy industries), a firm may need to pursue CSR initiatives as a form of insurance, ‘in the hope that its reputation for social consciousness will temper public criticism in the event of a crisis’ (Porter & Kramer, 2006: 82).

The contribution of CSR to CS is clear in that CSR provides ethical arguments as to why business managers should work towards CS (Wilson, 2003). As Wood (1991: 695) puts it, ‘the basic idea of CSR is that business and society are interwoven rather than distinct entities; therefore, society has certain expectations
for appropriate business behavior and outcomes’. This means that if society in general believes that sustainability is a worthwhile goal, businesses have an ethical obligation to do the right thing and to help society move in that direction (Wilson, 2003). The general idea of society is made concrete for many firms in the form of stakeholders that have an interest in the firm’s performance. Indeed, many firms pursue CRS because it is valued and accepted as the norm by stakeholders (see Bansal, 2002; Hess, Rogovsky & Dunfee, 2002; Porter & Kramer, 2002; Smith, 2003).

**Stakeholder Theory**

Stakeholder theory provides a basis for analyzing and understanding those groups to whom a firm should be responsible (Moir, 2001). As indicated by Freeman (1984), a firm can be described as a series of connections of stakeholders (not just its shareholders) that a firm attempts to manage. Freeman’s (1984: 46) classical definition of a stakeholder is ‘any group or individual who can affect or is affected by the achievement of the organization’s objectives’. Stakeholders are typically analyzed into primary and secondary stakeholders. Clarkson (1995: 106) defines primary stakeholders as ‘those without whose continuing participation the corporation cannot survive as a going concern’. These include shareholders, investors, employees, customers, suppliers, creditors, governments and communities. Secondary stakeholders are described as ‘those who influence or affect, or are influenced or affected by the corporation, but they are not engaged in transactions with the corporation and are not essential for its survival’. These include special interest groups concerned with social and environmental issues (Clarkson, 1995: 107).
In stakeholder theory, as the firm is held to be a nexus of explicit and implicit contracts between it and its various stakeholders, the conventional view that a firm’s success depends solely upon maximizing shareholders’ wealth by maximizing profit is replaced (Jensen & Meckling, 1976). Instead, in its place is the idea that the successful creation and management of stakeholder relationships based on trust, respect and cooperation will enable the firm to meet its business objectives and achieve competitive advantage more effectively (Werhane & Freeman, 1999). Thus the challenge for firms is to develop strategies that enable them to manage the different and sometimes conflicting goals, priorities and demands their stakeholders often have (Grass, 1999; Wilson, 2003). For example, shareholders and investors expect to see their wealth increase at a rate that reflects their capital risk; in contrast, customers want low-price and high-quality products and services; and, at the moment, society arguably places a priority on environmental interests (Lewis, Morkel & Hubbard, 1993). Employees have the right to seek reasonable levels of compensation, opportunity, safety and security. The community looks to the firm as a source of economic vitality and expects it to operate within the product, safety and environmental standards that the community sets (Lewis et al., 1993). Governments and regulators too want full compliance with applicable regulations (Wilson, 2003).

While there is potential for conflict to arise between the different stakeholder interests, there is general acknowledgement that the goals of economic prosperity, environmental integrity and social equity are likely to be common to many stakeholder groups (Wilson, 2003). Indeed, there are many empirical studies indicating that operating with respect for society and the natural environment does not conflict in any fundamental way with the organizational goals of profitability.
and building competitive advantage (see Aragon-Corra & Sharma, 2003; Lovins & Lovins, 2001; Porter & van der Linde, 1995).

As with the concepts of CSR and sustainable development, stakeholder theory can be seen then to underpin CS by providing business arguments as to why firms should work towards sustainability; in other words, ‘it is in the company’s own best economic interest to work in that direction, because doing so will strengthen its relationship with stakeholders, which in turn will help the company to meet its business objectives’ (Wilson, 2003: 4). Nevertheless, no firm has all of the resources required to solve all of society’s problems; therefore, each firm must select ‘the particular set of societal problems that it is best equipped to help resolve and from which it can gain the greatest competitive benefits’ (Porter & Kramer, 2006: 92). The difficulty a firm faces in managing the negative impact of its inability to please all of its stakeholders is compounded by the different levels of stakeholder understanding of the firm’s resources and capabilities, competitive positioning, and/or the tradeoffs the firm must make when seeking to achieve CS. This difference in levels of understanding links to the way in which a firm reports its performance and activities to stakeholders (Porter & Kramer, 2006).

**Corporate Accountability through Triple Bottom Line (TBL) Reporting**

‘Corporate accountability’ (CA) is broadly described as the legal requirement or duty to provide an account or justification for one’s actions to whomever one is held responsible (Owen, Swift, Humphrey & Bowerman, 2000; Swift, 2001). Amaeshi and Adi (2003) suggest that the concept of CA can easily be understood in terms of a principal-agent relationship. The principals (shareholders) entrust the agent (corporate management) to manage the firm and its resources in the
principals’ best interests. The agent is held accountable by the principals for how those resources are used and how a superior return on investment is achieved (Health, 2004). Similarly, Gray, Owen and Maunders (1988) argue that the notion of CA to the wider society is inherent in the social contract between society and the firm. Ongoing compliance with the social contract results in the firm being given legitimacy, a so-called ‘license-to-operate’, by society; as a consequence, firms become accountable to society for their performance (Donaldson & Preston, 1995; Harris, 2005; Swift, 2001). To obtain the ‘license-to-operate’, companies must identify sustainability issues that matter to its stakeholders, and acquire legitimacy through demonstrable economic, social and environmental performance as judged by its stakeholder groups (Cunningham, Kagan & Thornton, 2003). This entails a willingness to report the success or otherwise of its performance in addressing these issues to its stakeholders.

CA for economic, social and environmental corporate performance is the core notion embedded in the concept of ‘triple bottom line’ (TBL) reporting (Suggett & Goodsir, 2002; Grootjans, Townsend, Butler & Heyworth, 2005). The TBL concept (Elkington, 1999) emphasizes that firms need to report their success not only against the traditional measures of financial performance (e.g. profit, return on investment), but also in terms of their impact on the broader economy (e.g. tax paid, job created, monetary flows, R&D investment), on the environment (e.g. resource and energy usage, emission and waste management) and on society (e.g. employee relations, health and safety, human rights, labor practices, and community impacts). However, as TBL reporting has a strong connection with corporate image and reputation, it is viewed by many scholars as merely a self-
serving element of public relations and marketing strategies (e.g. Dobers & Wolff, 2000; Greer & Bruno, 1996; Hockerts & Moir, 2004).

The contribution of CA through TBL reporting to the concept of CS is that it provides a rationale as to why companies should report to society on their economic, social and environmental performance, not just financial performance (Wilson, 2003). Significantly, an emerging trend towards the use of TBL reporting over the last decade provides further concrete evidence that a growing number of large companies are attempting to maximize the commercial benefits to be derived from more proactive economic, social and environmental practices (Tilley et al., 2003). Unfortunately, this trend does not extend to SMEs which, in contrast, have generally shown a marked reluctance to report to society on their sustainability performance (Tilley et al., 2003). Nevertheless, it is important to recognize that today’s companies face growing pressures for right-to-know legislation and new corporate governance rules (Elkington, 1999); therefore, the difficulty of keeping information on company activities out of the public domain will become immeasurably greater. Sooner or later, most things a firm does relating to sustainability issues will become public knowledge. Firms that fail to plan with this possibility in mind must be prepared to accept the potentially negative consequences.

In summary, this review of the CS literature highlights the need for firms to address the economic, social and environmental problems they are helping to create. A single-minded focus by firms on profitability and financial business practices that maximize shareholder wealth whilst ignoring their wider negative impact, is no longer considered by society as acceptable. Instead, there are
increasing calls for business to become proactive and adopt corporate sustainability practices (CSPs) that allow firms to demonstrate effective financial performance against a range of economic, social and environmental indicators. The literature focusing on proactive CSPs, their capability foundations and performance outcomes in the SME context will be reviewed in the next section.

**PROACTIVE CORPORATE SUSTAINABILITY PRACTICES IN SMEs**

**Corporate Sustainability Practices (CSPs)**

Corporate sustainability practices (CSPs) are practices based on the heuristic, multi-criteria TBL perspective which aims to integrate economic, social and environmental aspects of business management (Elkington, 1999; Wilson, 2003). The literature (e.g. Aragon-Correa & Sharma, 2003; Bianchi & Noci, 1998; Hart & Ahuja, 1996; Muller & Koechin, 1992; Newman, 1993) suggests that CSPs can be classified along a continuum of activity, that ranges from reactive (that is simply aimed at legal compliance) to proactive (that is aimed at managing economic, social and environmental sustainability issues as the competitive priority).

Firms engaged in reactive CSPs tend to expend the minimum required effort on sustainability issues (Bianchi & Noci, 1998). Such firms passively follow minimum industry norms and standards and/or merely comply with legislation requiring attention to sustainability issues (Buysse & Verbeke, 2003). In such cases CSPs, rather than being seen as a possible source of strategic advantage, are usually used simply to gain legitimacy and maintain a firm’s ‘licence to operate’ (Aragon-Correa & Sharma, 2003; Buysse & Verbeke, 2003).
Proactive CSPs, in contrast, involve an active and voluntary engagement by the firm in the shaping of institutional environments for sustainability, which is the set of political, economic, social and legal conventions that establish the foundation for sustaining production and exchange. In such cases, firms attempt to take a leading position with CSPs even at times when institutional pressures for such practices are not yet well established (Bondy, Mattern & Moon, 2004; Wolf, 2008). Specifically, such a proactive approach involves designing new operations, production processes, and economically, socially and environmentally friendly products, in order to anticipate the expected evolution of the external regulation and social trends (Aragon-Correa, 1998; Bianchi & Noci, 1998; Hart & Ahuja, 1996). Strategy scholars advocate engagement in proactive CSPs as a value-creating strategy in order to derive benefits such as social approval and reputation building, increasing sales, increased access to resources, all of which together positively influence firm performance (Benn, Dunphy & Griffiths, 2006; Berry & Rondinelli, 1998; Bondy et al. 2004; Gardberg & Fombrun, 2006; Klassen & Whybark, 1999; Lewis & Dawkins, 2003; Sharma et al., 2007). It is the proactive form of CSPs that is of specific interest in this thesis.

Firms can be considered as engaging in proactive CSPs only if they actively exhibit a pattern of sustainability practices across all three dimensions (economic, social and environmental), at a level over and above that required merely to comply with regulations or isomorphic pressures in the form of standard practices within the industry (Sharma & Vredenburg, 1998). In other words, proactive CSPs are achieved only when proactive economic, social and environmental issues are all addressed simultaneously. These three dimensions of proactive CSPs are
interrelated; therefore, they may influence each other in multiple ways (Dyllick & Hockerts, 2002; Elkington, 1999).

**Proactive Economic Practices (EconPs)**

Proactive EconPs are the least understood form of proactive CSPs, but one of the most important given that it is the dimension related most closely to a firm’s profitability (European Commission, 2003b). Although there is no clear-cut definition of proactive EconPs, research suggests that such practices go beyond short-term financial performance (profit maximising) issues to emphasize long-term economic performance issues related to the effective creation and distribution of goods and services that will help increase the standard of living of the whole economy on local, national and international level (Bansal, 2005; Jenkins, 2006; Leopoutre & Heene, 2006; Russell, Haigh & Griffiths, 2007; Suggett & Goodsir, 2002; Willard, 2005). Such practices go beyond merely complying with tax obligations to include encouraging innovation, efficiency and wealth creation, which in turn foster longevity in corporate profitability and growth (Bansal, 2005; Willard, 2005).

According to the European Commission (2003b), the way firms operate in the market is a crucial indicator of how they have integrated sustainability concerns into their mainstream organizational structure and decision-making process. Proactive EconPs are the means by which firms attempt to preempt economic sustainability issues that might arise in their interactions with customers, suppliers and shareholders in the marketplace. In this way, proactive EconPs are tied to the principles of social and environmental integrity. Firms engaging in proactive EconPs deliberately pay attention to customer satisfaction, product quality and
safety, fair pricing, marketing and advertising ethics, as well as the social and environmental aspects of supply chain management (from sourcing to final payment); the aim of such an approach being to gain market opportunities through product and process differentiation, enhanced reputation, and hence stand a better chance of attracting investors and obtaining bank finance (European Commission, 2003b).

Similarly, Bansal (2005: 200) argues that proactive EconPs can be used for ‘value creation’. Firms can increase the value of their products by producing new and different products that are desired by consumers, by lowering the costs of inputs and/or by realizing production efficiencies (Conner, 1991; Porter, 1985). When the firm sells its products for a price that exceeds the cost of production, the firm captures the extra value it creates and so enhances its financial performance (Bowman & Ambrosini, 2000). According to Bansal (2005: 200), ‘when a firm does create and capture value, it distributes this value to consumers through its products/services, to shareholders through dividends and equity, and to employees through salaries’. Significantly, Dyllick and Hockerts (2002) note that proactive EconPs involves effective management of several types of economic capital: financial (equity and debt), tangible (machinery, land and stocks) and intangible (reputation, inventions, know-how and organizational routines). Therefore, firms seeking a competitive advantage need to adopt a long-term perspective in management and decision-making, so that at any time they can guarantee ‘cashflow sufficient to ensure liquidity while producing a persistent above average return to their shareholders’ (Dyllick & Hockerts, 2002: 133).
Many researchers suggest that SMEs, which they credit as sources of innovation, employment and wealth creation, are well positioned and equipped to benefit from proactive EconPs (Audretch, 2002; European Commission, 2003b; Lepoutre & Heene, 2006; Wennekers & Thurik, 1999). According to Storey (1994), considerable restructuring (such as downsizing, outsourcing and job exporting) from the 1980s onwards has seen a general shedding of jobs especially in large firms. It is primarily through the growth of SMEs characterized by entrepreneurial orientation and innovativeness that employees made redundant by large firms have been absorbed back into the workforce (Storey, 1994). Indeed this shift in employment to SMEs has provided income to regions which stimulates local economic activity which in turn, drives wealth and further creation of employment (Walker & Webster 2004).

Furthermore, as having a good reputation is of paramount importance to SMEs’ competitiveness, many SME owner-managers are particularly sensitive to the importance of their customer and supplier relationships (involving loyalty, openness, honesty and fairness in contracts, payments and marketing information, and the origin of resources); therefore, they are likely to engage naturally in proactive EconPs (Besser, 1999; European Commission; 2002; Hornsby, Kuratko, Naffzigger, La Follette & Hodgetts, 1994; Jenkins, 2006; Lepoutre & Heene, 2006; Vitell, Dickerson & Festervand, 2000). Nevertheless, some researchers argue adoption of proactive EconPs which emphasize the long-term perspective can prove difficult for some SMEs (e.g. Beaver & Jennings, 2000; Mazzarol, 2004). Beaver and Jennings (2000) suggest that management in SMEs is primarily an adaptive process, concerned with adjusting and manipulating a limited amount of resources in order to gain the maximum immediate short-term financial gain.
However, empirical research has found that SMEs managed with a long-term perspective are those enterprises that achieve higher sales growth and profitability (see Berman, Gordon & Sussman, 1997; Bracker, Keats & Pearson 1988; Gibson & Casser, 2005).

**Proactive Social Practices (SocPs)**

Another key element in proactive CSPs is recognition of a social dimension to a firm’s operation. However, as in the case of proactive EconPs, there is no universally accepted definition of proactive social practices (SocPs). The European Commission (2003b) describes the social dimension of proactive CSPs as having two parts: the workplace (dealing with practices towards employees); and the community (dealing with practices towards local community, trade unions and public authorities). Accordingly, the European Commission (2003b: 5) describes proactive SocPs as voluntary business practices that ‘care about the health, safety and general well-being of employees; motivate the workforce by offering training and development opportunities; and enable firms to act as good citizens in the local community’. Significantly, Bansal (2005) states that through proactive SocPs firms are able to consider the interests of all stakeholders in decision-making by creating a formal social dialogue to consider social and ethical questions (e.g. whether or not to produce socially undesirable products). Such a dialogue process facilitates outcomes mutually acceptable to the firm and its stakeholders.

However, studies about the ability of SMEs to adopt proactive SocPs show contrasting results. On the one hand, some researchers argue that SMEs are influenced and affected by the general value systems which dominate social
networks in their industry and in the value chain in which they operate; therefore, norms and pressures from employees, peer firms and the community drive SMEs to engage in proactive social behaviors (e.g. Arbuthnot, 1997; Besser, 1999; Lepoutre & Heene, 2006). This is in part because the reputation and image of a SME as an employer and actor in the local scene, has been shown to influence its competitiveness (Besser, 1999; European Commission; 2002). Consequently, by engaging in proactive SocPs many SMEs have developed close and positive relationships with their employees to address issues such as workplace flexibility (work/life balance), workplace democracy (employee participation in decision making process), workplace diversity (equal opportunities), as well as with local communities through corporate citizenship initiatives (Dunphy et al., 2000; Lahdesmaki, 2005; Longenecker, McKinney & Moore, 1989; Merritt, 1998; Southwell, 2004; Worthington, Ram & Jones, 2006). However, as Worthington et al. (2006: 202) note, such relationships are likely to be qualitatively different from those of large enterprises in that SMEs are often ‘characterized by high levels of informality, personal knowledge and familial ties that can help to engender trust and reciprocity in network interactions’.

On the other hand, other research presents a different perspective that reflects the difficulties SMEs experience in developing proactive SocPs because of the resource (financial and human) constraints on implementing employee health and safety programs, offering training and development opportunities for employees, or supporting voluntary community involvement through charitable donations or sponsorship (e.g. Besser, 1999; Brammer & Millington, 2006; European Commission, 2003b; Gerrans & Hutchinson, 2000; Murphy et al., 1992). Faced with resource constraints, some SMEs are only able to engage in limited SocPs
Moreover, although empirical qualitative research has found that SMEs engage in limited social and philanthropic practices, the benefits for SMEs of such limited practices are difficult to measure (Jenkins, 2006). Nevertheless, it is important to note that philanthropy need not be limited to activities that are unrelated to the business; rather, firms may also focus on issues that impact on the underlying drivers of competitiveness in locations where they operate, such as by engaging with local schools in areas where skilled labor is limited (Porter & Kramer, 2002). The divergent research results and observations in the literature demonstrate a need for more empirical research likely to yield valuable insights into how SMEs can engage in proactive SocPs.

**Proactive Environmental Practices (EnvPs)**

Despite differences in nomenclature, the various definitions presented in the literature suggest that proactive EnvPs fall along a continuum: at one end, reactive practices ensure compliance only; at the other end, proactive practices go beyond compliance to a focus on eco-efficiency and pollution prevention in processes, products and operations (e.g. requiring innovations aimed at reducing waste and energy consumption) and environmental leadership or ‘product stewardship’ where products, processes, and even business models are redesigned to minimize the ecological footprint along the entire product life cycle (Aragon-Correa, 1998; Buysse & Verbeke, 2003; Hart 1995; Ledgerwood & Broadhurst, 2000; Roome, 1992; Russo & Fouts, 1997; Sharma, 2000; Sharma & Vredenburg, 1998).

Proactive EnvPs often entail the adoption of ISO compliant environmental management systems and/or total quality environmental management to ensure environmental impacts from a firm’s operations are audited, monitored and
managed systematically rather than on an ad hoc basis (Bansal, 2001; Darnall, 2002; Walley & Whitehead, 1994). Such systematic environmental management helps build a firm’s credibility among its external stakeholders, as well as ensure that the principle of environmental sustainability is institutionalized among internal stakeholders (Bansal, 2001, 2002).

Research suggests that SMEs face more difficulty than large enterprises in pursuing proactive EnvPs because such practices require significant and sometimes quite sophisticated management and integration of value chain activities (Bianchi & Noci, 1998; Lepoutre & Heene, 2006; Rutherford, Blackburn & Spence, 2000; Schaper, 2002). For example, the decision to recover used product packaging from a firm’s customers often requires the introduction of new logistic management practices (Bianchi & Noci, 1998). Also, recycling-based programs often require high integration of the production, inbound and outbound logistics, and post-sales service links in the value chain. Similarly, the development of new environmentally friendly products can require cooperation between research and development, operations and inbound logistics, in order to identify sustainable and more efficient production materials and processes (Bianchi & Noci, 1998).

The complexity of integrating value chain activities reinforces the fact that proactive EnvPs requires the commitment of significant resources (Russo & Fouts, 1997; Sharma & Vredenburg, 1998). In particular, employee attitudes and environmental values, and their technical and managerial skills, are of key importance for the development of proactive EnvPs, as are the considerable financial resources often necessary to organize effective environmental training.
programs and to purchase new production equipment and technologies (Berry & Rondinelli, 1998; Bianchi & Noci, 1998; Ramus & Steger, 2000). Unfortunately in many cases, these resources and skills are simply not available in SMEs which are thereby prevented from adopting proactive EnvPs (Greening & Gray, 1994; Russo & Fouts, 1997). This fact is reflected in a number of studies that have found that large firms with extra financial resources or in-house environmental health and safety expertise are more likely to implement proactive EnvPs than SMEs (e.g. Bansal, 2005; Christmann, 2000; Tilley, 2000; Sharma, 2000). Furthermore, as suggested earlier SMEs generally focus on strategies for achieving economic viability and prefer short-term investments that yield a high return (Beaver & Jennings, 2000); therefore, proactive EnvPs requiring the investment of significant resources, without any certain returns in the short term, are paid less attention by SMEs (Bianchi & Noci, 1998; Lepotre & Heene, 2006). Other studies of SMEs have also often highlighted their poor level of environmental awareness and commitment (e.g. Rutherfoord et al., 2000; Schaper, 2002; Williamson & Lynch-Wood, 2001).

Nevertheless, a few studies have produced findings that contradict this view by showing that SMEs may successfully implement proactive EnvPs (e.g. Bianchi & Noci, 1998; Carlson-Skalak, 2000; Hillary, 2000). Significantly, Bianchi and Noci (1998) show that the development of proactive EnvPs in SMEs can be feasible if external stakeholders (especially public institutions, research centres, industrial union and governments) support the firm. These authors also suggest that SMEs need to establish positive and stable relationships with external stakeholders, since the more complex initiatives for developing environmental innovations often
require information, skills and resources that can be accessed through external stakeholder relationships (Bianchi & Noci, 1998).

**Capabilities and Proactive CSPs**

A range of specific capabilities that influence a firm’s strategic choice to engage into proactive CSPs have been proposed or identified in the literature. Such capabilities include:

- Shared vision and employee involvement (Andersson & Bateman, 2000; Hart, 1995; Ramus & Steger, 2000).
- Stakeholder management (Barney, 2005; Buysse & Verbeke, 2003; Klassen & Whybark, 1999; Sharma et al., 2007).
- Innovation (Christmann, 2000; Klassen & Whybark, 1999; Sharma et al., 2007).
- Strategic proactivity (Aragon-Correa 1998; Sharma et al., 2007).
- Capital management (Barney, 2005).
- Higher-order learning (Marcus & Geffen, 1998).
- Integration of sustainability issues in strategic planning (Bansal, 2003; Cordano & Frieze, 2000; Sharma, 2000).

However, much of this research has been conducted in the context of large firms, with predominant focus on the environmental dimension of proactive CSPs. To date, only Aragon-Correa et al. (2008) have investigated empirically whether the capabilities found to underpin proactive EnvPs in large firms can be applied to SMEs. In their study of 108 Spanish SMEs in the automotive repair sector, Aragon-Correa et al. (2008) found that, as in the case of large firms, SMEs require three capabilities for proactive EnvPs, specifically ‘shared vision’,
‘stakeholder management’ and ‘strategic proactivity’; but they might follow different paths based on different sets of characteristics to generate these capabilities. There have been no studies to date that have empirically examined these capabilities as the foundations of proactive EconPs and SocPs in the SME context. Therefore, this research will build on and extend the approach of Aragon-Correa et al. (2008) approach by investigating whether the capabilities of shared vision, stakeholder management and strategic proactivity are critical for the development of proactive CSPs (EconPs, SocPs and EnvPs) in SMEs. The discussion in the following subsections will provide insights into each of these specific capabilities from an SME perspective.

Shared Vision

Shared vision is an inside-out organizational capability that embodies the collective goals and aspirations of the members of a firm (Tsai & Ghoshal, 1998). Shared vision exists when the members of a firm collectively have similar values and beliefs about its goals and objectives (Oswald, Mossholder & Harris, 1994). Goal clarity and acceptance of shared responsibility for achievement of the firm’s goals are thus seen as a prerequisite for the development of a shared vision (Ramus & Steger, 2000). However, a shared vision does not simply mean that employees know their managers’ objectives; rather, it entails a shared feeling that the firm’s objectives are important and that all of its members may contribute to defining them (Graafland, van de Ven & Stoffele, 2003). In other words, a shared vision capability can be understood as the firm’s ability to embody the collective objectives and aspirations of its members.
Several studies indicate that a shared vision capability helps promote the integration of an entire firm, because of the positive effects it has on organizational learning and employee creativity (e.g. Hodge, Anthony & Gales, 2003; Maani & Benton, 1999; Orton & Weick, 1990). Tsai and Ghoshal (1998) explain that when a firm’s members have the same perceptions about the firm’s objectives and interests, they can avoid possible misunderstandings in communications and have more opportunities to exchange ideas and resources. Therefore, a shared vision acts as a bonding mechanism that helps different parts of a firm to integrate or to combine resources (Tsai & Ghoshal, 1998).

Creating a shared vision requires a deep commitment by management to empowering social processes that generate consensus and significant employee involvement (Campbell & Yeung, 1991; Hart, 1992; Senge, 1990). A number of research studies on this topic have found that a shared vision is positively associated with a firm’s performance, and thus a shared vision can be viewed as a source of competitive advantage (e.g. Blazevic & Lievens, 2004; Fahey & Prusak, 1998; Navarro-Paule, Lorens-Montes, Garcia-Morales & Ruiz-Moreno, 2005). However, given the difficulty of generating such a consensus about a firm’s mission and purpose, few firms have been able to establish and/or maintain a widely shared enduring sense of purpose (Fiegenbaum, Hart & Schendel, 1996; Hamel & Prahalad, 1989).

Hart (1995) suggests those firms that successfully develop a shared vision capability are able to accumulate and harness the resources and skills necessary for developing and adopting proactive CSPs more quickly than firms without such a capability. Because proactive CSPs are people intensive and inherently
emphasize ‘tacit skill development through employee involvement’, a shared vision assists the firm to generate the internal pressure and enthusiasm needed for innovations and changes with regard to the principles of CS (Hart, 1995: 999).

Graafland et al. (2003) note that in order to develop proactive CSPs successfully, it is the responsibility of management to align the firm’s proactive CSPs with its mission and purpose. However, in large firms the high number of employees and formal hierarchical management structures can lead to difficulties in rapidly and thoroughly disseminating proactive CSPs information throughout the firm. Therefore, large firms make relatively more use of formal mechanisms (e.g. code of conduct and sophisticated systems for knowledge management) to develop a shared vision capability and thus foster behaviors supportive of proactive CSPs (Aragon-Correa et al., 2008; Graafland et al., 2003).

In contrast, Worthington et al. (2006) suggest that the coincidence of ownership and control that typifies SMEs provides a context within which individual and organizational relationships frequently merge and become mutually reinforcing. This coincidence also makes the task more straightforward, as SME owner-managers build upon their personal and social ties to engage in actions which can help develop a shared vision capability. Moreover, research suggests that when either one individual or a very small team is responsible for the broad range of functional activities, as is often the case in SMEs, this can result in more opportunities for direct communication and learning through shared experiences (Buratti & Penco, 2001; Jones & Tilley, 2003; O’Gorman & Doran, 1999). Significantly, several researchers suggest that the simple management structures and shorter lines of communication characteristic of SMEs allow the values and
culture underpinning proactive CSPs to be more easily embedded across the entire firm thus facilitating greater involvement by all employees (Jenkins, 2006; Worthington et al., 2006; Welford & Gouldson, 1993). Nevertheless, it is important to recognize that because of their limited resources, some SME owner-managers may lack the necessary managerial skills and resources to work effectively with employees to develop clear objectives for the firm, and a sense of shared responsibility with employees for achieving those objectives (Merz & Suber, 1995; Smeltzer & Fann, 1989). Hence, it can be argued that only the SMEs that have the resources and requisite managerial skills to exploit a shared vision for a sustainable business will tend to adopt proactive CSPs.

**Stakeholder Management**

Stakeholder management is defined by Hart (1995) as an outside-in organizational capability that enables a firm to learn from suppliers and consumers in understanding product life cycles and designing economically socially and environmentally products. Sharma and Vredenburg (1998: 735), supported by Buysee and Vrebeke (2002) and Sharma et al. (2007), expand the definition to include ‘the ability to establish trust-based collaborative relationships with a wide variety of stakeholders, especially those with non-economic goals’. Hillman and Keim (2001) state that effective stakeholder management involves intangible, socially complex resources that enhance a firm’s ability to outperform competitors in terms of long-term value creation. Therefore, a stakeholder management capability is fundamental to gaining and maintaining a competitive advantage.

Sharma et al. (2007) suggest that while firms have developed extensive knowledge about improving their economic performance, the need to find better
ways to reduce negative social and environmental impacts has become essential in the pursuit of competitive advantage. These impacts are often ‘reflected in context-specific stakeholder pressures along a firm’s value chain’ (Sharma et al., 2007: 272), and empirical research shows that stakeholder pressures are a major factor in the adoption of CSPs (Buysse & Verbeke, 2002; Greeno & Robinson, 1992; Henriques & Sadorsky, 1999; Hillman & Keim, 2001; Kassinis & Vafeas, 2002).

Several empirical studies indicate that, in contrast to firms that focus on a narrow range of stakeholders, those that recognize a wide variety of stakeholders and have the capability to support such a focus, are more likely to adopt proactive CSPs (Buysse & Verbeke, 2003; Henriques & Sadorsky, 1999). This is because a stakeholder management capability is likely to lead firms to collaborate actively with many stakeholder types in order to manage economic, social, and environmental concerns (Buysse & Verbeke, 2003; Hosmer, 1994; Sharma et al., 2007; Venkatraman & Ramanujan, 1986).

Notably, published research into stakeholder management has mostly offered evidence for the importance of this capability for generating proactive CSPs in large firms (e.g. Henriques & Sadorsky, 1999; Sharma & Henriques, 2005; Wheeler, Colbert & Freeman, 2003). However, a review of the literature indicates that such a capability is also likely to be important to SMEs as well; notwithstanding that, the way an SME might develop a stakeholder management capability is likely to be significantly different to that of large firms (see Aragon-Correa et al., 2008; Jenkins, 2004; Worthington et al., 2006). Specifically, large well resourced firms are far more likely to engage in carefully planned, strategic
activities, such as extensive, sophisticated and persuasive marketing and public relations campaigns directed equally at internal and external stakeholders (Jenkins, 2004).

In contrast, SMEs with more limited resources are hindered from replicating such comprehensive types of stakeholder management activities (Jenkins, 2004). However, strategic management scholars argue that SMEs, by dint of their size, can derive a stakeholder management capability from their more flexible managerial structures and greater responsiveness to change in the business environment and stakeholder needs (e.g. Jenkins, 2006; Jones, 2003). Such flexibility can enable SMEs to focus more closely in their stakeholder management on particularly important external relationships (e.g. specific inter-firm relationships, and personal relationships with customers and governmental agencies). This capacity to target and manage specific external relationships is significant, given that implementation of the more complex proactive CSPs often require specialized resources and information on the expected evolution of regulations and social trends, which are generally not available within a SME (Aragon-Correa et al., 2008; Bianchi & Noci, 1998; Darnall, 2002; Hendry, Arthur & Jones, 1995; Rondinelli & London, 2003). Moreover, unlike their larger business counterparts, SMEs can develop close relationships with their stakeholders ‘based on a more informal, trusting basis and characterized by intuitive and personal engagement with less of a gap between the relative power and influence of company and stakeholder’ (Jenkins, 2006: 243).
Strategic Proactivity

Strategic proactivity is defined by Aragon-Correa (1998: 557) as ‘a firm’s tendency to initiate changes in its various strategic policies rather than to react to events’. Sharma et al. (2007: 272) extend this definition to define strategic proactivity as being ‘embedded in a firm’s routines and processes designed to maintain a leadership position via monitoring the external environment including the competitors’ strategies in competition’. The concept of strategic proactivity as defined by these scholars draws on the work of Miles and Snow (1978), which suggests that firms with a strategically proactive stance (labelled ‘prospectors’) develop entrepreneurial, engineering and administrative processes to integrate external information and opportunities. According to Miles and Snow (1978), ‘prospector’ firms have three strategic attributes: (i) they analyze all aspects of their context and grow by developing new products and markets; (ii) they have flexible technologies capable of responding quickly to change, and people play a crucial part in the way they operate; and (iii) they formulate extensive project-oriented plans in order to reduce uncertainty, and design internal processes to empower individuals to engage in innovation (Miles & Snow, 1978). In line with this approach, a firm’s strategic proactivity capability can be considered as an outside-in ability to initiate strategic policies and actions that shape the general business environment to its own advantage, and enable it to identify and capitalize on new opportunities emerging from changes in its business environment, rather than merely responding in a reactive fashion to those changes (Covin & Slevin, 1990; Dunphy, 2003; Miller, 1987; Veliyath & Shortell, 1993).

Research suggest that firms possessing a strategic proactivity capability often design internal possesses that empower individuals to engage in CS-oriented
innovation, and thus may be expected to progress more quickly towards a competitive advantage (Aragon-Correa, 1998: Starik & Rands, 1995; Veliyath & Shortell, 1993). Although previous empirical research regarding the influence of strategic proactivity has been mainly based on large firms, some studies point to its importance for SMEs (see Aragon-Correa, 2008; Chen & Hambrick, 1995; Hitt et al., 1991).

SMEs are often thought of as being more ‘entrepreneurial-oriented’ seeking focused niche strategies in competitive markets (Hitt et al., 1991; Storey, 1994; Woo, 1987), and research suggests that this market focus can aid in the development of a strategic proactivity capability and hence the implementation of proactive CSPs in SMEs (Aragon-Correa et al., 2008). Merz and Sauber (1995: 554) define entrepreneurial orientation as ‘the firm’s degree of proactiveness (aggressiveness) in its chosen product-market unit (PMU) and its willingness to innovate and create new offerings’. Proactiveness, innovativeness, and risk taking behavior are three key elements of entrepreneurial orientation (Dickson, 2004; Miller & Friesen, 1982). Due to the fact that SMEs are motivated to seek opportunities in order to survive and prosper (Aldrich & Auster, 1986; Katz, 1970), they have a greater need than their large business counterparts ‘to act aggressively in the market and to challenge the status quo by initiating competitive actions’ (Chen & Hambrick, 1995: 459). In addition, structural simplicity and streamlined operations also enable SMEs characteristically to be flexible and adaptable, and thus able to initiate competitive actions more quickly than large firms encumbered by structural complexity and bureaucracy (Mintzberg, 1979). On this basis, SMEs can be more creative and innovative, and are therefore better able to take advantage of new niche markets for products and
services that proactively incorporate economic, social and environmental benefits into their value (Hannan & Freeman, 1984; Jenkins, 2006).

On the other hand, it is important to note that while SMEs may be more innovative, resource constraints can frequently inhibit research and development and the bringing of sustainability-oriented innovations to the market in a successful way (Abernathy & Utterback, 1978; Dean et al., 1998; Storey, 1994). In contrast, large firms have greater success in bringing innovations to the market because of the availability of slack resources for investing in research and development, hiring highly skilled specialists, and establishing comprehensive distribution and servicing facilities (Abernathy & Utterback, 1978). At the same time, while large firms may be well-resourced they too can have trouble innovating due to structural inertia (Hannan & Freeman, 1984), with technological myopia (Foster, 1986) inhibiting their ability to perceive or attach importance to impending changes in newly emerging market niches with growth potential.

Financial Performance and Proactive CSPs
As discussed earlier in this chapter, research generally into the relationship between competitive strategies and performance has to date been primarily concerned with the financial returns on investment. This has also been the case in relation to research specifically focusing on the contribution of proactive CSPs to performance (Aragon-Correa & Sharma, 2003; Christmann, 2000; Hart, 1995), from which the evidence pertaining to the influence of proactive CSPs on a firm’s financial performance has been inconclusive. Some studies show a positive relationship between proactive CSPs and financial performance (e.g. Aragon-Correa & Sharma, 2003; Harrison & Freeman, 1999; Hart & Ahuja, 1996;
Klassen & Whybark, 1999; Mackey, Mackey & Barney, 2007; Margolis & Walsh, 2003; Russo & Fouts, 1997); some show no relationship (e.g. Gilley, Worell & El-Jelly, 2000; Thornton, Kagan & Gunningham, 2003); and some show a negative relationship (Wagner, Van Phu, Azomahou & Whermeyer, 2002).

These mixed findings may be explained in part by the difficulty of demonstrating empirically a clear direct causal effect of proactive CSPs on financial performance (Burke & Logsdon, 1996; Castka et al., 2004) when the nature of some such practices are not necessarily related to the operational business of a firm (e.g. some philanthropic activities) (Wolf, 2008). Furthermore, as proactive CSPs require a significant investment in resources, returns often only become realized in the long-term, rather than becoming immediately apparent through obvious changes in short-term financial performance, particularly in the light of possibility market dynamism, uncertainty and fluctuating risk levels in the general business environment (Eisenhardt & Martin, 2000; Hart & Ahuja, 1996; Miller & Shamsie, 1999; Russo & Fouts, 1997).

Despite the mixed evidence, it must be noted however that the majority of research conducted in the context of large firms has found that proactive CSPs do positively affect a firm’s financial performance (e.g. Harrison & Freeman, 1999; Hart & Ahuja, 1996). For example, some studies suggest that proactive CSPs can: enable a firm to differentiate its products in its product market (McWilliams & Siegel, 2001; Waddock & Graves, 1997); improve production efficiencies and lower operation costs (Hart & Milstein, 2003; Sharma & Vredenburg, 1998; Shrivastava, 1995); allow a firm to avoid costly government-imposed fines (Belkaoui, 1976; Bragdon & Marlin, 1972; Freedman & Stagliano, 1991); and
reduce a firm’s exposure to risks (Godfrey, 2004; Welford & Gouldson, 1993). All of these possibilities give rise to a view that proactive CSPs ‘can increase the present value of a firm’s future cash flows and are therefore consistent with maximizing the wealth of the firm’s equity holders’ (Mackey, Mackey & Barney, 2007: 818).

Significantly, a number of researchers argue that firm size can affect the relationship between proactive CSPs and financial performance (e.g. Bansal, 2005; Stanwick & Stanwick, 1998). Studies of proactive CSPs in the SME context have generally assumed that resource constraints mean that such practices cannot have positive implications for financial performance, and that legislative pressures produce only reactive CSPs among SMEs (e.g. Gadenne, Kennedy & McKeiver, 2008; Gerrans & Hutchinson, 2000; Rutherfordord et al., 2000; Simpson, Taylor & Baker, 2004). Nevertheless, studies by Miles, Munilla and McClurg, (1999) and Orlitzky (2001) present the different viewpoint that firm size does not confound the relationship between proactive CSPs and performance; indeed they argue that both large firms and SMEs can benefit from such practices. It should be acknowledged here that these studies only include populations of large firms in their samples.

A qualitative study of proactive sustainability-oriented SMEs in the U.K. (Jenkins, 2006) found that SMEs can accrue numerous business benefits as a result of engaging in proactive CSPs. Some of these benefits are quantifiable (e.g. cost savings and increased profitability); however, most are intangible benefits, either because they are difficult to measure (e.g. improved image and reputation, and enhanced trust), or cause and effect cannot be clearly established (e.g. reduced employee absenteeism and turnover). According to Jenkins (2006),
assessing the nature and value of these intangible benefits is one of the biggest challenges facing SMEs wishing to implement proactive CSPs.

There is also a small body of quantitative research indicating a possibility that there may be a positive causal link between proactive CSPs and financial performance in SMEs (e.g. Aragon-Correa et al., 2008; Flannery & May, 2000; Sturdivant & Ginter, 1977). For example, Sturdivant and Ginter (1977), in their empirical research on social responsibility, examined SMEs, with high, moderate, and low levels of CSPs (in each of four industrial groupings - petrochemical, industrial, retailing and customer goods). The study found that SMEs from the high and moderate groups outperformed those from the low group. Similarly, findings from an empirical study of Spanish SMEs conducted by Aragon-Correa et al. (2008) show a positive and significant relationship between proactive EnvPs and SME financial performance. While these results are interesting, they do not however, represent a consensus in the literature on the relationship between proactive CSPs and financial performance; hence, the causal link between proactive CSPs and SMEs’ financial performance warrants further examination.

**Proposed Model of Capabilities, Proactive CSPs and Financial Performance in SMEs**

By building on the above literature discussion generally, and specifically building on and extending Aragon-Correa et al. (2008)’s approach, the present study proposes a theoretical model of the relationship between specific organizational capabilities, proactive CSPs, and financial performance in SMEs (see Figure 2.3). The proposed model and theoretical framework will be used as a basis of the development of research hypotheses in the next chapter.
SUMMARY

This chapter has presented a review of the literature relevant to developing a theoretical framework for understanding the relationship between organizational capabilities, proactive CSPs and financial performance in SMEs. This framework emphasizes distinctiveness of specific organizational capabilities as the key determinant for the adoption of proactive CSPs. It extends Aragon-Correa et al. (2008)’s work by incorporating proactive EconPs, SocPs and EnvPs as the three constituent dimensions of proactive CSPs, and by framing the capabilities of shared vision, stakeholder management and strategic proactivity as the three critical foundations for such practices in SMEs. Whilst these capabilities have been analyzed predominantly in the large firm context, the ability of SMEs to adopt a wide range of proactive business practices across the economic, social and environmental dimensions of CS based on such capabilities has been largely unexplored. It is argued that increasing calls for proactive CSPs in business and particularly in SMEs are unlikely to be met, unless such practices are
demonstrated to link to competitive financial performance. The current body of research regarding the financial outcome of proactive CSPs in SMEs, however, has shown ambiguous results, thereby leaving the door open for further investigation.
CHAPTER 3: HYPOTHESES DEVELOPMENT AND PROPOSED MODELS

CHAPTER OBJECTIVES

This chapter develops research hypotheses and hypothesized models based on the theoretical framework of proactive CSPs in SMEs discussed in the previous chapter. Discussion in this chapter is structured around the two specific research objectives of the study and their related research questions. Research hypotheses are developed in relation to each research question, and a hypothesized model is then proposed for each specific objective. Finally, a summary of the chapter is provided.

PURPOSE OF THE STUDY

The purpose of this study is to develop an understanding of the role that proactive CSPs (EconPs, SocPs and EnvPs) play in mediating the relationship between three specific capabilities (shared vision, stakeholder management and strategic proactivity) and SME financial performance. As outlined in the preceding chapter, proactive CSPs involve a SME simultaneously engaging in proactive business practices across three dimensions – economic, social and environmental. However, given the different importance that each dimension of proactive CSPs might have in relation to financial performance, paying particular attention to the interaction between the three dimensions of practice is vital in helping SMEs understand how to integrate sustainable practices as a basis for achieving and sustaining above-normal level of financial performance.
Recognizing the significance of this issue, two specific research objectives, focusing on (i) proactive CSPs, and (ii) the interaction between proactive EconPs, SocPs and EnvPs, guide this study. Research questions and related hypotheses are specifically proposed and discussed in accordance with these objectives. Hypothesized models are proposed in relation to each research objective. It must be noted that each hypothesized model is controlled for (i) firm size (Size); (ii) duration of the firm’s experience with the management of proactive CSPs (Time); and (iii) the perceived impact of the recent global financial crisis (GFC) on business financial performance.

**RESEARCH OBJECTIVE ONE**

The first research objective for this study is to examine the mediating effect of proactive CSPs on the relationship between the specified capabilities (shared vision, stakeholder management and strategic proactivity) and SME financial performance. By focusing on proactive CSPs, this objective aims at contributing to knowledge of how proactive CSPs might mediate the relationship between three specific capabilities and financial performance in SMEs. The study addresses this objective by considering the following three research questions and associated hypotheses.
Research Question 1:

To what extent is the adoption of proactive CSPs in SMEs influenced by shared vision, stakeholder management and strategic proactivity capabilities?

As discussed in the previous chapter, proactive CSPs are delimited as the voluntary economic, social and environmental sustainable business practices that go beyond regulatory requirement (Aragon-Correa, 1998; Jenkins, 2006; Sharma & Vredenburg, 1998). Research in the large firm context suggests that to be able to adopt proactive CSPs, firms need to possess the capabilities that allow them to: develop tacit skills through employee involvement (Andersson & Bateman, 2000; Hart, 1995); establish sound relationships with stakeholders (Buysse & Verbeke, 2003; Klassen & Whybark, 1999); and capitalize on new opportunities offered by changes in external regulations and social trends (Aragon-Correa 1998). There is a growing body of research, however, arguing for the importance of such capabilities in generating proactive CSPs in SMEs (e.g. Aragon-Correa et al., 2008; Sharma et al., 2007; Jenkins, 2006, 2009).

Shared vision, as an inside-out capability, involves development and exploitation of collective values and beliefs about organizational goals in all members (Graafland et al, 2003; Oswald et al., 1994; Tsai & Ghoshal, 1998). Within SMEs, the development of a shared vision capability is made more likely because of distinctive structural characteristics such as shorter lines of communication, and the effects of a strong owner’s vision (Aragon-Correa et al., 2008). Such a capability has been shown to support organizational learning and employee creativity at the interface between SMEs and sustainability issues (Ramus & Steger, 2000; Tilley et al., 2003). By helping facilitate employee involvement,
shared vision is an important capability in enabling the values and culture of proactive CSPs to be more easily embedded within a SME (Jenkins, 2006; Ramus & Steger, 2000).

Stakeholder management, as an outside-in capability, involves the establishment of trust-based collaborative relationships with a wide variety of stakeholders (Sharma & Vredenburg, 1998). However, it must be noted that although sustainability-oriented firms pay attention to a broader range of stakeholders, not all stakeholders may be perceived as equally important, depending mainly on the relevant institutional context they face (Buysse & Verbeke, 2002). Researchers argue that a stakeholder management capability in SMEs is likely to arise as a consequence of the flexibility SMEs have in managing the intangible and socially complex resources required for maintaining trust-based stakeholder relationships (Aragon-Correa et al., 2008). Such a capability has been shown to help SMEs access and expand the resources required for implementing processes and technologies associated with proactive CSPs (Bianchi & Noci, 1998; Jenkins, 2006; Sharma et al., 2007).

Strategic proactivity, as an outside-in capability, involves the initiation of changes in organizational strategic policies in order to seek out and capitalize on, rather than merely react to, new external opportunities (Aragon-Correa, 1998; Sharma et al., 2007). A strategic proactivity capability in SMEs is likely to develop out of an entrepreneurial orientation (being more proactive, innovative and risk-taking) towards niche markets that are characteristic of SMEs (Aragon-Correa et al., 2008). Research suggests that such a capability allows SMEs to respond proactively and quickly to changing sustainability issues; and consequently
leading them to pursue more innovation and take rapid advantage of new products incorporating economic, social and environmental value (Jenkins, 2006; Strarik & Rands, 1995).

In line with this reasoning, it can be argued there is a strong possibility that the capabilities of shared vision, stakeholder management and strategic proactivity will have a positive influence on the adoption of proactive CSPs. This leads to the following three hypotheses:

- **H1a**: A shared vision capability will directly positively influence the adoption of proactive CSPs by SMEs.
- **H1b**: A stakeholder management capability will directly positively influence the adoption of proactive CSPs by SMEs.
- **H1c**: A strategic proactivity capability will directly positively influence the adoption of proactive CSPs by SMEs.

**Research Question 2:**

*To what extent do proactive CSPs have an influence on SME financial performance?*

According to Dunphy *et al.* (2003), firms engaging in proactive CSPs understand that such practices not only help build economic, social and environmental capital, but they also advantage the firm in strategic terms; therefore, such firms are likely to build on sustainability as a source of competitive advantage and superior financial performance.
Despite mixed results, the majority of research on proactive CSPs in large firms has found that such practices are associated with enhanced product differentiation, improved production efficiencies and lower operation costs; all of which contribute positively to a firm financial performance (e.g. Bansal, 2005; Godfrey, 2004; Hart & Ahuja, 1996; Chang & Kuo, 2008; Margolis & Walsh, 2003). In contrast to research on large firms, most descriptive studies of proactive CSPs (and mostly focused only on EnvPs) in SMEs have indicated that the financial benefits of such practices, requiring a significant investment in resources, are limited and difficult to measure for SMEs (e.g. Gadenne et al., 2008; Rutherford et al., 2000; Simpson et al., 2004).

Nevertheless, a group of researchers postulate an opposite point by arguing for the possibility of a positive link between proactive CSPs and financial performance in SMEs (e.g. Miles et al., 1999; Orlitzky, 2001). Despite no consensus in the literature regarding the financial performance outcomes of proactive CSPs in SMEs, it is plausible that such practices can be financially beneficial to SMEs as well. This leads to the following hypothesis:

- **H2**: Proactive CSPs will directly positively influence SME financial performance.
Research Question 3:

To what extent do proactive CSPs mediate the relationship between shared vision, stakeholder management and strategic proactivity capabilities, and SME financial performance?

Viewed from an RBV perspective, shared vision, stakeholder management and strategic proactivity capabilities can each be seen as forming part of a coordinating mechanism enabling the efficient use of the firm’s resources for achieving competitive advantage (Sharma & Vredenburg, 1998). Notwithstanding the intangible nature of these capabilities (deriving from their social complexity, causal ambiguity and deep embeddedness in the firm), each is also likely to make a direct contribution to financial performance improvement (Baum, Locke & Kirkpatrick, 1998; Chen & Hambrick, 1995; Rangone, 1999).

Given the difficulty of building an empowering social process and generating a consensus about a purpose among organizational members, a shared vision capability has been cited as a key generator of the internal pressure and enthusiasm needed for organizational learning and change (e.g. Garcia-Morales & Llorens-Montes, 2006; Maani & Benton, 1999; Senge, 1990). Because of the socially complex nature of the resources used to create the capability it is likely to be firm-specific and therefore imperfectly imitable (Baum et al., 1998). For similar reasons, stakeholder management and strategic proactivity are also recognized as firm-specific capabilities that are created over a long period of time and therefore are not easily imitated by competitors (Hillman & Keim, 2001; Hamel, 2000; Hosmer, 1994; Ogden & Watson, 1999; Sharma & Vredenburg, 1998; Zahra & Covin, 1995). Strategic proactivity is also recognized as a firm-
specific capability, due to the difficulties of facilitating speedy response and adopting organizational processes that reduce uncertainty in managing strategic issues.

On this basis, it is plausible that, while proactive CSPs are likely to mediate the relationship between the three specified capabilities and SME financial performance, these specified capabilities may themselves have a positive influence on SME financial performance. This reasoning leads to the following hypotheses:

- **H3a**: A shared vision capability will directly positively influence SME financial performance, when modeling proactive CSPs as the mediator.
- **H3b**: A stakeholder management capability will directly positively influence SME financial performance, when modeling proactive CSPs as the mediator.
- **H3c**: A strategic proactivity capability will directly positively influence SME financial performance, when modeling proactive CSPs as the mediator.

**Proposed Model for Research Objective One**

The above three research questions and their associated hypotheses are brought together in a proposed model (see Figure 3.1). In the model, the mediating role of proactive CSPs is the focus. Shared vision, stakeholder management and strategic proactivity capabilities are considered as the antecedents of proactive CSPs, and financial performance is viewed as a consequence of proactive CSPs. The proposed model incorporates controls for the possible effects of Size, Time and
GFC. Also, it should be noted that although the directional relationships between the three specified capabilities are not examined in this study, there is some agreement in the literature that these capabilities may link and interact. For example, shared vision may link to innovation and strategic changes; stakeholder management could associate with the development of innovative products; and strategic proactivity may involve anticipation of future stakeholder demands (Coff, 1997; Hamel, 2000; Oswald et al., 1994). The linkages and interaction are therefore assumed for the purposes of this study.

**Figure 3.1: Proposed Model for Research Objective One**

Note: Dashed arrows represent paths from control variables to endogenous latent variables. Curve, double-headed arrows represent correlation between variables.
RESEARCH OBJECTIVE TWO

The second research objective for this study is to examine the mediating effect of the interaction between the three dimensions of proactive CSPs (EconPs, SocPs and EnvPs) on the relationship between the specified capabilities (shared vision, stakeholder management and strategic proactivity) and financial performance in SMEs. By focusing on proactive EconPs, SocPs and EnvPs, this objective aims at contributing to knowledge of how the interaction between the dimensions of CSPs enables SMEs to make better use of their capabilities in achieving an improvement in financial performance. The study addresses this objective by considering the following four research questions and associated hypotheses:

Research Question 4:

To what extent is there a relationship between proactive EconPs, proactive SocPs and proactive EnvPs?

Proactive EconPs emphasize long-term economic performance related to effective value creation and distribution of products; they involve interaction with customers, suppliers and shareholders in the marketplace. Proactive EconPs have been linked in the literature to proactive SocPs, which emphasize caring about the well-being of employees, motivating the workforce and firms acting as good citizens in the local community, and proactive EnvPs which focus on eco-efficiency, pollution prevention and product stewardship (European Commission, 2003b; Schmidheiny, 1992). Firms pursuing above-average financial returns must actively pay attention to customer satisfaction, and the quality and safety of products, as well as engage in responsible supply chain management that aims at
gaining market opportunities through product and process differentiation if they are to be successful in that pursuit (European Commission, 2003b).

Research suggests that a trend towards a more socially acceptable and environmentally-friendly form of consumerism is driving a transition from a narrow focus on proactive EconPs towards a broader focus on proactive SocPs and proactive EnvPs, particularly in industries that have close contacts with end consumers (Arora & Cason, 1995). It is a fact that such consumers are now increasingly better informed and more aware of the social and environmental impacts of their consumption and are demanding firms adopt SocPs and EnvPs (Williams, Medhurst & Drew, 1993). The emergence of this trend in consumerism reflects a willingness and ability of an increasing number of customers to pay a premium for socially and environmentally friendly products (Vandermerwe & Oliff, 1990). Consequently, such consumers can exert negative pressures by boycotting the products of a firm with a poor reputation for social and environmental responsibility (Greeno & Robinson, 1992). Similarly, suppliers may stop delivering inputs to this firm to protect their own reputation (Henriques & Sadorsky, 1999). As a result, shareholders (and perhaps most significantly financial institutions) perceive firms with a poor social and environmental record as higher risk investment propositions, and may demand higher premiums, voice their discontent by withdrawing capital, or refuse to extend new loans, thus impairing long-term profitability (Henriques & Sadorsky, 1999).

All of this implies that it is less risky for a firm to engage in proactive EconPs combined with implementation of proactive SocPs and proactive EnvPs. Significantly, the literature also suggests that proactive SocPs and proactive
EnvPs, in turn, drive the transition towards proactive EconPs (see Chang & Kuo, 2008; Porter & van der Linde, 1995; Tilley et al., 2003). Porter and van der Linde (1995), for example, assert that properly designed social and environmental programs can trigger innovations that lower the total cost of a product and improve the value proposition it represents to a firm’s customers.

Importantly, a review of the literature indicates that the concept of proactive EnvPs is likely to be mutually compatible with that of proactive SocPs (see Bianchi & Noci, 1998; Buysse & Verbeke, 2003; Hart, 1995). The success of firms aiming to develop and design products and processes to minimize the ecological footprint along the entire product life cycle, strongly depends on the participation and involvement of employees in the range of value chain activities directly controlled by firms (Hart, 1995; Nehrt, 1998; Ramus & Steger, 2000). According to Bianchi and Noci (1998) and Graafland et al. (2003), the principle of respecting and valuing all employees underpinning proactive SocPs manifested through the provision of training and employee development opportunities, enables firms to build employees’ awareness of and commitment to environmental values, as well as improving the technical and managerial skills that are important for engaging in proactive EnvPs (Bianchi & Noci, 1998; Graafland et al., 2003). Meanwhile, firms with a reputation for proactive EnvPs may also, in turn, build skill and knowledge resources by attracting and retaining highly qualified employees, who may themselves have a strong preference for preventive environmental management (Reinhardt, 1999).
Based on the preceding discussion, it may be argued that all economic, social and environmental dimensions of proactive CSPs interrelate, and directly influence each other in multiple ways. This leads to the following hypotheses:

- **H4a**: There is a direct relationship between proactive EconPs and proactive SocPs.
- **H4b**: There is a direct relationship between proactive EconPs and proactive EnvPs.
- **H4c**: There is a direct relationship between proactive SocPs and proactive EnvPs.

**Research Question 5:**

*To what extent is the adoption of each of proactive EconPs, proactive SocPs and proactive EnvPs influenced by each of shared vision, stakeholder management and strategic proactivity capabilities?*

It is argued in the sustainability literature that shared vision, stakeholder management and strategic proactivity capabilities may drive the engagement by SMEs in each dimension of proactive CSPs (e.g. Aragon-Correa *et al.*, 2008; Bianchi & Noci, 1998; Jenkins, 2006, 2009; Ramus & Steger, 2000; Sharma *et al.*, 2007). Specifically, proactive EconPs, proactive SocPs and proactive EnvPs each depend upon: employee involvement and tacit skill development (Hart, 1995: 999), collaboration with relevant stakeholders (Bianchi & Noci, 1998; Jenkins, 2009), and making rapid strategic changes in response to new product and market opportunities and anticipated regulations (Aragon-Correa *et al.*, 2008; Sharma *et al.*, 2007). Therefore on this basis it is argued that SMEs having shared vision, stakeholder management and strategic proactivity capabilities in place will
be more likely to have the necessary resources and skills for engaging in proactive practices compared to those SMEs without the three capabilities.

However, it must be noted that the literature, to date, has mostly offered empirical evidence only for the importance of these capabilities in the case of proactive EnvPs in SMEs (e.g. Aragon-Correa et al., 2008; Ramus & Steger, 2000; Sharma et al., 2007). In particular, a recent empirical study (Aragon-Correa et al., 2008) examining these three capabilities and proactive EnvPs in 108 Spanish SMEs, reported positive and statistically significant parameter estimates for the links between: (i) shared vision and innovative-preventive practices ($\gamma = 0.38$) and eco-efficient practices ($\gamma = 0.61$); (ii) stakeholder management and innovative-preventive practices ($\gamma = 0.88$) and eco-efficient practices ($\gamma = 0.23$); and (iii) stakeholder management and innovative-preventive practices ($\gamma = 0.31$) and eco-efficient practices ($\gamma = 0.24$). On similar lines, a study of 134 SMEs in North America and Europe (Sharma et al., 2007), reported a positive influence for a strategic proactivity capability on the adoption of proactive EnvPs ($\gamma = 0.20$); however, no influence for a stakeholder management capability on proactive EnvPs was reported in the study. Sharma et al. (2007) speculated that this result may reflect that the sampled SMEs were mainly undertaking innovative actions to reduce known environmental impacts and for which they were not seeking a great deal of information from external stakeholders.

Although there has been no empirical research done to evaluate the direct influence of the capabilities of shared vision, stakeholder management and strategic proactivity on proactive EconPs and proactive SocPs in SMEs, the nature of these capabilities give rise to the belief that they would also be key drivers for
generating such practices. A shared vision capability is generally viewed as a bonding mechanism that facilitates fluid communication across functions and levels in a firm, and which increases employees’ motivation and participation in organizational decision-making (Porter & Kramer, 2006; Tsai & Ghoshal, 1998). Therefore, it could enable SMEs: to improve product quality and safety economically, and determine effectively which products present social responsibility risks. In turn this would enable consideration of how proactive EconPs and proactive SocPs might pre-empt any external pressure being brought to bear that negatively impacts on financial performance (Jenkins, 2009). Moreover, a stakeholder management capability that leads to trust-based relationships with customers, suppliers and shareholders supports the adoption of proactive EconPs, and provides a basis for proactive SocPs (Bansal, 2005; Wolf, 2008). Similarly, SMEs possessing a strategic proactivity capability are better able to forecast external opportunities and threats and reconcile the differing points of view of all organizational members; therefore, they tend to be better placed to develop innovative products and processes with lesser negative impacts on society and the environment (Gladwin et al., 1995; Jenkins, 2006, 2009; Veliyath & Shortell, 1993).

Hence, it may be argued, based on the above discussion, that when shared vision, stakeholder management and strategic proactivity capabilities are deployed in tandem will influence the adoption of practices in all three dimensions of proactive CSPs (EnvPs, SocPs and EnvPs) in SMEs. This leads to the following hypotheses:

- **H5a:** A shared vision capability will directly positively influence the adoption of proactive EconPs by SMEs.
H5b: A stakeholder management capability will directly positively influence the adoption of proactive EconPs by SMEs.

H5c: A strategic proactivity capability will directly positively influence the adoption of proactive EconPs by SMEs.

H5d: A shared vision capability will directly positively influence the adoption of proactive SocPs by SMEs.

H5e: A stakeholder management capability will directly positively influence the adoption of proactive SocPs by SMEs.

H5f: A strategic proactivity capability will directly positively influence the adoption of proactive SocPs by SMEs.

H5g: A shared vision capability will directly positively influence the adoption of proactive EnvPs by SMEs.

H5h: A stakeholder management capability will directly positively influence the adoption of proactive EnvPs by SMEs.

H5i: A strategic proactivity capability will directly positively influence the adoption of proactive EnvPs by SMEs.

Research Question 6:

To what extent does each of proactive EconPs, proactive SocPs and proactive EnvPs has an influence on SME financial performance?

Of the three dimensions of proactive CSPs, proactive EconPs have received the least research attention in relation to their contribution to a firm’s financial performance. This may be because most studies seem to assume that the adoption of proactive EconPs tends automatically to generate good financial performance because such practices, which emphasize long-term value creation and wealth
generation, should by definition underpin a firm’s core business and competitive advantage (European Commission, 2003b). However, this, as noted by Bansal (2005), may not always be the case for SMEs, since sustainable economic practices, where management has to invest significant resources, do not invariably result in desirable financial outcomes.

In regard to proactive SocPs and EnvPs, although a number of studies mostly in the large firm context present a business case for social and environmental responsibility based on cost reductions and revenue enhancements (e.g. Shrivastava, 1995; Willard, 2005), empirical results are inconclusive overall. Whereas the majority of studies indicate a positive influence on financial performance for proactive SocPs (e.g. Harrison & Freeman, 1999; Hillman & Keim, 2001; Nelling & Webb, 2006; Waddock & Graves, 1997), and for proactive EnvPs (e.g. Flannery & May, 2000; Klassen & Whybark, 1999; Russo & Fouts, 1997), other studies report contradictory results (e.g. Wagner et al., 2002). This has led some authors to suggest that the relationship between proactive SocPs, EnvPs and financial performance follows an inverse U-shaped pattern, meaning that proactive SocPs and EnvPs may lead to an increase in financial performance at first, but sooner or later engagement in such practices will represent net costs (Burke & Logsdon, 1996; Schaltegger & Synnestvedt, 2002). This gives rise to the possibility that the adoption of proactive SocPs and EnvPs may be less likely in SMEs (Gadenne et al., 2008; Simpson et al., 2004). However, recent empirical findings by Aragon-Correa et al. (2008) show a direct positive association between proactive EnvPs and financial performance in Spanish SMEs ($\beta = 0.31$ for innovative preventive practices and $\beta = 0.42$ for eco-efficiency practices). Similarly, another recent study of 261 German SMEs (Hammann, Habisch &
Pechlaner, 2009) found that engagement in SocPs has a positive impact on SME financial performance.

Therefore, although there is currently no consensus in the literature overall, it is plausible that proactive EconPs, SocPs and EnvPs each may make a direct positive contribution to SME financial performance. This leads to the following hypotheses:

- **H6a**: Proactive EconPs will directly positively influence SME financial performance.
- **H6b**: Proactive SocPs will directly positively influence SME financial performance.
- **H6c**: Proactive EnvPs will directly positively influence SME financial performance.

**Research Question 7:**

*To what extent does the interaction between proactive EconPs, proactive SocPs and proactive EnvPs mediate the relationship between shared vision, stakeholder management and strategic proactivity capabilities, and SME financial performance?*

As already discussed, shared vision, stakeholder management and strategic proactivity each tend to have a direct positive effect on SME financial performance; there is therefore a possibility that the interaction between proactive EconPs, SocPs and EnvPs may also mediate the relationship between these specified capabilities and SME financial performance. This leads to the following hypotheses:
• **H7a**: A shared vision capability will directly positively influence SME financial performance, when modeling the interaction between proactive EconPs, SocPs and EnvPs as the mediator.

• **H7b**: A stakeholder management capability will directly positively influence SME financial performance, when modeling the interaction between proactive EconPs, SocPs and EnvPs as the mediator.

• **H7c**: A strategic proactivity capability will directly positively influence SME financial performance, when modeling the interaction between proactive EconPs, SocPs and EnvPs as the mediator.

**Proposed Model for Research Objective Two**

The above four research questions and their associated hypotheses are brought together in the proposed model for research objective two (see Figure 3.2). In the model, the mediating role of the interaction between proactive EconPs, proactive SocPs and proactive EnvPs is the focus. Shared vision, stakeholder management and strategic proactivity capabilities are considered as the antecedents of all EconPs, SocPs and EnvPs, and financial performance is viewed as the consequence of such practices. Again, the proposed model incorporates controls for the effects of Size, Time and GFC. Furthermore, as there may be some influences on each and all of the specified three capabilities not recognized in the model, this study assumes these capabilities to be correlated, and thus their directional relationships remain unanalyzed.
SUMMARY

This chapter has presented the two specific research objectives for the study; the research objectives each focus on a different mediator: proactive CSPs (objective one) and the interaction between proactive EconPs, SocPs and EnvPs (objective two). Each objective addresses the role of its mediator on the relationship between the specified organizational capabilities (shared vision, stakeholder management and strategic proactivity) and SME financial performance. In light of research objective one, three research questions (1-3) and seven hypotheses (H1a-c, H2
and H3a-c) are to be considered. These are derived from a proposed model for research objective one. Similarly, in regard to research objective two, four research questions (4-7) and eighteen hypotheses (H4a-c, H5a-i, H6a-c and H7a-c) are to be considered. These are derived from a proposed model for research objective two. Both proposed models are controlled for the effects of Size, Time and GFC.
CHAPTER 4: RESEARCH METHOD

CHAPTER OBJECTIVES

This chapter provides a discussion of the methodological approach used to undertake this study. The chapter begins with a discussion of research design (including sample, survey methods, procedure and instrument development) and data collection. Then, the data analysis technique employed for testing research hypotheses in this study – structural equation modeling – is described and discussed with reference to any specific issues that need to be understood for the sound application of this technique and the interpretation of the results. The chapter concludes with a summary.

RESEARCH DESIGN AND DATA COLLECTION

Context

In their assessment of what has been learned from the RBV literature, Barney and Mackey (2005: 5) state that ‘the best resource-based empirical work will involve collecting primary data from firms in a carefully drawn sample’. Consistent with this approach, a sample of Australian SMEs in the machinery and equipment manufacturing industry sector (the Australian and New Zealand Standard Industrial Classification [ANZSIC] code 24 – see ABS, 2006) was selected for study. This sector was chosen for three reasons.
Firstly, the manufacturing industry is a vital part of the Australian economy. The latest data from the ABS shows that manufacturing businesses employ over 1 million Australians (ABS, 2009a), and the industry accounts for over 42 per cent of Australia’s export and contributes around 10 per cent to Australia’s GDP (ABS, 2009b). Importantly, the machinery and equipment sector is the largest sector of the Australian manufacturing industry in terms of gross value added (ABS, 2009b), the second largest sector in terms of value of exports (ABS, 2009c) and the third largest sector in terms of employment (ABS, 2009a).

Secondly, the environmental impacts of machinery and equipment manufacturing are significant because of the nature of the multiple activities and processes used to transform raw materials into finished products (Williamson, Lynch-Wood & Ramsay, 2006). Such impacts produced by this sector include environmental contamination through air and water emissions and waste disposal. Consequently, this sector is receiving growing attention from legislators, and is subject to increasing pressure to find performance improvement opportunities in proactive, sustainable environmental practices (Williamson et al., 2006).

Finally, the machinery and equipment manufacturing is a growing industry, which is likely to experience entry by new players and face high competition (Porter, 1980). Russo and Fouts (1997) indicate that firms in a growing industry emphasize the production of innovative products, and their organizational structures can be expected to be flexible and less bureaucratic. Under such conditions, the adoption of policies and procedures associated with proactive CSPs would be more feasible (Russo & Fouts, 1997). However, it must be noted
that by limiting the study to a specific industry sector, the potential to draw broadly generalizable conclusions is constrained; however, it does allow the researcher to control for possible external confounding influences and focus on the variables of interest (Aragon et al., 2008).

**Sample**

The population for the present study consisted of Australian SMEs i.e. enterprises with less than 200 employees (ABS, 2001) in the machinery and equipment manufacturing industry sector contained in a commercially available database. Dun and Bradstreet is one of Australia’s leading sources for company information (Dun & Bradstreet, 2009), and access to this database was available through the library portal of the University of Tasmania. The ANZSIC code 24 (machinery and equipment manufacturing) was converted into the Standard Industrial Classification (SIC) codes used in the Dun and Bradstreet database, which was equal to SIC 35 (industrial and commercial machinery and computer equipment) and SIC 36 (electronic and other electrical equipment and components except computer equipment).

When asked for a list of Australian business in SIC 35 and 36 that had less than 200 employees, the database initially provided names of 2,281 businesses. These data were cleaned extensively for accuracy of content. More specifically, businesses with more than one branch listed were identified and only the headquarters included. Duplicates were identified and removed. All details including address and other contact details were checked where possible for errors and consistency via each company’s website. Firms found to be ineligible (e.g.
being distributors rather than manufacturers, being acquired by large firms, or out of business) were removed. This left a final population of 1,388 businesses.

Recognizing the difficulty of obtaining data from SMEs (Aragon-Correa et al., 2008), a response rate in this study was estimated between 11 per cent and 20 per cent (corresponding with previous studies e.g. Nayak, 2006; Petts, Herd, Gerrard & Horne, 1999). This would yield a sample size of at least 150, which would be sufficient to provide the amount of data necessary to test the hypothesized models by the proposed analytical method of structural equation modeling (Schumacker & Lomax, 2004).

Research Methods

Previous sustainability research has used quantitative methods through survey investigation to analyze the relationships between constructs of interest (e.g. Aragon-Correa et al., 2008; Russo & Fouts 1997; Sharma et al., 2007). In particular, Aragon-Correa et al. (2008) tested a resource-based model of sustainability practices in Spanish SMEs using structural equation modeling of survey data. In line with that and other studies, the present study focuses on theory testing at the firm level of analysis and adopts a primarily quantitative and survey-based method.

It is argued that the quantitative method is appropriate because it allows for the collection of answers to a number of questions from a large sample of the population of manufacturing SMEs, which was required to achieve valid results (Malhotra, Hall, Shaw & Oppenheim, 2002). By using closed questions in a
survey-based format, responses can be easily classified, thus making analysis very straightforward (Davis & Cosenza, 1985). However, van der Velde, Jansen and Anderson (2004) warn that using only closed questions can mean respondents are unable to make subtle distinctions in their answers, and consequently the researcher may not collect some important information. To help avoid such an outcome, a small qualitative component can prove valuable in gathering data on matters where the quantitative method is less effective (van der Velde et al., 2004). For these reasons, the questionnaire used in this study provided respondents with space for additional qualitative comments in relation to an open-ended question designed to collect unstructured observations from the respondents. These qualitative data were expected to help explain the findings on the quantitative data in greater depth. The usable responses for an open-ended question (those that were relevant or the meaning could be understood) were coded inductively by the researcher.

**Procedure**

The most common form of survey research is a cross-sectional design involving the evaluation of relationships among variables at one point in time (MacCallum & Austin, 2000). However, the problematic feature of many models used in cross-sectional studies is the specification of directional influences among variables (Gollob & Reichardt, 1987, 1991; MacCallum & Austin, 2000). According to Joreskog and Sorbom (1993), directional effects in structural equation models can be considered as casual effects in a loose sense wherein a change in one variable somehow leads to a change in another variable. Such effects, however, take some finite amount of time to operate, and the magnitude of an effect may vary as a
function of the time lag (Gollob & Reichardt, 1987, 1991). This thus implies that the interpretation of causal effects in cross-sectional designs may not be valid because of the concurrent measurement of variables (MacCallum & Austin, 2000). The use of a longitudinal design, where independent and dependent measures are collected at different times, has been recommended by scholars as a means of addressing this problem (e.g. Gollob & Reichardt, 1987, 1991; Joreskog & Sorbom, 1993; MacCallum & Austin, 2000). As such, the present study employed a longitudinal design, by which the data were collected at two points in time (Time 1 and Time 2, six months apart) measuring the same variables on each occasion in order to understand more fully the nature of causality among the constructs under study. While a longer time gap would have been preferred, a gap of six months in data collection was chosen to fit with the limited time available for data collection and analysis for this study.

It is evident that a survey questionnaire, when constructed and used properly, is a powerful scientific instrument for collecting data (Borg & Gall, 1989; Shaughnessy & Zechmeister, 1997). Given the limited amount of data available from published sources, the use of a structured, self-report questionnaire for the purposes of data collection is both legitimate and dominant in strategic management research on SMEs (Aragon-Correa et al., 2008; Chen & Hambrick, 1995; Dean et al., 1998). It also enables data to be confidentially and inexpensively collected from a targeted but geographically diverse population, thereby making it suitable for collecting the data from the study sample and required to test the proposed hypothesized models in the present study. Given the
very limited numbers of employees in a large proportion of SMEs, a single informant in each firm was identified for this study.

Although the use of single source data to assess predictive relationships is widely used in strategic management research, the potential for common method variance (also known as common method bias or mono-method bias) may cause concern (Bagozzi & Yi, 1991; Podsakoff, MacKenzie, Lee & Podsakoff, 2003). Common method variance, as described by Fiske (1982), refers to variance that is attributable to the measurement method rather than to the constructs the measures represent. Such a variance may occur as a result of factors such as social desirability, halo effect and selective memory brought about by the self-reporting method, and it can threaten the internal validity of conclusions about the predictive relationships between measures (Campbell & Fiske, 1959; Howard, 1994; Spector, 1994). As suggested by Kaynak (1997), a researcher therefore should plan how to overcome common method variance.

As confirmed in the literature, one of the ways to minimize common method variance is by careful selection of key experienced members of a firm as informants, rather than selection of their less-experienced counterparts (Campbell, 1955; Huber & Power, 1985; Phillips, 1981; Seidler, 1974). Significantly, previous research has shown that in the case of SMEs where relevant decisions are often highly centralized, the views of a single experienced well-qualified informant can often better capture a firm’s approach than the views of several informants (see Chandler & Hanks, 1993; Lyon, Lumpkin & Dess, 2000). Therefore, in the present study, all informants selected were either Chief
Executive Officers (CEO), Managing Directors (MD), General Managers (GM) or senior managers, and more than half of them were the business owner. These key informants were selected in the expectation that they would be most knowledgeable about their firms as well as have a crucial role in developing sustainable business practices.

The use of multiple methods of measuring the same constructs is another recognized way to reduce common method variance (Kaynak, 1997; Podsakoff et al., 2003). Specifically, the literature often contains calls for researchers to design studies that attempt to link subjective self-reported data with either objective self-reported data or secondary objective data. The basic assumption is that if the correlation between subjective self-reported data and objective self-reported data (or secondary objective data) is significant, then it can be assumed that the respondents have answered the questions objectively, therefore making the data more reliable (Kaynak, 1997). Although in the present study, qualitative data (from an open-ended question) were used to supplement quantitative data, it was not possible to obtain objective self-reported data on every construct due to the limitations of commercial-in-confidence concerns. Coupled with the limitation of secondary data on SMEs, this meant the correlation between subjective self-reported and objective data could not be tested in this study.

Another technique for minimizing common method variance is to introduce a time lag between the measurements of independent and dependent variables in order to diminish a respondent’s ability and motivation to use previous responses to answer subsequent questions (Kaynak, 1997; Podsakoff et al., 2003). The present
study acknowledged this point by employing a longitudinal design where surveys were administered at Time 1 and Time 2 six months apart. Furthermore, in this study, the questionnaire and survey procedures were also designed to reduce the possibility of such problem. Specifically, assurances were given that the data provided by respondents would be held in strict confidence, the analysis would be done at the aggregate level, and no firm would be indentified individually. All of this information was stated clearly on the project information sheet provided to each informant. These procedures also were aimed at reducing respondents’ evaluation apprehension, so making them less likely to edit their responses to be more socially desirable (Podsakoff et al., 2003).

A statistical technique widely used by scholars to determine the influence of common method variance is called Harman’s one-factor (or single-factor) test (Podsakoff & Organ, 1986). Researchers using this technique traditionally load all variables in their study into an exploratory factor analysis (EFA), and examine the unrotated factor solution to determine the number of factors that are necessary to account for variance in the variables (e.g. Andersson & Bateman, 1997; Aulakh & Gencturk, 2000; Organ & Greene, 1981; Schriesheim, 1979). It is assumed that if only one factor emerges from the unrotated factor solution as accounting for most of the variance observed in the data, it is likely that common method variance is the primary source (Podsakoff & Organ, 1986). As an alternative to EFA, confirmatory factor analysis (CFA) can be used when implementing Harman’s single-factor test (Podsakoff & Organ, 1986). Specifically, in the CFA approach, all of the manifested items are modeled as the indicators of a single factor that represents method effects. Common method bias are assumed to be substantial if
the single-factor model fits the data significantly better than the proposed model with many factors (Podsakoff & Organ, 1986). In the present study, Harman’s one-factor test was performed through CFA (reported in the next chapter) in order to detect the severity of common method variance in the current data.

It must also be noted that a central issue in research using survey questionnaires is internal reliability, referring to the extent to which all items within a scale captures the same construct. A common indicator of internal reliability is the Cronbach’s alpha coefficient ($\alpha$), which ideally should be above 0.7 to demonstrate an acceptable internal reliability level (Pallant, 2007). The findings on the internal reliability of the individual items used in the survey instrument are reported in the following discussion.

**Survey Instrument**

A survey instrument for this study was developed based on both the use of existing published questionnaire items (for measuring shared vision and strategic proact ivity) and the extant literature providing theoretical definitions and domains of the other constructs of interest (for measuring stakeholder management, proactive EconPs, SocPs and EnvPs, and financial performance).

The questionnaire, used for both the Time 1 and Time 2 surveys, consisted of eleven sections. Section 1 aimed to gather background information about demographic characteristics of the respondents and the company (including email address). Section 2 was designed to collect respondents’ perceptions about the firm’s shared vision and strategic proactivity capabilities; and Sections 3 and 4
focused on the firm’s stakeholder management capability. In Sections 5, 6 and 7, the focus was on collecting data that showed the extent to which the company voluntarily engages in proactive EconPs, SocPs and EnvPs (and how long it had engaged in such practices). The emphasis of Section 8 was on collecting data relating to the firm’s financial performance. Section 9 aimed to gather control data on the perceived impact of the GFC on the firm’s financial performance. In Section 10, respondents were asked to assess the firm’s financial performance compared to similar firms in their industry sector (competitive comparison). Section 11, consisting of an open-ended question, gathered qualitative information from the respondents about their firm’s financial performance as well as difficulties the firm faced in implementing sustainable business practices.

As suggested by the literature, once a survey instrument is completed in draft form, it should be subject to a pretest in order to ensure readability and detect any potential ambiguity regarding the format and wording of survey items (Davis & Cosenza, 1985; van der Velde et al., 2004). To that end, the proposed questionnaire was pretested with two SME owner-managers in the machinery and equipment manufacturing sector (their responses were not used in the final study), four academic researchers familiar with strategic issues in this sector, a senior public sector expert in sustainable business practices in Australian manufacturing SMEs, and a professional statistician expert in structural equation modeling. Prior to the pretest, participants were made aware that the study had received ethics approval from the Tasmanian Social Sciences Human Research Ethics Committee. Results from the pretest indicated that the questionnaire was a reliable and valid instrument to collect data from the targeted sample population. The final
questionnaires are presented in Appendix A. The following discussion outlines the
items used to measure each construct of interest in the study.

Shared Vision Capability

Three items from Aragon-Correa et al. (2008)’s validated scale measuring a
shared vision capability were used (see Table 4.1). Aragon-Correa et al. (2008)
developed these items based on the research literature on the development of
shared values and beliefs about organizational objectives and the way in which
organizational members influence those objectives (e.g. Oswald et al., 1994; Tsai
& Ghoshal, 1998). In the present study, all items were presented as statements,
and the respondents were asked to rate their level of agreement with statements
(as each related to their firm) on a six-point scale (1 = “strongly disagree” to 6 =
“strongly agree”). A high score was indicative of a high degree of a shared vision
capability. The Cronbach’s α for the three-item scale of shared vision capability in
this study was 0.703 for the Time 1 survey and 0.766 for the Time 2 survey,
indicating an acceptable internal reliability level.

Table 4.1: Shared Vision Capability Scale

1. The objectives of this company are very well-known to everybody working
here.
2. Everybody working in this company influences the way to work and the
objectives of the company.
3. Everybody in this company freely contributes his/her points of view about
how to run it smoothly.
Stakeholder Management Capability

Following on from published research analyzing stakeholder influences (Aragon-Corra et al., 2008; Buysse & Verbeke, 2003; Cordano & Frieze, 2000; Flannery & May, 2000; Sharma et al., 2007), the present study adapted Ajzen and Fishbein’s (1980) approach to the measurement of a firm’s stakeholder management capability. First, nine categories of stakeholders (competitors, customers, suppliers, shareholders/owners, employees, local communities, government agencies, accountants, and research & development providers) were identified from the extant literature and discussions with pretest participants. Survey respondents were asked to use a five-point scale (1 = “very low”, 5 = “very high”) to rate the level of attention their firm gave to each type of stakeholder in organizational decision-making. Second, respondents were asked to use a five-point scale (1 = “very low”, 5 = “very high”) to rate the importance of each type of stakeholder in helping them understand issues the firm was facing. Similar to Buysse and Verbeke’s (2003) approach, the average value of a stakeholder management capability for each firm was calculated based on respondents’ ratings of the attention given to each type of stakeholder and the importance of each stakeholder in helping them understand issues they were facing. A high final score indicated a high capability of stakeholder management. In this study, the Cronbach’s α for the nine-item scale of stakeholder management capability was 0.774 for Time 1 and 0.763 for Time 2, indicating an acceptable internal reliability level.
Strategic Proactivity Capability

The present study adopted three items from Aragon-Correa (1998)’s validated scale to measure a firm’s strategic proactivity (see Table 4.2). The respondents were requested to rate the extent of agreement with statements (as each related to their firm) on a six-point scale (1 = “strongly disagree” to 6 = “strongly agree”). A high score was indicative of a high development of a strategic proactivity capability. The Cronbach’s $\alpha$ for this three-item scale in the present study was 0.720 for Time 1 and 0.740 for Time 2, demonstrating an acceptable internal reliability level.

Table 4.2: Strategic Proactivity Capability Scale

<table>
<thead>
<tr>
<th></th>
<th>Statement</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Our products are many and very different. We are always looking for new opportunities (i.e. in very different areas in the manufacturing industry).</td>
</tr>
<tr>
<td>2</td>
<td>The main technology focus of this company is on having leading flexible and innovative technologies.</td>
</tr>
<tr>
<td>3</td>
<td>Our planning systems are very open and flexible to allow us to seize new opportunities.</td>
</tr>
</tbody>
</table>

Proactive Corporate Sustainability Practices (CSPs)

Proactive CSPs in this study are defined as a set of sustainable business practices across three dimensions - EconPs, SocPs and EnvPs. Because of the lack of a published survey instrument, these three dimensions were measured using items drawn from the extant literature (e.g. Aragon-Correa et al., 2008; Bansal, 2005; Buysse & Verbeke, 2003; Dunphy et al., 2000; Dyllick & Hockerts, 2002; European Commission, 2003b; Hart, 1995; Jenkins, 2006; Sharma et al., 2007; Willard, 2005) and discussions with the pretest participants.
• Proactive Economic Practices (Proactive EconPs)

To assess Proactive EconPs, an eight-item scale was utilized (see Table 4.3). These items were drawn from the literature, including Bansal (2005), Dunphy et al. (2000), Dyllick and Hockerts (2002), the European Commission (2003b), and Willard (2005). The respondents were asked to evaluate their firms’ proactive EconPs as compared to similar firms in the industry sector using a five-point scale (1 = “not addressed issue at all” to 5 = “we are leaders on this issue”). Such comparisons, as suggested by Sharma et al. (2007) and Aragon-Correa et al. (2008), enable respondents to adopt an external referent for self-evaluation and help increase the precision of the measurement results. A high score was indicative of a high adoption of proactive EconPs. The Cronbach’s α for this eight-item scale was 0.805 for Time 1 and 0.778 for Time 2, indicating an acceptable internal reliability level.

Table 4.3: Proactive EconPs Scale

1. Work with government officials to protect the company’s interest
2. Adopt a long-term perspective in decision-making in order to guarantee sufficient cashflow and produce a persistent superior return to shareholders/owners
3. Reduce costs of inputs for the same level of outputs
4. Differentiate product/process by marketing of the social and environmental performance of the product/process
5. Sell waste products for revenue
6. Use of certification on quality aspects (e.g. ISO 9000)
7. Responsible supply chain management (from sourcing to final payment e.g. meeting payment schedules)
8. Create spin-off technologies that can be profitably applied to other areas of the business
• Proactive Social Practices (Proactive SocPs)

Proactive SocPs were measured using an eight-item scale (see Table 4.4) that asked the respondents to rate their firms’ proactive SocPs as compared to similar firms in the industry sector using a five-point scale (1 = “not addressed issue at all” to 5 = “we are leaders on this issue”). These items were drawn from the literature, including Bansal (2005), Jenkins (2006), and the European Commission (2003b). A high score was indicative of a high adoption of proactive SocPs. The Cronbach’s $\alpha$ for this eight-item scale was 0.835 for Time 1 and 0.835 for Time 2, indicating a good internal reliability level.

<table>
<thead>
<tr>
<th>Table 4.4: Proactive SocPs Scale</th>
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</thead>
<tbody>
<tr>
<td>1. Employee participation in decision-making process</td>
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<tr>
<td>2. Creation of good work-life balance and family friendly employment</td>
</tr>
<tr>
<td>3. Investor in people (e.g. training and employee development)</td>
</tr>
<tr>
<td>4. Equal opportunities in workplace (e.g. employing disabled people, and/or promoting women to senior management positions)</td>
</tr>
<tr>
<td>5. Improve employee health and safety</td>
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<tr>
<td>6. Engage in philanthropic activities (e.g. charitable donation)</td>
</tr>
<tr>
<td>7. Sponsorship of local community initiatives</td>
</tr>
<tr>
<td>8. Consider interests of stakeholders in investment decisions by creating a formal social dialogue</td>
</tr>
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</table>

• Proactive Environmental Practices (Proactive EnvPs)

Drawing from the literature, including Aragon-Correa et al. (2008), Buysse and Verbeke (2003), Hart (1995), Sharma et al. (2007), and the European Commission (2003b), proactive EnvPs were measured using an eleven-item scale – see Table 4.5. These items were designed to cover the possible range of proactive EnvPs that a SME might adopt including eco-efficiency, and product and process
innovations for pollution prevention. The respondents were requested to rate their firms’ proactive EnvPs compared to similar firms in the industry sector on a five-point scale (1 = “not addressed issue at all” to 5 = “we are leaders on this issue”). A high score was indicative of a high adoption of proactive EnvPs. The Cronbach’s $\alpha$ for this eleven-item scale was 0.921 for Time 1 and 0.916 for Time 2, indicating a good internal reliability level.

**Table 4.5: Proactive EnvPs Scale**

1. Periodic natural environment audits
2. Purchasing criteria including ecological requirement
3. Environmental training for employees
4. Filters and controls on emissions and discharges
5. Program for water recycling
6. Program of waste recycling/reuse
7. Increase energy efficiency
8. Reduction/replacement of hazardous chemicals or materials (e.g. substituting hazardous chemicals with less hazardous alternatives)
9. Systematically separate dangerous wastes
10. Use of certifications on environmental aspects (e.g. ISO 14000)
11. Design products and manufacturing processes to minimize the ecological footprint along the entire product life cycle

*Financial Performance*

Strategy and sustainability scholars have used a combination of subjective data (e.g. Aragon-Correa *et al.*, 2008; Judge & Douglas, 1998; Sharma & Vredenburg, 1998) and objective data (e.g. Bansal, 2005; Russo & Fouts, 1997) to measure a firm’s financial performance. Although in theory objective measures show greater validity, the literature shows that there is a high correlation and concurrent validity between objective and subjective data on performance, implying that both
are valid when calculating a firm’s financial performance (Homburg, Krohmer & Workman, 1999; Dess & Robinson, 1984).

Discussions with pretest participants indicated that respondents would likely be more open to offering their general perceptions rather than providing specific quantitative data that might likely be considered commercial-in-confidence. Drawing from a review of the performance literature (e.g. Dess & Robinson, 1984; Garcia-Morales et al., 2006; Homburg et al., 1999; Judge & Douglas, 1998), the present study used respondents’ subjective perceptions on four items (return on assets, net profits to sales, liquidity and total wage and salary expenses) to measure a firm’s financial performance. First, respondents were asked to rate their firm’s financial performance in the past six-month period compared to their previous preceding six-month period (self-comparison) on a five-point scale (1 = “much worse” to 5 = “much better”). Second, the respondents were asked to rate their firm’s financial performance in the past six-month period compared to similar firms in their industry sector (competitive comparison) using a five-point scale (1 = “much worse” to 5 = “much better”). Based on respondents’ self-comparison and competitive comparison ratings, the value of a firm’s financial performance was calculated. A high score was considered indicative of a high level of financial performance. The Cronbach’s α for this four-item scale was 0.882 for Time 1 and 0.905 for Time 2, demonstrating a good internal reliability level.
Control Variables

All the sampled firms were SMEs with employee numbers of less than 200 (ABS, 2001). However, the breadth of this definition raised the need to use ‘firm size’ (Size) to control for potential differences (Aragon-Correa et al., 2008). Therefore the sample firms were categorized into six groups according to the number of employees employed on a regular basis (0-9, 10-19, 20-49, 50-99, 100-149 and 150-199), and respondents were asked to indicate which of these groups fitted their firm.

Moreover, by recognizing that the benefits from proactive CSPs might only become fully visible over the long-term, rather than the short-term (Hart & Ahuja, 1996), data were collected on duration of experience in managing proactive CSPs (Time) as another control variable. Respondents were asked to indicate how long their firm had engaged in proactive EconPs, SocPs and EnvPs (from 1 year to 9 years plus), and a high score was considered indicative of a high experience in proactive CSPs.

Furthermore, as the present study was conducted during the GFC, there was the need to control for this external influence because of its potentially negative impact on firm performance. Thus, data were gathered on the perceived impact of the GFC on business financial performance as a third control variable. Respondents were requested to indicate the extent to which economic conditions had negatively impacted on their firm’s financial performance in the previous six-month period in relation to four financial indicators (return on assets, net profits to sales, liquidity and total wage and salary expenses) using a five-point scale (1 = “no impact at all” to 5 = “very high impact”). A high score was considered
indicative of a high negative impact on a firm’s financial performance. The Cronbach’s α for this four-item scale was 0.885 for Time 1 and 0.908 for Time 2, indicating a good internal reliability level.

**Data Collection**

As mentioned before, data in this study were collected at two different points of time. In the Time 1 survey, a survey pack was mailed out to 1,388 Australian SMEs in the machinery and equipment manufacturing industry sector, and was addressed to the CEO, MD or GM of the firm. The survey pack consisted of four items: a project information sheet, consent form (see Appendix A), a reply-paid addressed envelope, and a survey questionnaire. The project information sheet explained the purpose of the study and the benefits to the firm of participating in the survey, and provided assurances about the project’s data confidentiality and privacy provisions. Information on the procedures relating to the administration of the survey and contact details for the researchers was also provided. Recognizing that a low response rate is a common problem in mailed survey research (Neuman, 2003; Sekaran, 2003), a summary of the research findings was offered as an incentive to all respondents. The respondents were asked to complete the questionnaire and consent form and return them to the researcher in the reply-paid addressed envelope within 14 days. All respondents were requested to provide the researcher with their email address in order to allow the researcher to be able to contact them regarding the completion of the Time 2 survey questionnaire.

As only 102 questionnaires had been returned 14 days after the Time 1 survey distribution, reminder letters were mailed out to those firms that had not
responded, resulting in 48 more completed questionnaires being received. Telephone contact was then made with key informants in approximately 200 of the non-responding firms, during which information on the purpose of the study and the benefits to the firm of participation in the research was explained. Most informants asked the researcher to resend the questionnaire by email or fax. However, some firms advised of their lack of interest in participating. Reasons provided included informants were too busy and could not spare time to respond to any research surveys; they did not wish to divulge business information; or it was company policy not to participate in such surveys.

These telephone contacts resulted in 9 more completed questionnaires being received. Further attempts to increase the response rate included development of an on-line survey facility, advice on which was emailed to approximately 1,000 of the targeted firms with advice that if they had not done so already they could participate via the on-line survey. The online survey contributed 58 more completed questionnaires. Overall, the total number of completed questionnaires received was 218. Of these completed questionnaires, 18 were discarded because of missing values. This left a sample of 200 final completed questionnaires for the Time 1 survey, representing a 14.41 per cent response rate.

Based on experience gained during the Time 1 survey, email and the online survey were used as the main method for contacting the 200 respondents who had signified their consent to participate at Time 2 (approximately six months later). Respondents were individually notified by email three days in advance about the forthcoming Time 2 survey. After one week of the Time 2 survey distribution, 105 questionnaires were completed on-line. An email reminder was then sent to
those non-responding firms. This resulted in 66 more completed questionnaires. The total number of completed questionnaires received for the Time 2 survey was 171, representing an 85.50 per cent response rate.

**DATA ANALYSIS TECHNIQUE: STRUCTURAL EQUATION MODELING**

Structural equation modeling (SEM) is a powerful statistical technique that allows measurement analysis (specifying relationships among observed variables underlying latent variables) and structural analysis (specifying relationships among the latent variables) to be performed simultaneously (Kelloway, 1998; Schumacker & Lomax, 2004). Schumacker and Lomax (2004) describe the following five basic-building blocks of all SEM analyses: model specification, model identification, model estimation, model fit testing and model modification. These basic-building blocks are absolutely essential to both the measurement and structural models.

SEM is particularly valuable in inferential data analysis and hypothesis testing where the pattern of relationships among the study constructs is specified a priori and grounded in established theory. It allows the researcher to test prior theoretical assumptions against empirical data statistically (Kelloway, 1998; MacCallum & Austin, 2000; Schumacker & Lomax, 2004). For these reasons, the present study employed SEM (using the LISREL 8.8 software program) to test the proposed hypothesized models. However, there are a number of issues that must be addressed when using the SEM technique.
Sample Size

The first of these issues is sample size. The need to generate a sufficiently large sample size, that enables the researcher to maintain power and obtain stable parameter estimates and standard errors, has been a major concern in the application of SEM (Schumacker & Lomax, 2004). This need is due in part to both the statistical program requirements and the multiple observed indicator variables used to define latent variables (MacCallum & Austin, 2000). Several scholars have presented guidelines on the definition of ‘large’. For example, Anderson and Gerbing (1988) and Ding, Velicer and Harlow (1995) are in agreement that 100 to 150 subjects is the minimum satisfactory sample size when constructing SEM. Schumacker and Lomax (2004) indicate that a sample size between 100 and 200 is needed for good model fit and a nonsignificant chi-square. Hair, Anderson, Tatham and Black (1998) recommend a sample size of approximately 200 for models of moderate complexity. Boomsma (1982), however, recommends 400. Taking a somewhat different approach, Bentler and Chou (1987) suggest that the ratio of sample size to estimated parameters should be between 5:1 and 10:1. Because of this divergence of views, there has been reluctance in the literature to recommend rules of thumb regarding sample size in SEM.

However, developments in recent years make it feasible to address the sample size issue from a power analysis perspective (MacCallum & Austin, 2000). Power analysis, according to MacCallum, Browne and Sugawara (1996), can be used as a diagnostic tool to determine the probability that a study will reject the null hypothesis when it is false. Studies with high statistical power are more likely to detect the effects of interventions, whereas those with low statistical power often
lead the researcher to dismiss potentially important effects due to sampling error (Murphy & Myors, 2004). In the present study, power analysis is therefore used in order to ensure that the sample size of 171 has adequate power for detecting when null hypotheses are false.

### Analysis Approach

The second issue in the application of the SEM technique is the sequence in which structural and measurement analysis should occur. Although SEM is capable of testing the measurement model and structural model simultaneously, Anderson and Gerbing (1988) recommend a two-step approach and that the measurement model should be tested separately, using confirmatory factor analysis (CFA) in order to detect any inadequacy in fit, prior to testing the full structural model. They suggest that the measurement model provides an assessment of convergent and discriminant validity, while structural model provides an assessment of predictive validity. By using a sequential approach in analysis, the researcher is able to pinpoint where a model is misspecified (Anderson & Gerbing, 1988). The present study adopts this approach by measuring the fit of a model with the current data, before testing the structural relationships among the constructs in the model.

In addition, Mulaik and Millsap (2000) and Joreskog and Sorbom (1993) suggest that it is best to have a few good indicators for each of the latent variables in order to check more easily how well each observed variable measures a latent variable. Therefore, rather than using individual items as indicator variables, the present study also uses exploratory factor analysis (EFA) for each of the proposed seven latent variables (shared vision, stakeholder management, strategic proactivity,
proactive EconPs, proactive SocPs, proactive EnvPs and financial performance) and so reduce a large number of related items to a manageable number prior to using them in the measurement and structural analyses.

**Model Specification**

Another issue with any form of SEM is the requirement for prior specification of the model (Kelloway, 1998). The propositions incorporated in a model are most frequently drawn from previous research or theory (Bollen & Long, 1993). In other words, pre-existing theoretical information is used to decide which variables (both observed and latent variables) to include in the proposed model, and how these variables are related. Model specification involves determining every relationship and parameter that is of interest to the researcher (Kelloway, 1998). As highlighted by Schumacker and Lomax (2004), this is the hardest part of SEM as the exclusion of important variables or the inclusion of unimportant variables can produce an implied model that is misspecified resulting in bias parameter estimates (known as specification error). Specification error makes it likely that a theoretical model will not fit the data statistically and thus it will be deemed as unacceptable (Schumacker & Lomax, 2004).

The structural model proposed and tested in the present study draws on RBV theory (see Barney 1991; Grant, 1991) and prior research (see Aragon-Correa et al., 2008). The measurement model is operationalized using multi-item scales specified according to factor structures used in previous research and the extant literature (e.g. Ajzen & Fishbein, 1980; Aragon-Correa et al., 2008; Bansal, 2005; Dess & Robinson, 1984; European Commission, 2003b; Sharma et al., 2007).
Also, each observed variable is hypothesized to measure only a single latent variable.

Model Identification

In SEM, it is crucial that the level of model identification must be clarified prior to estimation of parameters (Schumacker & Lomax, 2004). Traditionally, there have been three levels of model identification: under-identified, just-identified and overidentified (Bollen, 1989; Joreskog & Sorbom, 1988; Pedhazur, 1982). According to Schumacker and Lomax (2004), a necessary but insufficient condition for model identification is ensuring that the number of free parameters to be estimated in a theoretical model must be less than (called over-identified) or equal to (called just-identified) the number of distinct values in the sample variance-covariance matrix (distinct values = \( p(p + 1)/2 \) where \( p \) is the number of observed variables). On the other hand if the number of free parameters exceeds the number of distinct values in the sample matrix (called under-identified), then the model parameters cannot be uniquely determined because there is not enough information in the matrix. A method for avoiding these problems is to ensure that either one indicator for each latent variable must have a factor loading fixed to 1, or that the variance of each latent variable must be fixed to 1 (Bollen, 1989; Joreskog & Sorbom, 1988; Schumacker & Lomax, 2004). Utilizing this method will often eliminate the problem of scale indeterminacy; however, additional constraints (e.g. a parameter is constrained to equal one or more other parameters) may also be necessary (Schumacker & Lomax, 2004).
**Model Estimation**

The most widely used type of estimation is maximum likelihood (ML), followed by generalized least square (GLS) and unweighted least squares (ULS) (Anderson & Gerbing, 1988; Bollen, 1989; Hoyle, 1995; Kelloway, 1996). The ML estimates are consistent, unbiased, efficient, scale-invariant and scale-free under the multivariate normality assumption (Schumacker & Lomax, 2004). As indicated by SEM scholars, the ML estimates are highly appropriate when the observed variables are interval scaled and multivariate normal distributed (or minor deviations). Nevertheless, if observed variables are ordinal scaled and/or extremely skewed or peaked (non-normally distributed), then the ML estimates are not robust (Anderson & Gerbing, 1988; Bollen, 1989; Hoyle, 1995; Kelloway, 1996; Raykov & Marcoulides, 2000). The GLS estimates have the same properties as the ML approach under a less stringent multivariate normality assumption. Meanwhile, the ULS estimates do not depend on a normality distribution assumption, but the estimates are neither efficient, scale-invariant or scale-free (Schumacker & Lomax, 2004).

In this study, the ML estimation method was used to estimate the parameters in the proposed hypothesized models. The current data were screened and examined for multivariate normality prior to their analysis in LISREL 8.8 (see the next chapter). A statistical significance criterion of less than 0.05 was applied, meaning that the probability of the findings being due to chance is less than 5 per cent.
Model Fit Testing

A number of goodness-of-fit measures have been developed to assist in interpreting how well the structural equation models fit the sample data. Such measures can be classified into absolute fit, incremental fit and parsimonious fit measures (Hair et al., 1998; Ho, 2006). As described by Hair et al. (1998), absolute fit measures assess the overall model fit with no adjustment for the degree of overfitting that might occur. Some commonly used measures of absolute fit include the chi-square ($\chi^2$), the goodness-of-fit index (GFI), the root mean square of the approximation (RMSEA), and the standardized root mean squared residual (SRMR). Incremental fit measures compare the proposed model to a null model to determine the degree of improvement over the null model. Common incremental fit measures are the comparative fit index (CFI), the normed fit index (NFI) and the non-normed fit index (NNFI). Parsimonious fit measures evaluate the fit of the model versus the number of estimated coefficients needed to achieve that level of fit. Examples of these measures include the parsimonious normed fit index (PNFI) and the Akaike information criterion (ACI) (Hair et al., 1998; Ho, 2006). Given a lack of consensus on the best measure of fit, SEM scholars recommend the use of multiple measures rather than rely on a single choice in evaluating the model fit (Bentler & Wu, 2002; Bollen, 1990; Hair et al., 1998; Ho, 2006; Hu & Bentler, 1998, 1999; Joreskog & Sorbom, 1993; Marsh, Balla & McDonald, 1988; Schumacker & Lomax, 2004).

As indicated by Joreskog and Sorbom (1993), the chi-square ($\chi^2$) is the only statistical test of significance for testing the fit of a proposed model. A low $\chi^2$ value relative to the degrees of freedom ($df$), indicating non-significance ($p >$
0.05), would point to a good fit. This is because such non-significance means that there is no statistical difference between the actual and predicted input matrices (Joreskog & Sorbom, 1993). Nevertheless, there are three cases in which the $\chi^2$ may be misleading (Hoyle, 1995). First, the $\chi^2$ is very sensitive to the complexity of the model; the more complex the model, the more likely the results will indicate a poor model fit. Second, it is too sensitive to the sample size; the larger the sample size, the more likely it is that the model will be rejected even if it is, in reality, a good fit with the data (a Type II error- accepting a false null hypothesis). Finally, it is also very sensitive to violations of the assumption of multivariate normality. When this assumption is violated, the $\chi^2$ will be inflated and the standard errors used to test the significance of parameter estimates will be deflated, which means that there is increased likelihood of an incorrect rejection of a model as false (Hoyle, 1995; Joreskog & Sorbom, 1993; Tabachnick & Fidell, 2001). To recognize these problems, this study complements the $\chi^2$ measure with other goodness-of-fit measures.

Marsh et al. (1988) proposed that the criteria for ideal fit measures are relative independence of sample size, accuracy and consistency to assess different models, and ease of interpretation aided by a well defined pre-set range. Based on these stated criteria, Garver and Mentzer (1999) recommend the use of the NNFI, CFI and RMSEA. Also, in their studies of the performance of various fit measures in relation to sensitivity to model misspecification, Hu and Bentler (1998) recommend the use of the SRMR in tandem with one of several other indices particularly the NNFI and RMSEA. Nevertheless, these authors recommend against usage of the GFI, due to its being strongly influenced by sample size, and
insufficiently sensitive to model misspecification (Hu & Bentler, 1998). In line with these recommendations, the present study reports the RMSEA, SRMR, CFI and NNFI in combination with reporting the $\chi^2$. The following is a brief discussion of the fit measures and their interpretation taken into account by the present study when testing model fit.

The RMSEA estimates the lack of fit in a model compared to a perfect (saturated) model. A value of 0.08 or less indicates a good-fitting model, while a value greater than 0.1 represents a poor-fitting model (Browne & Cudeck, 1993; Steiger, 1990). The SRMR is the average difference between the sample variances and covariances and the estimated population variances and covariances. The SRMR values range from 0 to 1, with value of 0.08 or less indicating a good model fit (Bentler, 1990; Hu & Bentler, 1999). The CFI estimates the proportion of improvement in the proposed model beyond the null model, based on the noncentral $\chi^2$ distribution that allows for unbiased estimation of small sample size. The CFI has a value ranging from 0 to 1 (1 = perfect fit), with a value of 0.95 or greater representing a good-fitting model (Bentler, 1990; Hu & Bentler, 1999). Similarly, the NNFI indicates the percentage improvement in fit over the null model by taking into account $df$. Higher values of the NNFI indicate a better fitting model, and it is common to apply the 0.95 rule as indicating a good fit to the data (Hu & Bentler, 1999).

Importantly, the statistical significance of individual parameter estimates for the paths in the proposed model also needs to be considered for assessing model fit (Schumacker & Lomax, 2004). A ratio of the parameter estimate to the estimated
standard error can be formed as a critical value (or $t$ value). If the $t$ value exceeds 1.96 at a significant level of less than 0.05, then the parameter is statistically significant. Furthermore, as suggested by Schumacker and Lomax (2004), the parameter estimates obtained from the analysis should be theoretically meaningful, and should be within an expected range of values (e.g. variances should not have negative values and correlations should not exceed 1).

Model Modification

Another aspect of the SEM techniques is the need to recognize that an initial specified model may not provide a good fit of the data; re-specification and re-estimation of the model is often necessary to achieve a better fit of the model (Anderson & Gerbing, 1988; Byrne, 1998). Based on the two-step model-building approach developed by Anderson and Gerbing (1988), the present study adjusted and fitted the measurement model to the data (through CFA) prior to testing and modifying the structural component of the model.

As suggested by Baumgartner and Homburg (1996), if an a priori measurement model provides a poor fit to the data, improvements to the model fit can be made by utilizing modification indices provided by the SEM software program. Modification indices suggest ways that the model might be altered by allowing the error covariance of corresponding parameters to become free or by allowing indicators to load more than one factors (multidimensional factors). A better fitting measurement model might then result (Bollen, 1989; Joreskog & Sorbom, 1988). However, because of reasons related to the study’s theoretical justification, no modifications were made that allowed indicators to load on multiple factors.
Importantly, according to Kline (2005), if the modified measurement model is plausible (good fit), then the following patterns should also be seen by the researcher: (i) convergent validity is demonstrated by all indicators specified to measure a common underlying latent factor having relatively high standardized loadings on that factor, and (ii) discriminant validity is demonstrated by estimated correlations between latent factors not being excessively high (e.g. > 0.85).

Importantly, to assess how well the latent constructs are measured by their indicators in CFA, SEM scholars (e.g. Anderson & Gerbing, 1988; Hair et al., 1998) urge the researcher to report not only the Cronbach’s $\alpha$ but also the composite reliability (CR) and the average variance extracted (AVE). The CR measures the internal consistency reliability of a summated scale (> 0.7 indicating internal reliability), and the AVE measures the amount of variance captured by a construct in relation to the variance due to measurement error (> 0.5 indicating convergent validity) (Hair et al., 1998). However, as LISREL does not output the CR and AVE directly, they were thus calculated by hand in this study based on the following formulas provided by Anderson and Gerbling (1988).

\[
\text{CR} = \frac{(\sum \text{standardized loading})^2}{(\sum \text{standardized loading})^2 + (\sum \text{measurement error})}
\]

\[
\text{AVE} = \frac{(\sum \text{standardized loading}^2)}{(\sum \text{standardized loading}^2) + (\sum \text{measurement error})}
\]

After the modified measurement model is assessed, a structural model is estimated. The fit of the structural model is evaluated, and modification indices are again examined. In the structural model, modification indices indicate how
much the model could be improved by adding in significant but unspecified paths (Schumacker & Lomax, 2004). Nevertheless, it is vital to note that modifications of the structural model, based on the inclusion of paths shown to be significant but not theoretically predicted, is considered to be problematic because it increases the probability of Type I errors; in other words, situations in which the researcher mistakenly rejects the null hypothesis (Kline, 2005). In addressing these concerns in this study, non-specified paths (between latent variables) were not added to the modified structural model. However, following the suggestion of Bollen and Long (1993), several nested models were fitted to the data (each one incorporating different assumptions about parameters). Such alternative models provide comparative information about alternative explanations of the data, thus lending some protection against a confirmation bias.

Causality

The final issue associated with SEM, to be discussed here, is its use as a method for studying causal patterns among variables (Joreskog & Sorbom, 1993). In this regard, it is important to note that SEM is not a method for discovering causes; rather, it is a method applied to a pre-specified model formulated on the basis of prior knowledge and theory (Pedhazur, 1982). As emphasized by Williams (1995), SEM does not prove causality any more than the application of any statistical technique conveys information about the causal relations in the data. Also, although the hypotheses underlying model development may be causal in nature, assessing the model fit does not provide a basis for causal inference (Bollen, 1989; Brannick, 1995; Kelloway, 1995, Williams, 1995). The conditions necessary for causal inference in SEM are proposed by James, Mulaik and Brett
(1982), and are more briefly summarized by Schumacker and Lomax (2004) as: (i) temporal ordering of variables exists; (ii) covariation or correlation is present among variables; and (ii) other causes are controlled. Meeting these three conditions for causal inference is indeed more a matter of study design than of statistical technique (Kelloway, 1998; Schumacker & Lomax, 2004).

Although the present study uses longitudinal data to examine the causal structure of the constructs, identifying a temporal sequence in itself is not sufficient to establish proof of causality. Even given a temporal sequence, an apparent causal influence may be due to an intervening variable or to some correlate of the putative causes. However, the present study makes an effort to avoid omitting this kind of variable by using the control variables of Size, Time and GFC. It was believed that the greater consideration of such issues would result in improved information about causal influences among variables.

SUMMARY

This chapter has described the methodological approach used to conduct the present study. A sample of Australian SMEs in machinery and equipment manufacturing industry sector was surveyed. The survey instrument was developed based on both published survey instruments and the broader extant literature. The self-report data were collected at two points in time, six months apart. The major issues pertaining to reliability and validity in the design of the study, as well as comments on the appropriateness and soundness of the methods utilized have been discussed in this chapter. A discussion of the analytical
technique employed (SEM) has highlighted the important considerations in the interpretation of results from such an analytical technique. Specifically, in this study, the two-step modeling approach, where the measurement model (using EFA and CFA) is adjusted and fitted to the data prior to testing the structural model, is employed, and five goodness-of-fit measures ($\chi^2$, RMSEA, SRMR, CFI and NNFI) are used to assist in data interpretation.
CHAPTER 5: DATA ANALYSIS AND RESULTS

CHAPTER OBJECTIVES

This chapter presents the results of data analysis and hypothesis testing. It begins with data preparation and screening for structural equation modeling (SEM). This includes a discussion of the respondents’ characteristics, a non-response bias assessment, a method for treating missing values, and exploratory factor analysis. After that, the measurement and structural analyses are conducted in relation to the proposed two hypothesized models. The examination of the reliability and validity of instruments, common method variance, and statistical power for the test of model fit are also presented. This is followed by the analysis of qualitative data obtained from an open-end question. The chapter concludes with a summary.

DATA PREPARATION AND SCREENING FOR SEM

Sample Characteristics

Of the 1,388 questionnaires distributed at Time 1, 200 completed questionnaires were received, representing a 14.4 per cent response rate. At Time 2, approximately six months later, 200 questionnaires were distributed to those who participated in Time 1 survey, and 171 valid questionnaires were returned, representing an 85.5 per cent response rate. Only data from these 171 respondents were used for the analysis, thus providing a 12.3 per cent final response rate of the survey project. Over half of the respondents were business owners (67.3 per cent). Current positions represented were CEO (11.7 per cent), MD (57.9 per cent), GM (11.7 per cent) and other (18.7 per cent). The number of people employed on a
regular basis by firms were 0-9 (11.7 per cent), 10-19 (27.5 per cent), 20-49 (42.1 per cent), 50-99 (11.1 per cent), 100-149 (4.1 per cent) and 150-199 (3.5 per cent). Business annual turnover ranged from less than $0.5M (2.3 per cent), $0.5M-less than $1M (3.5 per cent), $1M-less than $5M (33.3 per cent), $5M-less than $10M (28.1 per cent), $10M-less than $30M (23.4 per cent), to over $30M (9.4 per cent). All but one respondent indicated that they completed both Time 1 and Time 2 survey forms by themselves.

**Non-Response Bias Assessment**

Given a relatively low response rate, the possibility of non-response bias was examined by comparing demographic characteristics of the respondents who participated in both the Time 1 and Time 2 surveys (N = 171) and those who participated in the Time 1 survey but did not respond to the Time 2 survey (N = 29). A likelihood ratio chi-square test for independence and an independent-samples t-test were performed using SPSS version 17 to determine whether there was any statistically significant difference between these two groups that would bias the results of this study. The results confirmed that there were no significant differences between the two groups in terms of business ownership ($\chi^2 (1) = 0.803, p = 0.370$), current position ($\chi^2 (3) = 0.726, p = 0.867$), number of people employed on a regular basis ($t (198) = 0.286, p = 0.775$), and business annual turnover ($t (198) = 1.127, p = 0.261$). This therefore demonstrated that non-response bias was not a substantial concern in this study. However, it should be noted that a low response rate may limit the generalizability of the current findings (discussed further in Chapter 6).
Treating Missing Values

The proportion of missing values for variables was very small ranging from 0 per cent to 1.2 per cent. This met Tabachnick and Fidell’s (2001) recommendation that no variables had missing data in excess of 5 per cent. As already noted, SEM is very sensitive to the sample size; therefore, utilizing a conservative method such as likewise deletion was avoided. It is also suggested by Tabachnick and Fidell (2001) to avoid mean substitution unless there are no other options available. Therefore, since the data of this study were collected at two points in time measuring the same variables on each occasion, the researcher decided to deal with missing values by replacing them with data available at early or later time points (or matching response pattern). Given the small sample size, the matching response pattern method was considered most appropriate to retain all cases in the analysis (Joreskog & Sorbom, 1993).

Survey at Two Points in Time

As indicated by Gollob and Reichardt (1991), in any study where one investigates causal relationships that operate over time, those relationships may vary with the length of the time interval. From this perspective, there is no true causal relationship between the two variables, unless the causal relationship itself does not change over any time period of interest (Gollob & Reichardt, 1991). The present study therefore measured all of the independent (exogenous), mediating (first-grade endogenous) and dependent (second-grade endogenous) variables at both Time 1 and Time 2, six month apart. Therefore, the analyses in the remaining sections of this chapter will be based on the following three datasets:
(i) \( T1T2 \): using the Time 1 data for exogenous and first-grade endogenous variables, and using the Time 2 data for second-grade endogenous variables.

(ii) \( T1T1 \): using only the Time 1 data for both exogenous and (first and second grade) endogenous variables.

(iii) \( T2T2 \): using only the Time 2 data for both exogenous and (first and second grade) endogenous variables.

\( T1T2 \) will be the main analytical dataset of this study. However, in order to infer causality, the directional relationships between a pair of variables in the proposed hypothesized models should be found consistent across the \( T1T2 \), \( T1T1 \) and \( T2T2 \) datasets.

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**Exploratory Factor Analysis (EFA)**

By aiming to reduce a large number of related observed variables to a more manageable number, the EFA was primarily performed through LISREL 8.8, prior to conducting the measurement and structural analyses. Specifically, EFA was performed for each of the following latent variables: shared vision, stakeholder management, strategic proactivity, proactive EconPs, proactive SocPs, proactive EnvPs and financial performance. It must be noted that EFA was not performed for proactive CSPs, because such practices were already considered to be underpinned by only the three factors: proactive EconPs, proactive SocPs and proactive EnvPs.

Maximum likelihood (ML) factor extraction was employed for EFA, due to its ability to test the significance of loadings and correlations between factors;
however, such method required the assumption of univariate and multivariate normality (Ford, MacCallum, & Tait, 1986). Varimax method was used for the rotation of factor loadings because of its ability to secure a simple structure effectively, and only factors with eigenvalues greater than 1.0 were considered in the analysis (Gorsuch, 1983; Pallant, 2007).

Data were firstly assessed for their suitability for EFA. Pallant (2007) recommends that the overall sample size required for EFA should be more than 150, and there should be a ratio of at least five cases for each of the items. In this study, the sample size was 171 with a ratio of more than five cases per item; therefore, it appeared to be adequate for the analysis. Inspection of the correlation matrix revealed the presence of coefficients of above 0.3, determining the factorability of the data (Pallant, 2007; Tabachnick & Fidell, 2001). Univariate normality of distribution of variables was tested by checking their skewness (the degree of symmetry about the mean) and kurtosis (the degree of flatness or peakness of a distribution), whereby skewness and kurtosis values near zero indicate symmetrical and mesokurtotic distributions. Research suggests that variables with absolute values of the skewness greater than 3 may be considered as extremely skewed, and absolute values of kurtosis index greater than 10 may evidence a problem and greater than 20 may indicate a more serious one (Kline, 2005). These rules of thumb were implemented to assess the distributional properties of the variables in the present study. Results of the skewness and kurtosis assessments revealed that all items had approximately normal distributions (see Table 5.1-5.7). At the multivariate level, the relative multivariate kurtosis (RMK) estimates were less than 3 (see Table 5.1-5.7).
meaning that no serious deviations from multivariate normality existed (Bentler & Wu, 2002). Therefore, data could be analyzed by an ML factor extraction method. EFA (ML estimates and varimax rotation) for each exogenous variable showed that the three items of shared vision formed 1 factor with eigenvalues greater than 1 (labeled SHAR.F1, see Table 5.1); the nine items of stakeholder management formed 2 factors with eigenvalues greater than 1 (labeled STAK.F1 and STAK.F2, see Table 5.2); and the three items of strategic proactivity formed 1 factor with eigenvalues greater than 1 (labeled STRA.F1, see Table 5.3).

**Table 5.1: Factor loadings of EFA for Shared Vision**

<table>
<thead>
<tr>
<th>Items</th>
<th>T1T2 and T1T1</th>
<th>T2T2</th>
<th>Factor 1 SHAR.F1</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Skewness</td>
<td>Kurtosis</td>
<td></td>
</tr>
<tr>
<td>1. The objectives of this company are very well-known to everybody working here (SHAR1)</td>
<td>-0.582</td>
<td>1.308</td>
<td>0.611</td>
</tr>
<tr>
<td>2. Everybody working in this company influences the way to work and the objectives of the company (SHAR2)</td>
<td>-0.538</td>
<td>0.879</td>
<td>0.811</td>
</tr>
<tr>
<td>3. Everybody in this company freely contributes his/her points of view about how to run it smoothly (SHAR3)</td>
<td>-0.229</td>
<td>-0.189</td>
<td>0.579</td>
</tr>
<tr>
<td>RMK</td>
<td></td>
<td></td>
<td>1.245</td>
</tr>
<tr>
<td>Cronbach’s α</td>
<td></td>
<td></td>
<td>0.703</td>
</tr>
</tbody>
</table>

**Table 5.2: Factor loadings of EFA for Stakeholder Management**

<table>
<thead>
<tr>
<th>Items</th>
<th>T1T2 and T1T1</th>
<th>T2T2</th>
<th>Factor 1 STAK.F1</th>
<th>Factor 2 STAK.F2</th>
<th>Factor 1 STAK.F1</th>
<th>Factor 2 STAK.F2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Skewness</td>
<td>Kurtosis</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Competitors (STAK1)</td>
<td>-0.367</td>
<td>-0.816</td>
<td>0.430</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Customers (STAK2)</td>
<td>-1.414</td>
<td>2.239</td>
<td>0.749</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Suppliers (STAK3)</td>
<td>-0.681</td>
<td>-0.109</td>
<td>0.548</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Shareholders/owners (STAK4)</td>
<td>-1.128</td>
<td>0.845</td>
<td>0.310</td>
<td>-0.999</td>
<td>0.836</td>
<td>0.302</td>
</tr>
<tr>
<td>5. Employees (STAK5)</td>
<td>-0.579</td>
<td>-0.151</td>
<td>0.570</td>
<td>-0.522</td>
<td>-0.216</td>
<td>0.637</td>
</tr>
<tr>
<td>6. Local communities (STAK6)</td>
<td>0.438</td>
<td>-0.788</td>
<td>0.707</td>
<td>0.290</td>
<td>-0.899</td>
<td>0.811</td>
</tr>
<tr>
<td>7. Government agencies (STAK7)</td>
<td>0.152</td>
<td>-1.177</td>
<td>0.767</td>
<td>0.168</td>
<td>-0.981</td>
<td>0.633</td>
</tr>
<tr>
<td>8. Accountants (STAK8)</td>
<td>-0.059</td>
<td>-0.949</td>
<td>0.554</td>
<td>-0.181</td>
<td>-1.051</td>
<td>0.414</td>
</tr>
<tr>
<td>9. Research &amp; development providers (STAK9)</td>
<td>-0.053</td>
<td>-1.037</td>
<td>0.350</td>
<td>-0.154</td>
<td>-0.941</td>
<td>0.336</td>
</tr>
<tr>
<td>RMK</td>
<td></td>
<td></td>
<td>1.049</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cronbach’s α</td>
<td></td>
<td></td>
<td>0.684</td>
<td>0.688</td>
<td>0.639</td>
<td>0.689</td>
</tr>
</tbody>
</table>
Table 5.3: Factor loadings of EFA for Strategic Proactivity

<table>
<thead>
<tr>
<th>Items</th>
<th>T1T2 and T1T1</th>
<th>T2T2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Skewness</td>
<td>Kurtosis</td>
</tr>
<tr>
<td>1. Our products are many and very different. We are always looking for new opportunities (i.e. in very different areas in the manufacturing industry) (STRA1)</td>
<td>-0.382</td>
<td>-0.514</td>
</tr>
<tr>
<td>2. The main technology focus of this company is on having leading flexible and innovative technologies (STRA2)</td>
<td>-0.400</td>
<td>-0.169</td>
</tr>
<tr>
<td>3. Our planning systems are very open and flexible to allow us to seize new opportunities (STRA3)</td>
<td>-0.305</td>
<td>-0.110</td>
</tr>
<tr>
<td>RMK</td>
<td>1.105</td>
<td>1.181</td>
</tr>
<tr>
<td>Cronbach’s α</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

In the light of the first-grade endogenous variables (mediators), exploratory ML factor analysis with varimax rotation revealed that proactive EconPs consisted of 2 factors with eigenvalues greater than 1 (labeled ECON.F1 and ECON.F2, see Table 5.4); proactive SocPs consisted of 2 factors with eigenvalues greater than 1 (labeled SOC.F1 and SOC.F2, see Table 5.5); and proactive EnvPs consisted of 3 factors with eigenvalues greater than 1 (labeled ENV.F1, ENV.F2 and ENV.F3, see Table 5.6). However, it should be noted that one item of proactive EconPs (ECON3, see Table 5.4) and of proactive EnvPs (ENV5, see Table 5.6) were discarded from the EFA, as they were found to generate a ‘Heywood Case’, which is a situation where the minimum of the discrepancy function is obtained with one or more negative values as estimates for the variance of the unique variables, and such values are indeed considered invalid (Schumacker & Lomax, 2004). As a consequence, both ECON3 and ENV5 will not be considered as factor loadings in the measurement and structural analyses of the proposed models.
Table 5.4: Factor loadings of EFA for Proactive EconPs

<table>
<thead>
<tr>
<th>Items</th>
<th>T1T2 and T1T1</th>
<th>T2T2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Skewness</td>
<td>Kurtosis</td>
</tr>
<tr>
<td>1. Work with government officials to protect the company’s interest (ECON1)</td>
<td>0.200</td>
<td>-1.135</td>
</tr>
<tr>
<td>2. Adopt a long-term perspective in decision-making in order to guarantee sufficient cashflow and</td>
<td>-0.686</td>
<td>0.783</td>
</tr>
<tr>
<td>produce a persistent superior return to shareholders/owners (ECON2)</td>
<td>-0.766</td>
<td>1.040</td>
</tr>
<tr>
<td>3. Reduce costs of inputs for the same level of outputs (ECON3)</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>4. Differentiate product/process by marketing of the social and environmental performance of the product/process (ECON4)</td>
<td>-0.163</td>
<td>-1.030</td>
</tr>
<tr>
<td>5. Sell waste products for revenue (ECON5)</td>
<td>0.046</td>
<td>-0.946</td>
</tr>
<tr>
<td>6. Use of certification on quality aspects (e.g. ISO 9000) (ECON6)</td>
<td>-0.527</td>
<td>-0.982</td>
</tr>
<tr>
<td>7. Responsible supply chain management (from sourcing to final payment e.g. meeting payment schedules)</td>
<td>-0.559</td>
<td>0.113</td>
</tr>
<tr>
<td>8. Create spin-off technologies that can be profitably applied to other areas of the business (ECON8)</td>
<td>-0.282</td>
<td>-0.920</td>
</tr>
<tr>
<td>RMK</td>
<td>1.019</td>
<td></td>
</tr>
<tr>
<td>Cronbach’s α</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Items</td>
<td>T1T2 and T1T1</td>
<td>T2T2</td>
</tr>
<tr>
<td>----------------------------------------------------------------------</td>
<td>----------------</td>
<td>---------------</td>
</tr>
<tr>
<td></td>
<td>Skewness</td>
<td>Factor 1</td>
</tr>
<tr>
<td>1. Employee participation in decision-making process (SOC1)</td>
<td>-0.579</td>
<td>0.679</td>
</tr>
<tr>
<td>2. Creation of good work-life balance and family friendly employment (SOC2)</td>
<td>-0.508</td>
<td>0.701</td>
</tr>
<tr>
<td>3. Investor in people (e.g. training and employee development) (SOC3)</td>
<td>-0.392</td>
<td>0.709</td>
</tr>
<tr>
<td>4. Equal opportunities in workplace (e.g. employing disabled people, and/or promoting women to senior management positions) (SOC4)</td>
<td>-0.364</td>
<td>0.719</td>
</tr>
<tr>
<td>5. Improve employee health and safety (SOC5)</td>
<td>-0.681</td>
<td>0.710</td>
</tr>
<tr>
<td>6. Engage in philanthropic activities (e.g. charitable donation) (SOC6)</td>
<td>0.108</td>
<td>0.737</td>
</tr>
<tr>
<td>7. Sponsorship of local community initiatives (SOC7)</td>
<td>0.430</td>
<td>0.832</td>
</tr>
<tr>
<td>8. Consider interests of stakeholders in investment decisions by creating a formal social dialogue (SOC8)</td>
<td>-0.170</td>
<td>0.441</td>
</tr>
<tr>
<td>RMK</td>
<td>1.141</td>
<td></td>
</tr>
<tr>
<td>Cronbach’s α</td>
<td>0.832</td>
<td>0.790</td>
</tr>
<tr>
<td>Items</td>
<td>1. Periodic natural environment audits (ENV1)</td>
<td>2. Purchasing criteria including ecological requirement (ENV2)</td>
</tr>
<tr>
<td>-------</td>
<td>-------------------------------------------------</td>
<td>-------------------------------------------------</td>
</tr>
<tr>
<td></td>
<td>Skewness</td>
<td>Kurtosis</td>
</tr>
<tr>
<td>1. Periodic natural environment audits (ENV1)</td>
<td>0.360</td>
<td>-0.797</td>
</tr>
</tbody>
</table>
By focusing on financial performance (the second-grade endogenous variable), exploratory ML factor analysis with varimax rotation showed that it consisted of 1 factor with eigenvalues greater than 1 (labeled FINA.F1, see Table 5.7). However, it should be noted that FINA4 was excluded from this EFA, because it was found to generate a ‘Heywood Case’ which made a factor solution invalid. Hence, FINA4 will not be considered as the factor loadings of financial performance in the measurement and structural analyses of the proposed models.

<table>
<thead>
<tr>
<th>Table 5.7: Factor loadings of EFA for Financial Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Items</strong></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>1. Return on assets (FINA1)</td>
</tr>
<tr>
<td>2. Net profits to sales (FINA2)</td>
</tr>
<tr>
<td>3. Liquidity (FINA3)</td>
</tr>
<tr>
<td>4. Total wage and salary expenses (FINA4)</td>
</tr>
<tr>
<td>RMK</td>
</tr>
<tr>
<td>Cronbach’s α</td>
</tr>
</tbody>
</table>

From the EFA presented above in Table 5.1-5.7, it was clear that the survey instrument used in the present study had adequate reliability due to the consistency of the number of extracted factors (including items loaded on each factor) between the T1T2, T1T1 and T2T2 datasets with the majority of Cronbach’s α above 0.70. Although the Cronbach’s α of STAK.F1, STAK.F2 and ECON.F2 were less than 0.70, they were greater than a level of 0.60 – identified as an acceptable, albeit marginal, level of reliability for subscales with a small number of items (Smith, Schutz, Smoll & Ptacek, 1995); therefore, these subscales were retained for further analyses.
Subsequent analyses in the next sections – tests of proposed model for research objective one and research objective two – will be conducted using the smaller set of factors obtained from EFA. The factor scores of each of these factors were computed based on a weighted average of items (within a factor) using the standardized loading obtained from the second-order confirmatory factor analysis (CFA) provided by LISREL.

It must also be noted that by conducting a survey at two points in time, the researcher was able to test the reliability of self-reports of the constructs. The test (Time 1) and re-test (Time 2) correlations ($p < 0.01$) for the scales of shared vision, stakeholder management and strategic proactivity were $r = 0.89$, $0.95$ and $0.89$ respectively; for the scales of proactive EconPs, proactive SocPs and proactive EnvPs were $r = 0.96$, $0.91$ and $0.97$; and for the scale of financial performance was $r = 0.71$. These high correlations imply that the self-reporting method did not threaten the reliability of conclusions about the directional relationships between measures.

In addition, as already mentioned, the proposed models in this study are controlled for Size, Time and GFC. In the SEM analysis, these control variables are treated as exogenous variables. In order to reduce the complexity of the model causing problems in the analysis, the present study fixed each of these control variables to be one factor each. Specifically, (i) Size comprised one factor labeled SIZE.F1 representing the number of employees working in the firm; (ii) Time comprised one factor labeled TIME.F1 calculated based on a weighted average, using the second-order CFA, of the duration of the firm’s experience with the management
of proactive EconPs (TIME1), proactive SocPs (TIME2) and proactive EnvPs (TIME3); and (iii) GFC comprised one factor labeled GFC.F1\(^1\) computed based on a weighted average, using the second-order CFA, of the perceived impact of recent global financial crisis on return on assets (GFC1), net profits to sales (GFC2) and liquidity (GFC3).

**TEST OF PROPOSED MODEL FOR RESEARCH OBJECTIVE ONE**

**Introduction**

The proposed model for objective one examines the mediating effect of proactive CSPs on the relationship between the specified capabilities (shared vision, stakeholder management and strategic proactivity) and SME financial performance. The proposed measurement and structural model for research objective one is shown in Figure 5.1. In this model, shared vision (\(\xi_1\)), stakeholder management (\(\xi_2\)), strategic proactivity (\(\xi_3\)) and the three control variables – Size (\(\xi_4\)), Time (\(\xi_5\)) and GFC (\(\xi_6\)) – are considered as the exogenous latent variables. Proactive CSPs (\(\eta_1\)) are the first-grade endogenous latent variable, whilst financial performance (\(\eta_2\)) is the second-grade endogenous latent variable.

\(^1\) The perceived impact of the recent global financial crisis on total wage and salary expenses was excluded from GFC.F1, because such indicator was previously excluded from the EFA of financial performance.
Figure 5.1: Proposed Measurement and Structural Model for Research Objective One

By focusing on the measurement model shown in Figure 5.1, proactive CSPs are defined by three observed variables: proactive EconPs, proactive SocPs and proactive EnvPs. Whereas stakeholder management is defined by two observed variables (STAK.F1 and STAK.F2), shared vision, strategic proactivity, financial performance and control variables (Size, Time and GFC) each is defined by only one observed variables: SHAR.F1, STRA.F1, FINA.F1 and (SIZE.F1, TIME.F1 and GFC.F1) respectively. The factor scores of these observed variables were computed based on a weighted average of items (within each variable) using the second-order CFA.
Evaluation of SEM Assumptions

Data were evaluated for the compatibility with the SEM assumptions of univariate and multivariate normality, linearity, homoscedasticity and absence of multicollinearity. The assessments of skewness (between -1.142 and 1.322) and kurtosis (between -0.822 and 1.751) revealed that all observed variables have approximately univariate normal distributions (see Table 5.8). RMK obtained from LISREL was 1.071 for T1T2, 1.078 for T1T1 and 1.064 for T2T2, indicating that the assumption of multivariate normality was not violated (Table 5.8).

<table>
<thead>
<tr>
<th>Observed variables</th>
<th>T1T2</th>
<th>T1T1</th>
<th>T2T2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Skewness</td>
<td>Kurtosis</td>
<td>Skewness</td>
</tr>
<tr>
<td>SHAR.F1</td>
<td>-0.674</td>
<td>1.079</td>
<td>-0.674</td>
</tr>
<tr>
<td>STAK.F1</td>
<td>0.141</td>
<td>-0.822</td>
<td>0.141</td>
</tr>
<tr>
<td>STAK.F2</td>
<td>-0.620</td>
<td>0.086</td>
<td>-0.620</td>
</tr>
<tr>
<td>STRA.F1</td>
<td>-0.259</td>
<td>0.098</td>
<td>-0.259</td>
</tr>
<tr>
<td>Proactive EconPs</td>
<td>-0.282</td>
<td>-0.239</td>
<td>-0.282</td>
</tr>
<tr>
<td>Proactive SocPs</td>
<td>-0.577</td>
<td>0.377</td>
<td>-0.577</td>
</tr>
<tr>
<td>Proactive EnvPs</td>
<td>-0.022</td>
<td>0.752</td>
<td>-0.022</td>
</tr>
<tr>
<td>FINA.F1</td>
<td>-0.487</td>
<td>-0.367</td>
<td>-0.359</td>
</tr>
<tr>
<td>SIZE.F1</td>
<td>1.332</td>
<td>1.751</td>
<td>1.332</td>
</tr>
<tr>
<td>TIME.F1</td>
<td>-1.142</td>
<td>0.167</td>
<td>-1.142</td>
</tr>
<tr>
<td>GFC.F1</td>
<td>0.299</td>
<td>-0.142</td>
<td>0.413</td>
</tr>
<tr>
<td>RMK</td>
<td></td>
<td></td>
<td>1.071</td>
</tr>
</tbody>
</table>

All extreme outliers were checked to assure the accuracy of data entry. Kline (2005) asserts that there is no single definition of an extreme outlier, but a common rule of thumb is that values more than 3 standard deviations beyond the mean (the criterion at \( p < 0.001 \) is \( z > 3.29 \), two tail test) may be described as extreme outliers. Potential univariate outliers were pinpointed by inspecting the frequency distribution of z scores, and the results showed that there were no univariate outliers. Data were checked for the existence of multivariate outliers by
inspecting the Mahalanobis distance (produced by SPSS version 17) in a relevant multiple regression (FINA1 as a dependent variable; SHAR.F1, STAK.F1, STAK.F2, STRA.F1, proactive EconPs, proactive SocPs, proactive EnvPs, SIZE.F1, TIME.F1, GFC.F1 as independent variables). A conservative probability estimate for a case being an outlier ($p < 0.001$ for the $\chi^2$ value) was used to evaluate Mahalanobis distance with the degree of freedom equal to the number of independent variables of interest. Mahalanobis distance was evaluated against a critical $\chi^2$ value of 29.588 ($df = 10$, $p < 0.001$), and the results revealed no multivariate outliers.

The linearity and homoscedasticity of the data were evaluated through the inspection of a standardized residual scatterplot. The results of scatterplot showed that the residuals were roughly rectangularly distributed, with most of the scores concentrated in the centre. This implied that linearity and homoscedasticity were not violated in the data.

Lastly, the absence of multicollinearity was checked by inspecting the correlation matrix of the regression coefficients between each of the exogenous observed variables (SHAR.F1, STAK.F1, STAK.F2, STRA.F1, SIZE.F1, TIME.F1 and GFC.F1). Pallant (2007) indicates that multicollinearity exists when the exogenous observed variables are highly correlated ($r \geq 0.9$). The results of Pearson correlation analyses showed that no correlations were higher than the recommended 0.9. The tolerance and variance inflation factor (VIF) were also used as indicators to confirm the absence of multicollinearity. Tolerance indicates how much of the variability of the specified exogenous observed variable is not
explained by the other exogenous observed variables in the model (Pallant, 2007). VIF is the inverse of tolerance value (VIF = 1/tolerance) indicating the effect that the other exogenous observed variables have on the standard error of a regression coefficient (Hair et al., 1998). The commonly used cut-off points for determining the presence of multicollinearity are a tolerance value of less than 0.10 and a VIF value of above 10 (Pallant, 2007). In the case of the proposed model for research objective one, the tolerance values for each exogenous observed variable ranged from 0.388 to 0.948, and the VIF values were not greater than 2.576; therefore, the assumption of absence of multicollinearity was met.

**Testing the Measurement Model for Research Objective One**

After the evaluation of the SEM assumptions, the eight-factor measurement model was examined using CFA (see Figure 5.2). The identification of this measurement model was primarily checked in order to determine the number of data points and parameters to be estimated. There were 11 measured variables which produced 66 data points \((11(11 + 1)/2)\). The model illustrated in Figure 5.2 contains 44 parameters to be estimated (11 factor loading coefficients, 5 error variances and 28 covariances); therefore, the model is over-identified with 22 degrees of freedom (66-44). CFA of the original eight-factor measurement model (using ML estimation) did not produce an overall satisfactory result, because of the poor fit indices of \(\chi^2\), NNFI and RMSEA obtained from one or more of the T1T2\(^1\), T1T1\(^2\), T2T2\(^3\) data. However, based on Harman’s single factor test, this original eight-factor model provided a significantly better fit to the data than a single-factor

\[^1\] T1T2: \(\chi^2(22) = 42.46 (p = 0.01)\), RMSEA = 0.074, SRMR = 0.030, CFI = 0.98 and NNFI = 0.94
\[^2\] T1T1: \(\chi^2(22) = 48.18 (p < 0.001)\), RMSEA = 0.084, SRMR = 0.034, CFI = 0.97 and NNFI = 0.92
\[^3\] T2T2: \(\chi^2(22) = 41.42 (p < 0.001)\), RMSEA = 0.072, SRMR = 0.030, CFI = 0.98 and NNFI = 0.95
model in which all items were loaded onto a single factor \((p < 0.001)\), suggesting that the common method variance was not a concern in this study (see Table 5.9).

**Figure 5.2: Eight-Factor Measurement Model**

![Eight-Factor Measurement Model](image)

*Note: The error variances \((\delta)\) of SHAR.F1, STRA.F1, FINA.F1, SIZE.F1, TIME.F1 and GFC.F1 are fixed to zero due to one indicator loading on the factor.*

**Table 5.9: Results of Harman’s Single Factor Test: Objective One**

<table>
<thead>
<tr>
<th>Model</th>
<th>(\chi^2) (p-value)</th>
<th>df</th>
<th>RMSEA</th>
<th>SRMR</th>
<th>CFI</th>
<th>NNFI</th>
<th>(\Delta\chi^2)</th>
<th>(\Delta df)</th>
</tr>
</thead>
<tbody>
<tr>
<td>I-II</td>
<td>42.46 (0.01)</td>
<td>22</td>
<td>0.074</td>
<td>0.030</td>
<td>0.98</td>
<td>0.94</td>
<td>154.97*</td>
<td>22</td>
</tr>
<tr>
<td>Original eight-factor model</td>
<td>197.43 (&lt;0.001)</td>
<td>44</td>
<td>0.140</td>
<td>0.099</td>
<td>0.81</td>
<td>0.77</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single-factor model</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I-III</td>
<td>48.18 (&lt;0.001)</td>
<td>22</td>
<td>0.084</td>
<td>0.034</td>
<td>0.97</td>
<td>0.92</td>
<td></td>
<td>22</td>
</tr>
<tr>
<td>Original eight-factor model</td>
<td>207.56 (&lt;0.001)</td>
<td>44</td>
<td>0.148</td>
<td>0.100</td>
<td>0.80</td>
<td>0.77</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single-factor model</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>II-I</td>
<td>41.42 (&lt;0.001)</td>
<td>22</td>
<td>0.072</td>
<td>0.030</td>
<td>0.98</td>
<td>0.95</td>
<td>159.38*</td>
<td>22</td>
</tr>
<tr>
<td>Original eight-factor model</td>
<td>206.91 (&lt;0.001)</td>
<td>44</td>
<td>0.148</td>
<td>0.099</td>
<td>0.82</td>
<td>0.78</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single-factor model</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*\(p < 0.001\)
In attempt to improve the fit of the original eight-factor measurement model, post-hoc model modifications were performed. Sizable standardized residuals (with values ranged between -3.80 and 3.41) were detected between: (i) STAK.F2 and SHAR.F1, (ii) STRA.F1 and STAK.F1, (iii) proactive EconPs and proactive EnvPs, and (iv) proactive EnvPs and proactive SocPs. These large residuals indicated that the model did not adequately estimate the relationships between these indicators, and that the residuals of each pair of indicators may covary (Joreskog & Sorbom, 1988). These residual correlations reflected the assumption that the two corresponding indicators measured something in common that was not explicitly presented in the model, and therefore adding the error covariance between them would significantly improve the model fit (Schumacker & Lomax, 2004). The addition of this new parameter was reasonable in this study, since an unmeasured variable may possibly lead to error in the two corresponding indicators. For example, proactive EconPs (e.g. differentiating products by marketing of their environmental performance) and proactive EnvPs (e.g. designing products to minimize the ecological footprint) both contained a measurement error perhaps due to the omission of the variable ‘the owner’s business ability’.

Therefore, the original measurement model was re-tested with four additional error covariances, and the results revealed the significant improvement of fit of the final modified model with a drop in the model chi-square of 22.76 for T1T2, of 24.40 for T1T1 and of 15.32 for T2T2 ($p < 0.001$, see Table 5.10). In addition, because post-hoc model modifications were performed, a correlation was calculated between 11 standardized factor loading coefficients ($\lambda$) from the final
modified model and those from the original unconstrained model. The result of correlation analysis indicated that these parameter estimates were hardly changed despite modification of the model: \( r (T1T2) = 0.96; r (T1T1) = 0.94; \) and \( r (T2T2) = 0.96 (p < 0.01) \). Figure 5.3 shows the final good-fit eight-factor measurement model for the T1T2 data. All standardized factor loading coefficients (\( \lambda \)) were significant \((p < 0.05)\), ranging from 0.69 to 1.00. This standardized solution suggested a reasonable convergent validity of the measurement scale for all latent variables of the proposed model.

### Table 5.10: Comparing Original Model with Final Modified Model:

<table>
<thead>
<tr>
<th>Objective One</th>
<th>Model</th>
<th>( \chi^2 ) (p-value)</th>
<th>df</th>
<th>RMSEA</th>
<th>SRMR</th>
<th>CFI</th>
<th>NNFI</th>
<th>( \Delta \chi^2 )</th>
<th>( \Delta df )</th>
</tr>
</thead>
<tbody>
<tr>
<td>T1T2</td>
<td>Original eight-factor model</td>
<td>42.46 (0.01)</td>
<td>22</td>
<td>0.074</td>
<td>0.030</td>
<td>0.98</td>
<td>0.94</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Final modified eight-factor model</td>
<td>19.70 (0.35)</td>
<td>18</td>
<td>0.024</td>
<td>0.023</td>
<td>1.00</td>
<td>0.99</td>
<td>22.76**</td>
<td>4</td>
</tr>
<tr>
<td>T1T1</td>
<td>Original eight-factor model</td>
<td>48.18 (&lt;0.001)</td>
<td>22</td>
<td>0.084</td>
<td>0.034</td>
<td>0.97</td>
<td>0.92</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Final modified eight-factor model</td>
<td>23.78 (0.16)</td>
<td>18</td>
<td>0.043</td>
<td>0.031</td>
<td>0.99</td>
<td>0.98</td>
<td>24.40**</td>
<td>4</td>
</tr>
<tr>
<td>T2T2</td>
<td>Original eight-factor model</td>
<td>41.42 (&lt;0.001)</td>
<td>22</td>
<td>0.072</td>
<td>0.030</td>
<td>0.98</td>
<td>0.95</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Final modified eight-factor model</td>
<td>26.10 (0.10)</td>
<td>18</td>
<td>0.051</td>
<td>0.025</td>
<td>0.99</td>
<td>0.97</td>
<td>15.32*</td>
<td>4</td>
</tr>
</tbody>
</table>

* \( p < 0.01; ** p < 0.001 \)

Table 5.11 shows the comparison of the standardized loading coefficient (\( \lambda \)), the amount of explained variance (\( R^2 \)), the Cronbach’s \( \alpha \), the composite reliability (CR) and the average variance extracted (AVE) between the T1T2, T1T1 and T2T2 data. The pattern of convergent validity remained consistent across the three datasets (see \( \lambda \) in Table 5.11). All of the latent variables defined by more than one indicator also had adequate reliability scores with the Cronbach’s \( \alpha \), CR and AVE equal or above the recommended 0.70, 0.70 and 0.50 respectively (Hair et al., 1998).
Figure 5.3: Final Modified Eight-Factor Measurement Model: T1T2 Data

\[ \chi^2(18) = 19.70 \ (p = 0.35), \ RMSEA = 0.024, \ SRMR = 0.023, \ CFI = 1.00, \ NNFI = 0.99 \]
<table>
<thead>
<tr>
<th>Latent variables &amp; Indicators</th>
<th>T1T2</th>
<th>T1T1</th>
<th>T2T2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>λ*</td>
<td>R²</td>
<td>α</td>
</tr>
<tr>
<td>Shared Vision</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-SHAR.F1</td>
<td>1.00</td>
<td>1.00</td>
<td>-</td>
</tr>
<tr>
<td>Stakeholder Management</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-STAK.F1</td>
<td>0.69</td>
<td>0.50</td>
<td>0.68</td>
</tr>
<tr>
<td>-STAK.F2</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>Strategic Proactivity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-STRA.F1</td>
<td>1.00</td>
<td>1.00</td>
<td>-</td>
</tr>
<tr>
<td>Proactive CSPs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-Proactive EconPs</td>
<td>0.95</td>
<td>0.90</td>
<td>0.93</td>
</tr>
<tr>
<td>-Proactive SocPs</td>
<td>0.79</td>
<td>0.63</td>
<td>0.81</td>
</tr>
<tr>
<td>-Proactive EnvPs</td>
<td>0.71</td>
<td>0.50</td>
<td>0.69</td>
</tr>
<tr>
<td>Financial Performance</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-FINA.F1</td>
<td>1.00</td>
<td>1.00</td>
<td>-</td>
</tr>
<tr>
<td>Size</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-SIZE.F1</td>
<td>0.99</td>
<td>1.00</td>
<td>-</td>
</tr>
<tr>
<td>Time</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-TIME.F1</td>
<td>1.00</td>
<td>1.00</td>
<td>-</td>
</tr>
<tr>
<td>GFC</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-GFC.F1</td>
<td>1.00</td>
<td>1.00</td>
<td>-</td>
</tr>
</tbody>
</table>

*p < 0.05

The means, standard deviations (SD) and correlations among latent variables in the proposed model for research objective one, are illustrated in Table 5.12 in relation to the T1T2, T1T2 and T2T2 datasets. The estimated correlations between the latent variables ranged from -0.49 to 0.55 for T1T2, from -0.51 to 0.59 for T1T1, and from -0.49 to 0.56 for T2T2. Because these correlations were not excessively high (|r| ≤ 0.85, Kline, 2005), adequate discriminant validity was established for all constructs in this model.
Table 5.12: Means, SD and Correlations among Latent Variables: Objective One

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>SD</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Shared Vision</td>
<td>3.79</td>
<td>0.59</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Stakeholder Management</td>
<td>12.13</td>
<td>3.36</td>
<td>0.18*</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Strategic Proactivity</td>
<td>3.91</td>
<td>0.68</td>
<td>0.27*</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Proactive CSPs</td>
<td>9.15</td>
<td>2.06</td>
<td>0.55*</td>
<td>0.47*</td>
<td>1.00</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>5. Financial Performance</td>
<td>11.60</td>
<td>5.03</td>
<td>0.24*</td>
<td>0.35*</td>
<td>0.58*</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Size</td>
<td>2.79</td>
<td>1.14</td>
<td>-0.03</td>
<td>0.05</td>
<td>0.07</td>
<td>0.25*</td>
<td>0.26*</td>
<td>1.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Time</td>
<td>7.28</td>
<td>2.23</td>
<td>0.08</td>
<td>0.01</td>
<td>0.14</td>
<td>0.17*</td>
<td>0.09</td>
<td>0.05</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>8. GFC</td>
<td>2.73</td>
<td>0.86</td>
<td>0.03</td>
<td>0.01</td>
<td>-0.08</td>
<td>-0.17*</td>
<td>-0.49*</td>
<td>-0.12</td>
<td>0.01</td>
<td>1.00</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>SD</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Shared Vision</td>
<td>3.72</td>
<td>0.60</td>
<td>1.00</td>
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</tr>
<tr>
<td>2. Stakeholder Management</td>
<td>11.94</td>
<td>3.10</td>
<td>0.37*</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>3. Strategic Proactivity</td>
<td>3.90</td>
<td>0.68</td>
<td>0.33*</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Proactive CSPs</td>
<td>9.13</td>
<td>1.92</td>
<td>0.57*</td>
<td>0.49*</td>
<td>1.00</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>5. Financial Performance</td>
<td>11.60</td>
<td>5.03</td>
<td>0.24*</td>
<td>0.33*</td>
<td>0.56*</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Size</td>
<td>2.79</td>
<td>1.14</td>
<td>-0.03</td>
<td>0.01</td>
<td>0.12</td>
<td>0.21*</td>
<td>0.26*</td>
<td>1.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Time</td>
<td>7.28</td>
<td>2.23</td>
<td>0.07</td>
<td>0.05</td>
<td>0.12</td>
<td>0.16*</td>
<td>0.09</td>
<td>0.05</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>8. GFC</td>
<td>2.73</td>
<td>0.86</td>
<td>-0.07</td>
<td>-0.02</td>
<td>-0.14</td>
<td>-0.16*</td>
<td>-0.49*</td>
<td>-0.12</td>
<td>0.01</td>
<td>1.00</td>
</tr>
</tbody>
</table>

*p < 0.01

In sum, the final modified eight-factor measurement model provided an acceptable fit to the sampled data as well as evidence for convergent validity, reliability and discriminant validity. These results were consistent between the T1T2, T1T1 and T2T2 datasets.

Testing the Structural Model for Research Objective One

The second stage of the two-step modeling procedure dealt with the structural portion of the SEM containing both the measurement model and the hypothesized structural paths among the latent variables. The final modified eight-factor
measurement model was re-specified into the proposed structural model for research objective one. This structural model contained 66 data points and 47 parameters to be estimated (13 structural coefficients, 3 factor loading coefficients, 6 variances, 15 covariances, 4 error variances, 4 error covariances, and 2 equation predictor error variances); therefore, it was over-identified with 19 degrees of freedom (66-47). This proposed model provided a good fit to the T1T2\(^1\), T1T1\(^2\) and T2T2\(^3\) data.

However, although this model produced an overall satisfactory result, not all of the standardized structural coefficients for direct effects achieved a significant level of less than 0.05. Table 5.13 presents only the significant standardized coefficients (\(p < 0.05\)) that evaluate the direct effects among latent variables for the proposed model for research objective one.

Table 5.13: Significant Standardized Coefficients for Direct Effects:
Objective One

<table>
<thead>
<tr>
<th>Hypothesis Paths</th>
<th>Direct Paths</th>
<th>Parameters</th>
<th>T1T2</th>
<th>T1T1</th>
<th>T2T2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hypothesis Paths</td>
<td>Shared Vision ((\xi_1)) (\rightarrow) Proactive CSPs ((\eta_1))</td>
<td>(\gamma_{11})</td>
<td>0.16</td>
<td>0.17</td>
<td>0.26</td>
</tr>
<tr>
<td></td>
<td>Stakeholder Management ((\xi_2)) (\rightarrow) Proactive CSPs ((\eta_1))</td>
<td>(\gamma_{12})</td>
<td>0.42</td>
<td>0.41</td>
<td>0.45</td>
</tr>
<tr>
<td></td>
<td>Strategic Proactivity ((\xi_3)) (\rightarrow) Proactive CSPs ((\eta_1))</td>
<td>(\gamma_{13})</td>
<td>0.21</td>
<td>0.22</td>
<td>0.16</td>
</tr>
<tr>
<td></td>
<td>Proactive CSPs ((\eta_1)) (\rightarrow) Financial Performance ((\eta_2))</td>
<td>(\beta_{21})</td>
<td>0.48</td>
<td>0.50</td>
<td>0.45</td>
</tr>
<tr>
<td>Hypothesis Paths</td>
<td>Size ((\xi_4)) (\rightarrow) Proactive CSPs ((\eta_1))</td>
<td>(\gamma_{14})</td>
<td>0.18</td>
<td>0.18</td>
<td>0.17</td>
</tr>
<tr>
<td>Hypothesis Paths</td>
<td>Size ((\xi_4)) (\rightarrow) Financial Performance ((\eta_2))</td>
<td>(\gamma_{24})</td>
<td>0.11</td>
<td>-</td>
<td>0.13</td>
</tr>
<tr>
<td>Control Paths</td>
<td>GFC ((\xi_6)) (\rightarrow) Proactive CSPs ((\eta_1))</td>
<td>(\gamma_{16})</td>
<td>-0.11</td>
<td>-0.13</td>
<td>-</td>
</tr>
<tr>
<td>Control Paths</td>
<td>GFC ((\xi_6)) (\rightarrow) Financial Performance ((\eta_2))</td>
<td>(\gamma_{26})</td>
<td>-0.39</td>
<td>-0.42</td>
<td>-0.39</td>
</tr>
</tbody>
</table>

\*\(p < 0.05\)

\(^1\) T1T2: \(\chi^2(18) = 19.70\ (p = 0.35)\), RMSEA = 0.024, SRMR = 0.023, CFI = 0.99 and NNFI = 1.00
\(^2\) T1T1: \(\chi^2(18) = 23.78\ (p = 0.16)\), RMSEA = 0.043, SRMR = 0.031, CFI = 0.99 and NNFI = 0.98
\(^3\) T2T2: \(\chi^2(18) = 26.10\ (p = 0.10)\), RMSEA = 0.051, SRMR = 0.025, CFI = 0.99 and NNFI = 0.97
SEM focuses on estimating both direct and indirect effects that are calculated using the regression coefficients obtained when all aspects of the model are simultaneously included in the equations (Brown, 1997); therefore, the results obtained from the indirect effects analysis were worth investigation. It was expected that the evaluation of these indirect effects could allow the researcher to gain a better understanding of the nature of the relationships among variables. Table 5.14 presents the significant standardized coefficients for the indirect effects found in this model.

<table>
<thead>
<tr>
<th>Indirect Paths</th>
<th>T1T2</th>
<th>T1T1</th>
<th>T2T2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shared Vision (ξ1) → Financial Performance (η2)</td>
<td>0.07</td>
<td>0.08</td>
<td>0.12</td>
</tr>
<tr>
<td>Stakeholder Management (ξ2) → Financial Performance (η2)</td>
<td>0.20</td>
<td>0.21</td>
<td>0.20</td>
</tr>
<tr>
<td>Strategic Proactivity (ξ3) → Financial Performance (η2)</td>
<td>0.10</td>
<td>0.11</td>
<td>0.07</td>
</tr>
</tbody>
</table>

*p < 0.05

An alternative nested model was also specified and examined in order to evaluate whether the proposed model for research objective one best fitted the sampled data. More specifically, the proposed model was re-specified into the alternative model by deleting the non-significant direct paths. The results of the alternative model testing met the stringent decision rule regarding $\chi^2$, RMSEA, SRMR, CFI and NNFI, and the chi-square difference test indicated a non-significant difference in fit relative to the proposed model ($p < 0.05$, see Table 5.15). These results implied that both the proposed model and the alternative model were supported by the current sampled data. However, as the proposed model for research objective one yielded results on a variety of fit indices slightly better than the alternative
model, it was reasonable to retain the proposed model as the best-fitting model. Figure 5.4 shows the proposed model for research objective one with standardized regression coefficients for direct effects, based on the T1T2 data.

Table 5.15: Comparing Fit Indices between Proposed Model and Alternative Model: Objective One

<table>
<thead>
<tr>
<th></th>
<th>Model</th>
<th>(\chi^2) (p-value)</th>
<th>df</th>
<th>RMSEA</th>
<th>SRMR</th>
<th>CFI</th>
<th>NNFI</th>
<th>(\Delta\chi^2)</th>
<th>(\Delta) df</th>
</tr>
</thead>
<tbody>
<tr>
<td>T1T2</td>
<td>Proposed Model</td>
<td>19.70 (0.35)</td>
<td>18</td>
<td>0.024</td>
<td>0.023</td>
<td>0.99</td>
<td>1.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Alternative Model</td>
<td>22.03 (0.23)</td>
<td>18</td>
<td>0.036</td>
<td>0.027</td>
<td>0.99</td>
<td>1.00</td>
<td>2.33</td>
<td>0</td>
</tr>
<tr>
<td>T1T1</td>
<td>Proposed Model</td>
<td>23.78 (0.16)</td>
<td>18</td>
<td>0.043</td>
<td>0.031</td>
<td>0.99</td>
<td>0.98</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Alternative Model</td>
<td>24.79 (0.17)</td>
<td>19</td>
<td>0.045</td>
<td>0.029</td>
<td>0.99</td>
<td>0.98</td>
<td>1.01</td>
<td>1</td>
</tr>
<tr>
<td>T2T2</td>
<td>Proposed Model</td>
<td>26.10 (0.10)</td>
<td>18</td>
<td>0.051</td>
<td>0.025</td>
<td>0.99</td>
<td>0.97</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Alternative Model</td>
<td>26.18 (0.10)</td>
<td>19</td>
<td>0.047</td>
<td>0.028</td>
<td>0.99</td>
<td>0.97</td>
<td>0.08</td>
<td>1</td>
</tr>
</tbody>
</table>

Power Analysis for Proposed Model for Research Objective One

Following the suggestion of Kline (2005), this study conducted a power analysis for the proposed model for research objective one, using STATISTICA 8.0, in order to ensure that the current sample size had sufficient power to reject the null hypothesis when it is false (or rejecting close-fit hypothesis). A power analysis was conducted by specifying sample size (N), significant criterion (\(\alpha\), fixed to 0.05), model degrees of freedom (df\(m\)) and a suitable value of the parameter estimated by the RMSEA under the alternative hypothesis, \(\varepsilon_1\) (with the null hypothesis, \(\varepsilon_0\), fixed to 0.08) (Kline, 2005). The estimated power calculated by the power analysis program (based on \(\varepsilon_0 = 0.08\), \(\varepsilon_1 = 0.024\), \(\alpha = 0.05\), \(N = 171\), \(df_m = 18\)) was 0.6514. This means, if this model does not have close fit in the population, then the estimated probability of rejecting this incorrect model is 65.14 per cent for a sample size of 171 cases. The proposed model for research objective one, thus, is considered adequately reliable for the analysis of hypotheses.
Figure 5.4: Results of Estimating the Proposed Measurement and Structural Model for Research Objective One: T1T2 Data

\[ \chi^2(18) = 19.70 \text{ (p = 0.35)}, \text{ RMSEA = 0.024, SRMR = 0.023, CFI = 0.99, NNFI = 1.00} \]

*Note: the significant direct paths are shown in the red line.*
Analysis of Hypotheses for Research Objective One

The results of the analysis of the proposed model for research objective one, as shown in Figure 5.4, revealed that the adoption of proactive CSPs by SMEs was directly and positively influenced by all of the three specified capabilities at a significant level of less than 0.05 – shared vision (γ=0.16), stakeholder management (γ=0.42) and strategic proactivity (γ=0.21) – providing support for Hypotheses 1a, 1b and 1c. The results also demonstrated that proactive CSPs directly and positively influenced SME financial performance (β21=0.48, p < 0.05); therefore, Hypothesis 2 was supported.

When modeling proactive CSPs as the mediator, no significant direct influence of the three specified capabilities (shared vision, stakeholder management and strategic proactivity) on SME financial performance was found (p < 0.05); therefore, Hypotheses 3a, 3b and 3c were not supported. These results implied that proactive CSPs fully mediate the relationship between the three specified capabilities and SME financial performance. The analysis of indirect effects further confirmed that these three capabilities had a positive indirect influence on SME financial performance via proactive CSPs (standardized coefficient for indirect effect of shared vision = 0.07, of stakeholder management = 0.20 and of strategic proactivity = 0.10, p < 0.05).

The influence of control variables was also tested for each of the two endogenous latent variables in the model. The control variable for Size showed a positive and statistically significant (p < 0.05) association with proactive CSPs (γ14=0.18) and financial performance (γ24=0.11). In contrast to Size, the GFC had a negative and statistically significant (p < 0.05) association with proactive CSPs (γ16= -0.11).
and financial performance ($\gamma_{46} = -0.39$), meaning that the higher negative impact of recent global financial crisis perceived by firms resulted in the lower adoption of proactive CSPs and the worse financial performance. The influence of Time on proactive CSPs and financial performance, however, was not statistically significant for the sampled firms.

It should be noted that the results of hypotheses testing for objective one based on the T1T2 data were consistent with those obtained based on the T1T1 and T2T2 data (see previous Table 5.13). Due to this consistency, it was reasonable to infer causality or directional influence in this study.

**TEST OF PROPOSED MODEL FOR RESEARCH OBJECTIVE TWO**

**Introduction**

The proposed model for research objective two examines the mediating effect of the interaction between proactive EconPs, proactive SocPs and proactive EnvPs on the relationship between the specified capabilities (shared vision, stakeholder management and strategic proactivity) and financial performance in SMEs. The proposed measurement and structural model for research objective two is shown in Figure 5.5. In this model, shared vision ($\xi_1$), stakeholder management ($\xi_2$), strategic proactivity ($\xi_3$) and the three control variables – Size ($\xi_4$), Time ($\xi_5$) and GFC ($\xi_6$) – are considered as the exogenous latent variables. Proactive EconPs ($\eta_1$), proactive SocPs ($\eta_2$) and proactive EnvPs ($\eta_3$) are the first-grade endogenous latent variable, whilst financial performance ($\eta_4$) is the second-grade endogenous latent variable.
In the measurement model shown in Figure 5.5, shared vision, strategic proactivity, financial performance and control variables (Size, Time and GFC) each is defined by only one observed variable: SHAR.F1, STRA.F1, FINA.F1 and (SIZE.F1, TIME.F1 and GFC.F1) respectively. Stakeholder management, proactive EconPs and proactive SocPs are defined by two observed variables (STAK.F1 and STAK.F2; ECON.F1 and ECON.F2; SOC.F1 and SOC.F2 respectively), while proactive EnvPs are defined by three observed variables (ENV.F1, ENV.F2 and ENV.F3). The factor scores of these observed variables were computed based on a weighted average of items (within each variable) using the second-order CFA.

**Figure 5.5: Proposed Measurement and Structural Model for Research Objective Two**

Note: Dashed arrows represent paths from control variables to endogenous variables. Curve, double-headed arrows represent correlation between variables. Double-headed straight arrows between the three dimensions of proactive CSPs represent the various possibilities of one-way relationships between them.
It should also be noted, from the above Figure 5.5, that the directional relationship between proactive EconPs, SocPs and EnvPs, in fact, can be specified in 8 forms in the class of recursive relationship, thereby leading to a maximum of 8 possible equivalent models. Although the focus of this study is on the relationship (not directional relationship) between the three dimensions of proactive CSPs, the specification of the direction of such relationship is of critical importance in conducting the SEM analysis. As indicated by Stelzl (1986), to claim that only one particular model is valid, one must be able to logically exclude all the other equivalent models. Therefore, this study will examine all 8 equivalent models in the part of ‘testing the structural model for research objective two’, and the only one model that fit the sampled data best will be considered as the main proposed model.

**Evaluation of SEM Assumptions**

The assumptions of univariate and multivariate normality, linearity, homoscedasticity and absence of multicollinearity were evaluated. The assessment of skewness (between -1.142 and 1.332) and kurtosis (between -0.890 and 1.751) revealed that all observed variables have approximately univariate normal distributions (see Table 5.16). RMK reported by LISREL was 1.058 for T1T2, 1.072 for T1T1 and 1.050 for T2T2, indicating that the assumption of multivariate normality was met (Table 5.16).

In order to assure the accuracy of data entry, all extreme outliers (the criterion at \( p < 0.001 \) is \( z > 3.29 \)) were inspected, and no univariate outliers were found. To check the existence of multivariate outliers, the inspection of Mahalanobis
distance in a relevant multiple regression was done through SPSS version 17
(FINA1 as a dependent variable, and SHAR.F1, STAK.F1, STAK.F2, STRA.F1,
ECON.F1, ECON.F2, SOC.F1, SOC.F2, ENV.F1, ENV.F2, ENV.F3, SIZE.F1,
TIME.F1, GFC.F1 as independent variables). Mahalanobis distance were
evaluated against a critical $\chi^2$ value of 36.123 ($df = 14$, $p < 0.001$), and the results
showed no multivariate outliers.

Table 5.16: Univariate and Multivariate Statistics: Objective Two

<table>
<thead>
<tr>
<th>Observed variables</th>
<th>T1T2</th>
<th>T1T1</th>
<th>T2T2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Skewness</td>
<td>Kurtosis</td>
<td>Skewness</td>
</tr>
<tr>
<td>SHAR.F1</td>
<td>-0.674</td>
<td>1.079</td>
<td>-0.674</td>
</tr>
<tr>
<td>STAK.F1</td>
<td>0.141</td>
<td>-0.822</td>
<td>0.141</td>
</tr>
<tr>
<td>STAK.F2</td>
<td>-0.620</td>
<td>0.086</td>
<td>-0.620</td>
</tr>
<tr>
<td>STRA.F1</td>
<td>-0.259</td>
<td>0.098</td>
<td>-0.259</td>
</tr>
<tr>
<td>ECON.F1</td>
<td>-0.433</td>
<td>-0.276</td>
<td>-0.433</td>
</tr>
<tr>
<td>ECON.F2</td>
<td>0.044</td>
<td>-0.729</td>
<td>0.044</td>
</tr>
<tr>
<td>SOC.F1</td>
<td>-0.504</td>
<td>0.605</td>
<td>-0.504</td>
</tr>
<tr>
<td>SOC.F2</td>
<td>0.265</td>
<td>-0.500</td>
<td>0.265</td>
</tr>
<tr>
<td>ENV.F1</td>
<td>0.248</td>
<td>-0.891</td>
<td>0.248</td>
</tr>
<tr>
<td>ENV.F2</td>
<td>-0.328</td>
<td>-0.525</td>
<td>-0.328</td>
</tr>
<tr>
<td>ENV.F3</td>
<td>-0.082</td>
<td>-0.817</td>
<td>-0.082</td>
</tr>
<tr>
<td>FINA.F1</td>
<td>-0.487</td>
<td>-0.367</td>
<td>-0.359</td>
</tr>
<tr>
<td>SIZE.F1</td>
<td>1.332</td>
<td>1.751</td>
<td>1.332</td>
</tr>
<tr>
<td>TIME.F1</td>
<td>-1.142</td>
<td>0.167</td>
<td>-1.142</td>
</tr>
<tr>
<td>GFC.F1</td>
<td>0.299</td>
<td>-0.142</td>
<td>0.413</td>
</tr>
<tr>
<td>RMK</td>
<td>1.058</td>
<td>1.072</td>
<td>1.058</td>
</tr>
</tbody>
</table>

The scatterplot of standardized residuals was inspected in order to assess linearity
and homoscedasticity of the data. The residuals were roughly rectangularly
distributed with most scores concentrated in the centre, meaning that the
assumptions of linearity and homoscedasticity were not violated. Lastly, the
absence of multicollinearity was also checked by inspecting the correlation matrix
of the regression coefficients between each of the exogenous observed variables
(SHAR.F1, STAK.F1, STAK.F2, STRA.F1, SIZE.F1, TIME.F1 and GFC.F1).
Pearson correlation analyses revealed no correlations higher than the
recommended 0.9 (Pallant, 2007); therefore, the multicollinearity assumption was not violated. However, in order to confirm the absence of multicollinearity, the tolerance and VIF were also inspected. The tolerance values for each exogenous observed variable ranged from 0.330 to 0.915, and the VIF values were not greater than 3.026. As these values of the tolerance were higher than the recommended 0.10 and of VIF were less than the recommended 10 (Pallant, 2007), the multicollinearity assumption was not violated.

Testing the Measurement Model for Research Objective Two

The ten-factor measurement model was tested using CFA (see Figure 5.6). After a primary check of identification of the measurement model, the number of data points and parameters to be estimated was determined. There were 15 measured variables which produced 120 data points (15 (15 + 1)/2). The model contains 69 parameters to be estimated (15 factor loading coefficients, 9 error variances and 45 covariances); therefore, the model was over-identified with 51 degrees of freedom (120-69) (see Figure 5.6).

The overall result obtained from the CFA of the original ten-factor measurement model (using ML estimation) was not satisfactory, because of the poor fit indices of $\chi^2$ and RMSEA obtained from the T1T2\(^1\), T1T1\(^2\) and T2T2\(^3\) data. However, despite having some inadequate fit indices, the results of Harman’s single factor test revealed that this original ten-factor model provided a significantly better fit to the data ($p < 0.001$) than a single-factor model in which all items were loaded onto a single factor (see Table 5.17). The nearly acceptable fit statistics of the

\[\chi^2(51) = 115.51 \ (p < 0.001), \ RMSEA = 0.086, \ SRMR = 0.045, \ CFI = 0.97 \ and \ NNFI = 0.95\]

\[\chi^2(51) = 113.99 \ (p < 0.001), \ RMSEA = 0.085, \ SRMR = 0.045, \ CFI = 0.97 \ and \ NNFI = 0.95\]

\[\chi^2(51) = 118.90 \ (p < 0.001), \ RMSEA = 0.088, \ SRMR = 0.043, \ CFI = 0.97 \ and \ NNFI = 0.95\]
original ten-factor model and unacceptable fit statistics of the single-factor model suggested that common method variance was unlikely to be a problem with the current data.

Figure 5.6: Ten-Factor Measurement Model

Note: The error variances ($\delta$) of SHAR.F1, STRA.F1, FINA.F1, SIZE.F1, TIME.F1 and GFC.F1 are fixed to zero due to one indicator loading on the factor.
In an attempt to improve the fit of the original ten-measurement model, post-hoc model modifications were performed. Sizable standardized residuals (with values ranged between -3.38 and 4.09) were detected between: (i) STAK.F2 and SHAR.F1, (ii) STRA.F1 and STAK.F1, (iii) ECON.F1 and STAK.F1, (iv) SOC.F1 and SHAR.F1, (v) SOC.F2 and STAK.F1, (vi) ENV.F1 and ECON.F2, (vii) ENV.F2 and ECON.F2, (viii) ENV.F3 and ECON.F2, (ix) ENV.F2 and SOC.F1, (x) ENV.F2 and SOC.F2, and (xi) ENV.F3 and ECON.F1. These large residuals implied that the two corresponding indicators measured something in common that was not explicitly presented in the model. Stated differently, an unmeasured variable may possibly cause error in the two corresponding indicators. To improve the fit of the model based on MI suggestion, the error covariance between each pair of these indicators was added.

The original measurement model, therefore, was re-tested with eleven additional error covariances, and the results indicated that the overall fit of the final modified model was significantly improved with a drop in the model chi-square of 61.69 for T1T2, of 62.06 for T1T1 and of 50.78 for T2T2 (\(p < 0.001\), see Table 5.18). Furthermore, as post-hoc model modifications were conducted, a correlation was performed between 15 standardized factor loading coefficients (\(\lambda\)) from the final
modified model and those from the original unconstrained model: \( r (T1T2) = 0.96, \ r (T1T1) = 0.94 \) and \( r (T2T2) = 0.97 \) \((p < 0.01)\). This high correlation indicated that these parameter estimates were hardly changed despite modification of the model.

Figure 5.7 shows the final good-fit ten-factor measurement model for the T1T2 data. All standardized factor loading coefficients \((\lambda)\) were significant \((p < 0.05)\), ranging from 0.65 to 1.00. This standardized solution suggested a reasonable convergent validity of the measurement scale for all latent variables of the proposed model.

<table>
<thead>
<tr>
<th>Model</th>
<th>( \chi^2) ((p\text{-value}))</th>
<th>df</th>
<th>RMSEA</th>
<th>SRMR</th>
<th>CFI</th>
<th>NNFI</th>
<th>( \Delta\chi^2 )</th>
<th>( \Delta df )</th>
</tr>
</thead>
<tbody>
<tr>
<td>T1T2</td>
<td>Original ten-factor model</td>
<td>115.51 (0.00)</td>
<td>51</td>
<td>0.086</td>
<td>0.045</td>
<td>0.97</td>
<td>0.95</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Final modified ten-factor model</td>
<td>53.82 (0.07)</td>
<td>40</td>
<td>0.045</td>
<td>0.033</td>
<td>0.99</td>
<td>0.98</td>
<td>61.69*</td>
</tr>
<tr>
<td>T1T1</td>
<td>Original ten-factor model</td>
<td>113.99 (0.00)</td>
<td>51</td>
<td>0.085</td>
<td>0.045</td>
<td>0.97</td>
<td>0.95</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Final modified ten-factor model</td>
<td>51.93 (0.10)</td>
<td>40</td>
<td>0.042</td>
<td>0.030</td>
<td>0.99</td>
<td>0.99</td>
<td>62.06*</td>
</tr>
<tr>
<td>T2T2</td>
<td>Original ten-factor model</td>
<td>118.90 (0.00)</td>
<td>51</td>
<td>0.088</td>
<td>0.043</td>
<td>0.97</td>
<td>0.95</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Final modified ten-factor model</td>
<td>68.12 (0.05)</td>
<td>40</td>
<td>0.060</td>
<td>0.033</td>
<td>0.99</td>
<td>0.96</td>
<td>50.78*</td>
</tr>
</tbody>
</table>

\( ^*p < 0.001 \)
Table 5.19 shows the comparison of the $\lambda$, $R^2$, Cronbach’s $\alpha$, CR and AVE between the T1T2, T1T1 and T2T2 data. The pattern of convergent validity remained consistent across the three datasets (see $\lambda$ in Table 5.19). All of the latent variables defined by more than one indicator had adequate reliability scores with the Cronbach’s $\alpha$ above 0.70; the CR above 0.70; and the AVE above 0.50. However, it should be noted that $R^2$ of SOC.F2 was slightly less than the recommended 0.50, indicating that more than half of its variance was unexplained.
by proactive SocPs (Kline, 2005). Nevertheless, for substantive theoretical reason, this study chose to leave SOC.F2 specified as an indicator of proactive SocPs in the measurement model.

Table 5.19: Measurement Scale Properties of Final Modified Model: Objective Two

<table>
<thead>
<tr>
<th>Latent variables &amp; Indicators</th>
<th>T1T2</th>
<th></th>
<th>T1T1</th>
<th></th>
<th>T2T2</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>λ* R² α CR</td>
<td>AVE</td>
<td>λ* R² α CR</td>
<td>AVE</td>
<td>λ* R² α CR</td>
<td>AVE</td>
</tr>
<tr>
<td>Shared Vision -SHAR.F1</td>
<td>0.99 1.00</td>
<td>- - -</td>
<td>0.99 1.00</td>
<td>- - -</td>
<td>0.99 1.00</td>
<td>- - -</td>
</tr>
<tr>
<td>Stakeholder Management -STAK.F1</td>
<td>0.72 0.53</td>
<td>0.74 0.55</td>
<td>0.81 0.66</td>
<td>0.86 0.86 0.75</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-STAK.F2</td>
<td>0.96 0.92</td>
<td>0.94 0.88</td>
<td>0.92 0.85</td>
<td>0.86 0.86 0.75</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strategic Proactivity -STRA.F1</td>
<td>1.00 1.00</td>
<td>1.00 1.00</td>
<td>1.00 1.00</td>
<td>0.88 0.89 0.80</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proactive EconPs -ECON.F1</td>
<td>0.96 0.92</td>
<td>0.95 0.90</td>
<td>0.97 0.93</td>
<td>0.88 0.89 0.80</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-ECON.F2</td>
<td>0.82 0.68</td>
<td>0.83 0.69</td>
<td>0.82 0.68</td>
<td>0.88 0.89 0.80</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proactive SocPs -SOC.F1</td>
<td>0.83 0.70</td>
<td>0.83 0.69</td>
<td>0.94 0.87</td>
<td>0.77 0.80 0.67</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-SOC.F2</td>
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<td>0.65 0.43</td>
<td>0.68 0.46</td>
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<td>0.90 0.82</td>
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<td>0.92 0.92 0.79</td>
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<tr>
<td>Financial Performance -FINA.F1</td>
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<td>1.00 1.00</td>
<td>1.00 1.00</td>
<td>0.92 0.92 0.79</td>
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<td>0.99 1.00</td>
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<td>1.00 1.00</td>
<td>1.00 1.00</td>
<td>0.92 0.92 0.79</td>
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*p < 0.05

The means, SD and correlations among latent variables in the proposed model for research objective two, are illustrated in Table 5.20 in relation to the T1T2, T1T2 and T2T2 datasets. The estimated correlations between the latent variables ranged from -0.49 to 0.73 for T1T2, from -0.51 to 0.74 for T1T1, and from -0.49 to 0.70
for T2T2. These correlations were not excessively high ($|r| \leq 0.85$), demonstrating the adequate discriminant validity of the constructs in this model.

### Table 5.20: Means, SD and Correlations among Latent Variables: Objective Two

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<tr>
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<tr>
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<td>12.13</td>
<td>3.36</td>
<td>0.18*</td>
<td>1.00</td>
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<td></td>
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<tr>
<td>3. Strategic Proactivity</td>
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<td>0.51*</td>
<td>0.28*</td>
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<td>0.46*</td>
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<tr>
<td>1. Shared Vision</td>
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<td>0.68</td>
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<tr>
<td>4. Proactive EconPs</td>
<td>3.21</td>
<td>0.76</td>
<td>0.37*</td>
<td>0.54*</td>
<td>0.46*</td>
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<tr>
<td>5. Proactive SocPs</td>
<td>3.25</td>
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<td>0.22*</td>
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<td>0.38*</td>
<td>0.72*</td>
<td>1.00</td>
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<tr>
<td>6. Proactive EnvPs</td>
<td>2.70</td>
<td>0.89</td>
<td>0.38*</td>
<td>0.37*</td>
<td>0.36*</td>
<td>0.70*</td>
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<td>7. Financial Performance</td>
<td>11.60</td>
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<td>8. Size</td>
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<td>9. Time</td>
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<td>0.01</td>
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</table>

*p < 0.01

In conclusion, the final ten-factor modified measurement model provided an acceptable fit to the data as well as evidence for convergent validity, reliability
and discriminant validity. These results were consistent between the T1T2, T1T1 and T2T2 datasets.

Testing the Structural Model for Research Objective Two

The final modified ten-factor measurement model was re-specified into the proposed structural model for research objective two. As already mentioned, there were a maximum of eight possible equivalent recursive models to test for the structural model for research objective two. The specification of these equivalent models was different only in the directional relationship between proactive EconPs, SocPs and EnvPs (see Figure 5.8). Apart from this, the directional relationships between the other model constructs remained the same (see Figure 5.5 for proposed measurement and structural model for research objective two).

Figure 5.8: Eight Relationships between Proactive EconPs, SocPs and EnvPs
These eight recursive equivalent models all contained 120 data points and 80 parameters to be estimated (30 structural coefficients, 5 factor loading coefficients, 6 variances, 15 covariances, 9 error variances, 11 error covariances, and 4 equation predictor error variances); therefore, they were over-identified with 40 degrees of freedom (120-80). The results of model testing based on the fit indices, revealed that all of the eight equivalent models fitted the sampled data equally well for all the T1T2\textsuperscript{1}, T1T1\textsuperscript{2}, and T2T2\textsuperscript{3} datasets. However, the sum of the model R² (or the sum of the R² of four endogenous equations) of Model 1 (2.28) was higher than the other seven models\textsuperscript{4}, indicating that the variance in the endogenous variables was best explained by Model 1. Therefore, Model 1 was considered as the main proposed model for research objective two. Stated differently, the directional relationship between the three dimensions of proactive CSPs in this proposed model was specified as:

‘proactive EconPs $\rightarrow$ proactive SocPs $\rightarrow$ proactive EnvPs $\rightarrow$ proactive EconPs’.

However, although this model produced an overall satisfactory result, only some of the standardized structural coefficients for direct effects achieved a significant level of less than 0.05. Table 5.21 presents only the significant standardized coefficients ($p < 0.05$) that evaluate the direct effects among latent variables for the proposed model for research objective two.

\textsuperscript{1} T1T2: $\chi^2$(40) = 53.82 ($p = 0.07$), RMSEA = 0.045, SRMR = 0.033, CFI = 0.99 and NNFI = 0.98
\textsuperscript{2} T1T1: $\chi^2$(40) = 51.93 ($p = 0.10$), RMSEA = 0.042, SRMR = 0.030, CFI = 0.99 and NNFI = 0.99
\textsuperscript{3} T2T2: $\chi^2$(40) = 68.12 ($p = 0.05$), RMSEA = 0.060, SRMR = 0.033, CFI = 0.99 and NNFI = 0.96
\textsuperscript{4} The sum of model R²: Model 2 = 2.13; Model 3 = 2.19; Model 4 = 2.19; Model 5 = 2.27; Model 6 = 2.16; Model 7 = 2.13; Model 8 = 2.16
The indirect effects analysis was also conducted in order to gain a better understanding of the nature of the relationships among variables. Table 5.22 below presents the significant standardized coefficients for the indirect effects found in this model.

In addition, by aiming to evaluate a fitting and parsimonious model of the proposed model for research objective two, the two alternative nested models (each incorporating different assumptions about parameters) were specified and examined. Specifically, the proposed model for research objective two was re-specified into the alternative model 1 by deleting non-significant paths. The results of this alternative model testing met the stringent decision rule regarding $\chi^2$, RMSEA, SRMR, CFI and NNFI, and the chi-square difference between this alternative model and the proposed model was not statistically significant at a significant value of less than 0.05 (see Table 5.23).
These results demonstrated that both the proposed model and the alternative model 1 were supported by the sampled data. However, as the proposed model for research objective two yielded results on a variety of fit indices slightly better than the alternative model 1 (see Table 5.23), the proposed model was considered preferable for the analysis.

The proposed model for research objective two was also re-specified into the alternative model 2 by eliminating directional paths between proactive EconPs, proactive SocPs and proactive EnvPs. The fit indices of this alternative model were unacceptable (see Table 5.23), and the chi-square difference test revealed that the proposed model fitted the data significantly better than the alternative model 2 at a significant value of less than 0.001 ($T1T2\Delta \chi^2 = 70.18$, $T1T1\Delta \chi^2 = 73.07$ and $T2T2\Delta \chi^2 = 66.63$). This indicated that the elimination of paths between
each dimension of proactive CSPs could cause a large, significant loss of model fit. Therefore, it was reasonable to retain the proposed model as the best-fitting model. Figure 5.9 shows the proposed model for research objective two with standardized regression coefficients for direct effects, based on the T1T2 data.

<p>| Table 5.23: Comparing Fit Indices between Proposed Model and Alternative Models: Objective Two |
|-----------------------------------------------|---------------|---|---|---|---|---|---|---|---|</p>
<table>
<thead>
<tr>
<th>Model</th>
<th>χ²(p-value)</th>
<th>df</th>
<th>RMSEA</th>
<th>SRMR</th>
<th>CFI</th>
<th>NNFI</th>
<th>Δχ²ª</th>
<th>Δdfª</th>
</tr>
</thead>
<tbody>
<tr>
<td>T1T2</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proposed Model</td>
<td>53.82 (0.07)</td>
<td>40</td>
<td>0.045</td>
<td>0.033</td>
<td>0.99</td>
<td>0.98</td>
<td>12.90</td>
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<tr>
<td>Alternative Model 1</td>
<td>66.72 (0.05)</td>
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<td>0.046</td>
<td>0.046</td>
<td>0.99</td>
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<tr>
<td>Alternative Model 2</td>
<td>124.00 (0.00)</td>
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<tr>
<td>Proposed Model</td>
<td>51.93 (0.10)</td>
<td>40</td>
<td>0.042</td>
<td>0.030</td>
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<td>0.99</td>
<td>11.72</td>
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<td>0.99</td>
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<tr>
<td>Alternative Model 2</td>
<td>125.00 (0.00)</td>
<td>44</td>
<td>0.100</td>
<td>0.073</td>
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<td>0.91</td>
<td>10.69</td>
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<tr>
<td>Proposed Model</td>
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<td>0.99</td>
<td>0.96</td>
<td>10.69</td>
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<td>Alternative Model 2</td>
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*p < 0.001

**Power Analysis for Proposed Model for Research Objective Two**

The power analysis for the proposed model for research objective two was conducted using STATISTICA 8.0 in order to ensure that the sample size had sufficient power to reject close-fit hypothesis. The estimated power calculated by the power analysis program (based on ε₀ = 0.08, ε₁ = 0.045, α = 0.05, N = 171, df_m = 40) was 0.6908, meaning that the probability of rejecting the incorrect model is 69.08 per cent for a sample size of 171 cases. The proposed model for research objective two, therefore, is considered adequately reliable for the analysis of hypotheses.
Figure 5.9: Results of Estimating the Proposed Measurement and Structural Model for Research Objective Two: T1T2 Data

$\chi^2(40) = 53.82 \ (p = 0.07), \ RMSEA = 0.045, \ SRMR = 0.033, \ CFI = 0.99, \ NNFI = 0.98$

*p-value < 0.05: Note: the significant direct paths are shown in the red line.
Analysis of Hypotheses for Research Objective Two

The results of the analysis of the proposed model for research objective two, as shown in Figure 5.9, revealed that there was a significant relationship between proactive EconPs, proactive SocPs and proactive EnvPs at a significant level of less than 0.05. These three dimensions of proactive CSPs could directly influence each other in multiple ways; however, the directional relationship that best fitted the current sampled data was: proactive EconPs $\rightarrow$ proactive SocPs ($\beta_{21}=0.34$) $\rightarrow$ proactive EnvPs ($\beta_{32}=0.70$) $\rightarrow$ proactive EconPs ($\beta_{13}=0.34$). This provided support for Hypotheses 4a, 4b and 4c respectively.

The results showed that the adoption of proactive EconPs was directly and positively influenced by the capabilities of stakeholder management ($\gamma_{12}=0.34$) and strategic proactivity ($\gamma_{13}=0.17$, $p < 0.05$); therefore, Hypotheses 5b and 5c were supported. There was no significant direct influence of a shared vision capability on proactive EconPs; therefore, Hypothesis 5a was rejected. However, the analysis of indirect effects revealed that a shared vision capability had an indirect positive influence on the adoption of proactive EconPs (standardized coefficient for indirect effect = 0.08, $p < 0.05$).

The adoption of proactive SocPs was found to be directly and positively influenced by only a stakeholder management capability ($\gamma_{22}=0.24$, $p < 0.05$), providing support for Hypothesis 5e. The path coefficients of Hypotheses 5d and 5f, pertaining to the direct influence of shared vision and strategic proactivity on proactive SocPs, were not statistically significant at a significant level of less than 0.05; therefore, these two hypotheses were rejected. However, the analysis of
indirect effects indicated that both shared vision and strategic proactivity capabilities indirectly and positively influenced the adoption of proactive SocPs (standardized coefficient for indirect effect of shared vision = 0.05 and of strategic proactivity = 0.07, \( p < 0.05 \)).

It was found that the adoption of proactive EnvPs was directly and positively influenced by only a shared vision capability (\( \gamma31=0.23, \ p < 0.05 \)); therefore, Hypothesis 5i was supported. In contrast to Hypothesis 5i, Hypotheses 5g and 5h were rejected, because no significant direct influence of stakeholder management and strategic proactivity on proactive EnvPs was statistically found at a significant level of less than 0.05. However, the indirect effects analysis revealed that both the stakeholder management and strategic proactivity capabilities had an indirect positive influence on the adoption of proactive EnvPs (standardized coefficient for indirect effect of stakeholder management = 0.27 and of strategic proactivity = 0.13, \( p < 0.05 \)). The above results of the direct and indirect effects analysis could provide evidence that the interaction between proactive EconPs, proactive SocPs and proactive EnvPs is important in enabling SMEs to make the best use of shared vision, stakeholder management and strategic proactivity capabilities.

Among the three dimensions of proactive CSPs, only proactive EconPs was found to have a direct positive influence on SME financial performance (\( \beta41=0.44, \ p < 0.05 \)), thus providing support for Hypothesis 6a. On the other hand, Hypotheses 6b and 6c, regarding the direct influence of proactive SocPs and proactive EnvPs on financial performance, were not supported, as the path coefficients between these practices and SME financial performance were not statistically significant at
a significant level of less than 0.05. Despite no direct effect, the indirect effects analysis showed that both of the proactive SocPs and proactive EnvPs had an indirect positive influence on SME financial performance via the interaction between the three dimensions of proactive CSPs (standardized coefficient for indirect effect of proactive SocPs = 0.12 and of proactive EnvPs = 0.17, \( p < 0.05 \)). These results demonstrated that such interaction is vital in enabling SMEs to achieve improvement in financial performance.

When modeling the interaction between proactive EconPs, SocPs and EnvPs as the mediator, no significant direct influence of the three specified capabilities (shared vision, stakeholder management and strategic proactivity) on SME financial performance was found (\( p < 0.05 \)); therefore, Hypotheses 7a, 7b and 7c were not supported. These results implied that the interaction between the three dimensions of proactive CSPs fully mediate the relationship between the three specified capabilities and SME financial performance. The analysis of indirect effects further confirmed that these three capabilities had a positive indirect influence on SME financial performance via such interaction (standardized coefficient for indirect effect of shared vision = 0.07, of stakeholder management = 0.22 and of strategic proactivity = 0.11, \( p < 0.05 \)).

The examination of the influence of control variables on each of the two endogenous latent variables, revealed that Size had a positive and statistically significant association with proactive EconPs (\( \gamma_{14}=0.13 \)) and financial performance (\( \gamma_{44}=0.11 \)) at \( p \)-value < 0.05. The indirect effects analysis further indicated that Size is also indirectly and positively associated with the adoption of
proactive SocPs (standardized coefficient for indirect effect = 0.06) and proactive EnvPs (standardized coefficient for indirect effect = 0.11) at a significant level of less than 0.05. In contrast to Size, the GFC had a negative and statistically significant ($p < 0.05$) association with proactive EconPs ($\gamma_{16} = -0.10$) and financial performance ($\gamma_{46} = -0.38$), implying that the higher negative impact of the recent global financial crisis perceived by firms led to the lower adoption of proactive EconPs and worse financial performance. The influence of Time, however, was not statistically significant for either the three dimensions of proactive CSPs or financial performance.

It should be noted that the results of hypotheses testing for objective two based on the T1T2 data were consistent with those obtained based on the T1T1 and T2T2 data (see previous Table 5.21). Because of this consistency, it was reasonable to infer causal relationship in this study.

**SUMMARY OF RESULTS OF HYPOTHESIS TESTING**

This study proposed 25 hypotheses for testing the two proposed models (7 hypotheses for objective one and 18 hypotheses for objective two). Table 5.24 presents the list of the hypotheses proposed in this study, and whether they were supported by the SEM analysis. As can be seen in Table 5.24, among 25 proposed hypotheses, 12 hypotheses were supported.
### Table 5.24: Results of Hypotheses Testing

<table>
<thead>
<tr>
<th>Hypotheses</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1a: A shared vision capability will directly positively influence the adoption of proactive CSPs by SMEs.</td>
<td>Supported</td>
</tr>
<tr>
<td>H1b: A stakeholder management capability will directly positively influence the adoption of proactive CSPs by SMEs</td>
<td>Supported</td>
</tr>
<tr>
<td>H1c: A strategic proactivity capability will directly positively influence the adoption of proactive CSPs by SMEs.</td>
<td>Supported</td>
</tr>
<tr>
<td>H2: Proactive CSPs will directly positively influence SME financial performance</td>
<td>Supported</td>
</tr>
<tr>
<td>H3a: A shared vision capability will directly positively influence SME financial performance, when modeling proactive CSPs as the mediator.</td>
<td>Not Supported</td>
</tr>
<tr>
<td>H3b: A stakeholder management capability will directly positively influence SME financial performance, when modeling proactive CSPs as the mediator.</td>
<td>Not Supported</td>
</tr>
<tr>
<td>H3c: A strategic proactivity capability will directly positively influence SME financial performance, when modeling proactive CSPs as the mediator.</td>
<td>Not Supported</td>
</tr>
<tr>
<td>H4a: There is a direct relationship between proactive EconPs and proactive SocPs.</td>
<td>Supported</td>
</tr>
<tr>
<td>H4b: There is a direct relationship between proactive EconPs and proactive EnvPs.</td>
<td>Supported</td>
</tr>
<tr>
<td>H4c: There is a direct relationship between proactive SocPs and proactive EnvPs.</td>
<td>Supported</td>
</tr>
<tr>
<td>H5a: A shared vision capability will directly positively influence the adoption of proactive EconPs by SMEs.</td>
<td>Not Supported</td>
</tr>
<tr>
<td>H5b: A stakeholder management capability will directly positively influence the adoption of proactive EconPs by SMEs.</td>
<td>Supported</td>
</tr>
<tr>
<td>H5c: A strategic proactivity capability will directly positively influence the adoption of proactive EconPs by SMEs.</td>
<td>Supported</td>
</tr>
<tr>
<td>H5d: A shared vision capability will directly positively influence the adoption of proactive SocPs by SMEs.</td>
<td>Not Supported</td>
</tr>
<tr>
<td>H5e: A stakeholder management capability will directly positively influence the adoption of proactive SocPs by SMEs.</td>
<td>Supported</td>
</tr>
<tr>
<td>H5f: A strategic proactivity capability will directly positively influence the adoption of proactive SocPs by SMEs.</td>
<td>Not Supported</td>
</tr>
<tr>
<td>H5g: A shared vision capability will directly positively influence the adoption of proactive EnvPs by SMEs.</td>
<td>Supported</td>
</tr>
<tr>
<td>H5h: A stakeholder management capability will directly positively influence the adoption of proactive EnvPs by SMEs.</td>
<td>Not Supported</td>
</tr>
<tr>
<td>H5i: A strategic proactivity capability will directly positively influence the adoption of proactive EnvPs by SMEs.</td>
<td>Not Supported</td>
</tr>
<tr>
<td>H6a: Proactive EconPs will directly positively influence SME financial performance.</td>
<td>Supported</td>
</tr>
<tr>
<td>H6b: Proactive SocPs will directly positively influence SME financial performance.</td>
<td>Not Supported</td>
</tr>
<tr>
<td>H6c: Proactive EnvPs will directly positively influence SME financial performance.</td>
<td>Not Supported</td>
</tr>
<tr>
<td>H7a: A shared vision capability will directly positively influence SME financial performance, when modeling the interaction between proactive EconPs, SocPs and EnvPs as the mediator.</td>
<td>Not Supported</td>
</tr>
<tr>
<td>H7b: A stakeholder management capability will directly positively influence SME financial performance, when modeling the interaction between proactive EconPs, SocPs and EnvPs as the mediator.</td>
<td>Not Supported</td>
</tr>
<tr>
<td>H7c: A strategic proactivity capability will directly positively influence SME financial performance, when modeling the interaction between proactive EconPs, SocPs and EnvPs as the mediator.</td>
<td>Not Supported</td>
</tr>
</tbody>
</table>
ANALYSIS OF QUALITATIVE COMMENTS

The small component of qualitative data, through an open-ended question, was also considered important in this study, as it could help explain the findings on the quantitative data in greater depth. The open-ended question, in both Time 1 and Time 2, asked the respondents to provide any comments relating to their company’s financial performance as well as the difficulties their company faces in implementing sustainable business practices in today’s business environment. Out of 171 respondents, 58 respondents (33.92 per cent) provided usable responses to this open-ended question. These responses were manually coded inductively and categorized along the study objective and additional emerging themes.

By focusing on the coding process, the key concepts that were embedded in the comments were firstly highlighted. Then, notes of what the relevance of each highlighted concept were manually made. A coding frame, generating from the qualitative data, was next developed in order to identify themes. The themes were inductively categorized into two main categories: (1) issues relating to sustainability practices (commented by 38 respondents, representing 65.52 per cent), and (2) perceived factors affecting financial performance (commented by 22 respondents, representing 37.93 per cent). However, it must be noted that the researcher had not simply coded every related issue into a single category, but instead had identified subcategories which coded the various dimensions related to each main category. By doing this, a hierarchical coding structure was created. This could enable the researcher to develop systematic thinking about relationships between categories, and consequently inferences or conclusions based on inductive analysis could be easily drawn at the end. Table 5.25 presents
the main categories, subcategories, and respondents (by ID) responding in each subcategory.

Table 5.25: Main Categories, Subcategories and Respondents: Qualitative Comments

<table>
<thead>
<tr>
<th>Main categories</th>
<th>Subcategories 1</th>
<th>Subcategories 2</th>
<th>Respondents (ID)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reasons to adopt sustainability practices</td>
<td>- Good Citizenship</td>
<td>13, 19, 38, 70</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Need to be proactive in the market</td>
<td>105</td>
<td></td>
</tr>
<tr>
<td>Characteristics of adopting sustainability practices</td>
<td>- Selecting practices closely relating to business operations</td>
<td>96*, 111, 112, 176*</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Emphasizing in economic practices much more than social and environmental practices</td>
<td>4, 15, 80, 82, 96*, 104, 176*, 200</td>
<td></td>
</tr>
<tr>
<td>Concerns about the implementation of sustainability practices</td>
<td>- Costs from implementation</td>
<td>29, 81, 170*</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Lack of business incentives</td>
<td>170*</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- No link between sustainability practices and performance</td>
<td>29, 30</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Low cashflow being available for implementation</td>
<td>180*</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Unable to compete with imported cheap products</td>
<td>12, 109, 110, 181, 186*, 199</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Problems from government policies</td>
<td>2, 4, 51, 67, 75, 100, 109, 111, 134, 159, 178, 186*</td>
<td></td>
</tr>
<tr>
<td>Factors affecting financial performance</td>
<td>Current global financial crisis</td>
<td>7, 8, 19, 38, 43, 44, 51, 60, 84, 88, 104, 107, 108*, 109, 122, 158, 180*</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Other intervening factors</td>
<td>32, 103, 108*, 112, 120, 135</td>
<td></td>
</tr>
</tbody>
</table>

* ID 96, 170, 176, 180 and 186 are coded more than one subcategories.

Issues Relating to Sustainability Practices

Within the category of issues relating to sustainability practices, the three subcategories were created based on the comments made by the respondents: (i) reasons to adopt sustainability practices (5 respondents), (ii) characteristics of
adopting sustainability practices (10 respondents), and (iii) concerns about the implementation of sustainability practices (23 respondents) (see Table 5.25).

Specifically, good citizenship (commented by 4 respondents) and the need to be proactive in the market (commented by 1 respondent) were found to be the main two reasons for the sampled SMEs to adopt sustainability practices. For example, one participant responded that “we will continue to work sustainably as it makes sense to do so as a corporate citizen and a participant on this planet” (ID 19). Another participant responded similarly, “our company has always been based on sustainable business practices, but the underlying motivation has always been the Christian principle of ‘Love your neighbour’; this principle emphasizes we are not greedy, we care for others as well as care for the environment” (ID 70). Meanwhile, one participant revealed that “due to the need to be proactive in the market place to capitalize on any purchasing, both the individuals (domestic) and companies (commercial) are willing to undertake sustainability practices” (ID 105).

By focusing on the characteristics of adopting sustainability practices, four respondents expressed that they adopted sustainability practices that closely related to their business operations. One respondent, for instance, responded that “we attempt to implement sustainable business practices that relate directly to our business and that are practical and cost neutral” (ID 96). Interestingly, it was revealed by eight respondents that economic sustainability practices were much more important than social and environmental sustainability practices, particularly in the current economic downturn. For example, one participant responded that
“presently business survival is more important than environmental or social concerns”. Correspondingly, another participant responded that “implementation of sustainable business practices is a low priority in the current economic climate; focus is on cash flows and sustaining sales levels” (ID 80). Among the economic practices, innovation, quality, innovation and diversification were found to be the main strategic focus area. This was demonstrated in the statements such as “this company has succeeded in difficult times by investing consistently into R&D projects, and product diversification has proven a very successful strategy” (ID 15), and “we are a small manufacturer with a world-wide reputation for innovation and quality” (ID 176).

The majority of respondents expressed their concerns about the implementation of sustainability practices. Five of them pointed out that costs from implementation, a lack of business incentives, and no link between sustainability practices and performance, were the major obstacles. For example, one respondent criticized that “firms engage in sustainable business practices at a cost to the firm….there are very no economic benefits” (ID 29). Similar perception was expressed by ID 81: “most sustainable initiatives seem to cost a lot and implementing them in isolation, both domestically and internationally, impacts our competitiveness”. Another example was provided by ID 170, indicating that “the cost-benefit for implementing sustainable business practices are prohibitive at this time for a business of our size, i.e. our customers are not demanding newer technologies which are more environmentally sustainable, hence there is no business incentive to develop or utilize these technologies”. Furthermore, as argued by ID 30, “[the] link between CSR and revenue is tenuous at best and can’t see validity of the link being made”.
Low cashflow during the current economic crisis posed another obstacle to the adoption of sustainability practices. This was demonstrated in the statement, “due to the tight situation with our world market sales which are still well down, resulting in low cashflow being available to help us make major changes with sustainable business practices….once the world market does turn around we will be in a strong position to see clear profits improving relating to changes we have and are incorporating” (ID 180). Competing with imported cheap products was also indicated by six participants as a significant obstacle in the adoption of sustainability practices. For example, one participant responded that they were “unable to sustain current business & environmental practices while competing with ever increasing imported products which appear/claim to meet Australian & International standards but prove to be of inferior quality” (ID 12).

Government policies were also found to threaten the implementation of sustainability practices of the sampled SMEs. One respondent revealed that “state and federal government taxes and controls are increasing, in a diminishing economy, and these factors will restrict implementing sustainable business practices” (ID 134). Another participant responded similarly, “no matter what the government determines influences the economic condition; my worry for sustainable business practices is that the market will [be] getting more closed and protective in terms of governmental regulations such as the immigration law, the taxation, labor law, custom duty, etc” (ID 100). More specifically, a number of participants indicated that Government Red Tape, Payroll Tax, Emissions Trading Scheme (ETS), Carbon Pollution Reduction Scheme (CPRS) and other financial impositions, were huge obstacles in running a sustainable business in Australia,
because they imposed high costs that a small business was not entitled to recovered (ID 2, 4, 51, 67, 75, 100, 109, 111, 134, 159, 178, 186).

Factors Affecting Financial Performance

Within the category of factors affecting financial performance, the two subcategories were created based on the comments made by the respondents: (i) current global financial crisis, and (ii) other intervening factors (see Table 5.25).

Specifically, seventeen respondents indicated that the current global financial crisis had a major negative effect on their business financial performance. One participant, for instance, responded that “the economic downturn has had a very significant impact on our sales; revenue is down….further staff cuts will erode our skill base and present risks for the future” (ID 60). Another similar example was provided by ID 180; “due to the recession the company has gone through very difficult times during the last 9 months which has affected the bottom line of the business….without the recession we would have been in a much more positive position than the current situation”.

Six respondents commented about other intervening factors influencing SMEs’ financial performance. Such factors included staff ability (ID 32), contracts (ID 103, 120, 135) and large company (ID 108 and 112). For example, ID 32 stated that “staff ability and attitude dictate financial results…unable to find good practical staff”. Meanwhile, ID 135 indicated that “business is highly cyclical & project oriented…wining the right project (contract) has an enormous effect on results”. An interesting point was made by ID 112, revealing that “company
financial performance is mainly determined by large companies rather than general economic conditions”.

Summary of Qualitative Comments

The qualitative comments provided by the respondents were mainly related to the issues of the adoption of sustainability practices and the factors impacting financial performance. Although most of the sampled SMEs had adopted sustainable business practices to some extent, costs associated with the adoption of such practices and perceptions that doing so is antagonistic to maximizing profits remained a stumbling block to the uptake of full-scale sustainability practices. The high costs imposed by the Australian government policies (e.g. Red Tape, Payroll Tax, CPRS and ETS) also further threaten business survival and the implementation of sustainable business practices of Australian SMEs. The current global financial crisis was perceived by the respondents as the major factor that negatively impacted their firm’s financial performance.

SUMMARY

This chapter has presented the results of data analysis and hypothesis testing. The first section of this chapter discussed the data preparation and screening, including the non-response bias assessment and method for treating missing values. In attempt to reduce a number of related observed variables to a more manageable number for the SEM analysis, EFA was conducted for all latent variables. The analyses of proposed models for research objective one and research objective two, using SEM, were then undertaken in separate section. CFA was performed in
each of these sections in order to test the fit of the proposed measurement model. The results of CFA revealed that all constructs of the model (both objectives one and two) had adequate reliability with the Cronbach’s $\alpha$, CR and AVE above the recommendations. The significant standardized solution obtained from CFA also indicated a reasonable convergent validity of the measurement scale for all latent variables.

This measurement model was then re-specified into the proposed structural model. The examination of the fit of this structural model was made by comparing with the alternative models. The results of the chi-square difference test showed that the proposed model, for both objective one and objective two, fitted the data significantly better than the alternative models. Statistical power to reject incorrect models of this study (65.14 per cent for objective one and 69.08 percent for objective two) was considered adequately reliable for the hypothesis testing.

Of the 25 research hypotheses tested in this study, 12 hypotheses were supported. The results indicated that both the proactive CSPs and the interaction between proactive EconPs, SocPs and EnvPs fully mediate the relationship between the three specified capabilities (shared vision, stakeholder management and strategic proactivity) and SME financial performance. These results were found consistent between the T1T2, T1T1 and T2T2 datasets, implying that the causal relationship between the constructs may be inferred. The analysis of qualitative comments from 58 respondents, discussed at the end of this chapter, also provided insights into the difficulties and concerns in implementing sustainable business practices in today’s business environment.
CHAPTER 6: DISCUSSION AND CONCLUSIONS

CHAPTER OBJECTIVES

This final chapter discusses the pattern of empirical results observed in this study and draws out theoretical and practical implications. Limitations and potential directions for future research are also presented. Overall conclusions are provided at the end of this chapter.

DISCUSSION OF RESULTS

Introduction

As emphasized in Chapter 3, the aim of this study is to develop an understanding of the role that proactive CSPs (EconPs, SocPs and EnvPs) play in mediating the relationship between three specific capabilities (shared vision, stakeholder management and strategic proactivity) and SME financial performance. To achieve this aim, two specific research objectives were proposed. Objective one was to examine the mediating effect of proactive CSPs on the relationship between those three capabilities and SME financial performance, and objective two was to examine the mediating effect of the interaction between proactive EconPs, SocPs and EnvPs on such relationship. To address these objectives, three research questions (1-3) were developed for research objective one and four research questions (4-7) were developed for research objective two. In the following sections, the discussion of the results is framed in relation to these research questions.
Research Question 1:

*To what extent is the adoption of proactive CSPs in SMEs influenced by shared vision, stakeholder management and strategic proactivity capabilities? (Hypotheses 1a, 1b, 1c)*

As expected, a finding of this study is that the potential for SMEs to adopt proactive CSPs associates with specific organizational capabilities. More specifically, the results show that the adoption of proactive CSPs in the sampled SMEs is directly and positively influenced by the capabilities of shared vision (Hypothesis 1a – supported), stakeholder management (Hypothesis 1b – supported) and strategic proactivity (Hypothesis 1c – supported). Based on these results, it can be concluded that SMEs which deploy all three capabilities are more likely to engage in the wide range of proactive CSPs.

Interestingly, this finding has implications for the traditional assumption that because of a scarcity of slack resources SMEs cannot adopt proactive CSPs (e.g. Besser, 1999; Bianchi & Noci, 1998; Schaper, 2002). It suggests that a lack of slack resources is only a relevant but not deterministic condition for development of proactive CSPs in SMEs. Rather, the ability of SMEs to deploy three distinctive capabilities – that facilitate the strategic integration of collective values about the organizational goals, the establishment of sound trust-based relationships with stakeholders, and the seeking out and exploitation of new business opportunities – are fundamental drivers for engagement in such practices.
Research Question 2:

To what extent do proactive CSPs have an influence on SME financial performance? (Hypothesis 2)

Perhaps the most important finding in this study, and consistent with the demonstrated support of Hypothesis 2, is that of a direct positive association between engagement in proactive CSPs and perceptions of a link to SME financial performance. This coincides with findings in previous research for large firms (e.g. Chang & Kuo, 2008; Mackey et al., 2007). It also suggests that it is possible for SMEs to achieve a win-win scenario under which they can maximize financial returns whilst making progress towards meeting government and community calls for proactive implementation of sustainable business practices.

It is worth noting, however, that in this study the control variable of Size was found to affect the adoption of proactive CSPs and financial performance. Consistent with the findings of previous large firm based research (e.g. Bansal, 2005; Stanwick & Stanwick, 1998; Udayasanker, 2008), the larger the SME the more likely is the adoption of proactive CSPs and related positive effect on perceptions of financial performance. On this basis it can be concluded that, as issues such as access to, quantity of, and type of available resources are directly linked to firm Size (Beaver & Jennings, 2000; Udayasanker, 2008), SMEs when compared to large firms face greater difficulties in engaging in proactive CSPs and accessing the potential benefits for financial performance that such practices offer. The finding of a significant direct negative effect for the GFC control variable is evidence, perhaps not surprisingly, that for some SME owner-
managers the current difficult economic conditions are a major deterrent to engaging in proactive CSPs and threat to their firm’s financial performance. This links to the issue of limited access to and availability of slack resources, which tough economic times exacerbate for many SMEs. In contrast to Size and GFC, the lack of a significant effect for the control variable of Time, on both proactive CSPs and SME financial performance, may indicate that the duration of a firm’s experience with the management of proactive CSPs is not relevant as an influence, on either the extent to which SMEs adopt proactive CSPs or the financial returns obtained from such practices.

**Research Question 3:**

*To what extent do proactive CSPs mediate the relationship between shared vision, stakeholder management and strategic proactivity capabilities, and SME financial performance? (Hypotheses 3a, 3b, 3c)*

Contrary to Hypotheses 3a, 3b and 3c, data analysis shows that when modeling proactive CSPs as a mediator, shared vision, stakeholder management and strategic proactivity capabilities have no direct positive influence on SME financial performance. This finding implies that proactive CSPs fully mediate the relationship between the three capabilities and SME financial performance. The results provide evidence of the indirect effect of these capabilities on financial performance, and so confirm the finding that proactive CSPs represent one form of strategic mechanism through which such capabilities are able to influence SME financial performance.
These results, however, are inconsistent with previous research findings on distinctive capabilities and performance, where shared vision, stakeholder management and strategic proactivity together were found to be a direct predictor of performance improvement (e.g. Baum et al., 1998; Harrison & Freeman, 1999; Ogden, & Watson 1999; Rauch, Wiklund, Lumpkin & Frese, 2009; Sharma & Vredenburg, 1998). One likely explanation of this inconsistency may be that previous studies examined only the relationship between those capabilities and a firm’s financial performance, and did not consider the mediating role of competitive strategy, that is the adoption proactive CSPs to efficiently exploit such capabilities. Consequently, by not taking into account the mediating effect of strategy, such previous results may be misleading. To clarify the point, an additional test excluding proactive CSPs from the model analysis was performed on the data for the present study (see Model I, Appendix B). As expected, without proactive CSPs, the result shows a significant direct influence by the three specific capabilities on SME financial performance, thus confirming that proactive CSPs fully limit the direct influence of the three specific capabilities on SME financial performance and therefore have a significant mediating role. These findings are particularly interesting in the light of RBV research, since they provide empirical evidence supporting Grant (1991) that distinctive organizational capabilities alone cannot lead to improvement in a firm’s financial performance; rather, the adoption of competitive strategy that makes the most efficient and effective use of those capabilities is what drives business financial success.
Research Question 4:

To what extent is there a relationship between proactive EconPs, proactive SocPs and proactive EnvPs? (Hypotheses 4a, 4b, 4c)

As predicted, the results of data analysis show that there is a direct positive relationship between proactive EconPs and proactive SocPs (Hypothesis 4a-supported), between proactive EconPs and proactive EnvPs (Hypothesis 4b-supported), and between proactive SocPs and proactive EnvPs (Hypothesis 4c-supported). The pattern of these recursive relationships was found in eight forms, with the pattern of best fit to the data being:

‘proactive EconPs $\rightarrow$ proactive SocPs$\rightarrow$ proactive EnvPs $\rightarrow$ proactive EconPs’.

While proactive EconPs emphasize the creation of value-creating practices that lead to cost reduction or product differentiation gains, which in turn drive a firm’s long-term economic performance (Bansal, 2005), key stakeholders such as customers, suppliers, shareholders and investors are providing impetus to a broadening of the focus on proactive EconPs to include adoption of proactive SocPs (Vandermerwe & Oliff, 1990; Williams et al., 1993). Being more aware of sustainability issues, customers are now willing to pay more for socially responsible products (Williams et al., 1993); suppliers wishing to protect and enhance their own reputation are choosing to deliver inputs only to those firms having a good reputation for social management; and shareholders and investors are increasingly coming to perceive firms with a good social record as lower risk investment propositions (Henriques & Sadorsky, 1999). Those firms with an effective stakeholder management capability recognize meeting these
stakeholders’ expectations as essential to the firm’s long-term survival, and therefore are more likely to engage in both proactive EconPs and SocPs in order to strengthen their competitive strategy.

The results in this study also indicate that adoption of proactive SocPs makes it more likely that proactive EnvPs will be developed. Hart (1995) suggests that employee involvement is a key contributor to the successful development of ‘green’ competencies. Other research suggests that investing in employee development and employee participation in decision-making processes contributes both to enhancing a firm’s environmentally-related technical and managerial skills base and to the propagation of a culture of environmental responsibility across the entire firm (Bianchi & Noci, 1998; Graafland et al., 2003). Significantly, engagement in proactive EnvPs can reinforce the development of proactive EconPs; for example, well designed environmental programs can serve to trigger innovations that improve production efficiency and so lower business costs (Porter & van der Linde, 1995). The findings in this study confirm that for firms to derive benefits from the adoption of proactive CSPs then they must embrace all of the economic, social and environmental principles that underpin sustainability.
Research Question 5:

To what extent is the adoption of each of proactive EconPs, proactive SocPs and proactive EnvPs influenced by each of shared vision, stakeholder management and strategic proactivity capabilities? (Hypotheses 5a, 5b, 5c, 5d, 5e, 5f, 5g, 5h, 5i)

The results for this study demonstrate there are significant differences in the importance of each capability in influencing the adoption of each dimension of proactive CSPs. Specifically, consistent with Hypotheses 5b and 5c (both supported), the adoption of proactive EconPs was found to be directly and positively influenced by stakeholder management and strategic proactivity capabilities. This finding indicates that an SME’s ability to manage sometimes competing stakeholder interests and its ability to initiate changes in strategic policies for capitalizing new opportunities are of key importance in developing value-creating strategies that reduce costs, increase efficiency, and ensure long-term firm survival in a rapidly changing business environment. On the other hand, contrary to Hypothesis 5a (not supported), a shared vision capability was found to have no direct influence on the adoption of proactive EconPs. A possible explanation for this finding is that proactive EconPs, because they impact most directly on an SME’s financial goals (European Commission, 2003b), are perceived as particularly vital to long-term success and are therefore given priority by SME owner-managers. In the SME context, as ownership and decision-making control usually rest with owner-managers, this allows them a greater degree of autonomy and scope for action in allocating organizational resources for proactive EconPs (Jenkins, 2009). On the other hand, it can also mean that the SME owner-manager may work less effectively with employees in
developing clear common goals and shared-vision for the firm (Merz & Suber, 1995). However, it should be noted that despite no direct influence, a shared vision capability does exercise an indirect influence on the adoption of proactive EconPs.

In accordance with Hypothesis 5e (supported), the study results show that proactive SocPs are directly and positively influenced by a stakeholder management capability. This finding is consistent with a number of descriptive and qualitative studies in the field (e.g. Graafland et al., 2003; Jenkins, 2006, 2009; Lepoutre & Heene, 2006; Southwell, 2004; Worthington et al., 2006). Interestingly, it also extends that research by showing that a stakeholder management capability to be a significant predictor of not only EconPs but also SocPs in SMEs. This finding may be explained by the fact that as all stakeholders may not be perceived as equally important, the resulting differential management of key stakeholder relationships can influence the way SMEs approach sustainable business practices (Jenkins, 2009; Buysse & Verbeke, 2003). Arguably, given that SMEs are particularly sensitive to their immediate primary stakeholders (including customers, shareholders, suppliers and employees), sustainability practices closely related to these stakeholders will be thus more likely to receive priority (Lepoutre & Heene, 2006). Hence, a stakeholder management capability is likely to drive adoption of proactive EconPs involving interaction with customers, shareholders and suppliers in the marketplace, and proactive SocPs relating to employee involvement and participation.
Contrary to Hypotheses 5d and 5f (not supported), the results show no direct relationship for the other two remaining capabilities – shared vision and strategic proactivity – to the adoption of proactive SocPs. This finding is interesting because, contrary to previous studies indicating a relationship between such capabilities and proactive SocPs, it means that a causal relationship remains unsupported empirically (c.f. Bowen, 2007; Graafland et al., 2003; Gladwin et al., 1995; Jenkins, 2006, 2009; Jones, 2003; Porter & Kramer, 2006; Worthington et al., 2006). The demonstrated non-significant direct relationship between a shared vision capability and proactive SocPs may be explained by the fact that most SMEs are by nature likely to be more socially responsive. Even in the absence of clear common social values, the importance of employees as a cornerstone of business success naturally and instinctively leads SME owner-managers to engage voluntarily in SocPs that foster employee well-being and motivation (Arbuthnot, 1997; Besser, 1999; Lepoutre & Heene, 2006; Southwell, 2004; Worthington et al., 2006). Turning now to the demonstrated non-significant direct relationship between a strategic proactivity capability and proactive SocPs, this can perhaps be explained by the need for SMEs, in the face of the GFC, to take aggressive and proactive competitive actions in order to survive and prosper; thus, making business practices, such as SocPs which do not directly contribute to value creation and financial performance, of lesser priority. However, it is worth noting that the results show shared vision and strategic proactivity capabilities as having an indirect influence on the adoption of proactive SocPs.

In line with Hypothesis 5g (supported), the results indicate that of the three capabilities, only a shared vision capability has a significant direct and positive
influences on the adoption of proactive EnvPs, accounting as it does for the most variance in such practices. This finding implies that the successful adoption of proactive EnvPs requires a shared vision capability to serve as a basis on which to build commitment to an environmental culture, develop employees’ environmental skills, and shape responsible behaviour (Barret & Murphy, 1996; Hart, 1995; Ramus & Steger, 2000). This is consistent with findings in the literature that show a lack of capacity for shaping environmental behavior in SMEs mitigates against the adoption of proactive EnvPs (Hooper & Gibbs, 1995; Petts, 2000; Tilley, 1999). Major barriers to improved environmental practices include the inability to make the link between compliance with complex environmental regulations and individual responsibilities, and the potential conflict that can arise between environmental goals and production and survival pressures (Petts, 2000). Arguably, building shared vision among organizational members thus becomes essential for SMEs aiming to adopt proactive EnvPs. These findings correspond with those reported by Aragon-Correa et al. (2008), and are consistent with past research on corporate environmental change in SMEs (Barret & Murphy, 1996; Ruiz-Quintanilla, Bunge, Freeman-Gallant & Cohen-Rosenthal, 1996; Wehrmeyer & Parker, 1996).

In relation to Hypotheses 5h and 5i (not supported), the results show stakeholder management and strategic proactivity capabilities to have no significant direct influence on proactive EnvPs. These findings are different to those reported in previous empirical research conducted by Aragon-Correa et al. (2008) which reported a significant direct positive relationship between the two capabilities and proactive EnvPs. However, Aragon-Correa et al. (2008) examined only proactive
practices that SMEs adopt to reduce natural environmental impacts including innovative-preventive and eco-efficient practices, and consequently did not consider the potential mediating effects of proactive EconPs and SocPs. Therefore, in order to investigate whether the results obtained from only proactive EnvPs were similar to those reported by Aragon-Correa et al. (2008), an additional test excluding proactive EconPs and SocPs from the model analysis was conducted in the present study (see Model II in Appendix B). As expected, this additional test found a significant direct influence for stakeholder management and strategic proactivity capabilities on proactive EnvPs, so demonstrating the mediating effect of proactive EconPs and SocPs on the relationship between the stakeholder management and strategic proactivity capabilities and the adoption of proactive EnvPs. This finding is indeed confirmed by other results showing both capabilities having an indirect influence on the adoption of proactive EnvPs.

Importantly, the findings of the direct and indirect effects analysis reported in this section also presented evidence that shows the importance of an interaction between proactive EconPs, proactive SocPs and proactive EnvPs in enabling the sampled SMEs to make the best use of all the three capabilities specified.
Research Question 6:

To what extent does each of proactive EconPs, proactive SocPs and proactive EnvPs have an influence on SME financial performance? (Hypotheses 6a, 6b, 6c)

Consistently with Hypothesis 6a (supported), the findings show proactive EconPs to have a direct positive influence on SME financial performance. However, contrary to Hypotheses 6b and 6c (not supported), no evidence of a direct influence of proactive SocPs and proactive EnvPs on SME financial performance was found in this study. Based on these findings, it can be concluded that proactive EconPs are the only dimension of proactive CSPs that directly predicts an improvement in SME financial performance. These findings contradict previous empirical research on corporate social responsibility (e.g. Harrison & Freeman, 1999; Hillman & Keim, 2001; Nelling & Webb, 2006; Waddock & Graves, 1997) and environmental sustainability (e.g. Aragon-Correa et al., 2008; Flannery & May, 2000; Hart & Ahuja, 1996; Klassen & Whybark, 1999; Russo & Fouts, 1997) in which a significant direct relationship between socially or environmentally responsible business practices and a firm’s financial performance was found.

One plausible explanation for these different findings may be that most previous sustainability research focused only on the direct relationship between proactive SocPs or proactive EnvPs and a firm's financial performance (e.g. Aragon-Correa et al., 2008; Nelling & Webb, 2006; Hamamann, Habisch & Pechlaner, 2009), therefore ignoring the mediating role of the interaction between each of the three dimensions of proactive CSPs. By overlooking this interaction, it is possible that
such previous results may be misleading. To test this possibility, two additional model analyses were performed in this study: firstly, focusing only proactive SocPs; and then focusing only on proactive EnvPs (see Model III and II, Appendix B). As expected, a significant direct positive effect on SME financial performance was found for each of these practices dimensions. These findings, which demonstrate the importance of the interaction between each of the three dimensions of proactive CSPs in enabling SMEs to achieve improvement in financial performance, are also supported by results showing an indirect influence on SME financial performance for both proactive SocPs and proactive EnvPs via such interaction.

On the basis of these findings, it can be argued that the proactive sustainability agenda, rather than representing a business threat to and cost burden for SMEs, provides significant scope for competitive advantage if the three sustainability business practice dimensions (EconPs, SocPs and EnvPs) are adopted effectively in an integrated and synergistic manner. Clearly, SMEs must incorporate sustainability issues into business strategy if they are to remain financially competitive. However, these findings indicate that if a cost- and/or differentiation-based competitive advantages are to be gained, then proactive EconPs, which are shown here to contribute directly to improvement in SME financial performance, must be adopted in conjunction with proactive SocPs and EnvPs.

The literature suggests that the ability of a firm to integrate social and environmental values into its economic practices is a fundamental building block of financial success (Judge & Douglas, 1998; Klassen & McLaughlin, 1996;
Porter & van der Linde, 1995). Constrained as they are by limitations on the available resources for embracing the full proactive sustainability agenda, an SME needs to identify the particular set of SocPs and EnvPs it is best equipped to adopt for supporting its proactive EconPs, and from which it can gain the greatest competitive benefit. Moreover, within an industry, social and environmental issues may cut differently for different firms because of product differences and competitive positioning (Porter & Kramer, 2006). For example, in the manufacturing industry, SMEs manufacturing wastewater treatment equipment and machines are likely to make employees’ health and safety and environmental management a central element of their added-valued product positioning. On the other hand, SMEs producing environmental management software may make staff development and diversity in hiring a priority to drive innovative and high quality product improvements. As suggested by Porter and Kramer (2006: 91), ‘strategy is always about making choices and success in corporate social responsibility is no different; it is about choosing which social and environmental issues to focus on’.

**Research Question 7:**

*To what extent does the interaction between proactive EconPs, proactive SocPs and proactive EnvPs mediate the relationship between shared vision, stakeholder management and strategic proactivity capabilities, and SME financial performance? (Hypotheses 7a, 7b, 7c)*

In contrast to Hypotheses 7a, 7b and 7c (not supported), when modeling the interaction between proactive EconPs, SocPs and EnvPs as the mediator, the
results show no significant direct positive influence on SME financial performance for shared vision, stakeholder management and strategic proactivity capabilities. The non-significant results indicate that the interaction fully mediates the relationship between the specified capabilities and SME financial performance. The evidence for the indirect effects of these capabilities on financial performance further confirms that the interaction between each of the three dimensions of proactive CSPs is a necessary and sufficient mechanism for an improvement in SME financial performance to occur.

**Summary of Findings**

The study findings demonstrate that: (i) proactive CSPs (EconPs, SocPs and EnvPs) fully mediate the relationship between the three specific capabilities (shared vision, stakeholder management and strategic proactivity) and financial performance in SMEs; (ii) SMEs that are able to deploy all three capabilities effectively are more likely to adopt proactive CSPs; and (iii) proactive CSPs can, in turn, lead to improvement in SME financial performance. However, notwithstanding that all three capabilities exercise direct effects on the adoption of proactive CSPs, their importance in relation to each dimension of proactive CSPs has been shown to be significantly different. First, both stakeholder management and strategic proactivity capabilities drive the adoption of proactive EconPs by SMEs. Second, a stakeholder management capability drives the adoption of proactive SocPs. Lastly, a shared vision capability drives the adoption of proactive EnvPs. However, in order for SMEs to derive maximum benefit from all three capabilities they must be used in an integrated way to support the concurrent adoption of proactive CSPs.
Of the three dimensions of proactive CSPs, proactive EconPs has been shown to be of the most importance because of a direct influence on SME financial performance. However, the study findings show that the concurrent adoption of proactive SocPs and EnvPs with EconPs can deliver synergistic benefits likely to bolster competitive advantage and long-term financial success.

**IMPLICATIONS**

**Theoretical Implications**

The present study has important theoretical implications for sustainability research in the SME context. RBV theory assumes that a firm’s distinctive resources and capabilities provide the foundation for value-creating strategies, and thus are the fundamental drivers of superior performance and competitive advantage (Barney, 1986a, 1991; Corner, 1991; Dierickx & Cool, 1989; Prahalad & Hamel, 1990; Wernerfelt, 1984). In the sustainability literature to date, however, it has been assumed that a lack of slack resources prevents SMEs from adopting and successfully implementing proactive CSPs, and that such practices may threaten their financial performance (Bansal, 2005; Brammer & Millington, 2006; Gadenne *et al.* 2008; Rutherfoord *et al.*, 2000; Simpson *et al.*, 2004). The findings of this study invite researchers to reconsider and question this traditional resource-based assumption.

The findings of this study also show that SMEs which engage in proactive CSPs have a set of distinctive capabilities in place – shared vision, stakeholder management and strategic proactivity – that allows them to shape their business
environment and draw resources from it. Significantly, the simultaneous positive influence of these capabilities and the control variable of Size on proactive CSPs further suggests that size, a common proxy for organizational resources, is a relevant but not deterministic factor for the adoption of proactive CSPs in SMEs. For SMEs, these capabilities can compensate to some degree for the lack of slack resources (Aragon-Correa et al., 2008; Sharma et al., 2007).

The study findings support the RBV notion that resources on their own are unable to drive the competitive strategy development directly, and that it is integration and coordination of multiple resources to create capability which drives strategy (Amit & Schoemaker, 1993; Barney, 1991; Grant, 1991; Makadok, 2001; Penrose, 1959; Peteraf, 1993). The findings of a positive direct influence for proactive CSPs on SME financial performance, and perhaps more importantly that such practices play a necessary and sufficient role in fully mediating the relationship between the three linked capabilities and SME financial performance, are in line with the RBV notion that the adoption of strategies that make the most effective deployment of a firm’s capabilities is essential to a firm’s financial performance (Grant, 1991). It is also worth noting that empirical RBV-based research on proactive CSPs in SMEs has focused mainly to date, on the environmental dimension of practice (e.g. Aragon-Correa et al. 2008; Flannery & Mary, 2000; Sharma et al., 2007; Lepoutre, 2008); therefore, it has not taken fully into account, if at all, the interrelationship between proactive EconPs, SocPs and EnvPs and consequent effects on SME performance. Hence, it could be said that the findings of this study provide the first empirical evidence demonstrating a link
between integrated and holistic approach to the adoption of proactive CSPs and SME financial performance.

The study findings also contribute to sustainability research in the SME context by providing new empirical insights into the adoption of proactive CSPs by SMEs. In particular, the theoretical models developed in this study contribute to a more comprehensive understanding of how important the interaction between proactive EconPs, SocPs and EnvPs is in enabling SMEs to make the best use of the specified three capabilities – shared vision, stakeholder management and strategic proactivity – and so achieve improvement in financial performance. For example, the findings suggest that:

- Of the three dimensions of proactive CSPs, proactive EconPs are more important to an improvement in SME financial performance than proactive SocPs and proactive EnvPs;
- The adoption of proactive EconPs requires stakeholder management and strategic proactivity capabilities, the adoption of proactive SocPs requires a stakeholder management capability, and the adoption of proactive EnvPs requires a strategic proactivity capability;
- A shared vision capability indirectly influences the adoption of proactive EconPs and SocPs, a stakeholder management capability indirectly influences the adoption of proactive EnvPs, and a strategic proactivity capability indirectly influences the adoption of proactive SocPs and EnvPs.
These findings reveal that the interaction between each of the three dimensions of proactive CSPs is vital for SMEs to deploy all three capabilities for proactive sustainability initiatives successfully, and therefore lay a foundation upon which further research might build. Importantly, the findings also reveal that proactive SocPs and EnvPs have no direct influence on SME financial performance. This may, perhaps, reflect the fact that there are significant costs in implementing such practices, and if costs are greater than financial returns obtained, then SMEs with limited resources are unlikely to adopt such practices or obtain superior financial performance from their sustainability strategizing efforts (Besser, 1999; Bianchi & Noci, 1998; Brammer & Millington, 2006; Lepoutre & Heene, 2006). However, the indirect positive influences of such practices on SME financial performance found in this study indicates that the adoption of both proactive SocPs and EnvPs are necessary for reinforcing proactive EconPs and so making long-term financial success more likely for SMEs. At the centre of this argument is the idea that, in order to enhance their EconPs and maximize the financial benefits, SMEs need to identify and adopt those SocPs and EnvPs for which they are best equipped. While the idea of gaining superior financial performance from proactive CSPs may be not new, its application to SMEs, particularly in relation to how to adopt proactive EconPs, SocPs and EnvPs simultaneously in a way that contributes to SME financial success, is in infancy. The theoretical models developed in this study, therefore, provide ideal starting points for future research.

**Practical Implications**

For SME owner-managers, this study sheds light on the idea that proactive CSPs can be a strategic tool for a new era of competitive advantage in SMEs by
providing empirical evidence that supports the adoption of proactive CSPs. The direct positive influence of proactive CSPs on SME financial performance reported in this study should help address concerns often expressed by skeptics about the tangible financial benefits generated by proactive CSPs. The study findings contain value for SME owner-managers of firms facing resource constraints on strategy formulation and thereby the possibility of losing a competitive edge in the marketplace. Firstly, the findings suggest that SMEs aiming to adopt proactive CSPs should give resource priority to the development of shared vision, stakeholder management and strategic proactivity capabilities. A vision of organizational goals shared widely in the firm is essential for a sustainability culture to be realized and new ideas and skills for developing proactive CSPs to be generated. The experiences and knowledge of primary stakeholders (particularly customers, suppliers and employees) are valuable resources to exploit as sources for ideas about improving an SME’s sustainability practices. Actively managing opportunities associated with changing societal expectations about sustainability through the adoption of proactive CSPs can enable SMEs to take rapid advantage of new niche markets for sustainable innovative products.

The findings show that by leveraging these three capabilities to engage in proactive CSPs, across the economic, social and environmental dimensions of practices, superior financial performance can be achieved by SMEs. In so leveraging, SME owner-managers need to focus more on the adoption of proactive EconPs, as it is the only practice dimension shown in this study to have a direct positive influence on financial performance improvement. At the same
time, based on the study findings, the adoption of the particular set of proactive SocPs and EnvPs for which an SME is best equipped is strongly recommended in order to strengthen the returns from proactive EconPs and long-term financial success.

Last but not the least, government policy-makers and agencies have a huge role to play recognizing the implications of proactive CSPs for SMEs. In particular, the results of this study highlight the need for the provision of: appropriate support and training to SMEs to assist in the development of those capabilities that underpin proactive CSPs; as well as incentives that foster an environment where SMEs can learn from each other in order to innovate and develop proactive CSPs.

**LIMITATIONS**

Although this study has raised many important and worthwhile issues, it has a number of limitations as well. These limitations can be categorized in terms of the study sample and its method.

**Sample Limitations**

The sample in this study consisted of Australian SMEs in the machinery and equipment manufacturing industry sector. As the sample was drawn from one particular type of sector in a single country, the study results may reflect its specific characteristics and may not therefore be generalizable to Australian SMEs in other industry sectors or to SMEs in other economies. In addition, it must be noted that although this study attempted to minimize differences between SMEs in terms of a single industry sector and country focus, the qualitative comments
provided by some respondents revealed that the sampled SMEs were, in fact, still quite heterogeneous in their characteristics. The findings of study, therefore, must be interpreted in the light of the heterogeneity within the sampled SME group.

Another limitation stems from the study sample size. In the two surveys conducted for this study, a total of 171 from a possible 1,388 firms completed both Time 1 and time 2 questionnaires, thus providing a 12.3 per cent response rate. This rate was within the acceptable range of response rates for SME surveys (see Petts et al., 1999), and it resulted in sufficient data for testing the hypothesized models in the SEM analysis (Schumacker & Lomax, 2004). Nevertheless, it may be noted that a larger sample size increases the reliability and stability of parameter estimates, and thus lowers the likely error in generalizing results from sample to population (Saunders, Lewis & Thornhill, 2000).

**Method Limitations**

The findings in this study are limited by the self-report nature of the data collection process. Although the perceptions of CEO, MD, GM or senior managers are widely accepted as accurate reflections of corporate strategy given their holistic and deep knowledge about the firms (Shortell & Zajac, 1990), the subjective and potentially idiosyncratic nature of their reporting of their firm’s capabilities, sustainable business practices and financial performance must be acknowledged. This subjectivity therefore should be borne in mind when interpreting the study findings.
It is also worth noting that SEM is not an analytical method for discovering causes, but rather is a statistical method applied to a structural model formulated by the researcher on the basis of prior theoretical considerations (Pedhazur, 1982). One means of confirming the direction of causality between the model constructs is to conduct longitudinal research (MacCallum & Austin, 2000). Although the study used a longitudinal survey design, and causal patterns may be inferred from consistent and repeated testing of the hypothesized models with three datasets (T1T2, T1T1 and T2T2), the six month time gap in data collection is likely to have been too short to establish proof of causality. Furthermore, although the proposed hypothesized models fitted the sampled data well, there may also be other models that fit the data at or near to the same degree. This suggests that a finding of good fit to the hypothesized models, in fact, should not be taken to imply correctness or truth, but only plausibility (MacCallum & Austin, 2000). Coupled with the fact that other unknown intervening variables could have lead to an error in the causality analysis, the interpretation of the causal relationships analyzed in this study therefore needs to be done with caution.

FUTURE RESEARCH DIRECTIONS

A number of directions for future research are possible. Firstly, similar studies can be conducted, with a larger sample size, in other industry sectors and countries to test this study’s findings and thus determine the broader generalizability of the integrative resource-based strategy model of proactive CSPs in SMEs. Secondly, future researchers might employ a quasi-experimental, longitudinal research design to evaluate the causal relations between organizational capabilities,
proactive CSPs, and a firm’s financial performance over a longer period to reveal more time-related effects. Thirdly, model variables should be linked to additional sources of data that do not rely on self-report measures, and which include multiple informants and case studies. Such multiple sources would allow for the multi-level insights into the development of capabilities and competitive strategies that single-source surveys cannot reveal.

Fourthly, the use of different methodologies should also be considered. Despite incorporating a small qualitative component, the approach taken in this research was mainly quantitative. In-depth qualitative methods would enable the gathering of rich data that may illuminate mechanisms underlying the significant paths in the structural equation models. Finally, future research comparing large firms and SMEs would deepen understanding of whether SMEs are at a resource disadvantage but not a capability advantage when it comes to the adoption of sustainable business practices across the economic, social and environmental dimensions. Such an outcome would be of high value to individual SME owner-managers and government policy makers alike.

**OVERALL CONCLUSIONS**

During the last few decades, RBV-based business research has evolved from a generic rationale for the strategic importance of a firm’s resources to the identification of specific capabilities that underpin competitive strategies and generate superior financial performance. Recently, sustainability scholars have attempted to demonstrate a connection between the adoption of proactive CSPs
and a competitive advantage that leads to above-average returns to the firm. The present study, which adds to this research by modeling and empirically testing proactive CSPs as a mediator of the relationship between capabilities identified as contributors to sustainability and financial performance in SMEs, presents the following key findings:

- Proactive CSPs, and importantly the interaction that occurs between its constituent forms of EconPs, SocPs and EnvPs, represent a necessary and sufficient mechanism through which shared vision, stakeholder management and strategic proactivity capabilities have a positive influence on SME financial performance;

- SMEs which deploy all three capabilities are more likely to engage in proactive CSPs across its constituent forms of EconPs, SocPs and EnvPs;

- The adoption of each dimension of proactive CSPs is influenced differently by each capability: EconPs are directly influenced by stakeholder management and strategic proactivity; SocPs are directly influenced only by stakeholder management; and EnvPs are directly influenced by shared vision;

- Each dimension of proactive CSPs influences financial performance differentially: proactive EconPs have a direct positive influence on SME financial performance; proactive SocPs and EnvPs have an indirect influence via the interaction of the three dimensions of proactive CSPs.

In conclusion, the study contributes to a more comprehensive understanding of the adoption of proactive CSPs in the SME context. Its findings reveal that SMEs, even with limited and constrained resources, are able to adopt proactive CSPs
when the three capabilities of shared vision, stakeholder management and strategic proactivity have been developed and are used in tandem. Recognizing the importance of the interaction between proactive EconPs, SocPs and EnvPs is a critical factor in enabling SMEs to understand how to make best use of these capabilities and to achieve an improvement in financial performance. In particular, paying more attention to the adoption of proactive EconPs and choosing those proactive SocPs and proactive EnvPs that drive and support proactive EconPs, are of key importance to sustainable long-term financial success for SMEs.
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APPENDIX A:

SURVEY INSTRUMENT
Dear Participant,

We would like to invite your participation in the following research project titled ‘Proactive corporate sustainability practices (CSPs) and performance in small and medium enterprises (SMEs)’.

This research is being undertaken to fulfil the requirements of a Doctor of Philosophy under the auspices of the School of Management at the University of Tasmania. The research will be conducted by Miss Nuttaneeya Torugsa, a PhD candidate of the School of Management, and overseen by Dr Rob Hecker and Dr Wayne O’Donohue in the School.

The purpose of the project is to examine the ability of SMEs to adopt sustainable business practices, that go beyond minimum regulatory requirement, which may influence business financial performance. We are interested in your company’s long-term objectives, stakeholder management, and the extent to which your company voluntarily engages in sustainability practices (economic, social and environmental) to improve your company’s financial performance. We are not seeking any specific information which might be considered sensitive or commercial-in-confidence.

Your participation in the study would be extremely valuable. We believe that this study will enhance understanding of SME business practices and the difficulties SMEs face in today’s business environment, as well as provide guidance for SMEs wishing to become more innovative, efficient and competitive. It also has the potential to enhance community well-being, and promote the creation of sustainable communities. You can request a summary of the findings of this study upon its completion.

Your participation in the study involves completing two questionnaires at two points in time, 6 months apart. Please find attached the first questionnaire and consent form. The questionnaire should only take about 10-15 minutes to complete. The second questionnaire will be sent to you for your completion in November 2009.

Participation in this study is entirely voluntarily. You can decline to answer any questions, or can decline to participate at all. You are also free to withdraw from the study at anytime.

All participants are guaranteed confidentiality of their survey responses. Any information you provide will be used solely for the purpose of this research. The completed questionnaires will be viewed only by the researcher, and will be analysed and reported in statistical terms. Please be assured that you (and your company) will not be identified by name in the doctorate thesis or any publications arising from this research.
All questionnaires will be kept securely in locked filing cabinets and on a password-protected computer in the University of Tasmania Faculty of Business building for a period of five years after the completion of the project, at which time all information will be destroyed.

This study has been approved by the Tasmanian Social Sciences Human Research Ethics Committee (HREC), in which the HREC project number is H10585. If you have any concerns of an ethical nature or complaints about the manner in which the study is conducted, please contact the Executive Officer of the HREC (Tasmania) Network on (03) 6226 7479 or email human.ethics@utas.edu.au.

If you have any other questions about this research, please direct them to Dr Rob Hecker or Dr Wayne O’Donohue at the contact details provided below.

Thank you for taking the time to read this information sheet. If you are willing to participate in this study, please complete the attached consent form and questionnaire, and return them to us in the stamp-addressed envelope provided within 14 days.

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CONSENT FORM

Project Title: ‘Proactive Corporate Sustainability Practices (CSPs) and Performance in Small and Medium Enterprises (SMEs)’.

1. I have read and understood the ‘Information Sheet’ for this study.
2. The nature of the study has been explained to me.
3. I understand that the study involves completing two questionnaires at two points in time, 6 months apart.
4. I understand that all research data will be securely stored in the University of Tasmania for a period of five years after the completion of the project. At the end of five years, all data will be destroyed.
5. I have had all of my questions answered to my satisfaction.
6. I agree that research data gathered for the study may be published. However, I (and my company) will not be identified by name in any publications arising from this research.
7. I agree to participate in this research study and understand that I may withdraw at any time without any effect.

Name of participant: ……………………………………………………………………
Signature of participant…………………………………………Date…………………
Name of company: ……………………………………………………………………
(Please print)
Email address: …………………………………………………………………………

Please return a signed copy of this form in the reply paid envelope provided. Thank you
SURVEY OF SUSTAINABILITY PRACTICES IN SMEs 2009 – STAGE 1

The outcomes of this research will provide valuable guidance for SMEs to become more innovative, efficient and competitive, as well as promote the creation of sustainable communities. Summary information on the outcomes of the research will be made available to government, industry and economic development agencies at both the state and federal level. The project therefore has the potential to help improve your company’s profitability and growth, particularly under the current economic circumstances.

For this research to be successful, we are seeking your support and help in completing TWO questionnaires at two points in time (six months apart). Please be assured that the data collected will be held in strict confidence. A summary of the research findings will be made available to you on request.

If you are willingly to take part in this research, please complete the attached consent form and this questionnaire, and return them to us in the reply paid envelope provided within 14 days. Also, please ensure that you include your email address where requested in order to allow us to be able to contact you regarding completion of the Stage 2 survey questionnaire. Thank you.

1. Background information – Please tick the appropriate box or fill in the blank.

| Email address (for Stage 2 survey completion): ________________________________ |
| Current position: □ CEO □ Managing Director □ General Manager □ Other (specify)____ |
| Are you the Owner of the business?: □ Yes □ No |
| Number of people employed on a regular basis: □ 0-9 □ 10-19 □ 20-49 □ 50-99 □ 100-149 □ 150-199 |
| Annual turnover: □ Less than $0.5M □ $0.5M - Less than $1M □ $1M - Less than $5M |
| □ $5M - Less than $10M □ $10M - Less than $30M □ $30M plus |

2. Please tick the appropriate box below for the following statements as each relates to your company.

<table>
<thead>
<tr>
<th>Item</th>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Slightly disagree</th>
<th>Slightly agree</th>
<th>Agree</th>
<th>Strongly agree</th>
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<tbody>
<tr>
<td>a. The objectives of this company are very well-known to everybody working here</td>
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<tr>
<td>b. Everybody working in this company influences the way to work and the objectives of the company</td>
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<td>c. Everybody in this company freely contributes his/her points of view about how to run it smoothly</td>
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<tr>
<td>d. Our products are many and very different. We are always looking for new opportunities (i.e. in very different areas in the manufacturing industry).</td>
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Overall please indicate how long your company has engaged in the above Economic Sustainability Practices:

- 1 year
- 2 years
- 3 years
- 4 years
- 5 years
- 6 years
- 7 years
- 8 years
- 9 years plus

Please indicate the extent of contribution of the above Economic Sustainability Practices to your company’s financial performance (measured by return on assets, net profits, cash flows, and wage and salary expenses) in the period 1st November 2008 – 30th April 2009.

- Very low contribution
- Low contribution
- Moderate contribution
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7. Please indicate the extent to which your company voluntarily engages in each Environmental Sustainability Practice compared to “similar firms” in your industry sector.

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Please indicate the extent of contribution of the above Environmental Sustainability Practices to your company’s financial performance (measured by return on assets, net profits, cash flows, and wage and salary expenses) in the period 1st November 2008 – 30th April 2009.

- Very low contribution
- Low contribution
- Moderate contribution
- High contribution
- Very high contribution
8. Please tick the appropriate box below to indicate your company’s financial performance in the period 1st November 2008 – 30th April 2009, compared to in the period 1st May – 31st October 2008.

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10. Please tick the appropriate box below to indicate your company’s financial performance compared to “similar firms” in your industry sector in the period 1st November 2008 – 30th April 2009.

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11. Please provide any comments that you wish to add relating to your company’s financial performance as well as the difficulties your company faces in implementing sustainable business practices in today’s business environment (please add additional pages if space below is insufficient)

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Thank you for participating in the Stage 1 survey.

We look forward to your support again for the Stage 2 survey.
SURVEY OF SUSTAINABILITY PRACTICES IN SMEs 2009 – STAGE 2

Your company’s participation in this Stage 2 survey is extremely important to make the outcome of this research valid and reliable to be used as guidance to help create the longevity of the profitability and growth of SMEs as well as promote the creation of sustainable communities.

Please be assured that the data collected will be held in strict confidence, and you (and your company) will not be identified by name in any publications arising from this research. A summary of the research findings will be made available to you on request.

If you wish to participate in this Time 2 survey, please complete the form, and returned it to us in the reply paid envelope provided. Thank you.

1. **Background information – Please tick the appropriate box below**

| Name of company: ________________________________ |
| Email address: __________________________________ |

Did you complete the previous Stage 1 survey form?:  
☐ Yes  ☐ No

Current position:  
☐ CEO  ☐ Managing Director  ☐ General Manager  ☐ Other (specify)________

Are you the Owner of the business?:  
☐ Yes  ☐ No

2. **Please tick the appropriate box below for the following statements as each relates to your company.**

<table>
<thead>
<tr>
<th>Item</th>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Slightly disagree</th>
<th>Slightly agree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
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<tr>
<td>a. The objectives of this company are very well-known to everybody working here</td>
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</tr>
<tr>
<td>b. Everybody working in this company influences the way to work and the objectives of the company</td>
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<tr>
<td>c. Everybody in this company freely contributes his/her points of view about how to run it smoothly</td>
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<tr>
<td>d. Our products are many and very different. We are always looking for new opportunities (i.e. in very different areas in the manufacturing industry).</td>
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<tr>
<td>c. Liquidity (cash flows and/or access to funds)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. Total wage and salary expenses</td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

10. Please tick the appropriate box below to indicate your company’s performance compared to “similar firms” in your industry’s sector in the period 1st May – 31st October 2009.

<table>
<thead>
<tr>
<th>Financial indicator</th>
<th>Much worse</th>
<th>Worse</th>
<th>Same</th>
<th>Better</th>
<th>Much better</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Return on assets (earnings generated from invested assets)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. Net profits to sales</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. Liquidity (cash flows and/or access to funds)</td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. Total wage and salary expenses</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

11. Please provide any comments that you wish to add relating to your company’s financial performance as well as the difficulties your company faces in implementing sustainable business practices in today’s business environment.

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Thank you for completing our Stage 2 survey. A summary of the research findings will be sent to you via email when the project is completed in December 2010
APPENDIX B:

RESULTS OF ADDITIONAL TESTS
Model I

\[ \chi^2(3) = 2.64 \ (p = 0.45), \ RMSEA = 0.00, \ SRMR = 0.019, \ CFI = 1.00, \ NNFI = 1.00 \]

*\(p < 0.05; \) Note: the significant direct paths are shown in the red line.

Model II

\[ \chi^2(20) = 25.58 \ (p = 0.18), \ RMSEA = 0.041, \ SRMR = 0.021, \ CFI = 0.99, \ NNFI = 0.98 \]

*\(p < 0.05; \) Note: the significant direct paths are shown in the red line.
Model III

\[ \chi^2(11) = 18.49 \ (p = 0.07), \text{RMSEA} = 0.063, \text{SRMR} = 0.036, \text{CFI} = 0.98, \text{NNFI} = 0.95 \]

*p < 0.05; Note: the significant direct paths are shown in the red line.