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Linking Uses of Management Control Systems with Strategic Capabilities and Business Level Strategies for Organizational Performance:

Evidence from the Sri Lankan Textile and Apparel Industry

Nirosha Dilhani Kapu Arachchilage

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Doctor of Philosophy

Linking Uses of Management Control Systems with Strategic Capabilities and Business Level Strategies for Organizational Performance:

Evidence from the Sri Lankan Textile and Apparel Industry

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B Sc Accountancy (Special); MBA; SEDA; ACMA

A thesis submitted in fulfillment of the requirements for the award of the degree of
Doctor of Philosophy

School of Accounting, Finance and Economics
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USE OF THESIS

The Use of Thesis statement is not included in this version of the thesis.

ABSTRACT

This research investigates how the uses of Management Control Systems (MCS), namely, diagnostic use and interactive use, as moderating variables, influence the relationship between business (competitive) strategies (which are determined by strategic capabilities) and organizational performance. Simons' levers of control model, Porter's theory of generic competitive strategy and the Resource Based View (RBV) of strategy have been considered as the underpinning theories and models of the study in developing the theoretical framework and hypotheses. The theoretical framework consists of two strategic capabilities (low cost competency and uniqueness competency), two generic business strategies (cost leadership and differentiation), two uses of MCS (diagnostic and interactive) and organizational performance as the study variables leading to twelve hypotheses based upon the extant literature. In this quantitative research, five hypotheses are developed as exploratory while the other seven hypotheses are confirmatory.

After considering current challenges and issues, the Sri Lankan Textile and Apparel (T&A) Industry, which is the largest foreign exchange earner in the country, was selected to collect data expecting that a study conducted in a less developed country will bring unique findings due to the cultural political economy of management accounting controls and strategies. A questionnaire survey was conducted as the mode of data collection among 833 enterprises which had been registered under the Department of Registrar of Companies, Sri Lanka by 2005. A total of 117 responses was received after administering the questionnaire survey, corresponding to a response rate of 14.04 per cent.

In this study, Exploratory Factor Analysis (EFA) was mainly used for preliminary analyses to summarize data by grouping together those variables that are correlated. Further, Confirmatory Factor Analysis (CFA) was used to verify the overall goodness of fit of the measurement models which were developed using preconceived theories. Regression analyses (both simple and multiple) were used to examine study hypotheses while particularly using hierarchical regression analysis to examine the moderator effects created by uses of MCS to ascertain whether diagnostic use and interactive use of MCS

significantly affect the relationship between business strategies and organizational performance.

Consequently, it is found that the moderating effects created by two uses of MCS are significant and particularly, the moderating effect created by the diagnostic use of MCS is more significant when the cost leadership strategy is used for performance, while the interactive use moderates a noteworthy effect when the business strategy is differentiation. Through this research, it is also confirmed that strategic capabilities act as major determinants of business strategies and as important drivers of organizational performance whereas business level strategies also act as key determinants of organizational performance. However, Porter's proposition on mutual exclusiveness of business strategies for better performance is not supported in this study.

The results from this study bring important implications to both academic literature and management practice. As this is the first study conducted in Sri Lanka, integrating the role of MCS in influencing the relationship between business strategies and organizational performance, findings of this study are important for managers of Sri Lankan T&A sector organizations, in designing, shaping, and re-engineering uses of MCS, business strategies and strategic capabilities to enhance organizational performance. Findings of this study are also useful to academia as the results only partially confirm existing knowledge on the relationships among study variables, while challenging certain aspects of the extant literature.

DECLARATION

I certify that this thesis does not, to the best of my knowledge and belief:

(i) incorporate without acknowledgement any material previously submitted for a degree
     or diploma in any institution of higher education;

(ii) contain any material previously published or written by another person except where
     due reference is made in the text; or

(iii) contain any defamatory material.

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Nirosha Dilhani Kapu Arachchilage

12/07/2011

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CHAPTER 1

INTRODUCTION

1.1 Decision Making Context and Motivation for the Study

The past two decades have witnessed a considerable change in managerial accounting practice (Ittner and Larcker, 2001). From its traditional emphasis on financially oriented decision analysis and budgetary control, managerial accounting has evolved to encompass a more strategic approach in order to enhance value created for organizational stakeholders (Henri, 2005; Ittner and Larcker, 2001). Modern strategic performance management systems, such as the Balanced Scorecard (BSC) developed by Kaplan and Norton (1992), place great emphasis on designing and using Management Control Systems (MCS) as a way of reinforcing and supporting the strategies adopted and capabilities required by organizations. Evidence provided by Kaplan and Norton (2001) showed several organizations achieving performance breakthroughs by implementing and using MCS in congruence with organizational strategies and capabilities. According to Kaplan and Norton (2001), the magnitude and speed of such performance results indicates that companies' successes are not only due to capabilities developed and the strategies adopted by companies but also due to proper design and use of MCS.

A similar evolution has occurred not only in practice, but also in managerial accounting research as empirical studies of managerial accounting have taken a more strategic approach, combining elements of managerial accounting, strategy and organizational performance for different organizational contexts (Ittner and Larcker, 2001; Tucker et al, 2009). The landmark paper by Langfield-Smith (1997) consolidated and provided an "audit" or "snapshot" of research based knowledge to this time through a review and critique of nine empirical studies undertaken up to 1992 and seven case studies undertaken up to 1995[1]. Langfield-Smith (1997) observed that much of the empirical

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[1] The empirical studies reviewed by Langfield-Smith (1997) were: Khandwalla, (1972); Miller and Friesen, (1982); Merchant, (1985); Govindarajan and Gupta, (1985); Simons, (1987); Govindarajan, (1988); Govindarajan and Fisher, (1990); Daniel & Retisperger, (1992); Daniel and Retisperger, (1992). The case studies reviewed were: Archer and Otley (1991); Roberts, (1990); Knight and Wilmott, (1993); Simons, (1990, 1991, 1994, 1995).

research in this area followed a contingency approach and involved a search for systematic relationships between specific elements of the MCS and the particular strategy of the organization. Case studies, on the other hand, tended to investigate the role of MCS in supporting and influencing the strategic processes within organizations (Langfield-Smith, 1997). In spite of the growing interest in the relationship between MCS, strategy related elements and organizational performance, the picture presented in the literature is found to be incomplete (Tucker et al, 2009). According to Tucker et al (2009), as at the mid-2000's the MCS-strategy-performance relationship remained largely unexplored, little documented or understood. Although gradually advancing, understanding of this particular field of knowledge is still relatively embryonic (Tucker et al, 2009). Specifically, the nature and extent to which MCS and strategy related elements interacted; the manner in which MCS might be implicated in the strategic process; the superficiality of research contexts; and untested assumptions upon which extant knowledge was predicated have been identified by Langfield-Smith (1997) and Tucker et al (2009) as the limitations of research being carried out in this field. Thus a new comprehensive study is justified to better understand the relationships available among management control systems, strategy related elements and organizational performance.

Especially, Tucker et al (2009) state researchers have the possibility of researching either on the design or on the use of MCS. For the purpose of this research, use of MCS has been selected rather than the design. As per the extant literature MCS are dominantly subject to two types of use by management, namely diagnostic use of MCS and interactive use of MCS (Henri, 2005; Simons, 1995).[2] These two types of uses determine the way that managers use their control systems to monitor organizational performance. More recent researchers such as Chenhall (1997), Simons (1995), Abernethy and Brownell (1999) concluded in their research that studies which attempt to understand the relationship between MCS and strategy should not so much focus on the extent of MCS

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[2] Though Simons (1995) posits four interrelated control systems: beliefs (e.g. mission statement), boundary (e.g. code of conduct), diagnostic (e.g. budgets) and interactive (e.g. management involvement) systems in his levers of control (LOC) framework, only two levers namely diagnostic and interactive are chosen, since the current study concentrates on uses of MCS. According to researchers who have conducted studies in this field (e.g. Abernethy and Brownell, 1999; Chapman, 1997; Henri, 2005) MCS can be used either diagnostically or interactively.

use, but instead on the manner in which management uses MCS. On these grounds, the current research examines influence made by diagnostic and interactive uses of MCS.

The extant literature suggests that uses of MCS should link properly with strategy related elements for better organizational performance (Langfield-Smith, 1997; Henri, 2005; Tucker et al, 2009). As a strategy related element strategic capabilities determine the adequacy and suitability of resources and competencies of an organization for it to survive and prosper (Johnson, Scholes and Whittington, 2005). Accordingly, strategic capabilities include not only the resources but also the processes through which an organization deploys its resources effectively to ensure organizational performance (Kogut and Zander, 1992). The concept of strategic capabilities has gained considerable attention in the Resource Based View (RBV) of the firm which has become a very influential framework and one of the standard theories in the field of strategy though it is neglected by most of the management accounting researchers (Henri, 2005; Tucker et al, 2009). RBV has established the view that strategic capabilities of organizations are the major determinants of business (competitive) strategies which are formulated and implemented to accomplish organizational performance. Furthermore, several researchers and authors have pointed out that the findings provided by a limited number of researchers who investigated the effects that uses of MCS create on strategic capabilities and business strategies which contribute towards organizational performance remain ambiguous and contradictory (e.g. Abernethy and Brownwell, 1999; Chapman, 1997; Chenhall, 2003; Ittner et al, 2003; Langfield-Smith, 1997). Consequently, the conduct of a study to explore the effects that the two uses of MCS create on the relationship between strategy related elements (strategic capabilities and business strategies) and organizational performance is potentially of paramount importance.

However, it is also important to note that the nature of relationships available among MCS, strategic capability, strategy and organizational performance may be contingent upon the organizational context. According to Wickramasinghe and Hopper (2005) only a limited amount of research has been done in the area of MCS and strategy by collecting data from organizations which are operating in Less Developed Countries (LDCs). The

findings of research conducted in LDCs may vary considerably from the findings of research conducted in developed countries due to cultural political economy of management accounting controls and strategies (Wickramasinghe and Hopper, 2005). Thus, selecting a LDC country like Sri Lanka for the proposed study will enhance the significance of the expected research. The current study will be the first empirical research conducted based on data collected from Sri Lanka exploring relationships among uses of MCS, strategic capabilities, competitive strategies and organizational performance.

As far as the Sri Lankan economy is concerned the Textile and Apparel (T&A) industry plays a pivotal role. By 1992, the T&A industry had become the largest foreign exchange earner in the country hence overtaking the tea industry and by 2004, Sri Lanka's T&A sector accounted for 6 per cent of GDP, 39 per cent of industrial production, 33 per cent of manufacturing employment, 52 per cent of total export earnings and 67 percent of industrial exports (Kapuge and Smith, 2007; CBSL, 2005). According to Knutsen (2006) the T&A industry has been the first manufacturing industry in Sri Lanka to take on a global dimension and is the most geographically dispersed of all industries across the country. In this context, the significance of the T&A industry in Sri Lankan economy is apparent and thus it is being selected as the relevant industry for the present study.

However, Knutsen (2006, 2007) pointed out that the Sri Lankan T&A industry is currently facing a number of challenges in the international market owing to three reasons:

(i) The abolition of quota trade available under the Multi-Fibre Arrangement (MFA) and the Agreement on Textile and Clothing (ATC)[3] with effect from January 1, 2005:

For instance, the abolition of quota restrictions with effect from January 1, 2005 by USA which accounts for about 60% of the Sri Lankan apparel industry's revenue has increased the level of competition over the Sri Lankan T&A industry. Although the quota system is

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[3] Subsequent to the formation of the World Trade Organization (WTO) in 1995, the MFA was replaced by the Agreement on Textile and Clothing (ATC).

generally considered as a trade barrier, it guaranteed small countries like Sri Lanka a certain share of the international market irrespective of productivity and product quality. As indicated in Table 1, the Sri Lankan apparel industry had benefited under the MFA/ATC because of the reasonably large quotas it received when compared to other apparel exporting countries in the region. The high quotas and a semi-skilled, cheap labour force, supported by tax incentives and concessions to foreign investors had made Sri Lanka an attractive country in which to invest. Thus, the abolition of MFA/ATC has considerably increased the risk of the Sri Lankan apparel industry.

Table 1.1: MFA/ATC Quotas for Apparels in 2004

Country	MFA/ATC quota in pieces	Population	Quota per head
China	1,172,909,666	1,200,000,000	0.98
India	304,816,667	919,000,000	0.33
Indonesia	131,359,583	200,410,000	0.66
Pakistan	172,811,750	128,856,000	1.34
Sri Lanka	41,608,417	18,500,000	2.20
Vietnam	54,651,000	67,568,000	0.80

Source: Sunila, A. A. (2006). The Impact of the Uruguay Round Negotiations on the Textile and Apparel Industry in Sri Lanka - The Regional Aspects. Doctor of Philosophy Thesis. Colombo: University of Colombo. p. 23.

(ii) Increasing regionalization of the garment industry and increasing trade intra-regionally:

Intra-region trade is becoming increasingly important in the US and Europe (e.g. increasing trade between North America and Latin America; growing business between countries in Eastern Europe and the European rim, i.e. countries such as Tunisia, Morocco and Turkey) and reduces the need for importing from other regions.

(c) Intense competition from Asian countries over the Sri Lankan T&A industry:

Sri Lanka faces stiff competition from other developing countries of South and South East Asia, such as India, Bangladesh, Pakistan, Indonesia, Cambodia, Laos and Vietnam mainly due to availability of cheap labour in those countries. China has also emerged as a dominant force in the global apparel industry with its massive supply capability and very low costs of production. In the higher value clothing segment, countries such as Malaysia, Korea, Singapore, Hong Kong, and Japan are also now serious competitors. According to Athukorala and Rajapatirana (2005), the cost of labour in Sri Lanka has significantly increased due to political instability in the country and increasing rate of inflation. As a result, the comparative advantage of the Sri Lankan T&A industry against other Asian countries is currently eroding.

In this backdrop, recent researchers after studying the competitiveness and other issues of Sri Lankan T&A industry have pinpointed that Sri Lanka cannot compete further on low labour costs alone (Kelegama and Epparachchi, 2005; Knutsen, 2006). Kelegama and Epparachchi (2005) commented that MCS used by managers of the apparel industry should take a more strategic outlook. Knutsen (2006, 2007) specifically emphasized the need for using MCS properly by managers to capitalize on existing competences of the industry to maintain and enhance business performance. However, those studies have not explained the relationships available among strategies, strategic capabilities, uses of management controls and organizational performance of Sri Lankan T&A industry on a scientific basis using empirical evidence.

In this context, this research documents a research project based on the contingency theory[4] for which the real motivating factors were growing interest in MCS-strategy-performance relationship in both managerial accounting practice and research; absence of adequate research being done in this nature in LDCs; and lack of emphasis given to strategic capabilities as a related variable in exploring relationships available among MCS, strategy and organizational performance.

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[4] Contingency theory assumes that relationships available among variables are influenced by the context in which they are applied. A contingency approach to MCS-strategy-performance related research therefore aims at identifying the best design and use of relevant variables in a given context.

1.2 Research Problem and Research Questions

The need for further investigation into MCS-strategy-performance relationship typically in a LDC like Sri Lanka has been highlighted in the previous section, providing scope for further research. Against this backdrop, this research aims to examine the problem of "how do the uses of MCS influence the relationship between business strategies (which are determined by strategic capabilities) and organizational performance". Figure 1.1 illustrates key concepts relating to the research problem of this study.

Figure 1.1: Basic Conceptual Framework
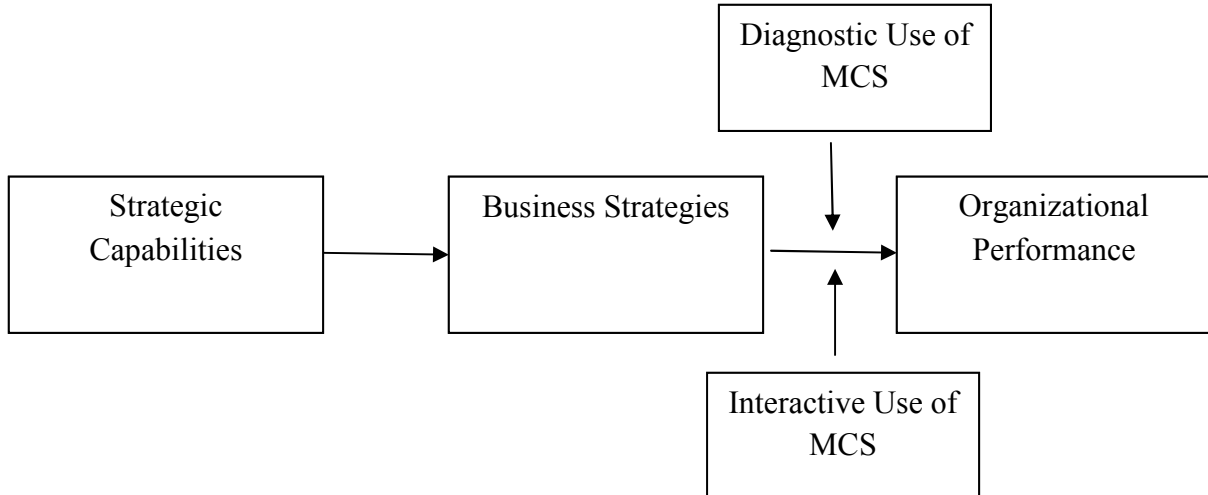
In order to address the aforesaid research problem, this research considers five research questions.

(i) How does the diagnostic use of MCS influence the relationship between business strategies and organizational performance?

Diagnostic use represents mechanistic controls used to track, review and support the achievement of predictable goals. Specifically, diagnostic use limits the role of MCS to a measurement and feedback tool (Henri, 2005). Following a traditional mechanistic notion of control, diagnostic use provides motivation and direction to achieve feedback signal to

adjust strategic processes for better organizational performance (Henri, 2005). Thus, examining moderating effects which will be created by diagnostic use of MCS over the relationship between business strategies and organizational performance is logical.

(ii) How does the interactive use of MCS influence the relationship between business strategies and organizational performance?

This research question will examine moderating effects created by interactive use of MCS over the relationship between business strategies and organizational performance. Interactive use is an organic control system supporting the emergence of communication processes and the mutual adjustment of organizational actors (Henri, 2005). According to Kaplan and Norton (2001) interactive use expands the role of MCS to a strategic management tool modifying the relationship between business level strategies and organizational performance.

(iii) To what degree do business level strategies contribute to organizational performance?

Business level strategies, also known as competitive strategies, are concerned with the basis on which a business unit might achieve competitive advantage in its market. Porter (1980, 1985) proposed in broader terms two different generic strategies by which an organization could achieve competitive advantage: cost leadership and differentiation. Further, Porter (1980, 1985) described the scope of competitive positioning as broad (industry-wide) or narrow (focus on a particular market segment or niche). For the source of competitive advantage, Porter (1980, 1985) described either a low cost strategy or a differentiation strategy, which he proposed must be adopted singularly for either a broad or narrow competitive positioning because these generic strategy approaches are mutually incompatible (justification for using Porter's model to recognize business strategies is provided in detail in the following chapter). As a consequence of this claim, Porter (1980, 1985) classified organizations as 'stuck in the middle' when they either adopt a combination of cost leadership strategy and differentiation strategy sources or fail to develop at least one strategy. Porter's performance prediction proposition therefore

warned of lower long-term financial performance being experienced by organizations that Porter would classify as 'stuck in the middle' (Sands, 2006). However, there are contradictory findings in relation Porter's proposition on single source of competitive strategy and organizational performance. In this milieu, examining the way business level strategies contribute to organizational performance is sensible.

(iv) To what degree do organizations' strategic capabilities contribute to organizational performance?

This research intends to examine the degree of influence created by strategic capabilities over organizational performance too. The RBV of strategy conceptualizes the ability of an organization to gain competitive advantage and superior performance through distinctive strategic capabilities (Johnson et al 2005). Strategic capabilities are the resources and competences of an organization needed for it to survive and prosper (Johnson et al 2005). Thus, it is rational to examine the degree of impact strategic capabilities make over organizational performance.

Low cost competency and uniqueness competency are recognized as core capabilities by researchers (Bridson and Mavondo, 2001; Mintzberg, Quinn and Voyer, 1995; Sands, 2006) who have researched on the relationship between strategic capabilities and organization performance as the competencies in cost efficiency and uniqueness provide value to both customers and organizations. Thus, in this study strategic capabilities of low cost competency and uniqueness competency have been recognized as the core capabilities which are also compatible with Porter's model of generic competitive strategies. Consequently, it is intended to examine the degree to which low cost competency and uniqueness competency impact organizational performance.

 (v) To what extent do strategic capabilities possessed by organizations determine business strategies?

The RBV of strategy has a fundamental assumption that strategic capabilities possessed by organizations are the major determinants of business strategies (Barney, 1997; Ireland et al, 2001). According to Sands (2006), each business strategy requires distinct strategic

capabilities. For instance Barney (1997, 2001) stated that if a firm possesses capabilities relating to economies of scale, learning curve economies, access to low-cost factors of production, and technological resources, the firm should pursue a cost leadership strategy. In the meantime, an alternative model in strategy namely Industrial Organization (I/O) model explains strategies as the determinants of capabilities. In the presence of two contradicting views, finding out the extent to which strategic capabilities used by organizations determine business strategies is an overriding requisite.

1.3 Research Objectives

Chenhall (2003) suggests that important links among elements of MCS, strategy related variables and performance represent an innovative stream of literature. In order to extend the current understanding of MCS-strategy-performance relationships, this research is expected to realize the following five objectives. The first objective of this study is to identify separate moderating effects created by each use of MCS (diagnostic use and interactive use) over the association between business strategies and organizational performance.

The second objective is to separately recognize the effect each business strategy has created on organizational performance. Porter's framework of generic strategies that has been used widely as a basis for numerous follow-up research studies, as well as studies to develop extensions to the original framework is used in this research as the key strategy typology. Accordingly cost leadership and differentiation (for both broad and narrow markets) strategies are considered as the main business strategies for this purpose. Many researchers have recognized business strategy as a key determinant of organizational success or failure (Chenhall, 2003; Floyd and Wooldridge, 1992; 1994; 1997; Henri, 2005; Sands, 2006). Thus, this objective will be very useful in recognizing the level of significance of business strategy as a determinant of organizational performance.

The third objective is to recognize the interrelationships between cost leadership and differentiation strategies. According to Porter's (1980, 1985) proposition organizations must adopt either the cost leadership strategy or the differentiation strategy to achieve a

sustainable competitive advantage and long-term above average performance. If this proposition is true relationship between cost leadership strategy and differentiation strategy has to be somewhat negatively correlated in well performing organizations. However, this proposition has been criticized by some researchers (Hill, 1988; Murray, 1988; Sands, 2006) in their empirical studies challenging the mutually incompatible nature of two generic strategies. Thus, this research objective will be very useful to check the accuracy of Porter's single source proposition for competitive advantage and long-term above average performance.

The next objective is to examine the nature of relationship available between strategic capabilities and business strategies (competitive strategies). While RBV assumes strategic capabilities as the key determinant of business strategies, the alternative I/O model assumes an inverse relationship. So, it is important to establish this objective in deciding the accuracy of assumptions of RBV. Further, Barney (1997, 2001), Henri (2005) and Sands (2006) indicate that low cost competency persuades organizations to use cost leadership strategy while uniqueness competency promotes differentiation strategy. Through this objective the accuracy of these proposed relationships can also be verified.

The final objective of this study is to find out the degree of influence that low cost competency and uniqueness competency as core strategic capabilities of organizations produce over organizational performance. The classification of strategic capabilities into low cost competency and uniqueness competency is justifiable in the present study, as it is compatible with Porter's generic strategy model which is selected as the focal strategy typology.

The following diagram (Figure 1.2) portrays an extended conceptual framework with the details added from research questions and objectives.

Figure 1.2: Extended Conceptual Framework
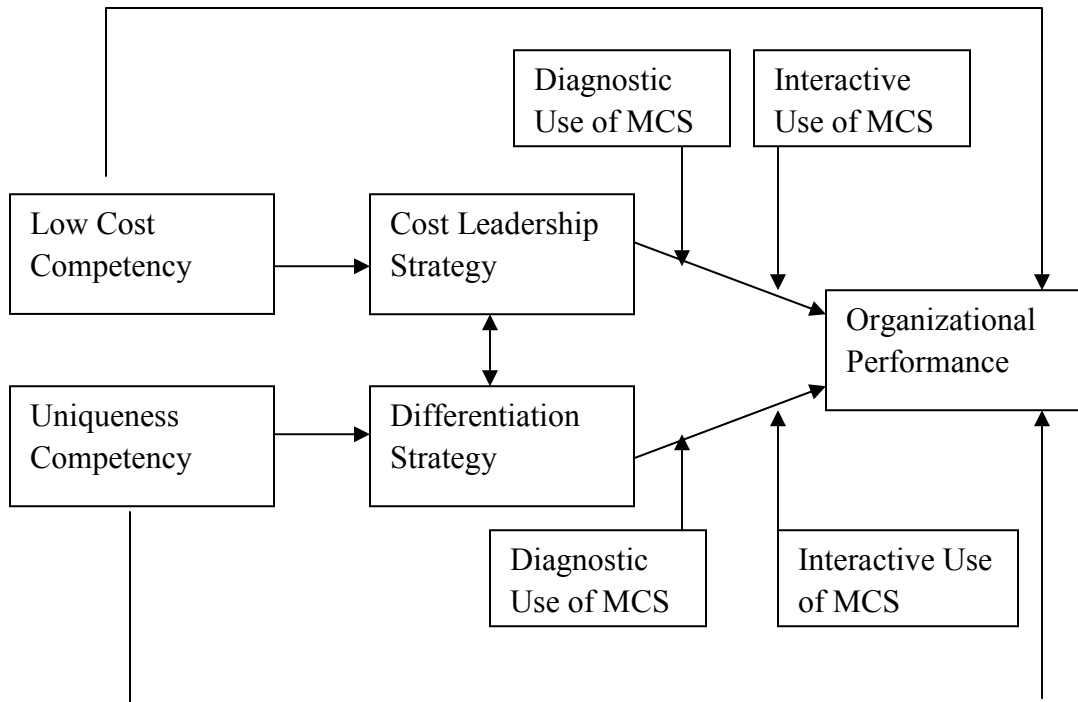
1.4 Significance of the Study

On successfully addressing the aforesaid research questions (section 1.2) to realize research objectives given (section 1.3), this research can bring important implications to both management practice and academic literature. As Epstein (2002) indicated, there is a need for managers to be aware of drivers of value in organizations and the causal relationships critical to drive that value. This study can reflect the importance of strategic capabilities as drivers of value and also the potential of two uses of PMS to influence the relationship between strategic capabilities and organizational performance. As far as the researcher knows, the research questions of the study have not been addressed in Sri Lankan context. Even though there are several published research papers available on MCS of Sri Lankan organizations (e.g. Bandaranayake, 2001; Wickramasinghe and Hopper, 2005) those papers have not integrated the role of MCS in influencing the relationship between business strategies and organizational performance. Hence, it is reasonable to expect that the findings of this study will be important for senior managers

of Sri Lankan T&A sector organizations, in designing; shaping; and reengineering MCS and their uses. Also the findings of this research will be useful to other executives besides Sri Lankan managers when designing and using PMS to enhance organizational performance.

It is noted that existing findings of empirical research that had been conducted to investigate MCS-Strategy-Performance relationships have been found to be 'fragmentary, providing limited knowledge about the forms of MCS that suit particular strategies and in fact, were incompatible and sometimes conflicting' (Langfield-Smith, 1997; Tucker et al, 2009). Hence, we might expect that the findings of this study will contribute to our knowledge by reducing the gaps apparent in the extant literature.

It is also hoped that the findings of this study would be useful to academia, since the findings can either confirm or challenge existing knowledge on the relationships among study variables. Indeed, there is a high possibility of challenging the existing knowledge through the findings of the study, since a greater percentage of the present body of knowledge is concentrated around the findings of studies which had been conducted in developed countries (Wickramasinghe and Hopper, 2005).

In addition, this study could also generate further research questions for future researchers to conduct their research studies in related fields.

1.5 Organisation of the Study

This chapter provided an introduction to the current study. It explains decision making context, motivation for the study, research problem & research questions, objectives of the study, significance and thesis organisation. The remainder of this dissertation is organised in the following manner (Figure 1.3).

Figure 1.3: Thesis Design

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┌─────────┐        ┌─────────────────────────┐
│         │        │       Chapter 2         │
│ Design  │        │   Literature Review     │
│         │        └───────────┬─────────────┘
│         │                    │
│         │        ┌───────────▼─────────────┐
│         │        │       Chapter 3         │
│         │        │ Theoretical Framework and│
│         │        │  Hypothesis Development  │
└─────────┘        └──────┬──────────┬───────┘
                          │          │
          ┌───────────────▼──┐   ┌──▼──────────────┐
┌─────────┐│    Chapter 4     │◄─►│    Chapter 5    │
│         ││    Research      │   │  Data Analysis  │
│ Analysis││   Methodology    │   │                 │
│         │└──────────────────┘   └─────────────────┘
│         │             │
└─────────┘             │
              ┌─────────▼──────────┐
              │     Chapter 6      │
              │ Conclusions, Limitations│
              │ and Recommendations for │
              │   Future Research  │
              └────────────────────┘
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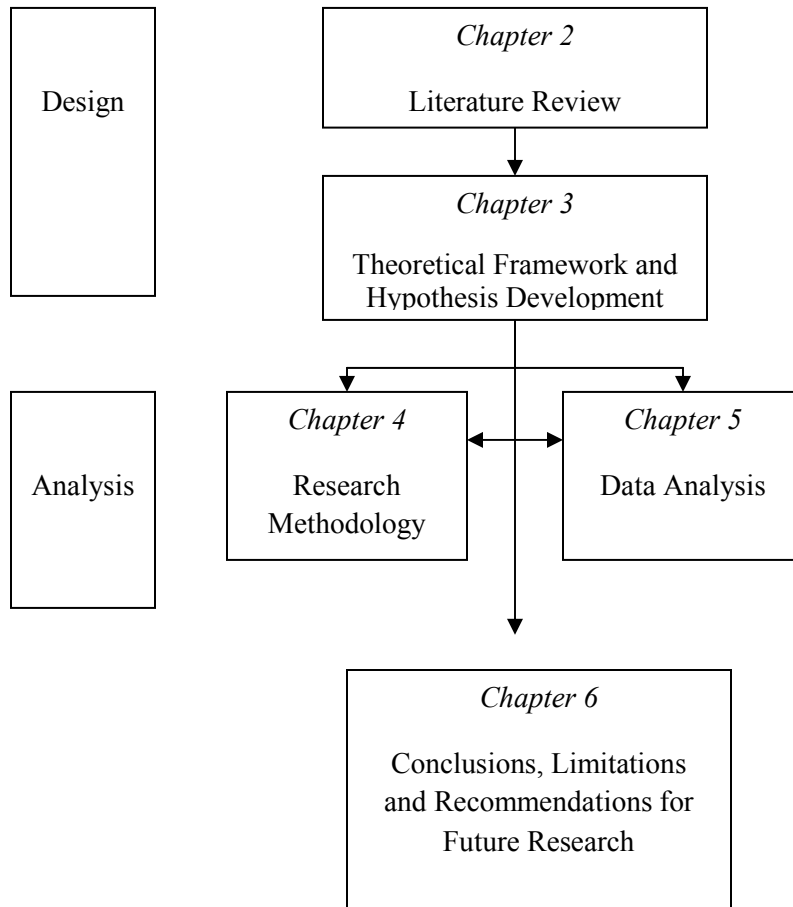
Chapter two reviews literature available, relating to key variables. Uses of MCS, low cost competency & uniqueness competency as strategic capabilities, cost leadership & differentiation as generic business strategies and organizational performance are recognized as the key variables of the study. Further, the importance of T&A industry to Sri Lankan economy and for world trade is explained in the chapter. More importantly, the summary of this available literature leads to the specification of research avenues available warranting investigation by this study.

In chapter three, the theoretical model within the contingency framework is developed. Relevant literature reviewed and discussions provided to support the hypothesised relationships among the variables, which are identified in chapter two.

Chapter four provides the rationale for the selection of a questionnaire survey for the study. Furthermore, this chapter provides a description of the pilot survey as well as development and administration of the survey. The sources of the measures selected to operationalize the variables and a justification for their choice are also discussed in this chapter. Further, the rationale for selecting statistical techniques for quantitative data analysis of the study is provided.

The results and discussions are provided in chapter five relating to quantitative data analysis of the study. The chapter provides the profiles of respondent organizations and their respondents, the results of preliminary analyses (correlation matrix, Bartlett's test of sphericity, KMO measure of sampling adequacy, reliability estimates and exploratory factor analysis), the confirmatory factor analysis and regression analyses.

Finally, chapter six discusses the overall findings of the study. Conclusions about the current research are compiled and comments are provided about the success of this study to realize research objectives detailed in this current chapter. The thesis concludes with a discussion of implications for future research and practice, and the limitations of the study.

CHAPTER 2

LITERATURE REVIEW

The core objective of this chapter is to review extant literature relating to key concepts of the study. In the first section of the chapter, alternative definitions available for Management Control Systems (MCS) have been recognized while highlighting potential avenues which will extend current understanding of the MCS-strategy-performance relationship. As the contingency approach is used in the current research, in the second section, it is emphasized that contingency based management accounting research has approached the study of MCS assuming that managers act with the intent to adapt their organizational controls to match with contextual or contingent variables in order to attain fit and enhance performance in organizations. In this section, business (competitive) strategy is recognized as a central contingency variable. The next section of the chapter focuses on two uses of MCS, namely diagnostic use and interactive use. After reviewing the literature, it is found that the two uses are complementary though they have distinct characteristics. In the fourth section, the concept of business (competitive) strategy is discussed and Porter's generic competitive strategy model (1980, 1985), with two propositions, is highlighted as the dominant strategy typology. Evaluation of Porter's model is conducted using the four criteria of Miller and Dess (1993). The following section portrays the Resource Based View (RBV) as a related theory while recognizing low cost competency and uniqueness competency as the core strategic capabilities for competitive advantage. In the sixth section of the chapter, the Textile and Apparel (T&A) sector of industry is emphasized as a talent intensive industry while explaining the importance of the industry to the Sri Lankan economy along with current challenges and issues. The subsequent section has recognized organizational performance as one of the most important constructs in accounting and management research. The Balanced Scorecard (BSC) developed by Kaplan and Norton (1992) is used as a relevant framework which indicates the significance of having multidimensionality in measuring organizational performance. An overview of the chapter is presented in the final section highlighting exciting research issues which warrant further investigation by the current study.

2.1 Management Control Systems (MCS)

In the extant literature MCS have been defined in various ways. Anthony (1965) stated that MCS are the processes by which managers assure that resources are obtained and used effectively and efficiently in the accomplishment of the organization's objectives. Simons (1995) viewed MCS essentially as means to successfully implement strategies and defined MCS as the formal information based routines and procedures managers use to maintain or alter patterns in organizational activities. MCS have also been defined in a generic manner as the systematic use of management accounting to achieve some goals, but also encompassing the use of other forms of controls such as personal or cultural controls (Chenhall, 2003). Chenhall (2003) notes that the terms Management Accounting (MA), Management Accounting Systems (MAS), and Management Control Systems (MCS) are sometimes used interchangeably.[5]

In the current research, Simons (1995) definition of MCS[6] is mainly considered and consequently assumes these control systems have the following features:

➢ MCS are primarliy concerned with formal routines and procedures such as plans, budgets, and market share monitoring systems.

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[5] Chenhall (2003) identified the terms used interchangeably in prior studies as MA, MAS and MCS. MA was referred to as collection of practices (such as budgeting or product costing). He described MAS as the systematic use of MA to achieve some goals and MCS as a broader term that encompasses MAS as well as other controls such as personal or clan controls.

[6] Simons (1995) in his book 'Levers of Control' defined MCS as the formal information based routines and procedures managers use to maintain or alter patterns in organizational activities. Simons' (1995) definition of MCS in 'Levers of control' framework is employed as the mean of obtaining further insights into the use and functioning of the control systems. This framework is selected on the basis of a literature survey, which indicated that it is a well accepted general framework that is focused on the operation of an organization's whole control system. For instance, in research conducted by Bisbe and Otley (2004); Ferreira and Otley (2005); Johannes (2009); Moulang (2006); Thoren and Brown (2004); and Webster (2006), Simon's definition of MCS has been used as the key definition. According to Simons (1995), other frameworks found in the literature on an ad hoc basis, appear to be directed only at specific aspects of an overall control system's design and use.

- MCS are information-based systems and senior managers use information for various purposes: to signal the domain in which subordinates should search for opportunities, to communicate plans and goals, to monitor the achievement of plans and goals, and to keep informed and inform others of emerging developments (Figure 2.1).
- Information-based systems become control systems when they are used to maintain or alter patterns in organizational activities.
- Primarily controls used by managers are concerned as MCS, not the host of control systems used in the organization to coordinate and regulate operating activities.

Figure 2.1: Information Needs of Top Managers in Implementing Strategy
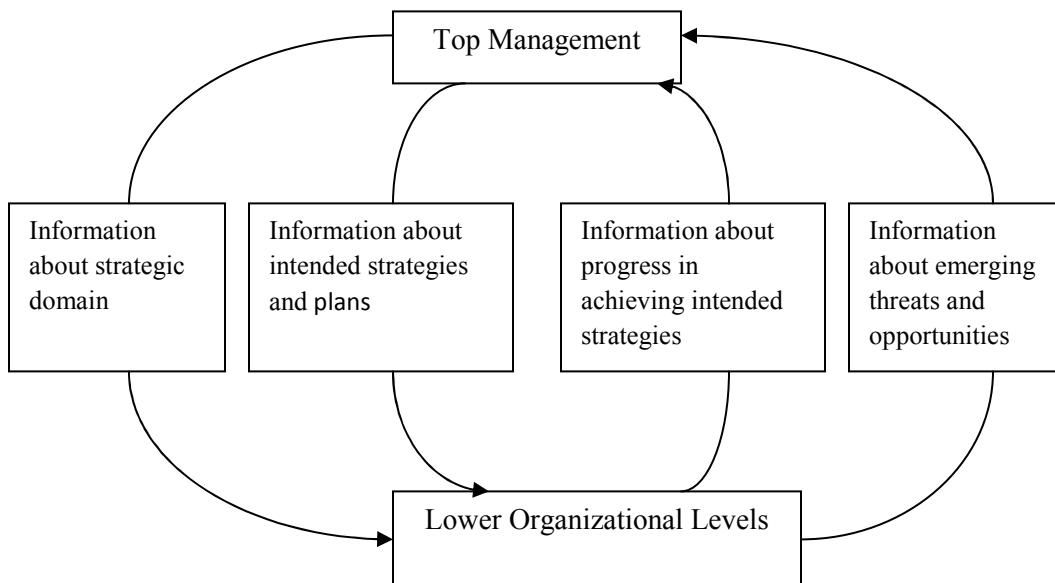
Source: Simons, R. (1995). Levers of Control: How Managers Use Innovative Control Systems to Drive Strategic Renewal. United States of America: President and Fellows of Harvard College. p. 6.

The use of management controls and the design of MCS draw upon a number of academic disciplines. Management controls involve extensive measurement for decision making and they are therefore related to and require contributions from accounting,

especially Management Accounting (MA) (Simons, 1995). Secondly, MCS involve resource allocation decisions and are therefore related to and require contribution from economics, especially managerial economics. Thirdly, MCS involve communication, and motivation which means they are related to and must draw contributions from social psychology, especially organizational behaviour. Consequently, MCS can be viewed as an interdisciplinary subject and this interdisciplinary nature is depicted in Figure 2.2.

Figure 2.2: Management Control Systems as an Interdisciplinary Subject
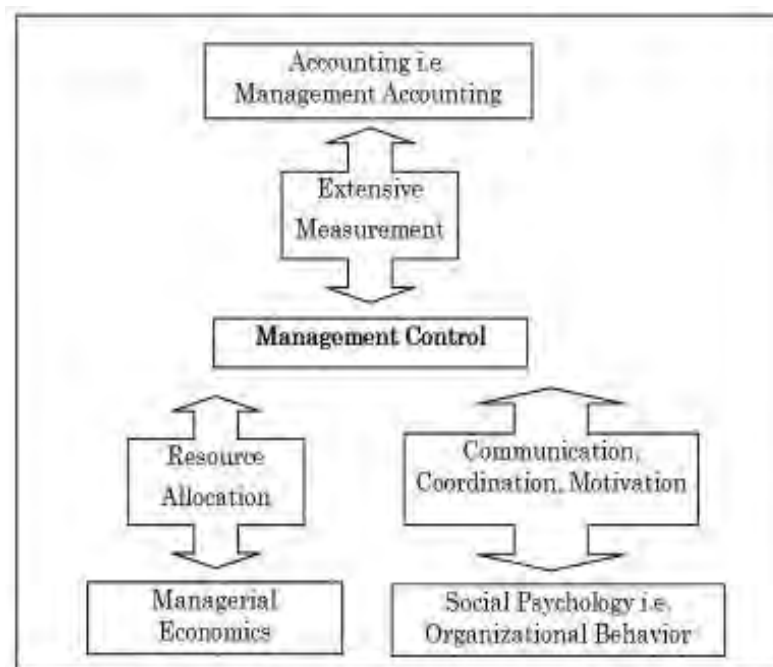
Source: Maciariello, J. and Kirby, C. (1994). Management Control Systems - Using Adaptive Systems to Attain Control. New Jersey: Prentice Hall. p. 225.

Recent developments in MA literature display strong claims about the substantive importance of the relationship between the use of MCS and strategy implementation success. Kaplan and Norton (1992), for example, specifically developed the Balanced Scorecard as a strategic management and measurement tool with the purpose of

'translating strategy into action'. According to Norreklit (2000), it is distinct from other strategic measurement systems as it is more than an ad hoc collection of financial and non-financial measures. The BSC contains outcome measures and the performance drivers of outcomes which are linked together in cause-and-effect relationships and thus aims to be a feed-forward management control system (Norreklit, 2000). Simons (1995, 2000) proposed a typology for management accounting and control systems, primarily based on the various roles that such systems play, or should play, in enabling strategy implementation. Following the emphasis given to the MCS-strategy relationship, Anthony (2007) defined MCS as the process by which managers influence other members of the organization to implement the organization's strategies. This growing interest in the relationship between MCS and strategy was consolidated by Langfield-Smith (1997) through her review and critique of nine empirical studies and seven case studies (Table 2.1).

Based on the summary produced in Table 2.1, it is apparent that examining the relationship among MCS-strategy-performance is of paramount importance for contemporary researchers. Specifically Tucker et al (2006; 2009), after reviewing synopses of twenty one MCS-strategy-performance studies that have been undertaken[7]

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[7] Tucker et al (2009) reviewed 21 studies undertaken since 1997 and chronologically ordered according to six research priorities advanced by Langfield-Smith (1997). The summary of research priorities and researchers are given below.

(i) The role that MCS can play to bring intended strategies to realisation- Chung (1996); Bouwens and Abernethy (2000); Shih and Yong (2001); Nilsson (2002), Baines and Langfield-Smith (2003); Bisbe and Otley (2004); Malina and Selto (2004)

(ii) Examining, in greater detail, the significance of resource sharing between SBUs for the design of MCS under different strategies, particularly concerning the reliance on either behaviour or outcome controls- Auzair and Langfield-Smith (2005); Henri (2005); Chung et al (2003); Nilsson (2000)

(iii) Exploration of the nature and extent to which the role and composition of MCS change as a company matures- Moores and Yuen (2001); Davila (2005)

(iv) How performance measures and reward systems may be used under particular operational strategies, and to support new manufacturing philosophies- Chenhall and Langfield-Smith (1998); Chenhall and Langfield-Smith (2003)

(v) Aspects of MCS-Strategy relationship which focus on operational as well as senior management- Nilsson and Rapp (1999); Marginson (1999); Marginson (2002)

since 1997 followed by Langfield-Smith's (1997) review and critique of sixteen studies, contended that four broad avenues are likely to extend understanding of the MCS-strategy-performance relationship, and therefore warrant further attention by researchers. These avenues relate to operationalizing MCS; operationalizing strategy; consistently conceptualizing MCS and strategy; and determining the proper fit between MCS and strategy. It is towards a consideration of these avenues that the attention of the current research will now be directed.

2.1.1 Opertionalization of MCS

According to Tucker et al (2009) a key opportunity relating to the operationalization of MCS exists for consideration of future researchers. It is to simultaneously examine the effects of both diagnostic and interactive uses of MCS on the strategy-performance relationship. According to Webster (2006) also, two uses of MCS known as diagnostic use and interactive use have been predominantly considered by researchers in isolation (either diagnostic use or interactive use at a time). Mostly, MCS are viewed as mechanistic controls or diagnostic controls to track, review and support the achievement of predictable goals. Alternatively, when controls are used interactively then managers personally and regularly interact with their subordinates within decision making activities. Thus, interactive use of controls is consistent with an organic structure and asserts positive forces throughout the organisation (Moulang, 2006).

Though these two uses have been researched independently by most researchers, in contemporary organizations MCS are used diagnostically and interactively at the same time. Tucker et al (2009) stated that it is better to consider effects of both diagnostic and interactive uses together by future researchers as results of such studies may create new findings relating to strategy-performance relationship and may resolve apparent ambiguities that have been found in studies to date.

(vi)   Whether MCS can minimize the disruption caused by strategic change over time- Abernethy and Brownell (1999); Kober, Ng and Paul (2003); Granlund and Taipaleenmaki (2003)

Table 2.1 Summary of Extant Knowledge of the MCS-Strategy Relationship (Langfield-Smith, 1997)

1.	Research evidence about the relationship between MCS and strategy covers a broad range of perspectives and methods.
2.	MCS has the propensity to support the strategy of the business to lead competitive advantage and superior performance (Dent, 1990; Simons, 1987; 1990).
3	There is evidence that high organizational performance may result from matching an organization's environment, strategy and systems (Govindarajan and Gupta, 1985; Govindarajan, 1988).
4.	MCS include both formal and informal controls. Empirical research has focused primarily on formal controls, which are of a feedback nature, and often financially oriented. This traditional orientation towards accounting controls and accounting information, which has dominated much of the MCS research, is not sufficiently broad to capture more modern approaches to effective control (Emmanuel et al., 1990).
5.	Informal controls are also important aspects of MCS and the effectiveness of formal controls may be dependent on the nature of the informal controls that are also in place (Otley, 1980).
6.	In contingency research that studies the relationship between MCS and strategy, numerous taxonomies have been employed by researchers, the most common being, entrepreneurial-conservative (Miller and Friesen, 1982); prospectors-analysers-defenders-reactors (Mile and Snow, 1978); build-hold-harvest (Gupta and Govindarajan, 1984); and product differentiation-cost leadership (Porter, 1980).
7.	Contingency-based empirical research studies have provided only limited knowledge about the forms of control systems that suit particular types of strategies to date.
8.	Several contingency studies have focused on the relationship between strategy and performance evaluation and reward systems. In particular, the choice of subjective or objective approaches to rewarding performance has been researched and the research findings are consistent.
9.	The perceptions of managers are of crucial importance in affecting the nature of strategic change, or the orientation of the MCS. Thus, managers' perceptions can be considered as a mediating variable in the relationship between MCS and strategy (Archer and Otley, 1991).
10.	The nature of a specific strategy can affect the choice of control system.

Source: Tucker, B., Thorne, H. and Gurd B. (2006). Management Control Systems and Strategy: What's been happening? Annual Conference of the Accounting and Finance Association of Australia and New Zealand, New Zealand: Wellington Convention Centre, 2-4 July.

2.1.2 Operationalization of Strategy

Two opportunities for further attention which focus on how the construct of strategy is treated by researchers are apparent from the analysis conducted by Tucker et al (2009).

First, operationalization of strategy should consider frameworks which incorporate or explain alternate typologies previously used in research efforts to date. For example, Langfield-Smith (1997) presents a particularly elegant three-dimensional theoretical model which integrates the strategic variables associated with the typologies of Miles and Snow (1978), the strategic positions advocated by Porter (1980), and the strategic missions described by Gupta and Govindarajan (1984).

Second, given the apparent attention that has been directed to the RBV of strategy in the strategic management literature, accounting research which examines MCS-strategy relationship should also seek to extend the interface between MCS and strategy with the application of the RBV framework (Tucker Thorne and Gurd, 2009). As accounting researchers have not paid much attention towards the RBV when examining MCS-strategy relationship, it is suggested as a priority for investigation in this area (Baines and Langfield-Smith, 2003; Henri, 2005; Tucker et al, 2009).

2.1.3 Consistency in Conceptualizing MCS and Strategy

After reviewing 21 studies[7] by Tucker et al (2009), the framework given in Figure 2.3 was developed for classifying MCS-strategy research. As illustrated in Figure 2.3 content and process approaches are used by researchers to conceptualize the concept of strategy and design and use perspectives of MCS to conceptualize the area of MCS.

The given framework (Figure 2.3) possesses five potential benefits for researchers (Tucker et al, 2009). First, it serves as a useful classificatory framework which assists in distinguishing between four types of research undertaken in this area. Second, through its use, it is possible to avoid comparisons with studies that do not focus on similar aspects of MCS and strategy. Third, it can provide an indication of broad gaps in knowledge. Fourth, it is likely to assist researchers avoiding claims that their findings are

contradictory when this is not necessarily the case, and/or incorrectly arguing that their results are strongly supported by previous studies. Finally, within the scope of each research type, the framework can assist researchers to explicitly discuss whether and how their particular study can be related to other research that has been predicated on alternative conceptualisations of strategy and/or MCS.

However, by differentiating between the parameters of strategy content, strategy process, MCS design, and MCS use, Figure 2.3 suggests that MCS-strategy research in fact comprises four independent, but mutually related types of study. The framework argues that studies are comparable within rows, or within columns, but not between rows or columns (Tucker et al, 2009). For instance, Type I studies are comparable with Type II and Type III studies, but not with Type IV studies. Similarly, Type II studies are comparable with Type I and Type IV studies, but not with Type III studies; Type III studies comparable with Type I and Type IV studies, but not with Type II studies; and Type IV studies are comparable with Type II and Type III studies, but not with Type I studies. It is also apparent from Figure 2.3 that even though past studies have examined strategy content either with MCS design or use fairly and equally, there is a vacuum in researching strategy process along with MCS design or use. Furthermore, there is a potential rich avenue for future researchers to extend the interface between MCS design, MCS use, strategy content and strategy process (Tucker et al, 2009).

Figure 2.3: Framework for Classifying MCS-Strategy Research
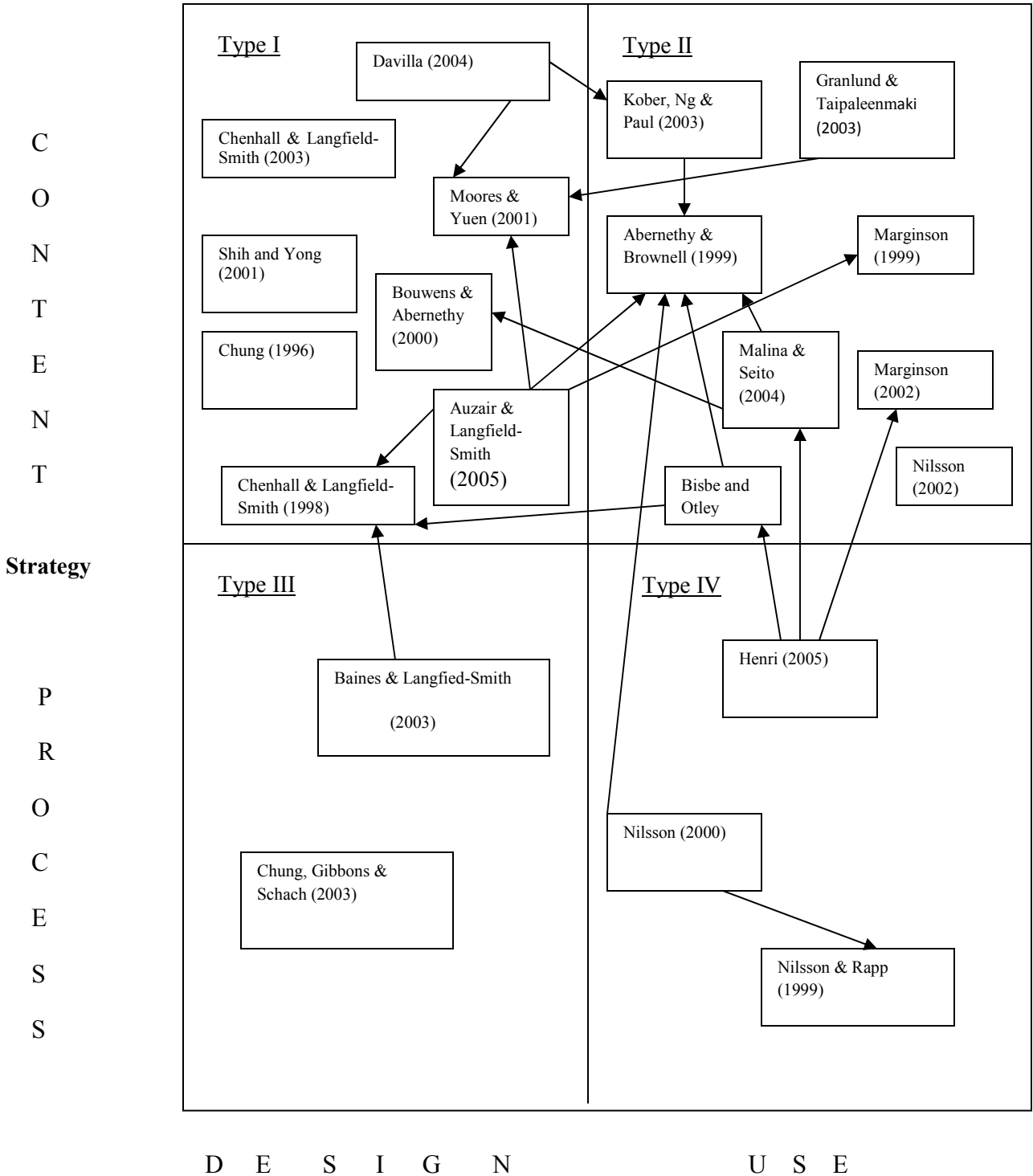
Source: Tucker, B., Thorne, H. and Gurd B. (2009). Management Control Systems and Strategy: What's been happening? Journal of Accounting Literature. Vol. 28. p. 134.

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2.1.4 Determining the Proper Fit between MCS and Strategy

The traditional perspective on the MCS-strategy relationship argues that MCS must fit the firm's strategy (Langfield-Smith, 1995; Tucker et al, 2009, Webster, 2006). This implies the strategy is first developed through a formal and rational process, and this strategy then drives the design of the organisation's MCS. Alternatively, it is found and accepted by some researchers that MCS significantly influence strategy and associated variables (Moores and Yuen, 2001; Kober et al, 2003; Davila, 2005). In this perspective, MCS can influence strategy related elements and it provides the ground to carry out further research considering potential issues such as effects created by MCS over strategy-performance relationship as a moderating variable, multicollinearity between contextual variables, and relaxation of the assumption of linearity between dependent and independent variables (Langfield-Smith, 1997; Chenhall, 2003; Govindarajan, 1988; Govindarajan and Fisher, 1990; Luft and Shields, 2003; Tucker et al, 2009). In order to address the aforesaid issues, Tucker et al (2009) emphasized the need for using statistical models to identify the statistical significance of moderating and mediating variables.[8]

2.1.5 Addressing Contemporary Gaps in MCS-Strategy Research

Consequently, the current research addresses the gaps which have been highlighted in the sections of 2.1.1-2.1.4 in a substantial manner. Table 2.2 indicates the ways in which those gaps will be addressed by the current researcher.

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[8] Baron and Kenny (1986) define moderators as the variables that affect the direction and/or strength of the relation between an independent or predictor variable and a dependent or criterion variable while a given variable may be said to function as a mediator to the extent that it accounts for the relation between the predictor and the criterion.

Table 2.2: Addressing Gaps in MCS-Strategy Research

Research Issues/Opportunities	Research Gaps	Dealing with Gaps
Operationalisation of MCS	Not extensively investigating the effects of both diagnostic and interactive uses of MCS at the same time.	Both diagnostic and interactive uses of MCS being investigated together as research variables.
Operationalisation of Strategy	Consideration of alternative strategy typologies	Porter's generic strategy model (1980) is considered as the principal strategy typology after comparing and evaluating alternative strategy frameworks
	Less emphasis on RBV in MCS-Strategy research	RBV is incorporated as a relevant theory by including strategic capabilities as a research variable
Consistency in Conceptualising MCS and Strategy	Vacuum in researching strategy process along with MCS design or use	Strategy process is also considered to an extent by incorporating RBV framework in the current research in addition to strategy content.
	Extending the interface between strategy and MCS	Current research is a hybrid research (lies in between Type II and Type IV of Figure 2.3) addressing both strategy content and process variables along with MCS use
Determining the Proper Fit between MCS and Strategy	Lack of attention on the influence MCS make over strategy elements	Diagnostic and interactive uses of MCS are considered as moderating variables to investigate MCS-strategy-performance relationship.

2.2 Application of Contingency Approach in Researching MCS-Strategy-Performance Relationship

Contingency theories presently dominate and provide a major framework for scholarly studies of organizational behavior, organizational design, managerial accounting, corporate planning and strategic management (Donaldson et al, 1995). While they vary widely in subject matter, they have the common proposition that an organizational outcome is the consequence of a fit or match between two or more factors (Donaldson et al, 1995). Contingency theories are a class of behavioural theory which claim that there is no best way to organize a corporation, to lead a company, or to make decisions. Instead, this approach highlights that the optimal course of action is contingent upon the internal and external factors (Morgan, 1986)[9]. Accordingly, it is apparent that the contingency view approaches management from a totally different perspective than do the formal schools of management. The classical, behavioral, and management science schools assumed a universal approach, proposing the discovery of "one-best-way" management principles with the view of applying same techniques to every organization. As specified by the contingency approach, it is well accepted that universal solutions and principles cannot be applied to all organizations and what managers do in practice depends on, or is contingent upon, a given set of circumstances also known as situational or contextual variables (Donaldson et al, 1995; Tekavcic and Peljhan, 2004).

Contingency-based management accounting research has approached the study of MCS assuming that managers act with the intent to adapt their organisational controls to changes in contingencies in order to attain fit and enhanced performance (Tekavcic and

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9 Gareth Morgan in his book, "Images of Organization" (1986) describes the main features underlying contingency theory as follows:

- Organizations are open systems that need careful management to satisfy and balance internal needs and to adapt to environmental circumstances.

- There is no one best way of organizing. The appropriate form depends on the kind of task or environment with which one is dealing.

- Management must be concerned, above all else, with achieving alignments and good fits.

- Different types or species of organizations are needed in different types of environments.

Peljhan 2004). According to Chenhall (2007), the contingency approach to MCS assumes that the best design and use of MCS are influenced by the context in which they are applied. Chenhall (2007) applied the contingency framework from a functionalist perspective[10] and commented that it is important to have a proper fit between MCS and contextual variables which include external environment, technology, organizational strategy, organizational structure, organizational size and national culture. According to Reheul and Jorrisen (2007) related studies within a contingency framework either focus on the relation between the organization's context and the design or use of the MCS (design-fit studies) or on the relation between the MCS' design or use and it's effectiveness in a certain context (efficiency-fit studies). In the area of efficiency-fit studies, it is apparent that performance has been used as a dependent variable (Reheul and Jorrisen, 2007). Consequently, Reheul and Jorrisen (2007) highlighted the opportunity and need for combining both design-fit studies and efficiency-fit studies in a single research by future researchers for better results. Otley's (1980) contingency framework given in Figure 2.4 also highlights the need for considering both design-fit and efficiency-fit simultaneously by indicating interelationships available among organization's contingent variables, MCS and organizational effectiveness.

Organizational strategy as a contextual variable has received a lot of attention in MCS related accounting research (Reheul and Jorrisen, 2007). Chenhall (2003) noted perhaps the most important new stream of literature in MCS related research has associated with the role of strategy. Furthermore, researchers such as Dent (1990), Langfield-Smith (1997), Samson et al (1991), and Simons (1987, 1990) suggested that MCS have to be tailored explicitly to support the strategy of the business to lead to competitive advantage and superior performance.Underlying most accounting research is the assumption that MCS contribute to the successful operation and profitability of the company provided that there is a proper fit between strategy and MCS (Merchant & Simons, 1986;

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[10] Functionalism is the oldest, and still the dominant, theoretical perspective in sociology and many other social sciences. This perspective is built upon twin emphases: application of the scientific method to the objective social world and use of an analogy between the individual organism and society (McClelland, 2000).

Govindarajan and Gupta, 1985; Hope and Hope, 1995; Miles and Snow, 1978; Simons 1987, 1990, 1991, 1995; Whittington, 1995). Otley (1999) noted that the business strategy a company decides to pursue represents a central contingency variable. According to Chenhall (2003), strategy is somewhat different from other contingency variables. In a sense strategy is not a mere element of context, rather it is the central means by which managers influence other contextual variables such as technology and structural arrangements (Chenhall 2003). Also, the respondents of this research are from the same industry (Sri Lankan Textile and Apparel industry) and subject to the same environmental and cultural influences. Further the majority of the respondents in the current research are small and medium-sized manufacturing companies. Thus, the researcher includes only business strategy as a contextual variable in the research design and seeks to find out to what extent the fit between business strategy and uses of MCS lead to superior organizational performance.

Figure 2.4: Otley's (1980) Contingency Theory
Framework
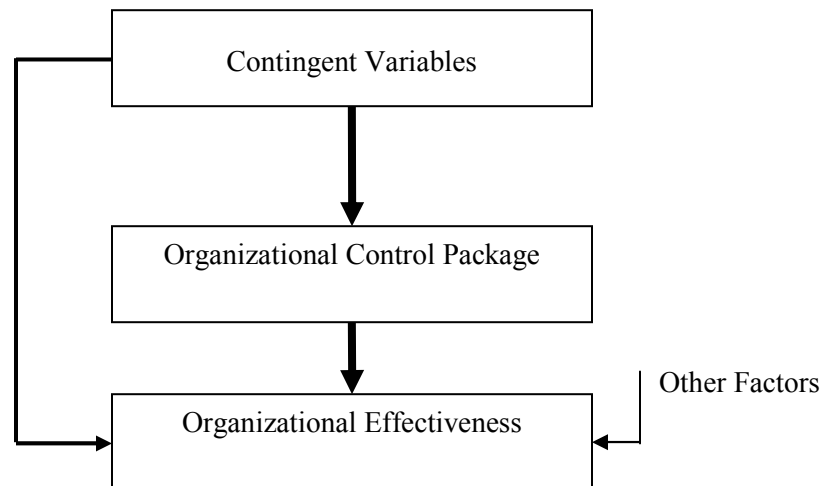
Source: Otley, D. T. (1980). The Contingency Theory of Management Accounting: Achievement and Prognosis. Accounting, Organizations and Society. p. 196.

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2.3 Use of Management Control Systems

Simons (1987, 1990, 1991, 1994) presented a series of cases that contribute to a theory of how senior managers can use controls when implementing and developing strategy. Simons (1995) argued that the most important fact is not the identification of types of controls firms use, rather how they are used. Following Simons (1995), Abernethy and Brownell (1999) also suggested that studies which attempt to understand the relationship between MCS and strategy should not so much focus on the extent of MCS use, but instead on the manner in which management uses MCS. In particular, Simons (1987, 1990, 1991, 1994) investigated why top managers choose to personally monitor certain control systems and delegate other aspects to subordinates. Based on these observations Simons (1995) made a distinction between the diagnostic and the interactive use of controls. Following Simons (1990) and Chapman (1997), Abernethy and Brownell (1999) also distinguished between diagnostic and interactive use of MCS and argued that such use moderates the relationship between strategy and performance.This distinction enables researchers to distinguish different modes of controls that do not depend on the instrument itself, but rather on the way managers use those (Martinez & Gutierrez, 2003). According to Simons (1995), these two uses create the opposing forces- the yin and yang- of effective strategy implementation. While interactive use of MCS is creating positive and inspirational forces (yang element) diagnostic use of MCS creates constraints and ensures compliance with orders (yin component).

Diagnostic control systems are formal information systems that managers use to monitor organizational outcomes and correct deviations from pre-set standards of performance (Simons 1995). Thus, diagnostic controls are for ex-post evaluation and correction and represent the traditional feedback role (Henri, 2005; Thoren and Brown, 2004). Following a traditional mechanistic notion of control, diagnostic use provides motivation and direction to achieve goals (Henri, 2005). Managers are interested primarily in monitoring diagnostic control systems that report variance information about critical performance variables (Simons 1995). According to Simons (1995), critical performance variables are the factors that have to be achieved or implemented successfully for the intended strategy of the business to succeed. One of the main purposes of diagnostic

systems is to eliminate a manager's burden of constant monitoring (Thoren and Brown, 2004). As noted by Thoren and Brown (2004), instead of constantly monitoring a variety of internal processes by managers, diagnostic systems ensure receipt of periodic exception reports from different staff groups such as analysts and accountants. More precisely, a diagnostic system is a top-down approach which routinely collects variance feedback from a process and utilizes the generated information for corrections of the process or its inputs (Simons, 1995). Following Simons (1995), Moulang (2006) stated that outputs of diagnostic systems are generally objective and can be measured using explicit formula.

When firms use accounting systems or other measurement mechanisms to follow up results, three elements are commonly associated with diagnostic use of controls: financial responsibility centres, budgeting, and rewards (Merchant, 1997). The budgeting process transforms the intended strategy into financial and non-financial targets, against which the work of each responsibility centre is measured and rewards are granted (Thoren and Brown, 2004). The choice of performance indicators and targets is intended to give organizational members a direction, as it signals which areas upper management considers important. In addition, these systems support coordination and provide motivation, since individuals and departments are rewarded for meeting targets that emanated systematically from organizational goals established during the budgeting process. These properties make diagnostic use a primary instrument for supporting the implementation of intended strategies (Merchant, 1997). However, since these systems mechanically communicate, aggregate and formalize data, they may be unable to capture emerging changes in strategic assumptions and uncertainties that threaten the sustainability of the current strategy and consequently, interactive use of controls is also indispensable (Simons, 1995; Thoren and Brown, 2004). According to Henri (2005), diagnostic use represents a negative force for two reasons. Firstly, diagnostic use focuses on mistakes and negative variances. On the other hand, the sign of the deviation that is derived when outputs and goals are compared is reversed in the feedback signal to adjust the process.

Interactive control systems are the formal information systems that managers use to involve themselves regularly and personally in the decisions of subordinates (Thoren and Brown, 2004). The interactive use of MCS represents a positive force as MCS are used to stimulate organizational learning and the emergence of new ideas and strategies throughout the organization (Simons, 1995; Henri, 2005). Through them, senior managers participate in the decisions of subordinates and focus organizational attention and learning on key strategic issues. Interactive control systems are measurement systems that are used to focus attention on the constantly changing information that top level managers consider to be of strategic importance. In contrast to diagnostic controls, what characterizes interactive controls is senior managers' strong level of involvement. Top managers pay frequent and regular attention to interactive control systems and become personally involved in them. Furthermore, this pattern of attention signals the need for organizational members to pay frequent and regular attention to the issues addressed by the interactive control systems. Through interactive control systems, top managers send messages to the entire organization in order to focus attention on strategic uncertainties. Consequently, interactive control systems put pressure on operating managers at all levels of the organization and motivate information gathering, face-to-face dialogue and debate. As participants throughout the organization respond to the perceived opportunities and threats, organization learning is stimulated, new ideas flow and strategies emerge. In this way, interactive control systems guide and provide input to innovation and to the formation of emergent strategies. According to Henri (2005), interactive use guides the bottom-up emergence of strategies by stimulating the development of new ideas and by focusing on strategic uncertainties (i.e. contingencies threatening or invalidating underlying assumptions of current strategies).

Using Simons (1995), Bisbe, Batista-Foguet and Chenhall (2007) recently proposed that an interactive control system consists of five properties: an intensive use by top and operational managers, pervasiveness of face to- face challenges and debates, a focus on strategic uncertainties and non-invasive, facilitating and inspirational involvement. Similarly, Henri (2005) recognized four features of interactive use of controls as follows. When MCS are used interactively, (i) the information generated is a recurrent and

important agenda for top managers; (ii) frequent and regular attention is fostered throughout the organization; (iii) data are discussed and interpreted among organizational members of different hierarchical levels; and (iv) continual challenge and debate occur concerning data, assumptions and action plans.

As noted by Thoren and Brown (2004), the difference between diagnostic and interactive control systems is not in their technical design features, but in the way managers use these systems. Only top managers can decide which control systems they desire to use interactively, based on their vision of the future for the business and their personal sense of strategic uncertainties. Table 2.3 provides a comparison of diagnostic use and interactive use of MCS based on specified criteria.

Table 2.3: A Comparison of Diagnostic Use and Interactive Use

	Diagnostic Use of Controls	**Interactive Use of Controls**
Purpose	Provide motivation and direction to achieve goals.	Stimulate dialogue and organizational learning.
Goal	Prevent surprises	Creative search
Analytic Reasoning	Deductive	Inductive
System Complexity	Complex	Simple
Time Frame	Past and present	Present and future
Targets	Fixed	Constantly re-estimated

Source: Thoren K. and Brown T. (2004). Development of Management Control Systems in Fast Growing Small Firms.13th Nordic Conference on Small Business Research. p. 3.

Diagnostic and interactive uses of MCS represent two complementary and nested uses (Henri, 2005; Thoren and Brown, 2004). They work simultaneously but for different purposes. While diagnostic use represents a mechanistic control used to track, review and support the achievement of predictable goals, interactive use is an organic control system supporting the emergence of communication processes and the mutual adjustment of organizational actors (Henri, 2005). Specifically, a diagnostic use limits the role of MCS

to a measurement tool, while an interactive use expands its role to a strategic management tool (Kaplan and Norton, 2001). According to Simons (1995), diagnostic and interactive uses of MCS represent countervailing forces used to balance the inherent organizational tension. Haas and Kleingeld (1999) pointed out that diagnostic use of MCS may not be an end in itself but a necessary means to initiate strategic dialogue and interactive use of MCS. Referring to Argyris and Schon (1978)[11], Henri (2005) stated that diagnostic use represents single-loop learning and acts as a prerequisite for interactive use and double-loop process (Figure 2.5). According to Argyris and Schon (1978) when there is a mismatch between an intended outcome and an actual outcome, it is possible to either change an action strategy satisfying existing governing variable/s (where the process is known as single-loop learning) or to change both an action strategy and governing variable/s (the process is known as double-loop learning).

Figure 2.5: Single and Double-Loop Learning
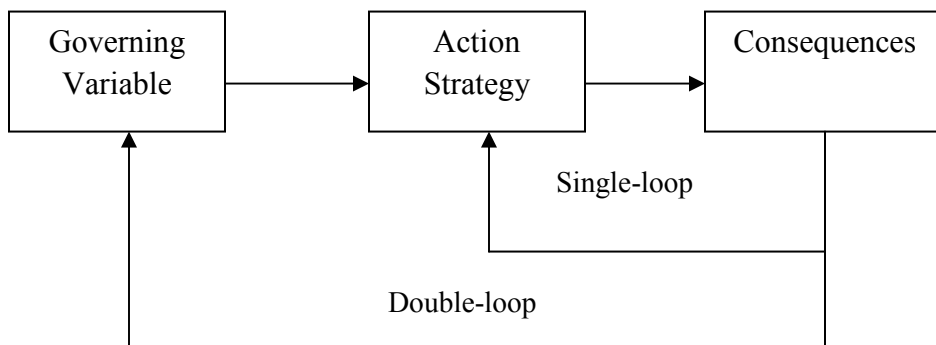
Source: Anderson, L. (1994). Espoused Theories and Theories-in-Use: Bridging the Gap. Master of Organisational Psychology Thesis: University of Queensland. p. 65.

In practice, the use of MCS may range from mostly diagnostic to a combination of diagnostic and interactive (Henri, 2005; Tekavcic and Peljhan, 2005; Simons, 1995; Thoren and Brown, 2004). The joint use of MCS in a diagnostic and interactive fashion to manage inherent organizational tensions creates dynamic tension (Simons, 1995).

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[11] Argyris and Schon (1974, 1978) contributed towards the theory of congruence and learning by introducing the concepts such as double-loop learning, theory of action, espoused theory, and theory-in-use.

Dynamic tension denotes contradictory but interrelated elements (Lewis, 2000). According to English (2001), tension can be defined as two phenomena in a dynamic relationship that involve both competition and complementarity. The joint use of management controls in a diagnostic and interactive manner creates dynamic tension reflecting competition in the way of positive versus negative feedback, and complementarity focusing on intended and emergent strategies (Henri, 2005). As, suggested by the conflict literature, tension is not necessarily negative but instead may be beneficial to organizations (DeDreu, 1991 and Nicotera, 1995).

Even though Simons (1995) introduced the concept of interactive use to MCS literature, social constructivists have raised some critique against Simons' framework of MCS (1995) suggesting that one needs to keep in mind about the fact that Simons overstate both the managerial perspective and managerial objectivity in the strategic process (Thoren and Brown, 2004). Further, Simons seems oblivious to the role of political manoeuverings in organizational processes, taking the acceptance of control system introduction in the organization for granted (Dremer & Lucas, 1986; Gray, 1990).

2.4 Business (Competitive) Strategy

The term strategy is employed in the literature of numerous disciplines and is an elusive concept (Pennings, 1985). Mintzberg (1987) argued that "the field of strategic management cannot afford to rely on a single definition of strategy." Mintzberg (1987) presented five definitions of strategy[12] and argued that some interrelationships exist among activities encaptured by these five definitions.

Dent (1990) explains that the term strategy remains ambiguous because it has been defined both broadly and narrowly. The broad definition of strategy encompasses

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[12] Mintzberg (1987) described strategy as: (1) a plan when it provides a consciously intended course of action as a guideline to deal with a situation (2) a ploy when it is an intended specific manoeuvre to outwit competitors (3) resulting patterns in a stream of actions for an intended strategy to be realized (4) a means of positioning firms within their business environment, and (5) a concept or perspective- an ingrained way of perceiving things which exist only in the minds of interested parties.

objectives, goals, and the means of achieving desired ends, including courses of action and resource allocation (Chandler, 1962; Cleland, 1996).[13]

Within the scope of meanings for the narrow definition of strategy, Abernethy and Guthrie (1994) and Langfield-Smith (1997) identified three levels of strategy and acknowledged the statement by Johnson (1987) that "strategic decisions occur at many levels of managerial activity". The first level of strategy which is the corporate strategy concerns top management decisions about choosing the type of businesses to operate and allocating resources among those businesses. However, business (competitive) strategies and operational (functional) strategies (the second and third levels of strategy) involve decisions and activities at many levels of the firm (Wilson, 1991; Langfield-Smith, 1997). The main objective of the narrow definition of strategy is to have the firm achieve and maintain a position of competitive advantage that results in above-average performance, and business (competitive) strategy is of paramount importance in this respect (Sands, 2006). According to Porter (1980, 1985)[14], competitive strategy relates to achieving and sustaining a favourable and sustainable competitive position through creation of unique competitive advantages. Lord (1996) concluded that business (competitive) strategy does not only include long-term planning but also involve the plans of competitors. As the business (competitive) strategy is critical for competitive advantage and to earn above average returns, it will be the focus of discussion in the rest of this section.

Business (competitive) strategies focus on how strategic business units (SBUs) compete within their business and the way each SBU positions itself in relation to its competitors (Sands, 2006). Operational (functional) strategies address how various functions or patterns of strategic priority actions of the firm contribute to its competitiveness (Langfield-Smith, 1997). Langfield-Smith (1997) noted that interest is increasing in research examining operational strategies. A reason for such interest may be due to the

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[13] This broad definition of strategy encompasses Mintzberg's (1987) 1st, 2nd and 3rd descriptions of strategy (Sands, 2006).

[14] This narrow definition of strategy encompasses Mintzberg's (1987) 4th description of strategy.

possibility suggested by Dent (1990) that business strategies may emerge through such operational strategies. In view of these comments, any discussion about competitive strategy should consider aspects of operational (functional) strategies too.

Campbell-Hunt (2000) conducted a meta-analysis of generic competitive strategy-based studies spanning approximately twenty years. According to Campbell-Hunt (2000), Porter's theory on generic business (competitive) strategies is "among the most substantial and influential contributions…made to the study of strategic behaviour in organizations". Porter's model has been a dominant paradigm in management accounting research literature too (Sands, 2006). Campbell-Hunt (2000) identified following two elements as the core elements of Porter's theory on generic business (competitive) strategies.

The first element relates to a theoretical proposition that describes the broad or focused scope of the strategy adopted by organisations as well as cost leadership and differentiation bases that provide the source of competitive advantage. A theoretical prediction about above-average long-term financial performance outcomes is Porter's second proposition. Porter (1980, 1985) predicted that firms must adopt either a cost leadership or differentiation strategy as a source to achieve above-average long-term financial performance outcomes as firms that adopt a combination of these strategy sources will experience below-average long-term financial performance. A detailed analysis of these two propositions is incorporated into the following two sub-sections.

2.4.1 Scope of Competitive Strategies and Source of Competitive Advantage Proposition

Porter's generic strategy framework (1980, 1985) has been used widely as a basis for numerous follow-up research studies as well as for studies to develop extensions to the original framework of generic competitive strategies (Miller and Dess, 1993; Sands, 2006). According to Hill (1988), Porter's generic business level strategies have become a dominant paradigm in the business policy literature. In his generic strategy framework, Porter described the scope of competitive positioning as broad (industry-wide approach) or narrow (focused on a particular market segment or niche). For the source of

competitive advantage, he described either having a low-cost base or a differentiation base. Porter's generic strategy model indicating the scope and sources of competitive advantage is presented in Figure 2.6.

Figure 2.6: Porter's Generic Competitive Strategies

Source of Competitive Advantage

	Cost	Differentiation
Broad	Cost Leadership	Differentiation
Narrow	Focus Cost Leadership	Focus Differentiation

Competitive Scope

Source: Hanson et al. (2008). Strategic Management: Competitiveness and Globalisation. Australia: Cengage Learning Australia Pty Ltd. 8th ed. p. 113

The companies that attempt to become the lowest-cost producers in an industry can be referred to as those following a cost leadership strategy (Porter 1980, 1985). These firms attempt to increase market share by becoming the lowest-cost producer in their industry through economies of scale and proprietary technological processes (Sands, 2006). According to Lynch (2003), the company with the lowest costs would earn the highest profits in the event when the competing products are essentially undifferentiated, and selling at a standard market price. Companies following this strategy place emphasis on cost reduction in every activity in the value chain (Hanson et al, 2008). It is important to note that a company might be a cost leader but that does not necessarily imply that the company's products would have a low price. In certain instances, the company can for instance charge an average price while following the low cost leadership strategy and

reinvest the extra profits into the business (Allan et al, 2006; Lynch, 2003; Porter, 1985). The risk of following the cost leadership strategy is that the company's focus on reducing costs may sometimes result in their trying to reduce cost as far as possible, at the expense of other vital factors such as quality and customer service (Lynch, 2003; Allan et al, 2006).

When a company differentiates its products, it is often able to charge a premium price for its products or services in the market (Hanson et al, 2008). Some general examples of differentiation include better service levels to customers, better product performance and offering extra product features in comparison with existing competitors. Porter (1980, 1985) has argued that for a company employing a differentiation strategy, there would be extra costs that the company would have to incur. Such extra costs may include high advertising spending to promote a differentiated brand image for the product, which in fact can be considered as both a cost and an investment. Differentiation has many advantages for the firm which makes use of the strategy. Some problematic areas include the difficulty of covering extra costs entailed in differentiation from the customer through premium pricing. Moreover, a successful differentiation strategy may attract competitors to enter the company's market segment and copy the differentiated product (Lynch, 2003; Allan et al, 2006).

Porter initially presented focus as one of the three generic strategies, but later identified focus as a moderator of the two strategies (Pearson, 1999; Lynch, 2003). Companies employ a focus strategy by concentrating on a specific niche in the market, and use either a cost leadership or differentiation approach. In that, a company using the cost focus approach would aim for a cost advantage in its target segment only. If a company is using the differentiation focus approach, it would aim for differentiation in its target segment only, and not the overall market (Porter 1980; 1985). According to Pearson (1999) and Lynch (2003) when carrying out follow-up research studies based on Porter's framework, cost leadership and differentiation strategies are adequate enough to consider as key generic strategies as Porter (1985) dissected the original generic strategy of focus also into cost focus and differentiation focus. Consequently, in the current research, Porter's cost leadership and differentiation are considered as core generic competitive strategies

while considering the possibility of employing them either to a broad market or to a narrow (niche) market.

While Porter's generic strategy model remains the most commonly supported and identified model in the literature (Kim and Lim, 1988; Miller and Dess, 1993), there are various other strategy typologies being identified over the years (Hambrick, 1985; Miles and Snow; 1978; Miller and Friesen, 1982; Mintzberg, 1973; Utterback and Abernathy, 1975). In order to ensure that Porter's generic strategy model is broad enough to cover strategies adopted under various settings, an attempt is made in the current research to compare and integrate alternative strategy typologies using the work of Simons (1990) and Kumar and Subramanian (1997/1998). Table 2.4 provides a summary of the similarities among the specific typologies from different strategy models and form the basis for the following discussion.

Simons (1990) after comparing number of typologies concluded that entrepreneurial strategy by Miller and Friesen (1982) and prospector strategy by Miles and Snow (1978) are similar to Mintzberg's (1973) entrepreneurial strategy type. Simons (1990) also stated that those typologies share commonalities in the competitive characteristics to Porter's differentiator firms and Utterback and Abernathy's (1975) performance maximising firms. Similarly, he suggested that Miller and Friesen's conservative firms, Mintzberg's adapter types, Miles and Snow's defender firms, Porter's cost leader firms and Utterback and Abernathy's cost minimising firms have similar characteristics.

Kumar and Subramanian (1997/1998) noted that Porter's (1980) differentiators are comparable to Miles and Snow's (1978) prospectors as well as Miller and Friesen's (1986) innovators. Furthermore, they acknowledged that Porter's cost leadership is similar to Miles and Snow's (1978) defenders and Hambrick's (1985) efficient misers.

While prior research appears to have identified similarities in the characteristics of these typologies, a study by Austin, Trimm and Sobczak (1995) has compared the information needs for each typology within the Miles and Snow's (1978) and Porter's (1980) models.

The comparison shows that there are a number of similarities in the information needs of cost leaders compared to defenders, and differentiators compared to prospectors.

In summary, findings from past studies into integration of different strategy typologies suggest that, Porter's generic strategy model is broad enough to cover generic competitive strategies used by firms as cost leadership or differentiation strategies cover characteristics of other alternative strategies introduced by various researchers and scholars. As a result, it is possible to conclude that Porter's model satisfies the third model evaluation criterion identified by Miller and Dess (1993). Evaluation of Porter's model (1980) against other criteria identified by Miller and Dess (1993) is also conducted subsequently in the chapter.

2.4.2 Performance Outcomes of a Singular Strategy Source Adoption Proposition

The second of the two elements of Porter's theory relates to the proposition that organisations must adopt either a cost leadership strategy source or a differentiation strategy source to achieve a sustainable competitive advantage and long-term above-average performance. This proposition emerges from Porter's claim that these two generic strategy sources are mutually incompatible. As a consequence of this claim, Porter (1985) classified organizations as 'stuck in the middle' when they either adopt a combination of cost leadership strategy and differentiation strategy sources or fail to develop at least one strategy. Moreover, Porter (1985) stressed that "achieving cost leadership and differentiation are usually inconsistent, because differentiation is usually costly. Porter's performance prediction proposition therefore warned of lower long-term financial performance being experienced by organizations that Porter would classify as 'stuck in the middle'. According to Porter (1985) firms who use combined strategies trying to be all things to all people, as a result are only setting themselves up for mediocrity. Thus Porter's model has usually been characterized as presenting discrete (mutually exclusive) alternatives (Wright, 1987; Hill, 1988). Porter (1985) argued that firms that are able to succeed at multiple strategies often do so by creating separate business units for each strategy. By separating the strategies into different units having

different policies and even different cultures, a firm is less likely to become 'stuck in the middle'.

There has been some support for Porter's proposition on mutual exclusiveness of strategy. Hambrick (1983) in his study of capital goods producers found that a single strategic approach was evident, not a mixed or hybrid strategy. Dess and Davis (1984), in their study of firms in the paint industry, verified the construct validity of the generic strategy typology and found that a commitment to one of the three strategies will result in higher performance than those firms which are stuck in the middle. Robinson and Pearce (1988) in an across-industries study found that firms which pursued inconsistent strategies were underperformers. Miller and Friesen (1986) studying consumer durable industries also validated the typology. In a study of 54 high-growth electronics firms in Korea, the performance of firms without a clear-cut strategy was less than those firms which used a single generic strategy (Kim and Lim, 1988). Also, in a study of single business companies, the presence of marketing strategies which closely resembled Porter's generic strategies was identified along with mutual exclusiveness for higher performance (Hooley, Lynch and Jobber, 1992).

Table 2.4: Integration of Strategies based on Similarities in Competitive Characteristics

Strategy Typologies with Similar Characteristics according to Simons (1990)	Strategy Typologies with Similar Characteristics according to Simons (1990)
Mintzberg (1973) — Entrepreneurial Miles and Snow (1978) — Prospector Miller and Friesen (1982) — Entrepreneurial	Mintzberg (1973) — Adapter Miles and Snow (1978) — Defender Miller and Friesen (1982) — Conservatives
Utterback and Abernathy (1975) — Performance-Maximising Firms Porter (1980) — Differentiator	Utterback and Abernathy (1975) — Cost-Minimisation Porter (1980) — Cost Leader
Strategy Typologies with Similar Characteristics according to Kumar (1990) and Subramanian (1997/1998) Miles and Snow (1978) — Prospector Porter (1980) — Differentiator Miller and Friesen (1986) — Innovators	**Strategy Typologies with Similar Characteristics according to Kumar (1990) and Subramanian (1997/1998)** Miles and Snow (1978) — Defender Porter (1980) — Cost Leader Miller and Friesen (1986) — Efficient Misers

Source: Sands, J. S. (2006). Strategic Priorities, Management Control Systems, and Managerial Performance: An Empirical Study. Doctor of Philosophy Thesis. Australia: Griffith University. p. 37.

While Porter's strategy typology has received a considerable support, it has been attacked on both the theoretical and empirical fronts (Rubach and McGee, 2004) Porter's assertion that the generic strategies are mutually exclusive has been questioned. Hill (1988) contends that Porter's model is fundamentally flawed, arguing that differentiation maybe a means to overall low cost leadership, especially within emergent industries or in mature industries which are experiencing technological change. Further Hill argues that a hybrid or combination strategy may be appropriate in certain mature industries. Murray (1988), Wright (1987) and Miller (1992) all argue that mixed or hybrid strategies have distinct advantages and that pursuing a single generic strategy may be dangerous, leading to lower performance. There have been a number of studies which suggest that following a combination or mixed strategy is the best course, which contradicts the assertions of Porter. A study of the screw machine products industry found that the most successful firms were those that adopted a combination of low cost and differentiation strategies (Wright et al, 1991). Miller and Friesen (1986) found that the companies which they studied often utilized combinations of generic strategies, and that following a combination strategy can achieve superior performance. Miller and Dess (1993) showed in their study of manufacturing firms that Porter's model does not accurately portray strategy-performance relationships. They found that not only combinations of the generic strategies possible, but that the combinations are also profitable, especially a combination of low cost and high differentiation.

As both positive and negative comments are presented on Porter's propositions on generic competitive strategies, the following section evaluates and provides the justification for considering his model as the dominant strategy typology in the current research.

2.4.3 Evaluation of Porter's Generic Competitive Strategy Model

In order to assess the appropriateness of Porter's generic strategy model, discussion in this section is linked to the following four criteria which are identified by Miller and Dess

(1993). According to Sands (2006), the four criteria recognized by Miller and Dess (1993) are the most widely accepted criteria for evaluating a model.[15]

These criteria help to establish whether the theory is parsimonious in its descriptive power and captures the level of specificity to provide an appropriate level of explanatory power (Sands, 2006). According to Campbell-Hunt (2000) a review of these aspects incorporates the approaches being used to interpret the dominant paradigm's perspective.[16]

Campbell-Hunt (2000) stated Porter's theory on generic business (competitive) strategies is "among the most substantial and influential contributions…made to the study of strategic behaviour in organizations." Campbell-Hunt specified Porter's framework as the dominant paradigm of competitive strategies. It fits "Kuhn's account"[17] of a paradigm because it has so penetrated research, theory and business practice and it has become the "received wisdom" (Campbell-Hunt, 2000). Hill (1988) also stated that Porter's generic business-level strategies have become a dominant paradigm in the business policy literature. As presented, Porter's framework has been used widely as a basis for numerous follow-up research studies, as well as for studies to develop extensions to the

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[15] Miller and Dess (1993) identified the most widely accepted criteria for evaluating a model.

1. its ability to simplify the complex, thereby making it more manageable for researchers

2. its ability to maintain accuracy in predicting and exploring relationships in spite of its simplicity

3. its generalisability to a variety of settings

4. its fruitfulness in generating interest in follow-up research

[16] Campbell-Hunt in his article, "What Have We Learned about Generic Competitive Strategy? A Meta-Analysis" used 17 studies from 1983 to 1994 covering more than 6000 companies around the world and identified Porter's generic competitive model as the dominant paradigm of competitive strategy.

[17] Kuhn (1962) popularized the term paradigm, which he described as essentially a collection of beliefs shared by scientists and a set of agreements about how problems are to be understood. According to Kuhn, paradigms are essential to scientific inquiry as "no natural history can be interpreted in the absence of at least some implicit body of intertwined theoretical and methodological belief that permits selection, evaluation, and criticism."

original framework.[18] His theory, therefore, satisfies the fourth model evaluation criterion identified by Miller and Dess (1993).

As commented in the literature, Porter's generic strategies typology is robust (Kotha & Vadlamani, 1995) and even though it is simple, it captures much of the complexity of business unit strategies (Miller & Dess, 1993). According to Sands (2006), Porter's framework is uncomplicated as there are only two key sources for competitive advantage based on low-cost and differentiation. As Rubach and McGee (2004) pointed out the core reason for using Porter's model in numerous follow-up studies is its simplicity and parsimonious nature. These comments are congruent with the first criterion of Miller and Dess (1993) model.

It is also possible to conclude that Porter's model satisfies the third criterion of Miller and Dess (1993) model to a great extent. It is found that Porter's model is compatible with various strategic options developed in the strategy literature. Table 2.4 indicates the possibility of matching Porter's generic strategies with alternative strategy typologies. According to Stephens (2006) there had been a development of alternative strategic priorities for various settings based on Porter's differentiation and cost leadership aspects in subsequent studies. Moreover, there has been a considerable support in the literature for adopting Porter's competitive strategies in different industries such as capital good manufacturing (Hambrick, 1983), paint industry (Dess and Davis, 1984), consumer durable industries (Miller and Friesen, 1986), electronic industry (Kim and Lim, 1988) and hospital industry (Rubach and McGee, 2004) for better organizational performance. So, it is difficult to refute that Porter's model is generalisable to a variety of settings.

Even though there are situations in which combined strategies worked well (Hill, 1988; Miller, 1992; Miller and Friesen, 1986; Miller and Dess, 1993; Murray, 1988; Wright, 1987; Wright et al, 1991), empirical evidence is also available to support Porter's

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[18] For example, Bowman's strategy clock model developed by Bowman and Faulkner (1996) provides eight core strategic options: (I) No-frills (Low price/Low added value) (2) Low price (3) Hybrid (4) Differentiation (5) Focused Differentiation (6) Increased price/standard value (7) Increased Price/Low Value (8) Low Value/Standard Price is an extension to Porter's generic strategy model as it is an elaboration of Porter's generic strategy framework.

proposition of mutual exclusiveness (Allen et al, 2006; Dess and Davis, 1984; Hambrick, 1983; Kim and Lim, 1988; Rubach and McGee, 2004). Also Hill (1988) contended that the relationship between mutual exclusiveness of competitive strategy and organizational performance is a contingent factor. Though, Porter recognized achieving superior performance through a hybrid strategy as a rare situation (1985), he has not completely rejected the possibility of succeeding at multiple strategies by creating separate business units for each strategy with different policies and different cultures. Further, to date, no research has been conducted with a sample of Sri Lankan organizations in the T&A industry to determine to what extent they are following Porter's generic strategies. In the absence of such a study in a developing economy like Sri Lanka, there is no ground to discard the Porter's model as a competitive strategy model even with some criticisms over the second criterion of the Miller and Dess (1993) model.

2.5 Resource Based View (RBV) and Strategic Capabilities

Understanding sources of competitive advantage for firms has become a major area of research in the field of strategic management (Barney, 1991; Porter, 1985; Rumelt, 1984). Competitive advantage is normally defined as the ability to earn returns on investment consistently above the average for the industry (Porter, 1985). Sustained competitive advantage is recognized as the level of exceptional performance that a firm attains when it devises and implements a value-enhancing strategy that is not concurrently being followed by any existing or possible competitors who are either incapable or reluctant to reproduce the benefits of this value-enhancing strategy (Barney, 1991; Lado and Zhang, 1998). The RBV of the firm has become an influential theoretical perspective in recent strategy related research, which highlights sustainable competitive advantage and superior performance of an organization is a result of distinctive strategic capabilities (Barney, 1991; Meso and Smith, 2000; Prahalad and Hamel, 1990). However, in management control research less emphasis is given to strategic capabilities associated with RBV in examining the relationship between MCS, strategy and performance. Thus, inclusion of these capabilities as a variable is of paramount importance (Tucker et al, 2006).

The first coherent statement of the RBV of strategic management was signified by Wernerfelt (1984) based on the work of Penrose (1959). This foundation statement of the theory was extended by others such as Rumelt (1984) and Diericks and Cool (1989). However, the RBV theory became popular after specifying firm resources as the foremost determinant of sustainable competitive advantage by Barney (1991). The RBV conceptualizes firms as bundles of resources heterogeneously distributed across firms, so that resource differences persist over time (Amit and Schoemaker, 1993; Barney, 1991; Rumelt, 1984; Wernerfelt, 1984). Resources are defined as various elements that can be used to implement value-creating strategies including physical assets (e.g. specialized production facities, geographic location), human resources (e.g. engineering experience, expertise in chemistry), organizational assets (e.g. management skills, superior sales force) and competencies (e.g. miniaturization, imaging) (Barney, 1991; Eisenhardt and Martin, 2000; Henri, 2005; Teece et al, 1977). According to Day (1994) and Henri (2005), capabilities forge a link between resources and permit their deployment. They are the organizational processes by which firms synthesize and acquire resources and generate new applications from these resources (Kogut and Zander, 1992). Accordingly, the term 'capabilities' is broad enough to include both resources and processes of resource utilization (Johnson et al 2008). Table 2.5 shows the elements of organizational capabilities by differentiating threshold capabilities[19] from strategic capabilities. In this research emphasis is on strategic capabilities as they are the resources and competences of an organization needed for competitive advantage and superior performance.

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[19] Threshold capabilities are those capabilities needed for an organisation to meet the necessary requirements to complete in a given market (Johnson et al 2008).

Table 2.5: Strategic Capabilities and Competitive Advantage

	Resources	Competences
Threshold capabilities	Threshold resources	Threshold competences
Capabilities for competitive advantage	Unique resources	Core competences

Source: Johnson et al. (2008). Exploring Corporate Strategy: Text and Cases. England: Pearson Education Limited. 8th ed. p. 95.

According to Barney (1991), four empirical indicators of the potential of a firm's strategic capabilities to generate sustained competitive advantage are value, rareness, inimitability and non-substitutability. Barney (1991) explained resources as valuable when they enable a firm to conceive of or implement strategies that improve its efficiency and effectiveness. Hershleifer (1980) and Barney (1991) indicated resources as rare when the number of firms that possess a valuable resource (or a bundle of valuable resources) is less than the number of firms needed to generate perfect competition dynamics in an industry. However, valuable and rare organizational resources can only be sources of sustained competitive advantage if firms that do not possess these capabilities cannot obtain them. In language developed in Lippman and Rumelt (1982) and Barney (1986), this characteristic is recognized as imperfect imitability. The last requirement for firm capability to be a source of sustained competitive advantage is that there must be no strategically equivalent valuable resources that are themselves rare and inimitable (Barney, 1991) and this feature is associated with non-substitutability.[20] Figure 2.7 summarizes the core concepts of RBV.

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[20] Two valuable firm resources (or two bundles of firm resources) are strategically equivalent when they each can be exploited separately to implement the same strategies.

Figure 2.7: Core Concepts of Resource-Based View

Firm resource heterogeneity Firm resource immobility	Value Rareness Imperfect imitability Non-substitutability	Sustained competitive advantage
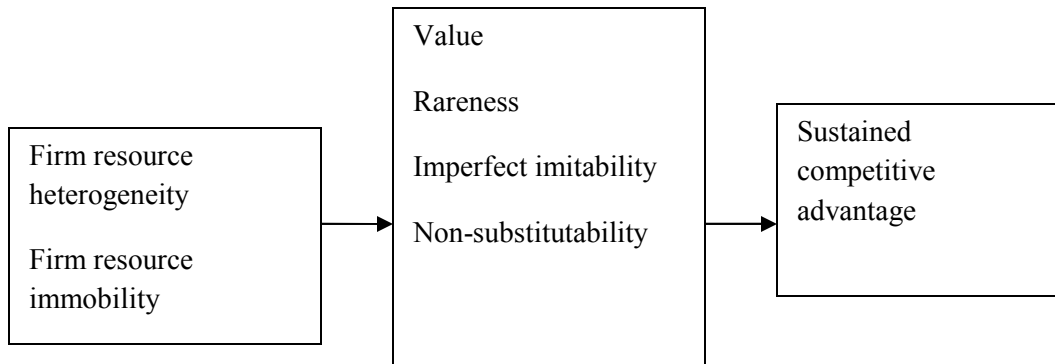
Source: Barney, J. (1991). Firm Resources and Sustained Competitive Advantage. Journal of Management. Vol. 7. No. 1. p. 112.

In this study strategic capabilities of low cost competency and uniqueness competency have been recognized as the core capabilities compatible with Porter's model of generic competitive strategies which is selected as the dominant model of competitive strategy. Low cost competency and uniqueness competency are recognized as core capabilities by researchers (Bridson and Mavondo, 2001; Mintzberg, Quinn and Voyer, 1995; Sands, 2006) who have researched on the relationship between strategic capabilities and organization performance as the competencies in cost efficiency and uniqueness provide value to both customers and organizations. According to Hurley and Hult (1998) and Ireland et al (2001), strategic resources and capabilities possessed by organizations influence the selection and use of business level (competitive) strategies as the key determinants of business strategies.

2.5.1 Low Cost Competency

Low cost competency incorporates the organization's emphasis on cost efficiency (Fritz, 1996; Bridson and Mavondo, 2001). According to Sands (2006), low cost competency deals with the capability of developing products or services by incurring low costs and it requires production efficiency. According to Bridson and Mavondo (2001), manufacturing organizations pursue process-oriented capabilities that allow them to

minimize costs in the supply chain. Barney (1997, 2001) stated that if a firm possesses valuable, rare, costly to imitate, and non-substitutable economies of scale, learning curve economies, access to low-cost factors of production, and technological resources, the firm should pursue a cost leadership strategy. Cost leadership strategy, when pursued as a long-term strategy by dedicating to minimizing costs and maximizing efficiency, is more likely to enhance organizational performance (Sands, 2006).

Johnson et al (2008) highlighted four key cost drivers (Figure 2.8) as the sources of low cost competency or cost efficiency.

Economies of scale refer to a reduction in cost per unit resulting from increased production realized through operational efficiencies (Gelles and Mitchell, 1996). According to Hill (1988), there are two sources of scale economies: the plant level and the firm level. The concept of minimum efficient scale (MES) defines the minimum plant size necessary to realize plant-level scale economies (Hill, 1988; Pratten, 1971). Firms can exploit firm-level scale economies in marketing, buying, distribution, finance and so forth as well as economies from multi-plant operations (Hill, 1988; Prais, 1976; Scherer et al; 1975).

Supply costs are of particular importance to organizations as a source of cost efficiency and according to Johnson et al (2008), location of the firm is mainly a factor which creates effects over supply costs. According to Hill (1988), supply costs are of particular importance to organizations that act as intermediaries, where the value added through their own activities is low and the need to identify and manage input costs is critically important to the success of these firms.

Figure 2.8: Sources of Cost Efficiency
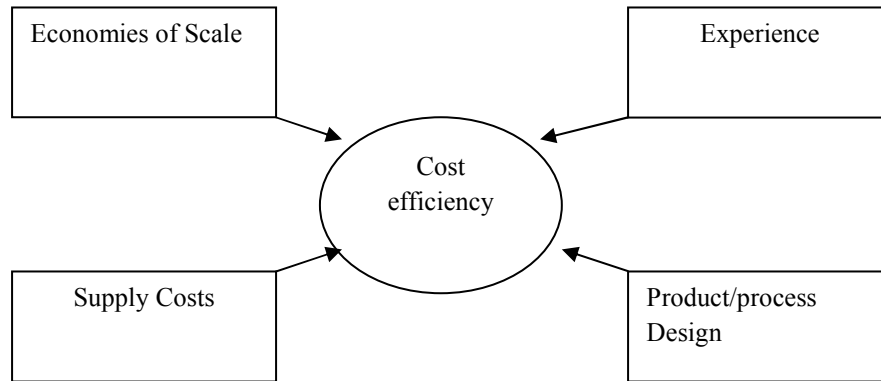
| Economies of Scale | | Experience |

Cost efficiency

| Supply Costs | | Product/process Design |

Source: Johnson et al. (2008). Exploring Corporate Strategy: Text and Cases. England: Pearson Education Limited. 8th ed. p. 95.

Product/process design also influences cost efficiency (Johnson et al 2008). Sands (2006) stated that efficiency gains in production processes have been achieved by many organizations through improvements in capacity-fill, labour productivity, yield from materials or working capital utilization. According to Johnson et al (2008), product design creates a significant impact over cost efficiency and a typical example is producing a simple product model.

Experience and associated learning effects are also recognized as key sources of cost efficiency and evidence suggests that learning effects are greatest during the start-up period associated with a new plant or process and that they decline and die out once a certain cumulative output is reached (Alchian, 1963; Baloff, 1966; Hall and Howell, 1985). Given the nature of learning effects, the two major determinants of their importance are the age and the complexity of the manufacturing or service process used by an organization (Hill, 1988). As stated by Hill (1988), the potential to realize learning effects will be greater in the case of a new process than in the case of an established process. Similarly, Hill (1988) specified that more complex or variable a process is, the greater the learning effects. Table 2.6 portrays relationship among learning effects, age of process and complexity of process.

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Table 2.6: Learning Effects and Process

		Complexity of Process	
Age of Process	*New Process*	Cell 1 Significant learning over short-time period	Cell 2 Significant learning over long-time period
	Established Process	Cell 3 No significant learning	Cell 4 No significant learning
		Low Complexity	*High Complexity*

Complexity of Process

Source: Hill, C. W. L. (1988).Differentiation versus Low Cost or Differentiation and Low Cost: A Contingency Framework. Academy of Management Review. Vol. 13. No. 3. p. 407.

2.5.2 Uniqueness Competency

Following Porter's generic strategy model, Mintzberg, Quinn and Voyer (1995) recognized that the generic strategy of differentiation needs to demonstrate the competency in uniqueness. Uniqueness competency is the capability of a firm to differentiate its offerings "by acting to distinguish its products and services from those of its competitors". Prior research studies have identified dimensions of uniqueness competency using different research methods. Two of these more frequently used methods are the basis of discussions in this section of the current research to recognize characteristics of uniqueness competency.

The first method has been to develop more refined and reconciled sets of uniqueness competency dimensions which follow Porter's differentiation strategy, using actual company examples. These studies did not involve any confirmatory statistical analysis and authors who followed this approach include Mintzberg (1988) and Miller (1990). Mintzberg (1988) described four features as dimensions of uniqueness competency and

they are: (i) differentiation by marketing an image or perceptions of intrinsic characteristics without any difference in fact to the product (ii) ability to differentiate by support services such as speedy delivery, after sales service, credit facilities and/or range of products (iii) differentiation by quality concerning the product's greater reliability, durability, and superior performance compared to competitors' products and (iv) designing as extrinsic product features to illustrate competencies relating to differentiation. Miller (1990) recognized innovation, quality and brand imaging as competent bases for differentiation or uniqueness.

The second method adopted by past researchers has been to recognize dimensions of uniqueness or differentiation competency through statistical analysis of data being gathered. Table 2.7 summarizes dimensions of uniqueness competency recognized by relevant researchers.

Consequently, after summing up both types of studies, Sands (2006) recognized three core dimensions as the features of uniqueness competency. Those features are: (i) product innovation (ii) product-service quality and (iii) marketing/brand imaging.

Table 2.7: Dimensions of Uniqueness/Differentiation Competency

Study	Dimensions of Uniqueness				
Archer and Otley (1991)	-	Technical expertise		-	Marketing
Chenhall and Langfield-Smith (1988) [FA]	Innovative product design and flexibility	Superior quality, customer service and prompt and reliable delivery			-
Chenhall (2005) [FA]	Innovative product design and flexibility	Superior quality, customer service and prompt and reliable delivery			-
Kotha and Vadlamani (1995) [FA]	Product design	Product quality	Support services		Image
LeCornu and Luckett (2004) [FA]	Manufacturing Excellence/Innovation	Full-line producer	Customer service	Specialization	Brand Development
Miller and Dess (1993)*	-	Product quality including delivery quality			Advertising, Image and Reputation
Miller and Friesen (1986)*	Product Innovation, Product quality including customer service quality				Marketing/Image
Miller (1988)**	Product Innovation	-	-		Marketing/Image of quality
Miller (1992)** [FA]	Product Innovation (Pioneering)	Product quality including service quality (Craftsmen)			Marketing (Salesmanship)
Robinson and Pearce (1988) [FA]	Product innovation and development	-	Service		Brand and Channel Influence
Wagner and Digman (1997)** [FA]	Product innovation	Process innovation			Marketing/Image

* Studies have used PIMS research data.   **Studies have used questionnaires based on PIMS research instrument

[FA] Studies have used factor analysis to establish associations with uniqueness competency

Source: Sands, J. S. (2006). Strategic Priorities, Management Control Systems, and Managerial Performance: An Empirical Study. Doctor of Philosophy Thesis. Australia: Griffith University. p. 42.

2.6 Textile and Apparel (T&A) Industry

2.6.1 World T&A Industry

The world T&A industry accounting for trade flows worth of nearly US $ 400 billion in 2005 is spread over 200 producing countries employing over 23.6 million workers (World Trade Report, 2006). In the world economy, T&A sector contributes nearly 8 per cent to world merchandise exports (Dheerasinghe, 2007). More importantly, as predicted by Textile Exchange global textile production will grow by 50 % by 2014 (Figure 2.9).

Figure 2.9: Trade Flows of World Textile and Apparel Trade
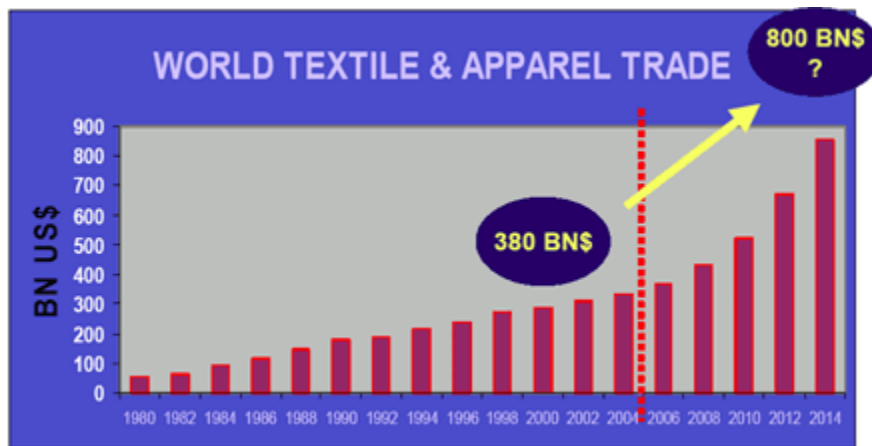
Source: Textile Exchange. Industry Overview. Retrieved August 3, 2010, from www.teonline.com.

The manufacture of textile can be divided into three segments: apparel, home textile and industrial/ technical textile. The ratio of global textile production of each segment is shown in the following diagram (Figure 2.10).

Figure 2.10: Segments of Global Textile Production
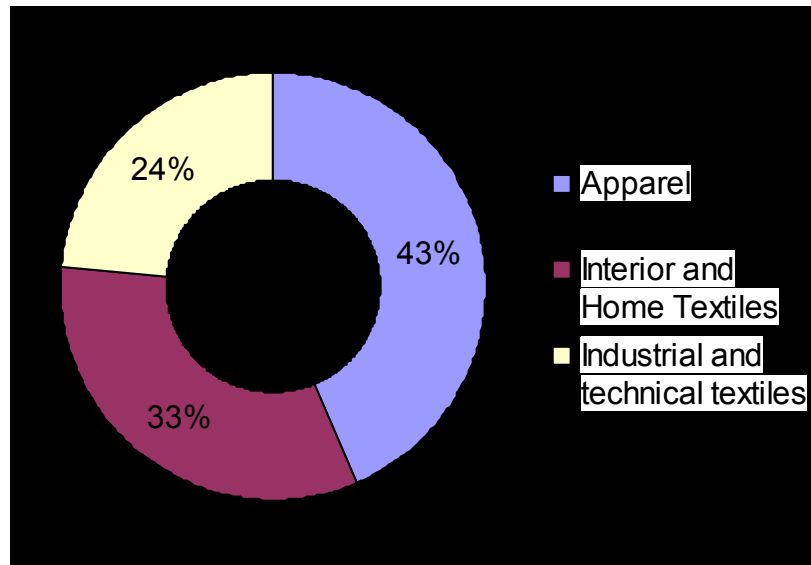
Source: Textile Exchange. Industry Overview. Retrieved August 3, 2010, from www.teonline.com.

World T&A production has undergone three successive phases. In the initial phase Hong Kong, Singapore, Republic of Korea and Taiwan produced excellent results confined to their national borders in 1970s. During 1985-1990 said countries decreased production and invested profoundly in least cost countries such as Philippines, Indonesia, Thailand and Malaysia promoting the latter countries as leading T&A exporters. The second set of countries too followed by investing and redistributing part of their production to another group of countries including Bangladesh, Pakistan, Sri Lanka, Laos, Nepal and Vietnam (Weeraratne, 2005).

The global T&A industry was predominantly governed by the Multi-Fibre Arrangement (MFA) of 1974. The Agreement provided guidelines to member countries on T&A trading and negotiating bilateral agreements and, a mechanism of quantitative restrictions to manage trade. Subsequent to the formation of the World Trade Organization (WTO) in 1995, the MFA was replaced by the Agreement on Textile and Clothing (ATC), which translated the gradual elimination of quota restriction over a 10 year period in four stages. Accordingly, with effect from January 1, 2005 the T&A industry was liberalized and now

it is subject to normal General Agreement on Tariffs and Trade (GATT) rules to ensure unrestricted access is available to all WTO members (Weeraratne, 2005).

The T&A industry has played an important role in the development process of many countries and in their integration into the world economy (World Trade Report, 2006). According to World Trade Report (2006), the T&A sector accounts for a major part of merchandise exports of a large number of developing countries. Developing countries as a group accounted for more than one-half of world exports of textiles and clothing in 2005 (World Trade Report, 2006). According to Weeraratne (2005), in no other category of manufactured goods do developing countries enjoy such a large net-exporting position.

2.6.2 T&A Industry in Sri Lanka

In Sri Lanka, which is a developing economy, the T&A industry is currently the leading industrial sub-sector. The importance of the industry emerged subsequent to export orientation of the local economy with the introduction of open economic policies in 1977. Starting with 19 firms in 1973, by 2004 the industry comprised more than 800 garment factories (Weeraratne, 2005). According to Weeraratne (2005), the population of T&A industry comprised 830 enterprises.[21]

The industry's contribution to economic and human development has been significant over the years. In 2005, the industry employed 338,704 direct employees with a female majority of over 80 per cent (Table 2.8). During the past ten years T&A exports accounted for over 50 percent of total export earnings of the country and 5 per cent of the GDP. As the leading sector of country's industrial production, the contribution by textiles and apparel to the value of industrial exports was 67 per cent in 2004 (Kapuge and Smith, 2007; CBSL, 2005).

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[21] According to Sri Lanka Companies Act No 7 of 2007 and former legislation, Sri Lanka Companies Act No 17 of 1982, it is not compulsory to register enterprises running as partnerships and sole proprietorships. This is the main reason for having a discrepancy between registered T&A enterprises and total T&A enterprises of the country.

Table 2.8: Classification of Sri Lankan T&A Enterprises

Classification	Number of Firms	Percentage of Firms	Number of Employees	Percentage of Employees
Small (1-100 employees)	157	18.9	10,501	3.1
Medium (101-500 employees)	438	52.8	118,679	35.0
Large (Over 500 employees)	235	28.3	209,524	61.9
Total	830	100.0	338,704	100.0

Source: Weeraratne, B. (2005). Textile and Apparel Industry in Sri Lanka: An Empirical Analysis in a Globalization Setting. Hawaii: International Graduate Student Conference Series. No. 9. p. 5.

Sri Lanka's textile and apparel exports are heavily concentrated in few markets. In 2004, over 93 per cent of apparel and textile products were exported to the USA and EU markets (Weeraratne, 2005). Figure 2.11 portrays Sri Lanka's apparel export destinations in 2005.

Figure 2.11: Sri Lanka's Apparel Export Destinations 2004
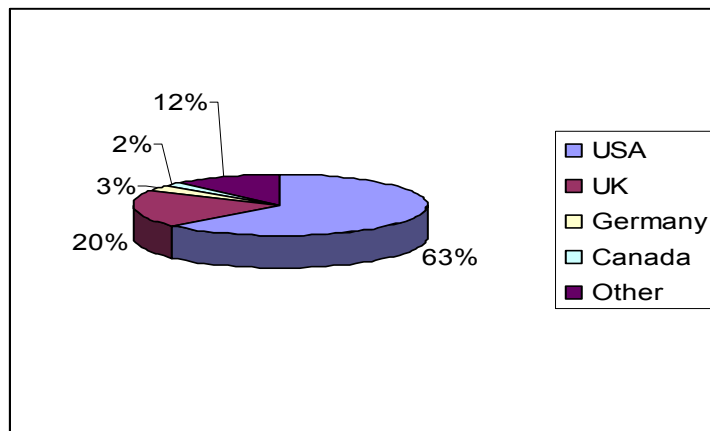
Source: Weeraratne, B. (2005). Textile and Apparel Industry in Sri Lanka: An Empirical Analysis in a Globalization Setting. Hawaii: International Graduate Student Conference Series. No. 9. p. 6.

Presently, synonymous with Sri Lankan T&A industry is the challenge of a post quota era (Weeraratne, 2005).The quota system which was valid till 2005, has protected Sri Lanka's exports from competitors by providing a ready market (Dheerasinghe, 2007). Though quota is a restriction on free trade, for developing economies like Sri Lanka it has provided a certain share in the global market (Kelegama, 2005). So phasing out of quota system has opened up more markets to Sri Lanka's exports while intensifying competition from other countries (Dheerasinghe, 2007). Chinese dominance in the industry has multiplied after 2005 with China's quota free access to markets in USA, EU, Canada. For instance, it was predicted that US export orders worth US$42 billion will shift to China by 2008 from other countries while Sri Lanka's loss to China in the US market was projected at US$791 million (Weeraratne, 2005).

According to recent researchers (Dheerasinghe, 2007; Kelegama; 2005; Weeraratne, 2005), Sri Lankan T&A industry is not competitive enough to gain from the expanding world apparel market due to inconsistencies available among competencies, strategies and control systems. As cost of labor in Sri Lanka has also risen sharply due to political instability in the country and increasing rate of inflation, Sri Lanka cannot solely compete on a low cost strategy as in the past and should try to differentiate its products by developing competencies relating to uniqueness (Athukorala and Rajapatirana, 2005; Kelegama and Epparachchi, 2005; Knutsen, 2006). Confirming this view, Textile Exchange (2010) also indicates global apparel industry is currently a talent intensive market where certain capabilities dominate the market position. According to Textile Exchange (2010) the following capabilities are of paramount importance to succeed in the industry.

- Adding value to products, customized with the "fast" changing fashion and textile needs
- The trading capability for taking full advantage of the vast and diverse ranges of textile produced across the globe
- Innovation in terms of new products, new systems and new applications
- The ability to introduce and implement participative management controls

- The capability to coordinate the dispersed supply chains through intelligence, understanding, technology

- Capability of developing retail brands for differentiating from other products and for gaining loyalty of consumers

- B2B branding because the large retailers and brands are relying more and more on B2B brands.

In the meantime, Kelegama and Epparachchi (2005) emphasized the need for persuading managers of Sri Lankan T&A firms to use MCS congruent with their competencies and strategies.

At a turbulent time of Sri Lankan T&A industry, the outcomes of this research will provide important findings to textile and apparel producing firms as the researcher has recognized the need for researching the extent to which current business strategies, strategic capabilities and uses of MCS of those firms contribute towards organisational performance.

2.7 Organizational Performance

Organizational performance is one of the most important constructs in accounting and management research. Organizational performance is the ultimate dependent variable of interest for researchers concerned with just about any area of management (Richard et al, 2009). This broad construct is essential in allowing researchers and managers to evaluate firms over time and compare them to rivals (Jing and Avery, 2008). According to Richard et al (2009), organizational performance is the most important criterion in evaluating organizations, their actions, and environments. This importance is reflected in the pervasive use of organizational performance as a dependent variable. March and Sutton (1997) found that of 439 articles in the Strategic Management Journal, the Academy of Management Journal, the Journals Accounting, Organizations and Society and Administrative Science Quarterly over a three year period, 23% included some measure of performance as a dependent variable.

Organizational performance has been defined alternatively in the literature in a narrower manner as well as in a broader manner. According to Richard et al (2009), the narrower domain of organizational performance encompasses three specific areas of firm outcomes: (1) financial performance (e.g. profits, return on assets, return on investment); (2) market performance (e.g. sales, market share); and (3) shareholder return (e.g. total shareholder return, economic value added). The traditional approach has been focusing on the interests of shareholders when measuring organizational performance (Richard et al, 2009). As Dore (2000) explained the Anglo-American model which is a liberal model and common in Anglo-American countries such as USA and UK tends to give priority to the interests of shareholders and thereby organizations have used a narrower approach mainly covering financial perspectives to evaluate organizational performance. In recent years, increasing criticism has been levelled against the pure use of financial measures in evaluating performance (Emmanuel and Otley, 1995; Norreklit, 2000). According to Richard et al (2009), if shareholders are the sole stakeholders to be considered, then maximization of shareholder wealth can be justified as the sole criterion of performance. However, in practice other stakeholders such as the firm's employees and customers must be considered (Dore, 2000). Adding in other stakeholders increases the dimensionality of performance to include items such as employee satisfaction, customer satisfaction and internal efficiencies bringing the concept organizational performance much broader and closer to that of organizational effectiveness.[22] In this context, the selection of a single measure may bias measurement by ignoring the distribution of value created across stakeholder groups.

The broader view of organizational performance is supported in the Balanced Scorecard (BSC) framework developed by Kaplan and Norton in 1992. The BSC has been initiated and used as a performance measurement framework introducing strategic non-financial performance measures to traditional financial metrics to give managers and executives a more 'balanced' view of organizational performance (Norreklit, 2000). The balanced

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[22] Organizational effectiveness is broader and captures organizational performance including the plethora of internal performance outcomes normally associated with more efficient or effective operations and other external measures that relate to considerations that are broader than those simply associated with economic valuation (either by shareholders, managers or customers), such as reputation (Richard et al, 2009).

scorecard concentrates on measures in four key strategic areas (Figure 2.12): (i) financial perspective which identifies how the company wishes to be viewed by its shareholders (ii) customer perspective which determines how the company wishes to be viewed by its customers (iii) internal-business-process perspective which describes the business processes at which the company has to be excel at to satisfy its shareholders and customers (iv) learning and growth perspective which involves the changes and improvements which the company needs to realize if it is to make its vision come true and requires the implementing organisation to identify goals and measures for each of them (Kaplan and Norton, 1996). Consequently, the BSC is an aid to achieving strategy by showing how key measures interrelate to track progress towards strategy (Norreklit, 2000). In this context, it is prudent to incorporate multi-dimensionality to measure organizational performance rather than solely using traditional financial measures (Kaplan and Norton, 1996; Norreklit, 2000 and Richard et al, 2009).

Figure 2.12: The Balanced Scorecard Framework
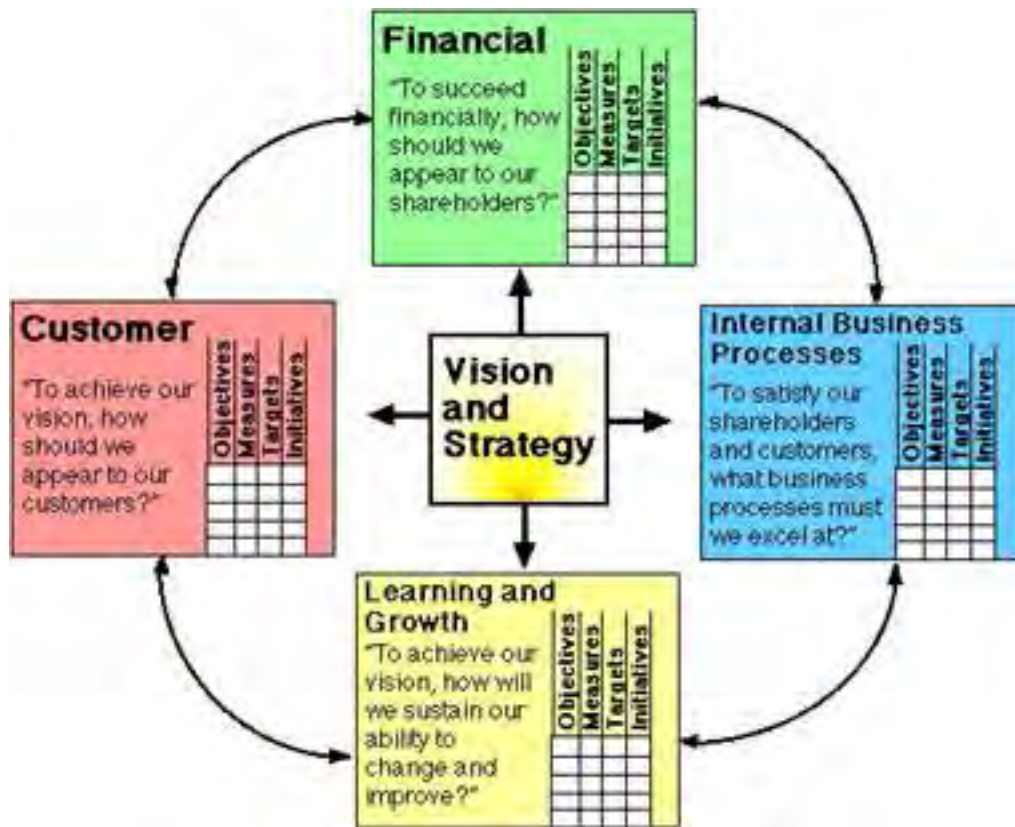
Source: Kaplan and Norton (1996). Using the Balanced Scorecard as a Strategic Management System. Harvard Business Review. Jan-Feb. p. 76.

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2.8 Chapter Overview

As emphasized in the first section of the chapter, it is apparent that examining the relationships available among MCS, strategy and performance is of paramount importance for contemporary researchers. In the current research, due emphasis is given to four avenues specified by Tucker et al (2009) after reviewing synopses of twenty one MCS-strategy-performance studies that have been undertaken since 1997 followed by Langfield-Smith's (1997) review and critique of sixteen studies. These avenues which warrant further attention by researchers relate to operationalizing MCS; operationalizing strategy; consistently conceptualizing MCS and strategy; and determining the proper fit between MCS and strategy.

The need for simultaneously examining the effects created by two uses of MCS (diagnostic and interactive) on strategy-performance relationship is recognized in this study as the literature supports their complementary use. While examining two uses to operationalize MCS in this study, the gap in operationalizing strategy is addressed by the current researcher in two ways. First, Porter's generic strategy model (1980) is considered as the principal strategy typology after comparing with and evaluation of alternative strategy frameworks to operationalize strategy. Then, RBV is incorporated as a relevant theory by including strategic capabilities as a research variable seeing that RBV has not been adequately used by past researchers to extend the interface between strategy and MCS. With the use of RBV, this research is going to fill the vacuum in researching strategy process along with MCS use as the majority of past studies have concentrated on strategy content and design or use of MCS (Figure 2.3). The current study can be mapped in Figure 2.3 as a hybrid study since RBV assists the focus on the aspect of strategy process while Porter's framework supports strategy content aspect. As described in section 2.6 of the current chapter, the aforesaid research gaps are addressed in relation to T&A industry in Sri Lanka by considering its significance to Sri Lankan economy and world trade while acknowledging the relevance of research constructs to the industry being selected.

The following chapter presents the theoretical framework and hypotheses of the study.

CHAPTER 3

THEORETICAL FRAMEWORK AND

HYPOTHESES DEVELOPMENT

The purpose of this chapter is twofold. First, the theoretical framework developed based on an extensive review of literature is presented. The main components of the theoretical framework include strategic capabilities, generic business (competitive) strategies, uses of MCS and organizational performance. Second, various stages of hypotheses development (Hypotheses 1 to 12) have been completed based on the theoretical framework. This study hypothesizes that the two strategic capabilities, namely low cost competency and uniqueness competency, determine the development of generic business strategies (cost leadership and differentiation), which, in turn, enhance organizational performance (Hypotheses 1 to 4). Furthermore, this study explores to what extent two uses of MCS moderate the relationship between strategy and organizational performance (Hypotheses 5 to 8). It also hypothesizes that two competences and two generic strategies separately have negative relationships with each other (Hypotheses 9 and 10). Additionally, Hypotheses 11 and 12 recognize the potential impact that two capabilities can directly make over organizational performance. A chapter overview is then provided.

3.1 Theoretical Framework Development

Understanding sources of organizational performance has become a major area of management and accounting research (Richard et al, 2009). Numerous studies have considered organizational performance as the ultimate dependent variable (e.g. Biddle, Bowen and Wallace, 1997; Capon, Farley and Hoenig, 1990; Gardner, 2005; Hoang and Rothaermal, 2005; Shaw, Gupta and Delery, 2005; Simsek et al, 2005; Steensma et al, 2005; Subramaniam and Youndt; 2005; Westphal & Stern, 2006) indicating its significance as a research construct.

Growing evidence of empirical studies has demonstrated that successful formulation and implementation of business level (competitive) strategies have a positive impact on organizational performance (e.g. Allen et al, 2006; Dess and Davis, 1984; Hambrick, 1983; Hill, 1988; Miller, 1992; Miller and Friesen, 1986; Miller and Dess, 1993; Kim and Lim, 1988; Rubach and McGee, 2004; Sands, 2006; Murray, 1988; Wright, 1987; Wright et al, 1991). In this study, Porter's generic competitive strategy typology (1980, 1985) is used after evaluating the model based on four criteria introduced by Miller and Dess (1993) and accordingly cost leadership and differentiation strategies are recognized as the dominant business strategies. However, recent researchers in management accounting have extended the interface between strategy and performance by incorporating the way MCS is being used as a moderating variable (e.g. Dent, 1990; Simons, 1987; 1990 Govindarajan and Gupta, 1985; Govindarajan, 1988). While suggesting in the extant literature that MCS can be used diagnostically or interactively with strategies for better organizational performance (Henri, 2005; Simons, 1995; Abernethy and Brownell, 1999), the extent to which uses of MCS make an impact over the strategy-performance relationship remains largely unexplored.

As recognized by Tucker et al (2009) in their study, a potential avenue for researchers conducting studies on MCS-strategy-performance relationship is to use RBV as a related theory of strategic management. The basic tenet of RBV is that firms can achieve better performance through sustainable competitive advantage by owning and deploying strategic resources which are valuable, rare, inimitable and non substitutable (Barney, 1991; Prahalad and Hamel, 1990). Though RBV of the firm has proven to be a highly influential theory of strategy, lack of emphasis is given to this model by researchers who examine the nature of relationships among uses of MCS, strategy and organizational performance (Tucker et al, 2009). Consequently, strategic capabilities namely low cost competency and uniqueness competency have been incorporated as research variables in the theoretical framework of the current study after considering the assumption that resource and capabilities act as determinants of business strategy within the framework of RBV.

Furthermore, empirical evidence available to explain the nature of the relationship between cost leadership and differentiation strategy is ambiguous and contradictory. While Porter (1980, 1985) and some other researchers have proposed a single dominant business strategy for better performance in organizations, there is another group of researchers who have suggested integrated cost leadership and differentiation for better results. For this reason, a hypothesis to examine the nature of relationship between two strategies is also incorporated in the current theoretical framework. In the context of the study, a hypothesis is also developed to explore the nature of the relationship between low cost competency and uniqueness competency as it is rational to assume the existence of a relationship between the two capabilities when the two strategies of cost leadership and differentiation are shown to be associated.

3.2 Hypotheses Development: Strategic Capabilities and Business Level Strategies

The RBV of strategic management proposes to select an appropriate strategy that best allows the firm to utilize its strategic capabilities (Hill et al, 2007). According to Hanson et al (2008), unique strategic capabilities are the basis for a firm's strategy and its ability to earn above-average returns. On these grounds, this study proposes that each core strategic capability (low cost competency and uniqueness competency) requires a distinctive business level strategy (cost leadership and differentiation). In this context, Hypotheses 1 and 2 are confirmatory as this study aims to confirm the predicted effects of strategic capabilities on business level (competitive) strategies.

As explained in Chapter 2 (2.5.1), low cost competency is the firm's capability to focus on cost efficiency (Fritz, 1996; Bridson and Mavondo, 2001). Johnson et al (2008)'s four drivers of cost efficiency: economies of scale, supply costs, product/process design and experience are significant factors to develop competency in managing low cost. Organizations which need to develop cost competency have taken initiatives to create the benefits of economies of scale (Perman and Scoular, 1999). Perman and Scoular (1999) emphasized the importance of economies of scale by referring to drinks, tobacco and food companies in UK. According to Sands (2006) and Johnson et al (2008), logistics

management and supplier relationship management are really critical as competencies to obtain purchases at the least possible costs to develop cost competencies. Stephens (2006) made comments about the importance of having product designs which are easy to manufacture and simple production processes which build low cost competency. Connole (1993) confirmed how organizations acquire the competency in producing at low costs through experience curve effects. Indicating the potential relationship between low cost competency and a cost leadership strategy, Barney (1997, 1991) stated that if a firm possesses valuable, rare, costly to imitate, and non-substitutable low cost competencies such as economies of scale, learning curve economies, access to low-cost factors of production, and technological resources, the firm should pursue a cost leadership strategy. As an organization's goal in pursuing a cost leadership strategy is to outperform competitors by producing goods and services at a cost lower than competitors, it is important to achieve a distinctive competency in relation to low cost (Hill et al, 2007).

Alternatively, firms who possess the ability to differentiate their offerings (products and services) from their competitors have uniqueness competency. According to Sands (2006) core dimensions of uniqueness competency include product innovation, product-service quality and marketing/brand imaging. The extant literature suggests that it is imperative to develop uniqueness competency to implement the strategy of differentiation (Hanson et al, 2008; Hill et al, 2007; Sands, 2006). The objective of a generic differentiation strategy is to achieve competitive advantage by creating a product (good or service) that customers perceive to be unique in some important way (Hill et al, 2007; Porter, 1980; 1985). Webster (2006) noted that innovation and creativity contribute for unique product developments which are requisites for Porter's differentiation strategy. Miller and Dess (1993), Miller and Friesen (1986) and Kotha and Vadlamani (1995) also confirmed that differentiation strategy needs unique competencies in quality, product/brand image and creativity.

Consequently, the following hypotheses in relation to strategic capabilities and generic business level strategies are developed.

H1: There is a positive relationship between low cost competency and cost leadership strategy.

H2: There is a positive relationship between uniqueness competency and differentiation strategy.

3.3 Hypotheses Development: Business Level Strategies and Organizational Performance

Business level strategy refers to the plan of action that strategic managers adopt for using a firm's distinctive competencies to gain a competitive advantage over rivals in a market or industry (Hill et al, 2007). As emphasized by Porter (1980, 1985) organizations are able to gain competitive advantage by adopting either cost leadership or differentiation strategy in a broad or narrow market. According to Johnson et al (2008), competitive advantage refers to the organization gaining an advantage by outperforming rival firms and thus, it ensures better organizational performance. Consequently, Hypotheses 3 and 4 which relate business level strategies with organizational performance are also developed as confirmatory in order to confirm the predicated effects of business strategies on organizational performance.

According to Porter (1985), a cost leadership strategy has the potential to ensure above average returns in the industry in two ways: (i) producing organizational products at a lower cost than competitors and charging the same market price (which leads to a higher profit margin from each unit) and (ii) producing products at a lower cost than competitors and charging a lesser price from customers (which leads to a higher market share). In consequence, a cost leadership strategy leads to substantial profits (Rubach and McGee, 2004). As emphasized by Johnson et al (2008) four criteria of low cost competency (economies of scale, supply cost, product/process design, experience) make organizations profitable by curtailing costs, which in turn drive organizational performance. However, in the long-run low costs may be imitated by competitors and as a result may not be able to produce consistent performance levels (Wright, 1987).

On the contrary, a differentiation strategy may lead to higher costs but will enable firms to earn more revenue by offering higher value products than competitors (Wright, 1987). According to Wright (1987), a differentiation strategy may create a competitive advantage comparatively over a long period of time as it creates difficulties of imitation

and imperfect mobility over organizational resources. Johnson et al (2008) also considered difficulties of imitation and imperfect mobility as two ways of sustaining competitive advantage based on differentiation. Furthermore, Johnson et al (2008) provided another factor for sustaining differentiation based competitive advantage i.e. reinvesting margins. Also the extant literature supports the view that organizations can charge a price premium by offering unique products and that enables organizations to earn more revenue and profits (Johnson et al, 2008; Porter, 1985; Wright, 1987).

Accordingly, the following two hypotheses are suggested.

H3: Cost leadership strategy positively affects organizational performance.

H4: Differentiation strategy positively affects organizational performance.

3.4 Hypotheses Development: Impact of Uses of MCS over Strategy-Performance Relationship

Even though a significant body of literature has explored the effects of strategy on MCS, the effects of MCS on strategy-performance relationship have been examined to a much lesser extent (Dent, 1990; Henri, 2005; Langfield-Smith, 1997; Shields, 1997). Further, Chenhall (2003) argued that the findings provided by a limited number of researchers who investigated the effects that MCS create on strategy-performance relationship remain ambiguous and sometimes contradictory. In this context, the current study aims to explore the impact made by the two uses of MCS, namely diagnostic and interactive, by developing Hypotheses 5 to 8.

As per Henri (2005), diagnostic use reflects two important features associated with mechanistic controls: (i) tight control of operations and strategies, and (ii) highly structured channels of communication and restricted flows of information (Burns and Stalker, 1961). Following the requirements of a cost leadership strategy, it is possible to assume that introducing tight controls could be favourable for cost reduction initiatives in order to enhance organizational performance (Sands, 2006). However, no research has been conducted to find out the effects that diagnostic use creates over the association of cost leadership strategy and performance. Generally, diagnostic use is described by

researchers as a negative force that creates constraints and ensures compliance with orders (Henri, 2005; Simons, 1995). However, Otley (1994) noted that traditional diagnostic use of MCS encourages conservatism and the result could be stifled creativity and impaired uniqueness. Following the same line, Simons (1995) also noted that diagnostic systems may constrain innovation and differentiation seeking behavior. The comments provided by Otley and Simons highlight the possibility of having a negative relationship between diagnostic use of MCS and differentiation strategy. However, there is no supporting empirical evidence provided by Otley and Simons to establish such a negative relationship between diagnostic use and differentiation strategy.

Conversely, interactive use reflects two important features associated with organic controls: (i) loose and informal control reflecting norms of cooperation, communication and emphasis on getting things done, and (ii) open channels of communication and free flow of information throughout the organization (Burns and Stalker, 1961; Henri, 2005). According to Simons (1995, p. 95) interactive use has the power to represent a positive trigger that fosters creative and inspirational forces; "…senior managers use interactive control systems to build internal pressure to break out narrow search routines, stimulate opportunity seeking, and encourage the emergence of new strategic initiatives". According to Dent (1987), curiosity and experimentation can be fostered by interactive use of MCS and the outcomes may lead to better business level strategies with reduced cost or/and unique products while improving firm performance. However, in the absence of profound empirical evidence, the impact made by interactive use of MCS over cost leadership and differentiation strategies leading to organizational performance, needs to be explored.

Interestingly, while explaining the dichotomy between diagnostic and interactive uses of MCS, the existing literature supports the joint use of MCS by following the concept of dynamic tension. As suggested by the conflict literature, tension is not necessarily negative but instead may be beneficial to organizations (DeDreu, 1991; Nicotera, 1995). In response, Henri (2005) concluded in his research that the joint use of MCS strengthens strategy-performance relationship.

Following Simons (1994) and Chapman (1997) it is possible to state at this stage that use of MCS moderates the strategy-performance relationship. As available empirical evidence is inadequate and ambiguous, exact relationships are difficult to specify.

In consequence, the following hypotheses are developed.

H5: Diagnostic use of MCS moderates the relationship between cost leadership strategy and organizational performance.

H6: Interactive use of MCS moderates the relationship between cost leadership strategy and organizational performance.

H7: Diagnostic use of MCS moderates the relationship between differentiation strategy and organizational performance.

H8: Interactive use of MCS moderates the relationship between differentiation strategy and organizational performance.

3.5 Hypotheses Development: Cost Leadership and Differentiation

Porter described generic competitive strategies as alternatives which should be mutually exclusive to guarantee a better performance (Porter, 1980; 1985; Rubach and McGee, 2004). Based on Porter's generic strategy framework, which is recognized and justified as the dominant competitive strategy typology in Chapter 2, Hypothesis 9 is developed as confirmatory along with Porter's proposition on mutual exclusiveness of competing business strategies.

Porter's generic strategy typology, which is robust and simple, captures much of the complexity of business unit strategies (Miller and Dess, 1993; Kotha and Vadlamani, 1995). A firm which is not focusing on one of the generic strategies is termed "stuck in the middle" and relegates itself to low profitability (Porter 1980; 1985). According to Porter (1985), by trying to provide all things to all people, these firms are setting themselves up for mediocrity. Achieving both cost leadership and differentiation is usually costly and thus Porter's model has been characterized as presenting discrete (mutually exclusive) alternatives (Wright 1987; Hill, 1988).

There has been a considerable support found for Porter's single source strategy proposition. Hambrick (1983) in his study on capital goods producers found that among the firms producing higher results, a single strategic approach was evident. Dess and Davis (1984) in their study of firms in the paint industry verified the construct validity of the generic strategy typology and found that a commitment to one of the generic strategies will result in higher performance than those firms which are stuck in the middle. Robinson and Pearce (1988) in a study conducted across industries found that firms which pursued inconsistent strategies were underperformers. In another study of 54 high-growth electronic firms in Korea, the performance of firms without a clear-cut strategy was less than in those firms which used a single generic strategy (Kim and Lim, 1988). Overall, these studies concluded that businesses which followed a "stuck in the middle" strategy were mediocre performers.

While Porter's typology has had a considerable support, it has also been attacked on empirical fronts. Porter's assertion that the generic strategies are mutually exclusive has been questioned by some researchers. Hill (1988) contended that Porter's model is fundamentally flawed, as a hybrid or combination strategy may be appropriate in certain industries. Further Murray (1988), Wright (1987) and Miller (1992) argued that mixed or hybrid strategies have distinct advantages and that pursuing a single generic strategy may be dangerous, leading to lower performance.

However, according to Rubach and McGee (2004) most of the prior research that supported Porter's mutual exclusiveness proposition had studied manufacturing firms. Rubach and McGee (2004) after comparing data from 236 firms in retailing, service and manufacturing industries, concluded that Porter's conclusion on mutually exclusiveness is rarely present in retailing and service industry, while the condition is often true for manufacturing firms. As it is expected to carry out the proposed study in a manufacturing industry, it may not be prudent to reject Porter's argument on mutual exclusiveness of generic strategies at this stage, especially because no empirical study has been conducted so far in the Sri Lankan T&A industry examining the reality of mutual exclusiveness of competitive strategies.

As a consequence, the study hypothesis below is developed.

H9: There is a negative relationship between cost leadership strategy and differentiation strategy.

3.6 Hypothesis development: Low Cost Competency and Uniqueness Competency

The extant literature supports the view that requirements of low cost competency and uniqueness competency are competitive (Sands, 2006; Webster, 2006). However, in the absence of an empirically proven relationship between low cost competency and uniqueness competency, Hypothesis 10 is developed with the aim of exploring the relationship between the two strategic capabilities.

As indicated by Stephens (2006) low cost competency requires the capabilities to design products which are easy to manufacture and inexpensive to capitalize. Also tight cost controls seem to be a major characteristic of low cost competency as the purpose of organizations is to produce their products at the least possible cost (Hanson et al, 2008). As indicated by Stephens (2006), employees are mostly persuaded when developing low cost competency to achieve quantitative cost targets irrespective of the long-term implications such initiatives might bring to the organization in terms of product quality, reliability and customer satisfaction. In the meantime, organizations intend to achieve low cost competency, develop economies of scale and learning curve effects rather than product customization which is a prerequisite for uniqueness competency (Hill, 1988).

Conversely, uniqueness competency needs strong creativity skills, strong research and development skills, continuous dialogues with subordinates, a good cooperation with distribution channels, productive branding/marketing processes and quality assurance (Stephens, 2006). In the meantime, Stephens (2006) after comparing and evaluating a number of studies, recognized innovation, product-process quality and marketing /brand imaging as the core competencies of uniqueness (Table 2.7). Webster (2006) commented that it is imperative to incur enormous costs to implement innovative ideas. This comment was made by Webster (2006) after studying new product development initiatives which took place in selected Australian companies (data was collected from 123 companies in Webster's study). Further, Fuller and Gordon (2004) after studying

new food product developments taking place in well known consumer product companies, explained that creative and innovative products are costly ventures, since those products need extensive research and development expenses. Simons (1995) after gathering data from nearly seventy public hospitals, suggested that there is an inherent organizational tension between creative innovation and cost efficiency requirements. Numerous researchers (e.g. LeCornu and Luckett, 2004; Miller and Dess, 1993; Miller and Friesen, 1986; Sands, 2006) have confirmed that requisites of uniqueness competency such as creativity, brand imaging and product quality are expensive and may limit cost reduction targets. These comments and conclusions present the dichotomy of low cost competency and uniqueness competency, leading to the following hypothesis.

H10: There is a negative relationship between low cost competency and uniqueness competency.

3.7 Hypotheses Development: Strategic Capabilities and Organizational Performance

Following the RBV of strategy, Barney (1991), Johnson et al (2008), Prahalad and Hamel (1990) have emphasized the possibility of achieving extraordinary profits or returns by having distinctive capabilities which are valuable, rare, inimitable and non-substitutable. Hypotheses 11 and 12 of this study are constructed as confirmatory in order to confirm the predicted effects of strategic capabilities on organizational performance.

Capabilities (competencies) are considered to be the key drivers of organizational transformation and strategic renewal by building and developing resources into new value creating strategies (Bhuian et al, 2005; Danneels, 2002; Eisenhardt and Martin, 2000; Hitt et al, 2001; Ireland et al, 2001). Previous empirical studies provide evidence showing that strategic capabilities contribute to performance in a positive manner (e.g. Hult and Ketchen, 2001; Naman and Slevin, 1993; Ireland et al, 2001). Further, Henri (2005) concluded that his research based on 383 Canadian manufacturing firms, established that capabilities relating to uniqueness competency such as innovation, market orientation, organizational learning and entrepreneurship lead to better organizational performance. Johnson et al (2008) commented that organizations which

achieve competitive advantage have strategic capabilities to produce their products either at lower cost (low cost competency) or to generate a superior unique product or service (uniqueness competency). Firms who achieve competitive advantage based on cost efficiencies have the competencies to provide products at a relatively lower cost, to make their products valuable to customers and to develop economies of scale through learning curve effects (Barney, 1991; 1997). According to Barney (1991, 1997) these competencies are somewhat rare and costly to imitate in the industry. Sands (2006) after collecting data from 227 Australian companies in the retail and service industries concluded that organizations which have developed uniqueness competency have achieved above average returns by making their distinctive capabilities valuable, rare, costly to imitate and hard to substitute.

In this context, the following two hypotheses are created.

H11: Low cost competency positively affects organizational performance.

H12: Uniqueness competency positively affects organizational performance.

3.8 Chapter Overview

This chapter has presented the theoretical framework and hypotheses development. Figure 3.1 summarizes the theoretical framework of the current study which includes twelve hypotheses. In developing these twelve hypotheses, Simons' levers of control model (1995), Porter's theory of generic competitive strategy (1980, 1985) and RBV of strategy have been considered as the underpinning theories and models of the study. While Hypotheses 1 and 2 investigate the relationship between strategic capabilities and business level strategies, Hypotheses 3 and 4 examine the effects made by business strategies on organizational performance. Hypotheses 5 to 8 explore the level of moderation created by diagnostic and interactive uses of MCS over strategy-performance relationship. In this study, Hypothesis 9 investigates the relationship between cost leadership strategy and differentiation strategy while examining the association between low cost competency and uniqueness competency through hypothesis 10. Further, Hypotheses 11 and 12 test the relationship between each strategic capability recognized (low cost competency and uniqueness competency) and organizational performance.

While Hypotheses 5 to 8 and Hypothesis 10 are exploratory, Hypotheses 1 to 4; Hypothesis 9 and Hypotheses 11 to 12 of the study are confirmatory.

Figure 3.1: Theoretical Framework
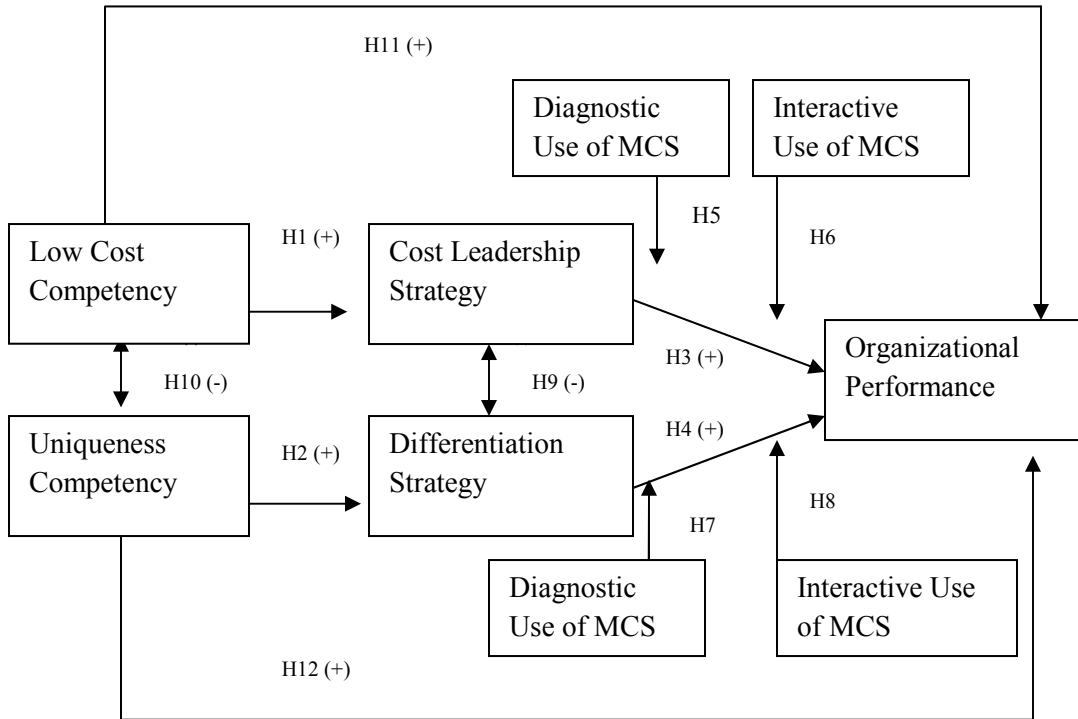
The next chapter illuminates discussions and justifications for the research methodology being used, pilot and final surveys being administered, measures selected to operationalize variables, and how reliability and validity of the questionnaire was measured.

CHAPTER 4

RESEARCH METHODOLOGY

This chapter of the study covers six main sections. Firstly, it describes the research design process which includes the purpose of the study, the time dimensions, development of an appropriate methodology and the theory building and testing. Secondly, it justifies the research approach being used for addressing the research problem and questions. The chapter then explains the sampling procedure based on Churchill and Iacobucci's (2005) six-step process. Next, it describes measurement and questionnaire development which consists of developing measures for variables and the questionnaire development process. This chapter then moves on to the description of two stages of the data collection process which comprises pilot testing of the questionnaire and the final questionnaire administration (first-wave, reminder and second-wave). Finally, it discusses the data analysis process including the preliminary analyses (correlation matrix, Bartlett's test of sphericity, KMO measure of sampling adequacy, reliability estimates and exploratory factor analyses), confirmatory factor analysis and regression analysis. A chapter summary is also provided at the end.

4.1 Research Design

Research design is "a master plan specifying the methods and procedures for collecting and analyzing the needed information" (Zikmund, 2003, p. 65). According to Neuman (2003), the research design of a study is divided into four sections: the purpose of the study (exploratory, descriptive or explanatory), the time dimension (cross-sectional or longitudinal), development of an appropriate methodology (inductive or deductive) and the theory building and testing.

4.1.1 Purpose of the Study

The purpose of social research can be classified into three groups based on what the researcher is trying to accomplish, namely: exploratory, descriptive or explanatory (Neuman, 2003).

An exploratory study aims to explore a new topic or issues in order to learn about them and thus, the study may be the first stage in a sequence of studies (Neuman, 2003). According to Lee (2008), exploratory research involves gathering information and developing ideas about a relatively under-researched problem or context. The prime purpose of exploratory research is to develop understanding in an area that is little understood. As stated by Neuman (2003) in exploratory studies there is no well understood basis from which to conduct research and thus, it is more appropriate to carry out this kind of research using qualitative methods.

A descriptive research study describes a social phenomenon by providing a detailed, highly accurate picture (Lee, 2008). It generally answers the questions who, what, where, when and how (Neuman, 2003). According to Lee (2008) and Neuman (2003), although the data description is factual, accurate and systematic, the research cannot describe what caused a situation. Thus, descriptive research cannot be used to create a causal relationship, where one variable affects another.

Alternatively, an explanatory study, builds on exploratory and descriptive research, and aims to explain and to identify 'why' something occurs. In other words, explanatory research typically seeks to identify and explain a causal relationship that is substantively important or meaningful. As Neuman (2003) stated, in this kind of research, researchers typically develop hypotheses to be tested (in light of the extant literature) and then see whether the data they have collected can be called on to support or refute those hypotheses. This type of approach is more likely to employ quantitative methods, typically a survey, but one could also seek explanatory type research using case study, or observational data (Lee, 2008).

Likewise, Churchill and Iacobucci (2005) indicate that the choice of research design (exploratory, descriptive or causal) usually depends on knowledge of the research problem. Exploratory research is usually used when the research problem is broad and/or vague, whereas descriptive or explanatory research is used when the research problem is precisely and unambiguously formulated. As the key focus of the current study is to examine the impact of diagnostic and interactive uses of MCS and strategy related

elements (business level strategies and strategic capabilities) on organizational performance in the Sri Lankan Textile and Apparel Industry, the study is descriptive as well as explanatory. Nevertheless, the explanatory approach is the dominant purpose of this study as causal relationships are established in terms of hypotheses.

4.1.2 Time Dimension

The time dimension in research is generally divided into two groups: a single point in time (cross-sectional research) versus multiple time points (longitudinal research) (Neuman, 2003). Accordingly, cross-sectional studies involve data collected at a defined time while longitudinal studies involve making a series of observations over a period of time on members of the study population.

Most sociological researchers take a snapshot approach (cross-sectional research) as it is the simplest and least costly alternative, whereas others use longitudinal resrach as it is more powerful, particularly when seeing answers to questions about social change (Levin, 2006; Neuman, 2003). Under the budget and time constraints, this study adopted the cross-sectional approach for its questionnaire administration. Even though there are limitations to this approach, as stated by Levin (2006) cross-sectional studies are the best way to determine prevalence and are useful at identifying associations that can then be more rigorously studied using a cohort study or randomized controlled study.

4.1.3 Development of an Appropriate Methodology

The development of an appropriate methodology for building and testing of theory can be approached from two directions: inductive or deductive (Neuman, 2003). The inductive approach "begins with detailed observation of the world and move toward more abstract generalizations and ideas", whereas the deductive approach "begins with an abstract, logical relationship among concepts and then move toward concrete empirical evidence" (Neuman, 2003, p. 51). Figures 4.1 and 4.2 illustrate steps of inductive and deductive reasoning respectively.

Figure 4.1: Inductive Reasoning
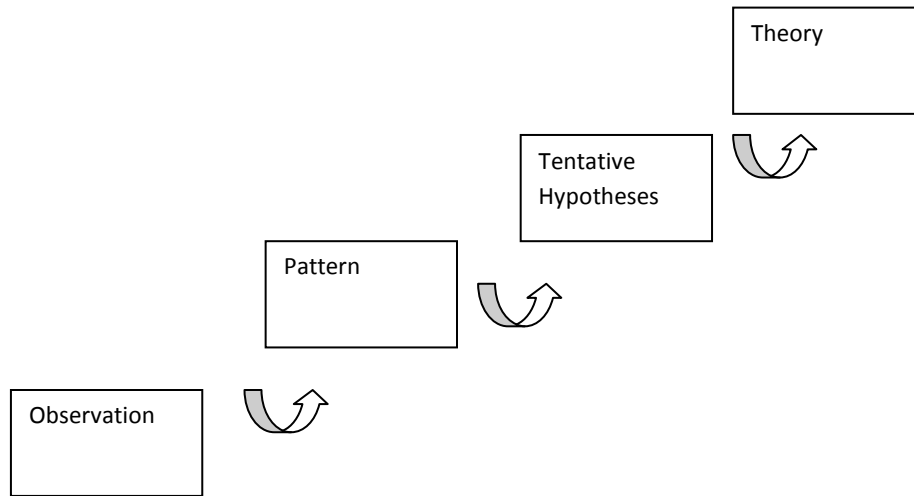
Theory

Tentative
Hypotheses

Pattern

Observation

Source: Boswell, T. (1999). The Scope of General Theory Methods for Linking Deductive and Inductive Comparative History. Sociological Methods Research. Vol. 28. No. 2. November. p. 158.

Figure 4.2: Deductive Reasoning
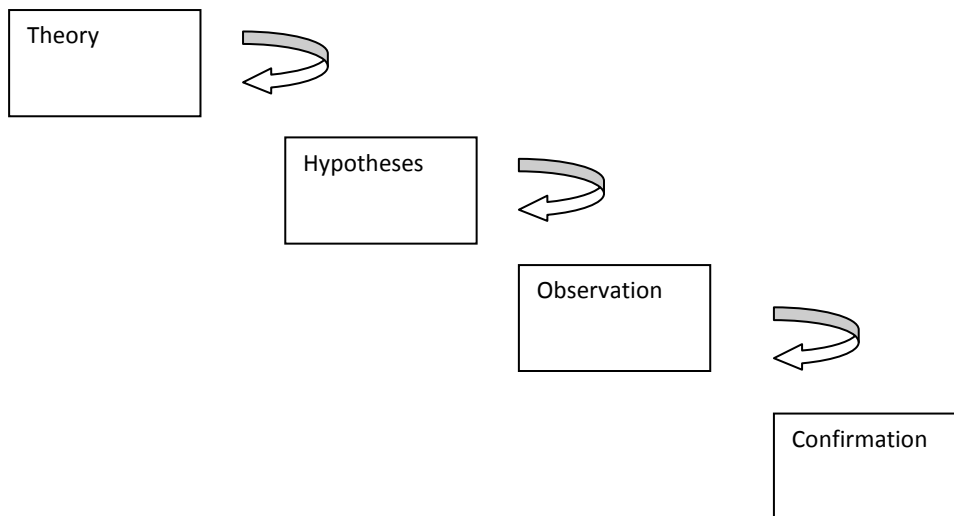
Theory

Hypotheses

Observation

Confirmation

Source: Boswell, T. (1999). The Scope of General Theory Methods for Linking Deductive and Inductive Comparative History. Sociological Methods Research. Vol. 28. No. 2. November. p. 158.

In the current study, a deductive approach is principally used as the study hypotheses are developed after reviewing the extant literature and tested with data collected from the questionnaire survey. Even though this study may look to be purely deductive, according to Boswell (1999) most social research involves both inductive and deductive reasoning processes at some time in the project. In fact, even in this deductive study, the researcher has observed certain patterns in the data that lead to development of new theoretical inputs which have the characteristics of inductive reasoning.

4.1.4 Theory Building and Testing

Deductive reasoning starts with the theory and proceeds to generate specific predictions which follow from its application (Smith, 2011). As stated by Smith (2011), the systematic collection of data allows for the testing of the alternative theories so that researchers can establish which of the existing theories best explains the facts.

This study aims to examine the problem of "how do the uses of MCS influence the relationship between business strategies (which are determined by strategic capabilities) and organizational performance" through a series of theoretically justified hypotheses[23]. After reviewing the related literature and prior empirical studies (e.g. Henri, 2005; Langfield-Smith, 1997; Miller and Friesen, 1982; Moulang, 2006; Sands, 2006; Thoren and Brown, 2004; Webster, 2006), a quantitative, positivistic approach[24] was selected in order to address the research problem and to test the hypotheses. According to Slater and Atuahene-Gima (2004) survey research is a valuable and valid strategy for conducting research on management controls-strategy related issues and in many circumstances, it might be the only appropriate method for collecting data to address research questions on strategy and controls.

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[23] Twelve hypotheses are developed and given in the previous chapter.

[24] Smith (2011) recognized three alternative research approaches adapted from Connole (1993), namely: positivist, interpretive and critical. The research sequence of the positivist approach includes (i) problem identification (ii) literature review (iii) hypotheses development (iv) research method identification and (v) generation of results (Smith, 2011, p. 16).

Wicks and Freeman (1998) stated that positivistic research is based on three principles: finding facts, documenting facts, and the use of scientific methods. Thus, the researcher aims to examine the impact of diagnostic and interactive uses of MCS and strategy related elements (business level strategies and strategic capabilities) on organizational performance in the Sri Lankan Textile and Apparel Industry using the scientific method. The chief advantage of the scientific method is that it avoids speculation and bias as it "allows researchers to test their hypotheses and rely on objective measures to support their findings" (Wicks and Freeman, 1998, p. 125). By using quantitative, scientific methods, empirical results generated can be replicated for verification purposes in future studies- a critical "next step" for theory testing (Flew, 1979; Lee, 2008; Rudner, 1966).

4.2 Research Approach

The research approach is to determine the appropriate data collection method to address the research objectives (Aaker, Kumar and Day, 2004; Lee, 2008). In general, primary data can be collected by two methods: qualitative and quantitative (Lee, 2008). Qualitative and quantitative research have often been viewed as fundamentally opposing paradigms. The basic difference between the two groups of techniques employ measurement, whereas qualitative ones do not (Bryman and Bell, 2007). According to Ghauri and Gronhaug, 2005), qualitative and quantitative methods are not mutually exclusive and the difference is in the overall form, emphasis and objectives of the study. Table 4.1 illustrates the differences in the emphasis between qualitative and quantitative methods.

On the one hand, qualitative techniques such as interviews and focus groups are more unstructured in data collection techniques which require a subjective interpretation. They tend to be more exploratory as they provide in-depth information on a few characteristics (Anderson and Tatham, 2006; Hair et al, 2006), which can lead to hypotheses building and explanations (Ghauri and Gronhaug, 2005).

On the other hand, quantitative techniques such as questionnaires are more structured data collection techniques which require objective ratings. They tend to be more useful for testing as they provide summarized information on many characteristics (Lee, 2008).

In particular, quantitative techniques help provide objectivity in that hypotheses are tested by applying statistical criteria to the measures (Hair et al, 2006; Lee, 2008).

Table 4.1: The Differences in Emphasis in Qualitative Versus Quantitative Methods

Qualitative Methods	Quantitative Methods
➢ Emphasis on understanding	➢ Emphasis on testing and verification
➢ Focus on understanding from respondent's/informant's point of view	➢ Focus on facts and/or reasons for social events
➢ Interpretation and rational approach	➢ Logical and critical approach
➢ Observations and measurements in natural settings	➢ Controlled measurement
➢ Subjective 'insider view' and closeness to data	➢ Objective 'outsider view' distant from data
➢ Explorative orientation	➢ Hypothetical-deductive- focus on hypotheses testing
➢ Process oriented	➢ Results oriented
➢ Holistic perspective	➢ Particularistic and analytical
➢ Generalization by comparison of properties and contexts of individual organism	➢ Generalisation by population membership

Source: Lee, C. (2008). An Empirical Study of the Impact of Human Resource Configurations and Intellectual Capital on Organizational Performance in the Australian Biotechnology Industry (thesis). Australia: Edith Cowan University. p. 70.

Qualitative and quantitative methods are appropriate at different stages or levels of research (Ghauri and Gronhaug, 2005). Ghauri and Gronhaug (2005) explain that qualitative techniques are appropriate at the first stage since the problem has an unstructured nature, whereas quantitative techniques are suitable at the second stage as

they allow testing of the hypotheses arrived through stage one. Often both qualitative and quantitative techniques can be used at the third stage (Ghauri and Gronhaug, 2005).

As the present study needs to test the hypotheses which have been developed based on the theoretical inputs, a questionnaire is used as the main method of data collection. According to Hair et al (2003, p. 419), a questionnaire is "a predetermined set of questions designed to capture data from respondents". There are various methods of questionnaire administration such as mail, telephone, fax, intenet and so forth. A mail questionnaire is a self-administered questionnaire sent through the mail to the respondents (Zikmund, 2003), which is the most commonly used questionnaire administration method (Tharenou et al, 2007). Its advantages include geographic flexibility (wider access and better coverage), economy (relatively inexpensive), time efficiency, anonymity and the possibility of completing at the respondents' convenience (Hair et al, 2003; Zikmund, 2003).

In the case of the present study, textile and apparel producing firms are dispersed throughout Sri Lanka, thus mail was used for questionnaire administration. The disadvantages of mail-outs include low response rate, not having the possibility of point of clarification, difficulty in follow-up of non-responses (Hair et al, 2003). In order to increase the response rate of the mail questionnaire of the present study, as indicated by Ghauri and Gronhaug (2005) and Conant et al (1990), several approaches were underatken: personalization (individually typed and addressed letter), response deadline (setting a due date), use of appeals (convincing that respondent questionnaire is important and useful), incentives (possibility of receiving summarized research findings and the promise to treat respondent information as strictly confidential), follow-ups (sending out reminders), a cover letter, and stamped and self-addressed envelopes (respondents need not to incur any expense while providing the researcher with information).

4.3 Sampling Procedure

With regard to the sampling procedure, Churchill and Iacobucci's (2005) six-step procedure is taken into consideration: (i) to define the population; (ii) to identify the

sampling frame; (iii) to select a sampling procedure; (iv) to determine the sample size; (v) to select the sample elements; and (vi) to collect the data from the designated elements.

4.3.1 Population

Population is defined by Neuman (2003, p. 541) as "the name for the large general group of many cases from which a researcher draws a sample and which is usually stated in theoretical terms." As the core objective of the study is to examine the impact of diagnostic and interactive uses of MCS and strategy related elements (business level strategies and strategic capabilities) on organizational performance in the Sri Lankan textile and apparel Industry, the population of the study consisted of all the textile and apparel producing firms in Sri Lanka.

4.3.2 Sampling Frame, Procedure and Sample Size

Sampling frame is "the list of elements from which the sample is actually drawn" (Cooper and Schindler, 2003, p. 188). According to Weeraratne (2004), starting with 19 firms in 1973, the textile and apparel industry in Sri Lanka comprised more than 800 garment factories by 2004. However, a population list (sampling frame) was not readily available since the 728 firms registered (as at 31/12/2006) under the Department of Registrar of Companies, Sri Lanka do not comprise all the textile and apparel producing firms in Sri Lanka. In order to overcome this coverage problem, a database (including names, addresses, contact numbers, e-mail addresses) has been created. The database combined publicly available directories from the Department of Registrar of Companies, Sri Lanka, the Board of Investment (BOI) of Sri Lanka, Colombo Stock Exchange (CSE) and the National Chamber of Commerce of Sri Lanka (NCCSL). As a result, a list of a total number of 833 textile and apparel producing firms has been created and considered as the sampling frame of this study.

Since the sampling frame of the textile and apparel producing firms in Sri Lanka is not very large, a census sample size was used. Census is defined by Zikmund (2003, p. 734) as an "investigation of all the individual elements making up a population". In other

words, a total enumeration of the 833[25] textile and apparel producing firms rather than a sample was used for data collection purpose.

4.3.3 Sample Elements and Data Collection from the Designated Elements

Sample element is defined as "the name for a case or single unit to be selected" (Neuman, 2003, p. 543). Most Sri Lankan textile and apparel producing firms are small and medium enterprises (SMEs) but, as pointed out by Weeraratne (2005), a few large companies dominate the financial results of the sector (e.g. MAS Holdings, Brandix Lanka Ltd, Hirdaramani Industries (Pvt) Ltd). In general, there are three levels of management in the Sri Lankan textile and apparel industry: senior (top level) managers[26], middle managers[27] and lower level managers[28] (Weeraratne, 2004). Despite the levels of management in SMEs and in large companies not being exactly the same, senior managers and middle managers comprised the sampling elements of the current study as they generally have the overall understanding of management controls, business strategies and organizational performance (Merchant, 1989; Sands, 2006).

Data collection was principally done using a mail survey and the details of measurement development, questionnaire design and administration are given in the remaining sections of the chapter.

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[25] Weeraratne (2004) also considered 830 Sri Lankan textile and apparel producing enterprises as the population in her empirical study (Table 2.8).

[26] The Chief Executive Officer (CEO), Managing Director (MD) and General Manager (GM) are some of the more common titles for people in this position (Sands, 2006).

[27] Examples of appropriate participant identification have been provided in past studies of middle management and include plant managers, sales managers, human resource managers, research and development managers (Schilit, 1987) and second- or third-manager described as managers not reporting directly to the CEO (Wooldridge and Floyd, 1990) and a variety of labels such as company-, sector-, group- or area-managers (Merchant, 1989).

[28] General examples for people in lower level management include supervisors, team leaders and foreman (Sands, 2006).

4.4 Measurement Development

A conceptual definition, an operational definition and a system of consistent rules for assigning scores or numbers are required for measurement development in business research (Zikmund, 2003). Conceptualization is a process of refining a construct by giving it a conceptual or theoretical definition (Neuman, 2003). An operational definition is defined as "a construct in measurable terms by reducing it from its level of abstraction through the delineation of its dimensions and elements" (Sekaran, 2003, p. 421). Measurement tools are then applied to measure the construct by using different numbers or scaled items. In other words, the measurement development process starts with conceptualization, followed by operationalization and application of measurement tools.

Accordingly, the key concepts relating to the current study were conceptualized first into four constructs: (i)uses of MCS (ii)strategic capabilities (iii)business level strategies and (iv)organizational performance. The first three constructs were operationalized and measured by a 1-5 likert-type scale while using a 0-5 likert type scale for the fourth construct. The following sections describe the processes of measurement development for all the variables in the theoretical framework.

4.4.1 Uses of MCS

Diagnostic and interactive uses of MCS were measured using an adapted version of the Vandenbosch's (1999) instrument. Developed originally to measure the use of Executive Support Systems (ESS),[29] this instrument is based on several dimensions of diagnostic and interactive uses notably score keeping (diagnostic) and attention focusing (interactive). The choice of this instrument, to measure diagnostic and interactive uses, is justified by Henri[30] (2005) as its development is based on the theories of accounting

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[29] Executive Support System (ESS) is a reporting tool that allows a manager to turn an organization's data into useful summarized reports. These reports are generally used by executive level managers for quick access to reports coming from all company levels and departments such as billing, cost accounting, staffing, scheduling, and to control such aspects (Hoven, 1996).

[30] In the study of Henri (2005), Vandenbosch's (1999) instrument was used as the basic measurement model to measure two uses of MCS when examining the relationships between the use of MCS and organizational capabilities from the resource-based perspective.

control (including Simons, 1990), before its adaptation to a management-information context. Furthermore, ESS is used as a surrogate for accounting and management information and is restricted to the accounting, management and control information provided (Henri, 2005). Thus, MCS and ESS seem to have a common base (Henri, 2005) and that allows the adaptation of the instrument to the proposed research context. In the survey questionnaire (Appendix A), there are fourteen questions to capture the features of the two aspects of MCS. In designing the research questionnaire, eleven questions were adapted from the Vandenbosch's instrument while including two questions from Moulang (2006) and one question from Henri (2005) to include extra features of the two uses.

The diagnostic use of a control system is identified as a system that aims to monitor the outcomes of the organization and compare them to pre-set standards (Moulang, 2006). According to Simons (2000), the aim is to correct deviations from pre-set standards of performance. The diagnostic use of controls usually centres on the achievement of critical performance variables and is a top-down approach to monitoring. Scarce management attention is allocated to this form of control as it does not require constant management attention once it has been established. Outputs of diagnostic systems are generally objective and can be measured using explicit formulas (Simons, 1995, 2000). As recognized by Moulang (2006), rewards are given to employees when using diagnostic systems based on the achievement of predetermined targets. In view of these characteristics, the following statements were included in the *Section B* of the questionnaire (Appendix A) to incorporate diagnostic use of MCS.

According to Simons (2000), interactive control systems are used to focus organizational attention toward strategic uncertainties facing the organization or to alter strategy in accordance with competitive markets. When a control system, is used interactively, managers personally and regularly involve themselves with subordinates, in decision making activities. This can be used as a signalling device to direct attention toward areas of importance, such as strategic uncertainties (Simons, 2000). Using Simons (1995), Bisbe et al (2007) proposed that an interactive control system consists of five properties:

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an intensive use by top and operational managers, pervasiveness of face to- face challenges and debates, a focus on strategic uncertainties and non-invasive, facilitating and inspirational involvement. Further, Simons (1995, 2000) claimed that using MCS interactively can result in innovation at an organizational level. Such innovation is achieved as interactive MCS create conditions conducive to encouraging individuals to be creative. This creativity is encouraged by opening up channels of dialogue and by encouraging an environment that values new ideas, experimentation, learning and information sharing (Simons, 2000). Thus, when interactive MCS are used, rewards for employees are determined by considering employees' contribution towards innovation too (Moulang, 2006). The statements which are given in the Table 4.3, considered the prominent features of MCS in the *Section B* of the questionnaire (Appendix A).

Table 4.2: Statements in the Questionnaire for Diagnostic Use

Section B: Statement Number	Statement
(i)	Performance targets are set in advance.
(iii)	Performance targets are set by top managers without considering subordinates' viewpoints.
(iv)	MCS evaluate and control subordinates tightly.
(vi)	MCS are used to align performance measures with strategic goals.
(vii)	MCS are used to follow up present plans and goals.
(viii)	MCS are considered as tools available for learning.
(ix)	MCS are used to follow up significant exceptions and deviations.
(xi)	Rewards for employees are determined by a formula based on the achievement of predetermined targets.

Table 4.3: Statements in the Questionnaire for Interactive Use

Section B: Statement Number	Statement
(ii)	PMS are often used as means of questioning and debating ongoing assumptions, decisions and action plans.
(v)	MCS are used to challenge new ideas and ways of doing tasks.
(viii)	MCS are considered as tools available for learning.
(x)	MCS are discussed regularly and frequently in face-to-face meetings between supervisors and subordinates.
(xii)	MCS demand frequent and regular attention from operating managers and subordinates at all levels of the organization
(xiii)	MCS generate information that forms an important and recurring agenda in discussions between operational and senior managers.
(xiv)	Rewards for employees are determined by employees' contribution towards innovation.

4.4.2 Strategic Capabilities

Strategic capabilities were measured by focusing on its two key components, namely: (i) low cost competency and (ii) uniqueness competency. The instrument proposed by Sands (2006) was adapted principally to measure two competencies. In the original instrument used by Sands (2006), there were eight statements to assess each competency. In the current study, all eight statements used by Sands (2006) have been included to measure the low cost competency. Nevertheless, one extra statement focusing on the uniqueness competency was added to the questionnaire of this study to incorporate outstanding customer service, which is also a major feature of uniqueness (LeCornu and Luckett, 2004). In the meantime, one statement from the Sands instrument relating to product quality was removed as that aspect is embedded into another statement with different terms.

As explained by Johnson et al (2008), economies of scale, supply cost, product/process design and experience are the key sources of low cost competency. Sands (2006) elaborated these key sources, which facilitate the capability of producing products at a

lower cost than the competitors, as economies of scale, capability of designing simple products, ability to negotiate for cheaper prices with suppliers, competency in strictly controlling waste/rejects, raising funds from cheaper sources, using cheaper methods for advertising and product promotions, and research and development potential on low cost production. In the extant literature, these different aspects of low cost competency are recognized also by Alchian, 1963; Baloff, 1966; Gelles and Mitchell 1996; Hall and Howell, 1985; Hill, 1988; Pratten, 1971; Prais, 1976; Scherer et al, 1975. Table 4.4 indicates the statements which were used in *Section C* of the research questionnaire (Appendix A) to measure low cost competency of Sri Lankan textile and apparel producing firms.

Table 4.4: Statements in the Questionnaire for Low Cost Competency

Section C: Statement Number	Statement
(i)	Capable of producing products at a lower cost than competitors.
(iii)	Economies of scale are achieved.
(iv)	Capable of designing simple products which are easy to manufacture.
(vi)	Capable in negotiating with suppliers to get raw materials at a lower cost.
(viii)	Capable of raising funds from cheaper sources.
(x)	Waste/rejects are strictly controlled in the production process.
(xi)	Innovative in finding cheaper ways to produce and deliver products.
(xiii)	Cheaper methods are used for advertising and product promotions.
(xvi)	Research and development is mainly focused on developing unique products.

Ability to produce unique products, capability of using different marketing techniques, innovativeness in producing quality and unique products, ability to maintain closer relationships with distributors, well developed brand name and potential for research on unique product development are the main aspects recognized by Sands (2006) as the measures of uniqueness competency. Mintzberg (1988) described four features, namely:

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(i) differentiation by marketing an image or perceptions of intrinsic characteristics without any difference in fact to the product, (ii) ability to differentiate by support services such as speedy delivery, after sales service, credit facilities and/or range of products, (iii) differentiation by quality concerning the product's greater reliability, durability, and superior performance compared to competitors' products, and (iv) designing as extrinsic product features to illustrate competencies relating to differentiation as the dimensions of uniqueness competency. Miller (1990) recognized innovation, quality and brand imaging as competent bases for differentiation or uniqueness. Chenhall and Langfield-Smith, 1988; Chenhall, 2005; Kotha and Vadlamani, 1995; LeCornu and Luckett, 2004; Robinson and Pearce, 1988; Miller and Friesen, 1986 recognized outstanding customer service also as an aspect of uniqueness competency. Consequently, the capability of providing outstanding customer service was added to Sands' 0-5 likert-type scale to measure uniqueness competency. Six statements which were used in *Section C* of the research questionnaire (Appendix A) to measure uniqueness competency are given in the Table 4.5.

Table 4.5: Statements in the Questionnaire for Uniqueness Competency

Section C: Statement Number	Statement
(ii)	Capable of producing unique products relative to competitors.
(v)	Capable of using different marketing techniques and methods to those of competitors.
(vii)	Innovative in producing unique and quality products.
(xii)	Capable of maintaining closer relationships with distributors than competitors.
(xiv)	Capable of providing outstanding customer service.
(xv)	Brand name is well developed.
(xvii)	Research and development is mainly on developing unique products.

4.4.3 Business Level Strategies

The two key business level strategies, namely: cost leadership and differentiation, were operationalized using established measurement items from prior strategic management

studies. Eighteen aspects used by Sands (2006) to operationalize cost leadership and differentiation strategies were selected for this study. Most of these items were developed and tested initially by Dess and Davis (1984). Kotha and Vadlamani (1995) and Robinson and Pearce (1988) also used these items and suggested their use in future research. A five-point likert-type scale was used and the participants of the study were asked to indicate the level of emphasis placed on each of the eighteen items when assessing their business-level strategies. A scale ranging from 1 'Not at all' to 5 'To a great extent' was attached to each strategic item.

The firms which attempt to gain competitive advantage through strategy of cost leadership are the lowest-cost producers in their industries (Porter, 1980; 1985). According to Lynch (2003), cost leaders earn higher profits either by pricing their products below competitors to enhance sales volume or by saving costs in every activity in the value chain. As indicated by Hanson et al (2008), cost leaders tend to produce standardized products, make every attempt to reduce costs including outsourcing and provide rewards to employees for suggesting meaningful ways of reducing costs of organizational functions. In the questionnaire of the current study, nine statements were used in *Section D* (Appendix A) to measure cost leadership strategy as a business level strategic priority and those statements are given in Table 4.6.

Table 4.6: Statements in the Questionnaire for Cost Leadership Strategy

Section D: Statement Number	Statement
(i)	Achieving lower cost per unit than competitors is a strategic priority.
(iii)	Pricing the products below competitors is a strategic priority.
(iv)	Employs extremely strict cost controls.
(vii)	Produce standardized products.
(xiii)	Outsource organizational functions to control costs.
(xiv)	Major expenditure on technology being incurred to lower costs.
(xvi)	Performs an analysis of costs associated with various activities.
(xvii)	Rewards are given to those employees who suggest ways of reducing costs of organizational functions.

When a company implements a differentiation strategy, unique products are offered to customers with extra product features and better customer service levels (Porter, 1980; 1985). Porter (1980, 1985) argued that for a company employing a differentiation strategy, there would be extra costs that the company would have to incur. Such extra costs may especially include high advertising spending to promote a differentiated brand image for the product, expenses on innovation, technology improvement and customization (Lynch, 2003; Allan et al, 2006). According to Hanson et al (2008), when rewards are given to employees, the suggestions they have made to make organizational products unique ones are highly recognized. Thus, the statements given in Table 4.7 are rational and used in *Section D (Appendix A)* of the questionnaire.

Table 4.7: Statements in the Questionnaire for Differentiation Strategy

Section D: Statement Number	Statement
(ii)	Attempts being made to differentiate product attributes from competitors.
(v)	Building brand identification is recognized as a strategic priority.
(vi)	Unique features of products are emphasized in promotional activities.
(viii)	Produce customized products.
(ix)	Innovation takes place in marketing technology and methods.
(x)	Fostering innovation and creativity in the production process is a strategic priority.
(xi)	Providing outstanding customer service is given priority.
(xii)	Major expenditure on technology being incurred to differentiate products.
(xv)	Extremely strict product/service quality control procedures are employed.
(xviii)	Rewards are given to those employees who suggest ways of making organizational products/services unique ones.

4.4.4 Organizational Performance

Organizational performance is included as a dependent variable in this study. Although past studies have measured organizational performance either objectively[31] (Lawrence and Lorsch, 1967; Davis et al, 1992) or subjectively (Govindarajan, 1984; 1988; Abernethy and Stoelwinder, 1991), subjective measures were selected for this study by considering the reasons given by Govindarajan and Fisher (1990)[32] and comments given by various scholars specifying the difficulty in collecting objective performance data from questionnaires (Dess and Robinson, 1984; Robinson and Pearce, 1988; Venkatraman and Ramanujam, 1987). Further, the difficulty in extracting adequate and reliable financial information was anticipated as most Sri Lankan textile and apparel producing firms are SMEs. As a result, subjective performance measures were employed based on the informants' perceptions by asking them to compare the organization's performance in the last financial year relative to that of competitors.

For this study, organizational performance is recognized as a multi-dimensional concept, even though Porter (1980, 1985) focused on a unidimensional concept[33]. This recognition of a multi-dimensional concept follows literature indicating that organizations use modern management systems, such as the Balanced Scorecard (BSC) and related multi-perspective systems (Kaplan and Norton, 1992; 1996; 2001; Simons, 1990; 1995; 2000). As a consequence, an 18-item measure was used to establish the multi-dimensional nature of the organizational performance concept relevant to organizations in today's business environment. The 18 items were extracted from the literature (e.g. Govindarajan and Fisher, 1990; Kaplan and Norton, 1996; Hoque and James, 2000; Iselin et al, 2004

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[31] Objective performance measures usually derive from substantial figures (outcomes) whereas subjective measures are often based on informants' perceptions (Lee, 2008).

[32] Govindarajan and Fisher (1990) highlighted three reasons to specify why objective measures have a limited value for cross sectional studies: (i) it is not possible to use the same set of criteria because different strategies imply different goals and priorities (ii) no objective measure can capture some of the factors critical for success of some strategies and (iii) industry factors influence organizational performance.

[33] Porter (1980, 1985) identified financial performance as the intended outcome in his above-average long-term performance proposition.

and covered a broad range of performance items. Items included in the instrument accounted for nine of the ten items in the Govindarajan and Fisher (1990) measure of organizational performance. The "political-public affairs" item was excluded because it is not included in the BSC and in many other multi-perspective systems. Additional items were included because the Govindarajan and Fisher (1990) measure, which covered five financial and five non-financial dimensions, is not considered as broad enough to cover non-financial dimensions (Sands, 2006).

In *Section E* (Appendix A) of the questionnaire, net profit margin, cost of goods sold to sales revenue, cost per unit, return on investment, sales returns as a percentage of gross sales are used as the financial measures (Govindarajan and Fisher; 1990; Sands, 2006). Non-financial measures include market share, sales growth, number of rejects/rework, product processing time, delivery performance to customers by date and quantity, number of customer complaints, customer dropout rate, employee turnover, employee absenteeism, new products introduced to the market, percentage of sales from new products and new production techniques and processes used (Canibano et al, 2000; Chen et al, 2004; Deurinck et al 2007; Govindarajan and Fisher, 1990; Hall, 1992; Kaplan and Norton, 1992; 1996; 2001; Moreby and Reithner, 1990; Parker and Skitmore, 2005; Petty and Guthrie, 2000; Brendle, 2001; Sands, 2006).

4.5 Questionnaire Development

The design of questions for the questionnaire was based on the theoretical framework underlying the research problem and questions (Tharenou et al, 2007) and it was modified by analysis of data collected from the pilot testing. The questionnaire was divided into five sections. The first section contained demographic information including name of the organization, number of employees, location of the organization, type of company (e.g. sole proprietorship, partnership), the respondent's position, number of years working in the organization, level of education, type of products offered (e.g. standard garments, non-standard garments), the status of branding (existence of a brand name) and export destinations including sales percentages). Appendix A indicates the contents of the questionnaire. The following sections describe how the questionnaire was

designed in terms of its phrasing, wording, sequence of questions, multi-item measures, scale and response format.

4.5.1 Questionnaire Design

Several rules of thumb in questionnaire development suggested by Churchill ad Iacobucci (2005) were taken into consideration. Firstly, phrasing should be used carefully as poor phrasing may lead to item non-response, incorrect answers and misunderstanding (Lee, 2008). The phrasing of the questionnaire avoided the use of relatively difficult words, complex grammar, negative and additions to clauses, phrases and instructions (Tharenou et al, 2007). Secondly, wording was used with caution. Ambiguous words and questions, leading questions and double-barrelled questions were all avoided. Frazer and Lawley (2000) also point out that the questionnaire should be simple, to the point and easy to read. Thirdly, a sequence of questions should begin with questions securing key information as they are the most critical ones, followed by questions seeking classification.

4.5.2 Multi-item Measures

Multi-item measures are the most commonly employed measurement devices in management research (Lee, 2008). They are used to measure complex unobservable constructs and form a major part of data collection instruments such as questionnaires (Tharenou et al, 2007). These authors point out the advantages of using multi-item measures which include superior reliability and validity, more easily tested for evidence of reliability, representing the construct of interest and can be modelled using factor analytic procedures (Lee, 2008; Tharenou et al, 2007). In other words, each item (statement or question) in the multi-item measures acts as an indicator of the construct.

More specifically, the key constructs of uses of management control systems, strategic capabilities and business level strategies were measured by five-item scales while organizational performance was measured using a six-item scale.

4.5.3 Scale and Response Format

The purpose of scaling is to assist in the operationalization of a construct, and also to produce quantitative measures which can be used with other variables to test hypotheses (Neuman, 2003). Commonly employed scales in social research include the Semantic Differential scale, Likert scale, Thurstone scale and Guttman scale (Neuman, 2003) where five-, six- or seven-point likert scales are the most commonly used response formats (Tharenou et al, 2007). Hinkin (1995) also concludes that five to seven response categories are adequate for most items.

Five- and six-point likert scales were employed in the questionnaire for the following reasons: firstly, it allows "respondents to indicate how strongly or to what extent they agree or disagree with carefully constructed statements that range from very positive to very negative towards an attitudinal object (Zikmund, 2003, p. 312); secondly, a likert-scale enables each statement to measure some aspects of a single common factor resulting in a uni-dimensional scale (Aaker et al, 2004); and thirdly, a likert-scale is the most appropriate for research designs that utilize self-administered surveys, personal interviews or online surveys (Hair et al, 2003).

For the sections B (uses of management control systems), C (strategic capabilities) and D (business level strategies) a five-point likert scale, where '1' represents 'not at all' and '5' represents 'to a great extent', was employed for the respondents to indicate their views. A six-point likert scale, where '0' represents 'not known' and '5' represents 'very high' was used for the respondents to indicate their opinion about organizational performance in the section E of the questionnaire.

4.6 Data Collection

Data collection of the study had two stages: pilot testing of the questionnaire and questionnaire administration.

4.6.1 Pilot Testing of the Questionnaire

For many research studies, the data collection process typically begins with pilot testing. As defined by Cooper and Schindler (2003, p. 86) pilot testing is "conducted to detect weaknesses in design and instrumentation and to provide proxy data for selection of a probability sample". It is suggested that pilot testing should draw subjects from the target population and simulate the procedure and protocols that have been designated for data collection (Cooper and Schindler, 2003; Lee, 2008).

The pilot study involved a 45-minute interview with 30 senior (top level) executives or middle managers who were employed by Sri Lankan textile and apparel manufacturing firms of Western Province[34] and those companies were selected from the Directory of the Board of Investment (BOI), Sri Lanka using stratified sampling system[35]. In order to group firms into three strata, the scale of the firm was used as the core criterion. According to Weerartne (2004), when classifying Sri Lankan textile and apparel producing firms based on the scale of the firm, there are alternative criterion such as sales revenue, market share and number of employees. As the information relating to sales revenue and market share is not readily available, number of employees was used as the decisive factor. The BOI considers 1-100 employees as the small scale, 101-500 as the medium scale and over 500 employees as the large scale and these ranges were used in the study for the stratified sampling process. Table 4.8 indicates the number of employees worked in the relevant firms at the time of conducting the pilot testing.

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[34] According to Weeraratne (2004) more than 50% of textile and apparel producing firms in Sri Lanka are located in the Western Province. Also as stated by Kelegama and Epparachchi (2005) the majority of firms located in other provinces of the country have their head offices located in the Western Province.

[35] Stratification is the process of grouping members of the population into relatively homogeneous subgroups before sampling (Lee, 2008). The strata should be mutually exclusive to provide the opportunity for every element in the population to get into only one stratum. In the current study three strata were created: small-scale firms, medium-scale firms and large-scale firms. Ten firms from each stratum were selected on a random basis.

Table 4.8: Number of Employees in the Firms Selected for the Pilot Testing

Firm	Number of Employees	Firm Size
1	78	Small
2	112	Medium
3	95	Small
4	596	Large
5	718	Large
6	45	Small
7	102	Medium
8	213	Medium
9	29	Small
10	65	Small
11	325	Medium
12	154	Medium
13	171	Medium
14	625	Large
15	94	Small
16	82	Small
17	1095	Large
18	156	Medium
19	889	Large
20	52	Small
21	1256	Large
22	112	Medium
23	906	Large
24	49	Small
25	412	Medium
26	756	Large
27	110	Medium
28	664	Large
29	69	Small
30	1562	Large

The pilot testing was undertaken in order to refine the questionnaire prior to the questionnaire administration throughout Sri Lanka. In order to improve the understandability and clarity of the questionnaire, the last section of the questionnaire provided the pilot testing participants with space to suggest ways in which it could be improved. Comments received from the participants were taken into consideration for questionnaire refinement. Most of the pilot testing participants found that the phrasing and wording of the questionnaire were simple and easy to understand, and the length of

the questionnaire was reasonable. Besides, the 18-item measurement for organizational performance was considered to be appropriate by 80 per cent of the respondents.

The response received from the respondents was very useful to improve the final questionnaire. For instance, in *Section A* of the pilot questionnaire, there was a question asking sales revenue of the firm in Sri Lankan Rupees. As only four respondents (13 per cent) provided this financial information, the question was removed when developing the final questionnaire to avoid non-response error.[36] In the questionnaire used for the pilot study, *Section B (Uses of MCS), Section C (Strategic Capabilities)* and *Section D (Business Strategies)* had sub classifications grouping statements which look at the same aspect together. For instance in Section B of the pilot questionnaire, the statements measuring the diagnostic use of MCS were together with the relevant sub-heading while the statements which measure the interactive use of MCS were given separately as another sub-section. When analysing the data gathered from the pilot study, it was found that most of the respondents had selected the same response for the statements given under each sub-section (e.g. the response indicated by a particular respondent for all the statements of the diagnostic use was mostly consistent as the answers were either 'not at all' or 'to a great extent'). According to Viswanathan (2005), the tendency to agree or disagree irrespective of the content of the items can cause measurement error.[37] As the inclusion of homogeneous items together can cause acquiescence or disacquiescence response styles leading to the measurement error, the statements of related variables pertaining to one section were mixed in the final questionnaire (e.g. in the final

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[36] There are four possible sources of error in conducting surveys: sampling error, non-coverage error, non-response error, and measurement error. Non-response error occurs when the survey fails to get a response to one, or possibly all, of the questions. Non-response causes both an increase in variance, due to the decrease in the effective sample size and/or due to the use of imputation, and may cause bias if the non-respondents and respondents differ with respect to the characteristic of interest (Cooper and Schindler, 2003).

[37] A variety of sources can cause measurement error: including response styles, specifically acquiescence, disacquiescence, extreme response, response range, midpoint responding, and non-contingent responding (Baumgartner & Steenkamp, 2001; Podsakoff et al 2003). Acquiescence bias occurs when individuals have the tendency to agree with item statements irrespective of the content of the item (Martin, 1964). Disacquiescence response style is the disagreement bias or nay-saying, is the opposite of acquiescence response style (Couch & Keniston, 1960).

questionnaire, the statements were provided in common under the heading of 'Uses of MCS' rather than classifying them into two sub-sections of diagnostic and interactive use).

4.6.2 Questionnaire Administration

4.6.2.1 First Wave Questionnaire Administration

The final (refined) questionnaire with the cover letter (Appendix B), a pre-paid return envelope, and a pre-paid postcard (to send by the respondent, if interested in receiving the summarized research findings) were posted directly to the intended respondents (833 firms) in Sri Lankan textile and apparel industry. As given in Table 4.7, 89 valid questionnaires were received at the first wave administration, while 38 questionnaires were returned to the sender as either the respondents no longer work at the organizations or wrong postal addresses were available, and 9 companies declined participation in this study. The content of the questionnaire is provided in Appendix A.

4.6.2.2 Reminder Administration

In order to increase the number of responses, follow-up techniques such as reminders (Lee, 2008) were posted two weeks after the deadline date indicated at the end of the first wave questionnaire. In total 727 reminders were sent which excluded the 59 filled questionnaires received indicating the firm's name[38], 38 questionnaires returned and 9 rejections. Additionally, reminder e-mails were sent to the firms with e-mail addresses and follow-up telephone calls were made to the questionnaire recipients with telephone numbers as those methods are most effective ways of increasing response rates and accelerating the rate of return (Blumberg et al, 2005). Some of the respondents were willing to participate in the study but had not received the questionnaire, thus questionnaires were again forwarded to them promptly. The content of the reminder is given in Appendix C.

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[38] Only 59 firms out of 89 respondents had indicated their firm's name and thus it was mentioned in the reminder to disregard the reminding note if the filled questionnaire had already been sent.

4.6.2.3 Second Wave Questionnaire Administration

The final questionnaire with a cover letter, a pre-paid return envelope, and a pre-paid postcard were posted again two weeks after the reminder as the second wave questionnaire administration. In order to resend 38 questionnaires returned from the first wave administration, potential respondents' contact details were searched again using web-based search engines such as Google and Yellow Pages Sri Lanka. However, 13 of the respondents' contact details were not available and their names were removed from the database. In total 699 questionnaires were posted at the second wave administration and 13 valid questionnaires were received (Table 4.9).

Overall the response rate for the first wave, second wave, and reminder administration was 14.04[39] per cent as only 117 out of 833 questionnaires were received as the valid responses. Even though, many observers presumed that higher response rates assure more accurate survey results (Aday 1996; Babbie 1990; Backstrom and Hursh 1963; Rea and Parker 1997), some studies which have been conducted in recent years are challenging the presumption that a lower response rate means lower survey accuracy.

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[39] The response rate is computed using the following equation (Wei, 2003). In the ratio, valid responses denote the number of completed survey questionnaires received and out of scope is to indicate number of respondents approached, but who are not in the target population.

$$\underline{\text{Number of valid responses}}$$

$$\text{Total number approached- Out of scope}$$

Table 4.9: Results of Questionnaire Administration

Administration Stage	No. of Questionnaire Sent	No. of Questionnaire Received[40]	No. of Returns to the Sender[41]	No. of Rejections[42]
First Wave	833	89	38	9
Reminder	727	15	0	0
Second Wave	699	13	7	0

One early example of a finding was reported by Visser et al (1996) who showed that surveys with lower response rates (near 15%) yielded more accurate measurements than did surveys with higher response rates (near 60 or 70%). Further, Holbrook et al (2007) assessed whether lower response rates are associated with less unweighted demographic respresentativeness of a sample. By examining the results of 81 national surveys with response rates varying from 5 percent to 54 percent, Holbrook et al. (2007) found that surveys with much lower response rates were only minimally less accurate. In another study, Keeter et al. (2006) also compared results of a 5-day survey employing the Pew Research Center's usual methodology (with a 15% response rate) with results from a more rigorous survey conducted over a much longer field period and achieving a higher response rate of 50%. In 77 out of 84 comparisons, the two surveys yielded results that were statistically indistinguishable. Among the items that manifested significant differences across the two surveys, the differences in proportions of people giving a particular answer ranged from 4 percentage points to 8 percentage points. As a result of these recent findings, it now seems clear that a low response rate does not always guarantee lower survey accuracy. According to Groves (2002), internal surveys generally receive a 30-40% response rate or more on average, compared to an average 10-15%

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[40] Number of questionnaire received = Number of valid responses

[41] Number of returns to the sender = Number of questionnaires returned due to incorrect or non existent addresses

[42] Number of rejections = Number of refusals or people who returned blank questionnaires.

response rate for external surveys. In this backdrop, the response rate of 14.04 per cent for the external survey of the current research is not unacceptable as especially in Sri Lankan context the average response rate for the studies conducted in Sri Lankan textile apparel industry seems to be 12%-16% (Weeraratne, 2004).

4.6.2.4 Non-response Bias

According to Brick and Bose (2001), analysis of potential non-response bias is most useful for mail surveys conducted under a rigid time constraint. Mail surveys to estimate a population preference are often criticized, as typically response rates have great potential for non-response bias (Brick and Bose, 2001). Non-response bias is an error resulting from distinct differences between a survey that includes only those who responded and a perfect survey that would also include those who failed to respond (Zikmund, 2003). Brick and Bose (2001) stated that the higher the response rate of a survey, the lower the risk of non-response bias as the low response rate creates bias towards describing the sample, ignoring those who did not respond. In this context, with the response rate of 14.04%, conducting a test for non-response bias is of paramount importance.

Most researchers view non-response bias as a continuum, ranging from early respondents to late respondents and consider the preferences of non-respondents to be similar to the preferences indicated by late respondents (Brick and Bose, 2001). In the current study, the sample was divided into two groups by considering the number of completed questionnaires received after the initial posting as early respondents (89 out of 117) and those which were received after the second reminder (13 out of 117) as late respondents. Thus, it is logical to assume that the feedback received from the late respondents was similar to the preferences of non-respondents (85.96%). As shown in Table 4.10, results of descriptive statistics indicate that there were no significant differences between the two groups of respondents, except for the variable of interactive use (means of 2.5 vs. 1.5).

Table 4.10: Analysis of Non-response Bias
Early (n=89) and Late (n=13) Respondents

Research Variables	Mean	Standard Deviation	Range	
			Min	Max
Uses of MCS				
Diagnostic Use				
Early Respondents	3.2	1.3	1.1	4.2
Late Respondents	2.9	1.0	1.5	4.0
Interactive Use				
Early Respondents	2.5	2.0	1.8	4.4
Late Respondents	1.5	2.3	0.9	3.3
Strategic Capabilities				
Low Cost Competency				
Early Respondents	3.8	1.0	2.9	4.8
Late Respondents	4.1	0.9	3.1	4.7
Uniqueness Competency				
Early Respondents	2.2	1.1	2.0	3.5
Late Respondents	1.9	1.2	1.5	3.8
Business Level Strategies				
Cost Leadership strategy				
Early Respondents	4.1	1.1	3.1	4.6
Late Respondents	3.8	1.2	2.0	4.2
Differentiation Strategy				
Early Respondents	2.4	0.6	1.3	3.9
Late Respondents	2.3	0.8	1.1	3.2
Organizational Performance				
Early Respondents	3.1	0.9	2.3	4.1
Late Respondents	3.4	1.1	1.9	3.9

Brick and Bose (2001) suggest comparing adjusted and unadjusted estimates to further investigate non-response bias. Consequently, in this study the comparison was done in

relation to the variable of interactive use. In order to compute weights[43], the approach recommended by Brick and Bose (2001) was used. Thus, it was assumed that early respondents (89 out of 833) are equal to 10.6% while late respondents represent 87.5%[44] of the population. Table 4.11 illustrates the adjusted and unadjusted averages to analyse the non-respondent bias in relation to the variable of interactive use.

Table 4.11: Adjusted and Unadjusted Responses for the Variable of Interactive Use

Adjusted Average	1.6
Unadjusted Average	2.0

As adjusted and unadjusted estimates do not indicate a significance difference, it is possible to conclude that non-response bias is not an issue even in relation to the variable of interactive use. Overall, it is possible to conclude that the sample is representative and non-response bias is not an issue in this research.

4.7 Quantitative Data Analysis

The anticipated quantitative data analysis process includes a number of preliminary analyses, confirmatory factory analysis (CFA) using structural equation modelling (SEM) and multiple regression analysis. The raw data collected from the questionnaires are systematically transformed into machine-readable scales that summarize the data prior to hypotheses testing (Neuman, 2003; Zikmund, 2003). The items which are based on the likert-type scales are assigned the values from '1' for 'not at all' to '5' for 'to a great extent' in the sections of *B, C and D* of the questionnaire. In the meantime, in the *section E* of the questionnaire the values are assigned from '0' for not known' to '5' for 'very high'.

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[43] Weighted values are computed by multiplying the mean values of each respondent group (both early and late respondents) by the percentage of each group's representation within the population (Brick and Bose, 2001).

[44] 87.5%= (Population- early respondents- those who responded to the second reminder)/population x 100 = (833-89-15)/833 x100

When entering data for the analysis, it was found that some of the respondents had not answered certain parts of the questionnaire. According to Graham (2009), missing data occur because of non-response and non-response could be either when no information is provided for several items or when no information is provided for a whole unit. As missing data reduce the representativeness of the sample and can therefore distort inferences about the population, it is important to prevent data from missingness before the actual data gathering takes place (Graham, 2009). In the current research, the reminder administration and the second wave questionnaire administration were done in order to reduce the impact of missing data as administration of these two stages increased the rate of response. However, to treat partially missing data, a user-defined missing value was introduced to the SPSS (17.0). User-defined missing values are numeric values that need to be defined as missing for SPSS analyses (Schafer and Graham, 2002). In this study, -9 was defined to represent missing values as negative values are irrelevant for the variables in the data set.

4.7.1 Preliminary Data Analyses

Preliminary analyses are undertaken to examine the data using validity and reliability measures and exploratory factor analysis (EFA).

According to Winter (2000, p. 7), "reliability and validity are tools of an essentially positivist epistemology." Both reliability and validity referred to related, desirable aspects of measurement as they concern how concrete measures are connected to constructs (Neuman, 2003). According to Zikmund, reliability denotes "the degree to which measures are free from error and therefore yield consistent results (2003, p. 300), whereas validity pertains to "the ability of scale or measuring instrument to measure what it is intended to measure (2003, p. 302). Cronbach (1951) alpha is used in this study to assess the reliability of each measure.[45] Provision of content validity of the instrument has been

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[45] Varying levels of this alpha coefficient have been used in the literature but Nunnally and Burstein (1994) suggest 0.70 to be an acceptable reliable coefficient level. However, Cronbach alphas of between 0.70 and 0.60 have been considered acceptable because "these reliability values were comfortably above the lower limits of acceptability, generally considered to be around 0.50 to 0.60 (Govindarajan, 1988). This lower

fulfilled because established instruments are used in this study.[46] Construct validity of latent variables used for this study is assessed by factor analysis to test how well the items selected for the dimensions of the variable define the construct. The dimensions (or factors) underlying a latent variable are established using eigenvalues.

The general purpose of factor analysis is to "summarize the information contained in a large number of variables into a smaller number of factors" (Zikmund, 2003, p. 586). There are two types of factor analysis, namely: exploratory factor analysis (EFA) and confirmatory factor analysis (CFA). EFA is used for the purpose of describing and summarizing data by grouping together those variables that are correlated while CFA is used for the purpose of confirming underlying processes (Tabachnick and Fidell, 2007). EFA is usually performed in the early stages of research, where it provides a tool for consolidating variables and for generating hypotheses about underlying processes (Lee, 2008). CFA is a much more sophisticated technique used in the advanced stages of the research process to test a theory about latent processes (Tabachnick and Fidell, 2007). In the present study, both EFA and CFA are used for different purposes of data analysis. EFA is used for preliminary evaluation of all the study variables and in contrast, CFA is conducted to confirm the results of preconceived theories.

Three decisions were made in EFA concerning the selection of the factor extraction models, the criteria for number of factors to extract and the factor rotation methods. The first decision was to choose the factor extraction models. Factor extraction models can be broadly categorized into common factor models and components models (Gorsuch, 1983). Principal component analysis (PCA) is the most frequently used components model, while principal axis and maximum likelihood factoring are popular among common factor models (Lee, 2008). The two categories are different in their purposes as PCA is to "reduce the number of variables by creating linear combinations that retain as

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allowable alpha coefficient for an internal consistency test has been acknowledged by Kline (1998). Provision of content validity of the instrument has been fulfilled because established instruments are used in this study.

[46] Content validity refers to the extent to which items, related to the variables to be investigated, provide adequate coverage of the research questions (Page and Meyer, 2000; Cooper and Schindler, 2003).

much of the original measures' variance as possible", where as common factor model is to "understand the latent (unobserved) variables that account for relationships among measured variables" (Conway and Huffcutt, 2003, p. 150). PCA is chosen for the factor extraction models for two reasons: first, it has been argued that PCA gives almost indistinguishable results as common factor models (Goldberg and Digman, 1994; Velicer and Jackson, 1990) and second, PCA can avoid factor indeterminacy from which common factor analysis suffers (Stevens, 2002).

The second decision was the criterion for the number of factors to retain. Several options are available such as Kaiser's (1956) "eigenvalues greater than one" rule, Cattell's (1966) scree test, Horn's (1965) parallel analysis, and Velicer's (1976) minimum average partial correlation (MAP). Most commonly used, Kaiser's (1956) "eigenvalues greater than one" rule was chosen despite Gorsuch's (1997) argument that it does not consistently give an accurate number of factors.[47]

The third decision was to choose the types of rotation methods out of the two types available: orthogonal rotations and oblique rotations. Varimax is the most common orthogonal rotation method, while direct oblimin and promax are popular oblique rotations. Orthogonal rotation methods are favoured for data reduction to either a smaller number of variables or a set of uncorrelated measures, whereas oblique rotation methods are preferred to obtain several theoretically meaningful factors or constructs (Hair et al, 2006). The most commonly used varimax orthogonal rotation method was chosen to simplify the factor matrix and to provide a clear separation of the factors (Hair, et al, 2006).

Furthermore, the sample size for a factor analysis was also taken into consideration. Hair et al (2006) and Lee (2008) suggest that sample size should be more than 50 observations (preferably 100 or larger) as well as at least five times as many observations as the number of variables. As the sample size of the present study is 117 observations, it meets the two requirements.

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[47] Research has indicated that Kaiser's guideline is accurate when the number of variables is less than 30 and the resulting communalities (after extraction) are all greater than 0.7 (Field, 2009).

4.7.2 Confirmatory Factor Analysis (CFA)

CFA is used to provide a confirmatory test of the hypotheses which are built upon preconceived theories. According to Long (1990), in the confirmatory factor model, the researcher imposes substantively motivated constraints and these constraints determine (i) which pairs of common factors are correlated, (ii) which observed variables are affected by which common factors, (iii) which observed variables are affected by a unique factor, and (iv) which pairs of unique factors are correlated. Thus, statistical tests can be performed to determine if the sample data are consistent with the imposed constraints or, in other words, whether the data confirm the substantively generated model (Long, 1990). As the hypotheses 1 to 4 and hypotheses 9 to 12 of the current study are confirmatory ones (as explained in the Chapter 3), CFA enables either confirmation or rejection of those hypotheses which have been built upon defined set of theories.

CFA is performed through Structural Equation Modelling (SEM) using Linear Structural Relationship (LISREL) software (8.80), to verify the construct validity and the overall goodness of fit of the proposed model. Nevertheless, the elements relating to the uses of MCS are not included in the CFA as they are still at its early stage of measurement development (Henri, 2005; Sands, 2006; Webster, 2006).

4.7.3 Regression Analysis

A common goal for a statistical research project is to investigate causality, and in particular to draw a conclusion on the effect of changes in the values of predictors or independent variables on dependent variables or response (Field, 2009). According to Field (2009), in statistics regression analysis includes the techniques for modeling and analyzing several variables, when the focus is on the relationship between a dependent variable and one or more independent variables. In the current study, regression analysis is alternatively used to test the study hypotheses as it has been utlised in number of recent empirical studies which also examined the effects of uses of management controls and strategy on organizational performance (e.g. Lee, 2008; Moulang, 2006; Sands, 2006; Webster, 2006). More importantly, in order to examine the impact of diagnostic and interactive use of management control systems over the relationship between business

level strategies and organizational performance (hypotheses 5 to 8), hierarchical multiple regression analysis is used.[48] In the current study, the uses of management control systems are recognized as moderator variables[49] (as explained in Chapter 2). According to Bennett (2000), the general strategy (whether predictor and moderator variables are categorical[50] or continuous[51]) to test for statistical significance of a moderator effect is to test for an interaction using hierachical multiple regeression analysis.[52] The moderator variables (interactive use and diagnostic use of MCS) of the current study have been developed as continuous variables based on the related empirical studies (e.g. Henri, 2005; Moulang, 2006; Webster, 2006) and following Baron and Kenny (1986), and Kim et al (2001), the interaction term is created by multiplying the predictor (business level strategy) by the moderator (use of MCS). In order to run these regression analyses Statistical Package for the Social Sciences (SPSS) (17.0) is used.

4.8 Chapter Overview

This chapter has described the research methodology by which the empirical data was collected in order to answer the research problem and the research questions. It has presented the research design process while justifying the appropriateness of the research approach being used. It has also explained the sampling procedure and the measurement development of the variables. Next, the two stages of data collection process including

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[48] When predictor and moderator variables are continuous, multiple regression analyses are used for testing moderating effects.

[49] In general terms, "a moderator is a qualitative (e.g., sex, race, class) or quantitative (e.g., level of reward) variable that affects the direction and/or strength of the relation between an independent or predictor variable and a dependent or criterion variable" (Baron and Kenny, 1986, p. 1174).

[50] Continuous variables have numeric values and the relative magnitude of the values is significant |(e.g. height, weight, income, age) (Bennett, 2000).

[51] A categorical variable has values that function as labels rather than as numbers. For example, a categorical variable for gender might use the value 1 for male and 2 for female. The actual magnitude of the value is not significant (Bennett, 2000).

[52] Depending on the type of moderator variable, different statistical analyses are used to measure and test the differential effects (Kim et al, 2001). The statistical tests are multiple regression analyses, structural equation modeling (SEM), and analysis of variance (ANOVA; Baron & Kenny, 1986; Holmbeck, 1997). According to Kim et al (2001) when predictor and moderator variables are interval or continuous, multiple regression analyses are used for testing moderating effects.

pilot testing of the questionnaire and questionnaire administration were described. Finally, it has addressed the data analysis process comprising preliminary analyses, confirmatory factor analysis and regression analyses along with hierarchical multiple regression analysis to test the effect of the moderator variables.

In the next chapter, quantitative data analysis is presented in detail.

CHAPTER 5

DATA ANALYSIS

The purpose of this chapter is fourfold. It presents and discusses the results of the quantitative data analysis in accordance with the underlying research objectives and questions, examining the problem of "how do the uses of MCS influence the relationship between business strategies (which are determined by strategic capabilities) and organizational performance", relating to the textile and apparel industry in Sri Lanka. More specifically, the results are segmented in a sequential manner in order to test the research hypotheses as proposed in Chapter 3.

Firstly, it describes the profile of the respondent organizations and their respondents. Secondly, it examines the data using the preliminary analyses: correlation matrix, Bartlett's test of sphericity, KMO measure of sampling adequacy, reliability estimates, and exploratory factor analysis (EFA). Thirdly, confirmatory factor analysis (CFA) is conducted to test whether the data enables either confirmation or rejection of measurement models (relating to low cost competency, uniqueness competency, cost leadership strategy, differentiation strategy and organizational performance) which have been built upon a defined set of theories. However, measurement models relating to diagnostic and interactive uses of MCS are not tested using confirmatory factor analysis as little knowledge is available about the underlying latent variable structures (Sands, 2006). Finally, in the current study, regression analysis is used to test the study hypotheses as it has been utlised in a number of recently related empirical studies (e.g. Lee, 2008; Moulang, 2006; Sands, 2006; Webster, 2006). More importantly, diagnostic and interactive uses of management control systems are recognized as moderator variables and hierarchical multiple regression analysis is used to test the statistical significance of the moderator effect.

5.1 Profile of Respondent Organizations and their Respondents

5.1.1 Profile of Respondent Organizations

Sri Lankan textile and apparel industry is divided into three sectors based on the scale of organizations: small, medium and large (Weeraratne, 2004).[53] Table 5.1 shows that the medium-scale sector has the largest representation in the current survey, followed by the large-scale sector and small-scale sector respectively.[54] According to Table 5.1 most of the respondent organizations are private companies, whereas the least amount of respondents pertains to sole proprietorship[55]. It is found that all the participants in the survey use budgetary controls as a management control system, while activity based costing is rarely used for management control. It is also apparent that variance analysis is quite popular among the respondents as a management control system (Table 5.2). Surprisingly no one in the respondent group uses activity based kaizen costing or target costing as control systems. The majority of respondent organizations (75.2%)[56] produce standard garments as only 24.8% respondent organizations produce non-standard customized garments (Table 5.3). While 61.4%[57] of respondent organizations produce branded garments, 38.6% distribute non-branded products to the market.

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[53] Though there are alternative criteria to classify organizations based on the scale (e.g. number of employees, the amount of capital invested, sales volume), Weeraratne (2004) in his study justified the criterion of number of employees as the most used parameter as organizations generally do not provide critical financial information such as capital invested and sales volume. In the current study also, the same criterion (number of employees) is used to classify respondent organizations. Weeraratne (2004) considered organizations having 1-100 employees as small, 101-500 employees as medium and over 501 employees as large organizations.

[54] Representation of respondent companies (based on the scale) in the survey is compatible with the distribution of population of textile and apparel producing organizations in Sri Lanka. As Table 2.8 illustrates the population of textile and apparel producing firms consists of 52.8% as the medium-scale, 28.3% as the large-scale and 18.9% as the small-scale.

[55] Weeraratne (2004) indicates that the tendency of sole proprietors in the industry to respond to surveys is minimal as they are reluctant to provide information as such firms assume that they may become exposed to income tax obligations.

[56] Percentage calculation is done not as a percentage of total organizations who replied to the survey (117), but as a percentage of number of organizations who responded (112) to the given question.

[57] Percentage calculation is done not as a percentage of total organizations who replied to the survey (117), but as a percentage of number of organizations who responded (101) to the given question.

Table 5.1: Profile of Respondent Organizations: Scale and Organizational Type

	N	Percentage (%)		N	Percentage (%)
Scale of the Firm (No. of Employees)			**Type of the Organization (Ownership structure)**		
Small (1-100)	27	23.1	Sole proprietorship	9	7.7
Medium (101-500)	58	49.6			
Large (Over 500)	32	27.3	Partnership	28	23.9
Total	117	100			
			Private Company	56	47.9
			Public Company	24	20.5
			Total	117	100

Table 5.:2 Profile of Respondent Organizations: Type of Management Control Systems Used

Type of Management Control Systems Used	N	Percentage (%)
Budgetary controls	117	100.0
Activity Based Costing	3	2.6
Variance Analysis	72	61.5
Six Sigma	16	13.7
TQM measurements	18	15.4
Target Costing	0	0
Kaizen Costing	0	0
Other	12	10.3

Table 5.3: Profile of Respondent Organizations: Product Type and Branding

Product Type	N	Percentage (%)
Standard garments	88	75.2
Non-standard (customized) garments	24	24.8
Total	112	100
Branding	**N**	**Percentage (%)**
Yes	62	61.4
No	39	38.6
Total	101	100

Table 5.4 indicates that while most of the respondent organizations are located in Western Province (49.6%), another considerable percentage of respondent organizations are from Southern Province (20.5%) and Central Province of the country (18.8%). Only 11.1% of respondent organizations represent all the other provinces (6 remaining provinces) of the country. According to Weeraratne (2004), approximately 75% of garment factories are concentrated in Western, Southern and Central Provinces of the country due to infrastructure facilities provided by the government.

Table 5.4: Profile of Respondent Organizations: Geographical Location

Product Type	N	Percentage (%)
Western Province	58	49.6
Southern Province	24	20.5
Central Province	22	18.8
Other	13	11.1
Total	117	100

5.1.2 Profile of Respondent Managers

A summary of the demographic information of the respondent managers is shown in Table 5.5. The survey questionnaires have been completed either by a top-level manager or a middle manager of respondent organizations. As indicated in Table 5.5, the respondents are mostly involved either in the accounting or the finance area. According to Sands (2006), those who are in the field of management accounting or financial accounting are the key persons who are aware of management controls of organizations. Nearly 70%[58] of the respondent managers have worked in their current position for less than ten years, whereas only 3.6% have worked for more than twenty years in their present position.

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[58] Percentage calculation is done not as a percentage of total organizations replied to the survey (117), but as a percentage of number of managers responding (112) to the given question.

Table 5.5: Profile of Respondent Managers

	N	Percentage (%)		N	Percentage (%)
Organizational Position			**No. of Years in the Position**		
Chief Executive Officer	9	7.7	0-4	32	28.6
Commercial Director	6	5.1	5-9	43	38.4
Finance Director	12	10.3	10-15	21	18.8
Management Accountant	36	30.8	15-20	12	10.6
			20+	4	3.6
Finance Manager	18	15.4	Total	112	100.0
Financial Accountant	29	24.8			
Operations Manager	4	3.4			
Other	3	2.5			
Total	117	100.0			

5.2 Preliminary Analyses

The purpose of the preliminary analyses is to examine the data prior to further analyses. In particular, exploratory factor analysis (EFA) is conducted prior to confirmatory factor analysis (CFA) and regression analyses. The preliminary analyses included correlation matrix, Bartlett's test of sphericity, KMO measure of sampling adequacy, reliability estimates and EFA. The correlation matrix was used to inspect the appropriateness of the data, because if none of the correlations are above .30, factor analysis might be considered inadequate (Tabachnick and Fidell, 2007). Bartlett's test of sphericity and KMO measures of sampling adequacy were used to test the inter-correlations among the measurement items. Hair et al (2006) suggest that data is appropriate for factor analysis when Bartlett's test value is significant (sig.<.05) and the KMO measure value is above 0.5. Reliability (internal consistency) was tested by Cronbach's alpha based on standardized items. Hair et al (2006) suggest levels of .60 and .70 for exploratory research and previously used measurements respectively. EFA was used to reduce a large

number of variables to a few interpretable dimensions (Zikmund, 2003). The minimum required factor loadings are $\pm$ .30 to $\pm$ .40; nevertheless, values greater than $\pm$ .50 are necessary for practical significance (Hair et al, 2006).

The results of the preliminary analyses are structured into four sections based on the theoretical framework: strategic capabilities, business-level strategies, uses of MCS and organizational performance. As mentioned above, a correlation matrix, Bartlett's test of sphericity, KMO measure of sampling adequacy, reliability estimates, and EFA were examined for each variable.

5.2.1 Preliminary Analyses: Strategic Capabilities

5.2.1.1 Low Cost Competency

Low cost competency was measured by nine items (SCQ1, SCQ3, SCQ4, SCQ6, SCQ8, SCQ10, SCQ11, SCQ13, SCQ16) in Section C of the questionnaire. Preliminary analyses of the correlation matrices resulted in three items (SCQ4, SCQ13 and SCQ16) being deleted due to very low correlations (less than .30) and therefore they were removed and not reported in Table 5.6. As presented in Table 5.6, the Bartlett's tests were significant (p<0.001) and the KMO measures of sampling adequacy were above the acceptable level of .5 (.658). The internal consistency of the items was tested by Cronbach's alpha and the results showed the scale reported good reliability with coefficient alpha level of .722. EFA was therefore conducted, producing a single factor structure with factor loadings ranging from .714 to .842 and communalities ranging from .522 to .709, explaining 65.034% of the variance.

Table 5.6: Factor Loadings: Low Cost Competency

	EFA Loadings	Communalities	SCQ1	SCQ3	SCQ6	SCQ8	SCQ10	SCQ11
SCQ1	.838	.702						
SCQ3	.735	.540	.412					
SCQ6	.842	.709	.587	.420				
SCQ8	.726	.534	.406	.346	.420			
SCQ10	.831	.694	.498	.378	.386	.525		
SCQ11	.714	.522	.336	.336	.408	.339	.366	
Variance explained		65.034%						
Bartlett's		Sig. 000						
KMO		.658						
Cronbach's alpha		.722						

5.2.1.2 Uniqueness Competency

Uniqueness competency was measured by eight items (SCQ2, SCQ5, SCQ7, SCQ9, SCQ12 SCQ14, SCQ15, SCQ17) in Section C of the questionnaire. Only six items remained as SCQ7 and SCQ15 had correlations less than .30. Table 5.7 shows that the Bartlett's tests indicated statistical significance ($p<0.001$) and the KMO measure of sampling adequacy (.810) was much higher than the benchmark of .5. The result of the reliability test indicated that the Cronbach's alpha level of .812 was above the acceptable level. EFA was then conducted, producing a single factor structure with factor loadings ranging from .616 to .845, and communalities ranging from .379 to .714, explaining 52.052% of the variance.

Table 5.7: Factor Loadings: Uniqueness Competency

	EFA Loadings	Communalities	SCQ2	SCQ5	SCQ9	SCQ12	SCQ14	SCQ17
SCQ2	.828	.686						
SCQ5	.789	.622	.591					
SCQ9	.845	.714	.682	.656				
SCQ12	.681	.464	.445	.394	.525			
SCQ14	.616	.379	.405	.366	.339	.384		
SCQ17	.664	.422	.424	.382	.375	.396	.349	
Variance explained		52.052%						
Bartlett's		Sig. 000						
KMO		.810						
Cronbach's alpha		.812						

5.2.2 Preliminary Analyses: Business-Level Strategies

5.2.2.1 Cost Leadership Strategy

Cost leadership strategy was measured by eight items (BLQ1, BLQ3, BLQ4, BLQ7, BLQ13, BLQ14, BLQ16, BLQ17) in Section D of the questionnaire. As Table 5.8 shows, the correlations were well above the acceptable level of .30, the Bartlett's tests were significant (P<0.001), and the KMO measures of sampling adequacy (.876) were above the benchmark of .5.The internal consistency of the items was tested by Cronbach's alpha, the scale demonstrating high reliability with a coefficient level of .901. EFA produced a single factor structure with factor loadings ranging from .641 to .872, and communalities ranging from .411 to .760, explaining 63.766% of the variance.

Table 5.8: Factor Loadings: Cost Leadership Strategy

	EFA Loadings	Communalities	BLQ1	BLQ3	BLQ4	BLQ7	BLQ13	BLQ14	BLQ16	BLQ17
BLQ1	.641	.411								
BLQ3	.714	.510	.477							
BLQ4	.863	.745	.442	.578						
BLQ7	.872	.760	.472	.535	.800					
BLQ13	.837	.700	.497	.498	.733	.712				
BLQ14	.795	.632	.383	.455	.577	.618	.567			
BLQ16	.840	.706	.434	.504	.625	.664	.619	.801		
BLQ17	.681	.464	.421	.482	.521	.632	.510	.785	.742	
Variance explained	63.766%									
Bartlett's	Sig. 000									
KMO	.876									
Cronbach's alpha	.901									

5.2.2.2 Differentiation Strategy

Differentiation strategy was measured by ten items (BLQ2, BLQ5, BLQ6, BLQ8, BLQ9, BLQ10, BLQ11, BLQ12 BLQ15, BLQ18) in Section D of the questionnaire. Preliminary analyses of the correlation matrices resulted in four items (BLQ8, BLQ9, BLQ11 and BLQ15) being deleted due to very low correlations (less than .30) and therefore were not reported in Table 5.9. As presented in Table 5.9, the Bartlett's tests were significant (p<0.001) and the KMO measure of sampling adequacy (.877) was above the benchmark of .5. The internal consistency of the items was tested by Cronbach's alpha and the scale demonstrated high reliability with a coefficient alpha level of .914. EFA was therefore

conducted, producing a single structure with strong factor loadings ranging from .784 to .908 and communalities ranging from .614 to .824, explaining 75.230% of the variance.

Table 5.9: Factor Loadings: Differentiation Strategy

	EFA Loadings	Communalities	BLQ2	BLQ5	BLQ6	BLQ10	BLQ12	BLQ18
BLQ2	.879	.773						
BLQ5	.784	.614	.631					
BLQ6	.908	.824	.773	.611				
BLQ10	.896	.803	.730	.649	.754			
BLQ12	.841	.710	.642	.521	.721	.696		
BLQ18	.865	.747	.669	.547	.780	.740	.712	
Variance explained	75.230%							
Bartlett's	Sig. 000							
KMO	.877							
Cronbach's alpha	.914							

5.2.3 Preliminary Analyses: Use of MCS

5.2.3.1 Diagnostic Use of MCS

Diagnostic use of MCS was measured by eight items (MCQ1, MCQ3, MCQ4, MCQ6, MCQ7, MCQ8, MCQ9, MCQ11) in Section B of the questionnaire. All eight items remained as the majority of the correlations were above .30 except MC6. Nevertheless, MCQ11 was not deleted due to its factor loading being above .5 and Cronbach's alpha would not be significantly improved even if it was deleted (from .748 to .757). Table 5.10 indicates the Bartlett's tests were significant (p<0.001) and the KMO measure of sampling adequacy (.742) was higher than the benchmark of .5. The result of the reliability test

indicated the Cronbach's alpha level of .748 was higher than the acceptable level. EFA was therefore conducted, producing a single factor structure with factor loadings ranging from .695 to .798, and communalities ranging from .483 to .636, explaining 57.455% of the variance.

Table 5.10: Factor Loadings: Diagnostic Use of MCS

	EFA Loadings	Communalities	MCQ1	MCQ3	MCQ4	MCQ6	MCQ7	MCQ8	MCQ9	MCQ11
MCQ1	.791	.626								
MCQ3	.695	.483	.356							
MCQ4	.744	.553	.513	.325						
MCQ6	.735	.540	.412	.346	.445					
MCQ7	.798	.636	.499	.474	.419	.436				
MCQ8	.669	.447	.306	.339	.438	.378	.425			
MCQ9	.783	.613	.407	.350	.397	.414	.437	.452		
MCQ11	.508	.258	.322	.320	.285	.244	.249	.232	.248	
Variance explained	57.455%									
Bartlett's	Sig. 000									
KMO	.742									
Cronbach's alpha	.748									

5.2.3.2 Interactive Use of MCS

Interactive use of MCS was measured by six items (MCQ2, MCQ5, MCQ10, MCQ12, MCQ13, MCQ14) in the B of the questionnaire. Preliminary analyses of the correlation matrices resulted in one item (MCQ13) being deleted due to very low correlation (less than .30) and therefore, not reported in Table 5.11. As Table 5.11 shows the Bartlett's tests indicated statistical significance ($p<.001$) and the KMO measure of sampling adequacy (.838) was above the benchmark. The internal consistency of the items was tested by

Cronbach's alpha and the results showed the scale reported good reliability with a coefficient alpha level of .884. EFA was then performed, producing a single factor structure with factor loadings ranging from .691 to .915 and communalities ranging from .478 to .837, explaining 69.036% of the variance.

Table 5.11: Factor Loadings: Interactive Use of MCS

	EFA Loadings	Communalities	MCQ2	MCQ5	MCQ10	MCQ12	MCQ14
MCQ2	.854	.730					
MCQ5	.915	.837	.789				
MCQ10	.886	.785	.660	.789			
MCQ12	.691	.478	.537	.515	.503		
MCQ14	.789	.622	.529	.653	.686	.404	
Variance explained	69.036%						
Bartlett's	Sig. 000						
KMO	.838						
Cronbach's alpha	.884						

5.2.4 Preliminary Analyses: Organizational Performance

Organizational performance was measured by 18 items (PQ1-PQ18) in Section E of the questionnaire. The correlations of 13 items were above .30 and 5 items which had less than the accepted level were removed (PQ4, PQ9, PQ10, PQ12, PQ17). When the five items with very low correlations were removed, the variance increased considerably from 52.456% to 63.693%. Thus, these items are not reported in Table 5.12. As presented, the Bartlett's tests were significant (p<0.001) and the KMO measure of sampling adequacy (.809) was above the acceptable level of .5. The internal consistency of the items was tested by Cronbach's alpha and the scale demonstrated good reliability with coefficient alpha

level of .855. EFA was performed, producing a single factor structure with factor loadings ranging from .667 to .857 and communalities ranging from .445 to .734, explaining 63.693% of the variance.

Table 5.12: Factor Loadings: Organizational Performance

	EFA Loadings	Communalities	PQ1	PQ2	PQ3	PQ5	PQ6	PQ7	PQ8	PQ11	PQ13	PQ14	PQ15	PQ16	PQ18
PQ1	.796	.633													
PQ2	.833	.693	.741												
PQ3	.774	.600	.427	.529											
PQ5	.809	.654	.575	.560	.510										
PQ6	.667	.445	.385	.351	.563	.477									
PQ7	.756	.571	.695	.498	.543	.523	.633								
PQ8	.815	.665	.435	.539	.498	.518	.606	.603							
PQ11	.805	.649	.516	.448	.388	.542	.629	.567	.800						
PQ13	.844	.712	.712	.576	.435	.589	.576	.487	.732	.449					
PQ14	.767	.588	.643	.541	.481	.571	.532	.520	.711	.564	.433				
PQ15	.851	.725	.654	.621	.532	.489	.665	.511	.665	.496	.632	.589			
PQ16	.857	.734	.499	.547	.602	.465	.554	.532	.632	.489	.621	.612	.637		
PQ18	.851	.725	.509	.466	.582	.576	.497	.563	.593	.498	.609	.587	.496	.531	
Variance explained	63.693%														
Bartlett's	Sig. 000														
KMO	.809														
Cronbach's alpha	.855														

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5.2.5 Summary of Preliminary Analyses

Overall, as presented in Table 5.13, the preliminary analyses (correlation matrix, Bartlett's test of sphericity, KMO measure of sampling adequacy, reliability estimates and EFA) resulted in 15 measurement items being omitted leaving 52 items. The remaining measurement items appear to be valid and reliable for the subsequent analyses described in the following sections.

Table 5.13 Summary of Preliminary Analyses

Constructs	No. of original items	No. of items deleted	No. of items remaining
Low cost competency	9	3	6
Uniqueness competency	8	2	6
Cost leadership strategy	8	0	8
Differentiation strategy	10	4	6
Diagnostic use of MC	8	0	8
Interactive use of MCS	6	1	5
Organizational performance	18	5	13
Total	67	15	52

5.3 Confirmatory Factor Analysis

CFA is performed through Structural Equation Modelling (SEM) using Linear Structural Relationship (LISREL) software (8.80), to verify the construct validity and the overall goodness of fit of the proposed measurement models. Nevertheless, the elements relating to the uses of MCS are not included in the CFA as they are still at its early stage of measurement development (Henri, 2005; Sands, 2006; Webster, 2006). The proposed measurement models are illustrated from Figures 5.1 to Figure 5.5, where circles represent latent variables, and rectangles represent measured variables. Figure 5.1 to 5.5 provide illustrations of loadings of observed measures onto the underlying factors (latent variables) for the measurement models for each of the five research constructs (low cost competency, uniqueness competency, cost leadership strategy, differentiation strategy, organizational performance) investigated by the current study.

Figure 5.1: Proposed Measurement Model for Low Cost Competency

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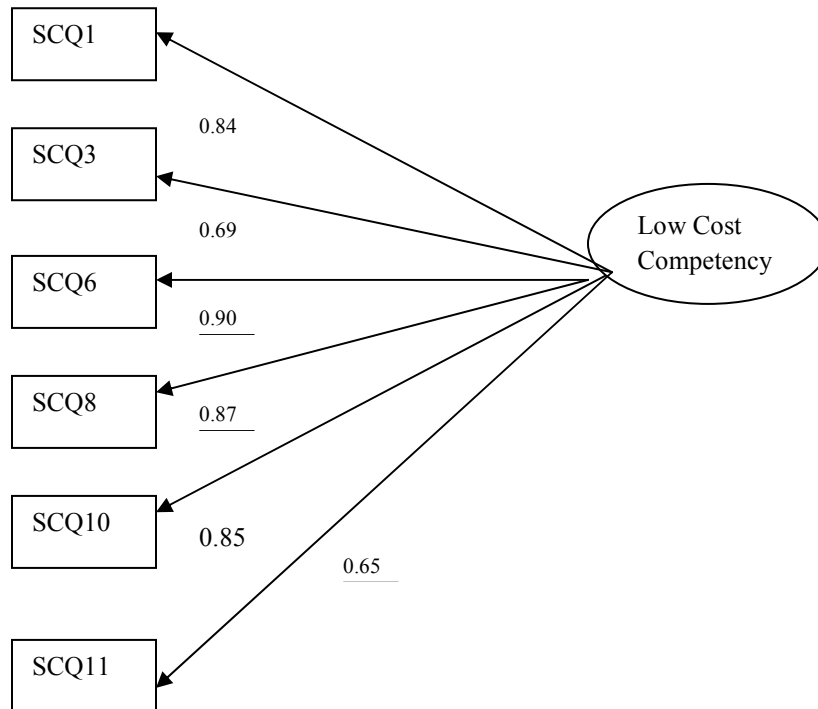
Figure 5.2: Proposed Measurement Model for Uniqueness Competency
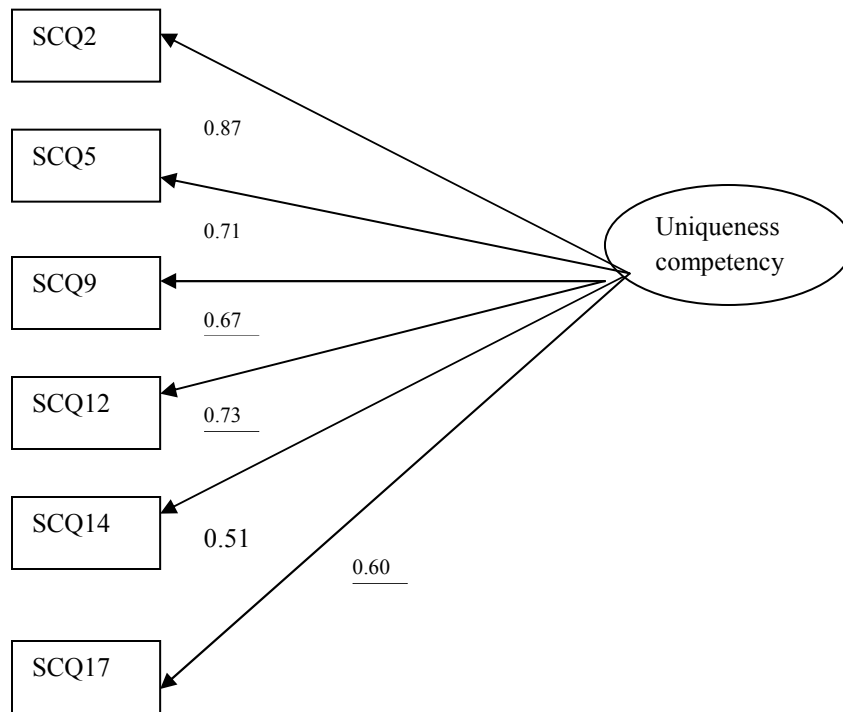
Figure 5.3: Proposed Measurement Model for Cost Leadership Strategy

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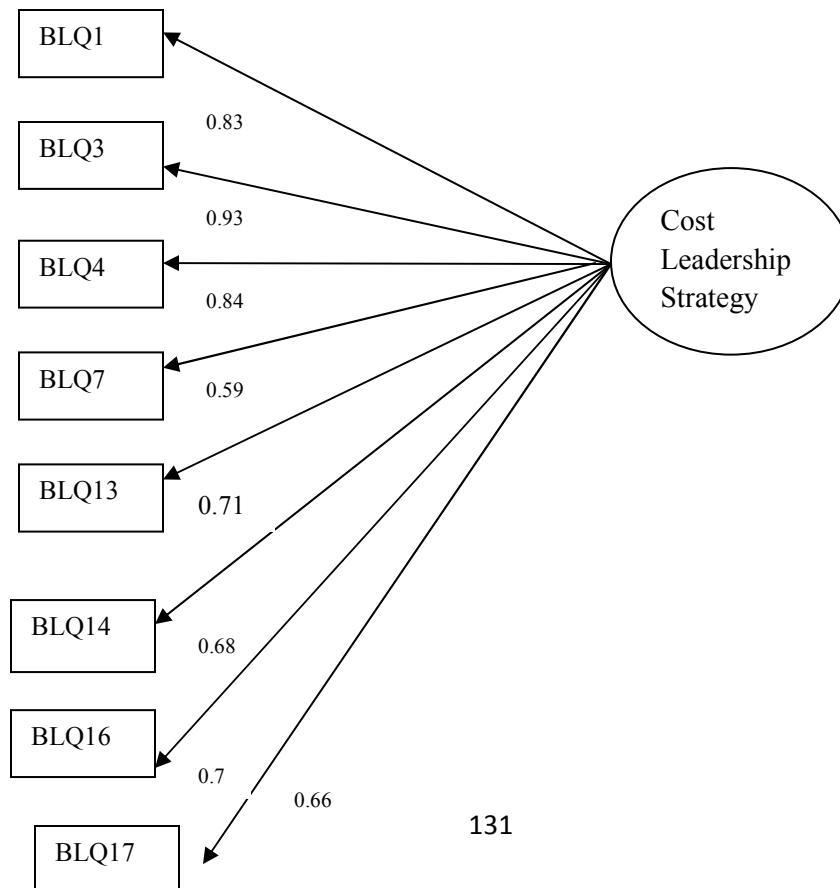
Figure 5.4: Proposed Measurement Model for Differentiation Strategy
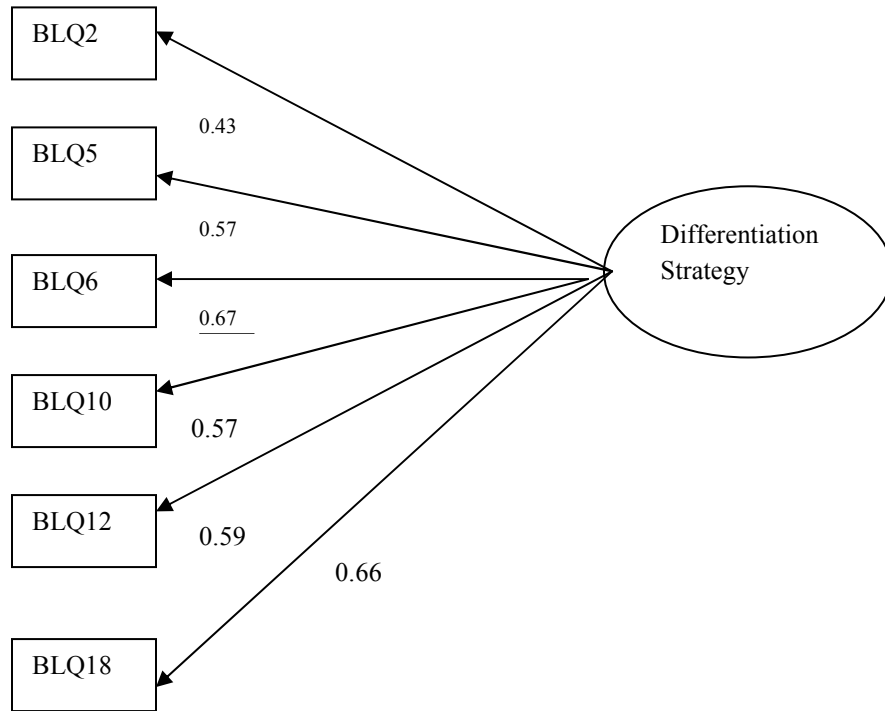
Maximum likelihood estimation (MLE) is employed in the current study to estimate all measurement models. The idea behind maximum likelihood parameter estimation is to determine the parameters that maximize the probability (likelihood) of the sample data (DeCoster, 1998). From a statistical point of view, the method of maximum likelihood is considered to be more robust (with some exceptions) and yields estimators with good statistical properties (DeCoster, 1998; Lee, 2008).

Hair et al (2006) and Lee (2008) suggest that CFA should be mainly used to assess convergent validity and the overall goodness of fit of the measurement models.

Figure 5.5: Proposed Measurement Model for Organizational Performance
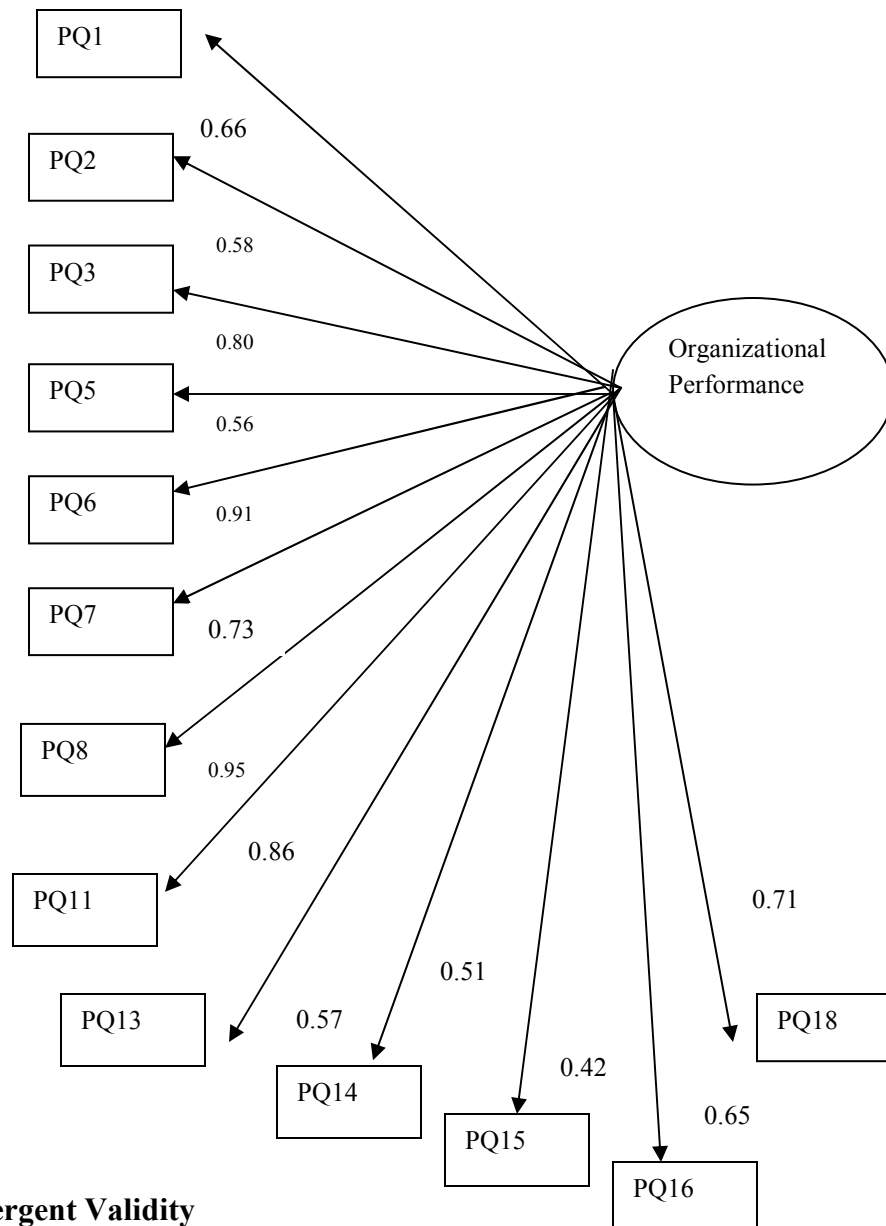
5.3.1 Convergent Validity

Convergent validity signifies the "extent to which indicators of a specific construct converge or share a high proportion of variance in common (Hair et al, 2006, p. 771). They suggest that convergent validity can be estimated by factor loadings, variance extracted and construct reliability. First Table 5.14 shows that all standardized factor loading estimates (λ) were higher than 0.5 except for two measured variables (BLQ2 = 0.43 and PQ15 = 0.42). Nevertheless, the t-values were all larger than 2 which indicate all loadings were significant at least at a 95% confidence interval.

Table 5.14: Loadings (λ), R Squares (R^2), Standard Errors and t-values for each Variable in the Proposed Measurement Models

Variable	λ	R^2	Std Error	t-values
Low cost competency				
SCQ1 Producing at a lower cost than competitors	0.84	0.70	0.055	12.69
SCQ3 Economies of scale are achieved	0.69	0.48	0.068	9.65
SCQ6 Getting RM at a lower cost	0.90	0.81	0.050	14.30
SCQ8 Raising funds from cheaper sources	0.87	0.75	0.056	13.45
SCQ10 Waste is strictly controlled	0.85	0.72	0.058	13.05
SCQ11 Finding cheaper ways to produce and deliver products	0.65	0.42	0.0061	8.40
Uniqueness Competency				
SCQ2 Producing unique products	0.87	0.75	0.053	13.43
SCQ5 Using different marketing techniques	0.71	0.51	0.071	10.04
SCQ9 Producing high quality products	0.67	0.45	0.075	8.00
SCQ12 Closer relationships with distributors	0.73	0.54	0.069	10.92
SC14 Outstanding customer service	0.51	0.24	0.081	5.43
SC17 R&D focused on developing unique products	0.60	0.37	0.074	7.98
Cost Leadership Strategy				
BLQ1 Lower cost per unit than competitors	0.83	0.69	0.057	12.57
BLQ3 Pricing the products below competitors	0.93	0.86	0.051	14.97
BLQ4 Extremely strict cost controls	0.84	0.71	0.054	12.89
BLQ7 Producing standardised products	0.59	0.35	0.066	7.91
BLQ13 Outsource functions to control costs	0.71	0.51	0.060	10.06
BLQ14 Technology to lower costs	0.68	0.47	0.070	9.63
BLQ16 Cost analysis associated with activities	0.70	0.49	0.066	10.01
BLQ17 Rewards for employees on cost reduction suggestions	0.66	0.43	0.076	8.44

Table 5.14 (contd.): Loadings (λ), R Squares (R^2), Standard Errors and t-values for each Variable in the Proposed Measurement Models

Variable	λ	R^2	Std Error	t-values
Differentiation Strategy				
BLQ2 Differentiate product attributes	0.43	0.19	0.10	4.89
BLQ5 Brand identification is a priority	0.57	0.33	0.092	6.68
BLQ6 Unique features emphasized in promotion	0.67	0.45	0.081	8.02
BLQ10 Fostering innovation is a priority	0.57	0.33	0.091	6.67
BLQ12 Technology used to differentiate products	0.59	0.35	0.089	7.89
BLQ18 Rewards for employees on unique product suggestions	0.66	0.43	0.083	8.42
Organizational Performance				
PQ1 Market share	0.66	0.43	0.083	8.43
PQ2 Sales growth	0.58	0.34	0.088	6.98
PQ3 Net profit margin	0.80	0.62	0.054	11.99
PQ5 Cost per unit	0.56	0.34	0.090	6.42
PQ6 Return on Investment	0.91	0.83	0.054	14.35
PQ7 Number of rejects/rework	0.73	0.55	0.059	10.09
PQ8 Product processing time	0.95	0.89	0.049	15.01
PQ11 Number of customer complaints	0.86	0.73	0.057	13.16
PQ13 Customer dropout rate	0.57	0.33	0.090	6.67
PQ14 Employee turnover	0.51	0.24	0.094	5.43
PQ15 Employee absenteeism	0.42	0.18	0.11	4.87
PQ16 New products introduced to the market	0.65	0.42	0.084	8.40
PQ18 New production techniques and processes used	0.71	0.51	0.060	10.06

Second, variance extracted refers to "a summary measure of convergence among a set of items representing a latent construct. It is the average percentage of variance explained among the items" (Hair et al, 2006, p. 773). Variance extracted was calculated by the formula of Fornell and Larcker (1981): Variance extracted = N/(N+S), where N= Sum of squared standardised loading and S= Sum of indicator measurement error. As Table 5.15 shows, variance extracted by each construct supported adequate convergence as they were all above the accepted level of 0.5, ranging from 0.78 to 0.92.

Table 5.15: Construct Reliability and Variance Extracted

Construct	Construct Reliability	Variance Extracted
Low cost competency	0.98	0.92
Uniqueness competency	0.93	0.78
Cost leadership strategy	0.89	0.72
Differentiation strategy	0.85	0.68
Organizational performance	0.98	0.91

Third, construct reliability denotes "measure of reliability and internal consistency of the measured variables representing a latent construct" (Hair et al, 2006, p. 771). Construct reliability was calculated by the formula of Wert et al (1974): Construct reliability =M/(M+S). As Table 5.15 shows, good construct reliability was established as the reliabilities were all above the accepted level of 0.7 ranging from 0.85 to 0.98.

5.3.2 Overall Goodness of Fit Index

Goodness of fit signifies "measure indicating how well a specified model reproduces the covariance matrix among the indicator variables" (Hair et al, 2006, p.708). The assessment criteria of the overall model fit for proposed measurement models are summarised in Table 5.16.

Table 5.16: Overall Goodness of Fit Statistics for Measurement Models

Goodness of Fit Indices	Low Cost Competency	Uniqueness Competency	Cost Leadership Strategy	Differentiation Strategy	Organizational Performance
Probability#	.2830	.1540	.0110	.1110	.1100
GFI (Goodness of Fit Index)*	.9800	.9440	.8991	.9740	.9860
AGFI (Adjusted Goodness of Fit Index)*	.9470	.9010	.8656	.9480	.9300
CFI (Comparative Fit Index)*	.9920	.9620	.9010	.9190	.9820
RMSR (Root Mean Square Residual)**	.0336	.0491	0.498	.0486	.0387
#Non-significant probability cannot reject the goodness of fit of the model (Byrne, 2001).					
*Required value of >.9 for each of these indices (Page and Meyer, 2000; Tabachnick and Fidell, 2007)					
**RMSR<.05 represents a well fitting model (Byrne, 2001).					

5.3.2.1 Analysing the Overall Goodness of Fit Indices

As indicated in Table 5.16 overall goodness of fit statistics are acceptable for all the constructs except for cost leadership strategy. Even though the GFI and AGFI of the construct of cost leadership strategy are less than the accepted level of 0.9, as indicated by Lee (2008), it is appropriate to consider the measurement model of the construct as satisfactory provided that RMSR meets the accepted level. Thus, it is considered that the measurement model of cost leadership strategy is appropriate due to the fact that RMSR of the construct (0.498) is just below the accepted level of 0.5.

5.3.3 Summary of CFA

CFA was conducted for convergent validity and the overall goodness of fit of the proposed measurement models of well researched constructs. More specifically,

convergent validity (factor loadings, variance extracted, and construct reliability) resulted in all factor loadings being significant except for two measured variables (nevertheless, the t-values were all larger than 2 which indicate that all loadings were significant at least at 95% confidence interval), variance extracted by each construct was of adequate convergence (all above the accepted level of 0.5) and construct reliability was good (all above the accepted level of 0.7). In the meantime, the overall goodness of fit indices for proposed measurement models were satisfactory subject to very few exceptions confirming the appropriateness of measured variables to recognize the impact of latent variables.

5.4 Regression Analyses

In the current study, regression analyses are used to test study hypotheses illustrated in the conceptual framework given in Chapter 3 (Figure 3.1). In order to run regression analyses Statistical Package for the Social Sciences (SPSS) (17.0) is used. Simple regression analysis is used to test H1, H2, H9, H10, H11 and H12 while multiple regression analysis is used to examine H3 and H4. In order to recognize the effect of two uses of MCS (H5, H6, H7 and H8) hierarchical regression analysis is used.

5.4.1 Simple Regression Analyses

The following study hypotheses, which are recognized in the conceptual framework of the study, are tested using simple regression analysis.

H1: There is a positive relationship between low cost competency and cost leadership strategy.

H2: There is a positive relationship between uniqueness competency and differentiation strategy.

H9: There is a negative relationship between cost leadership strategy and differentiation strategy.

H10: There is a negative relationship between low cost competency and uniqueness competency.

H11: Low cost competency positively affects organizational performance.

H12: Uniqueness competency positively affects organizational performance.

5.4.1.1 Testing Hypotheses 1 and 2

These two hypotheses were developed based on the findings of the resource based view of strategic management which proposes that strategic capabilities are the basis for a firm's strategy and its ability to earn above-average returns. On these grounds, these two hypotheses proposed that each core strategic capability (low cost competency and uniqueness competency) requires a distinctive business level strategy (cost leadership and differentiation). Table 5.17 presents the summarized results of simple regression analysis supporting H1 and H2 of the present study.

Table 5.17: Simple Regression Analysis: Strategic Capabilities and Business Level Strategies

	Cost Leadership Strategy	Differentiation Strategy
Low Cost Competency	.537**	
Uniqueness Competency		.451***
R^2	.429	.369
Adjusted R^2	.421	.364
F	35.064***	66.733***
**p<.01 ***p<.001 (one-tailed)		

Based on the results found from regression analysis, both H1 (standardised beta =.537, p<0.1) and H2 are supported (standardised beta = .451, p<0.1) and it is possible to confirm that there is a positive significant relationship between each competency and related business level strategy. Accordingly, it is possible to state that this study further confirms the view of the proponents of the resource based view in strategy.

5.4.1.2 Testing Hypotheses 9 and 10

Hypothesis 9 is developed based on Porter's findings (1980, 1985) in relation to generic competitive strategies. According to Porter (1980, 1985), achieving both cost leadership and differentiation together is usually costly and thus Porter's model has been characterized as presenting discrete (mutually exclusive) alternatives (Wright 1987; Hill, 1988). However, the results found from the current study (Table 5.18) do not confirm Porter's assertion as the statistical results do not support a negative relationship between cost leadership strategy and differentiation strategy (standardised beta .086). On these grounds, the current study supports the view of Hill (1988) who contended that Porter's model is fundamentally flawed, as a hybrid or combination strategy may exist and be appropriate in certain industries.

Table 5.18: Simple Regression Analysis: Strategic Capabilities and Business Level Strategies

	Cost Leadership Strategy	Low Cost Competency
Differentiation Strategy	.086	
Uniqueness Competency		.073
R^2	.025	.017
Adjusted R^2	.019	.012
F	4.064***	8.211***
***$p<.001$ (one-tailed)		

Hypothesis 10 was developed based on the extant literature which supports the view that requirements of low cost competency and uniqueness competency are competitive (Sands, 2006; Webster, 2006). Nevertheless, there is no empirical support found from the current study (Table 5.18) to confirm that there is a negative relationship between the two competencies (low cost and uniqueness) under consideration (standardised beta .073).

5.4.1.3 Testing Hypotheses 11 and 12

Following the RBV of strategy, Barney (1991), Johnson et al (2008), Prahalad and Hamel (1990) have emphasized the possibility of achieving extraordinary profits or returns by having distinctive capabilities which are valuable, rare, inimitable and non-substitutable. Hypotheses 11 and 12 of this study are constructed as confirmatory in order to confirm the predicted effects of strategic capabilities on organizational performance. Table 5.19 illustrates the results of simple regression analysis.

Table 5.19: Simple Regression Analysis: Strategic Capabilities and Organizational Performance

	Organizational Performance
Low cost competency	.352***
Uniqueness Competency	.423***
R^2	.469
Adjusted R^2	.458
F	60.733***
**p<.01	
***p<.001 (one-tailed)	

The statistical results given in Table 5.19 support both hypotheses as low cost competency (standardised beta = .352, p<0.001) and uniqueness competency (standardised beta = .423, p<0.001) are significantly related to organizational performance.

5.4.2 Multiple Regression Analysis

The following study hypotheses, which are recognized in the conceptual framework of the study, are tested using multiple regression analysis.

H3: Cost leadership strategy positively affects organizational performance.

H4: Differentiation strategy positively affects organizational performance.

These two hypotheses are also developed based on the theory of competitive generic strategies developed by Porter (1980, 1985). According to Porter (1985), a cost leadership strategy has the potential to ensure above average returns in the industry in two ways: (i) producing organizational products at a lower cost than competitors and charging the same market price (which leads to a higher profit margin from each unit) and (ii) producing products at a lower cost than competitors and charging a lesser price from customers (which leads to a higher market share). Alternatively, a differentiation strategy may create a competitive advantage comparatively over a long period of time as it creates difficulties of imitation and imperfect mobility over organizational resources. The summarized statistical results given in Table 5.20 support both hypotheses as cost leadership strategy (standardised beta = .466, p<0.001) and differentiation strategy (standardised beta = .512, p<0.001) are significantly related to organizational performance.

Table 5.20: Multiple Regression Analysis: Business Strategies and Organizational Performance

	Organizational Performance
Cost Leadership Strategy	.466***
Differentiation Strategy	.512***
R^2	.481
Adjusted R^2	.473
F	30.821***
***p<.001 (one-tailed)	

5.4.3 Hierarchical Regression Analysis

The following four hypotheses, which are recognized in the conceptual framework of the study, are tested using hierarchical regression analysis.

H5: Diagnostic use of MCS moderates the relationship between cost leadership strategy and organizational performance.

H6: Interactive use of MCS moderates the relationship between cost leadership strategy and organizational performance.

H7: Diagnostic use of MCS moderates the relationship between differentiation strategy and organizational performance.

H8: Interactive use of MCS moderates the relationship between differentiation strategy and organizational performance.

As explained in the extant literature, a moderator is a variable that alters the direction or strength of the relation between a predictor and an outcome (Baron and Kenny, 1986; Holmbeck, 1997; James and Brett, 1984). According to Frazier et al (2004), a moderator

effect is nothing more than an interaction whereby the effect of one variable depends on the level of another. Even though there are few alternative statistical techniques (e.g. analysis of variance[59]) available to examine moderator effects, hierarchical multiple regression is preferred as researchers can use multiple regression to examine the effects created by any type of predictor or moderator variables (either categorical or continuous) (Frazier et al, 2004). In the current study, multiple regression analysis is used in the hierarchical manner to examine the moderator effects of uses of MCS (moderator variables) over the relationship between business-level strategies (predictor variables) and organizational performance (outcome variable) as both predictor and moderator variables are continuous.

In hierarchical regression analysis variables are entered into the regression equations through a series of specified blocks or steps (Aiken and West, 1991; Cohen et al, 2003; West et al, 1996). Table 5.21 illustrates the results of hierarchical regression analyses conducted to test the moderator effect of diagnostic use of MCS over the relationship between business level strategies and organizational performance.

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[59] When both the predictor and moderator are categorical, analysis of variance (ANOVA) procedures can also be used (Fraizer et al, 2004).

Table 5.21: Testing Moderator Effects of Diagnostic Use of MCS Using Hierarchical Multiple Regression

Step and Variable	B[60]	β[61]	R²
(a)			
Step 1			
Cost Leadership strategy	.311	.466***	
Differentiation Strategy	.416	.512***	
Diagnostic Use of MCS	.25	.38	.389**
Step 2			
Cost Leadership Strategy x Differentiation Strategy	.392	.415*	.391**
Cost Leadership Strategy x Diagnostic Use of MCS	.375	.398**	.301**
Differentiation Strategy x Diagnostic Use of MCS	.302	.387*	.211*
Step 3[62]			
Cost Leadership Strategy x Differentiation Strategy x Diagnostic Use of MCS	.461	.501*	.289*
*p<.01, **p<.001, ***p<.001 (one-tailed)			

Table 5.22 illustrates the results of hierarchical regression analyses conducted to test the moderator effect of interactive use of MCS over the relationship between business level strategies and organizational performance.

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[60] B= Unstandardised beta should be used when interpreting the results of moderation effect as the predictor and moderator variables are properly standardized to provide a meaningful zero point (Frazier et al, 2004). This treatment avoids the problem of multicollinearity (Frazier et al, 2004). Multicollinearity causes "bouncing betas" in which the direction of the beta terms can shift from previously positive to negative relationships or vice versa (Cohen, 8).

[61] β= Standardised beta

[62] Three way interactions are used as there are two predictor variables (cost leadership strategy, differentiation strategy and diagnostic use of MCS).

Table 5.22: Testing Moderator Effects of Interactive Use of MCS Using Hierarchical Multiple Regression

Step and Variable	B	β	R^2
(a)			
Step 1			
Cost Leadership strategy	.311	.466***	
Differentiation Strategy	.416	.512***	
Interactive Use of MCS	.12	.21	.361**
Step 2			
Cost Leadership Strategy x Differentiation Strategy	.392	..415*	.391**
Cost Leadership Strategy x Interactive Use of MCS	.298	.325**	.285**
Differentiation Strategy x Interactive Use of MCS	.398	.422	.311*
Step 3			
Cost Leadership Strategy x Differentiation Strategy x Interactive Use of MCS	.431	.495 *	.265*
*p<.01, **p<.001,***p<.001 (one-tailed)			

It is important to note that, when diagnostic use was introduced as a moderator an additional 28.9% variance is added to organizational performance over and above the 38.9% explained by the first order effects of business level strategies and diagnostic use alone. Similarly, when interactive use was introduced as a moderator an additional 26.5% variance is added to organizational performance over and above the 36.1% explained by the first order effects of business level strategies and interactive use alone. The summarized statistical results given in Table 5.21 and Table 5.22 support the four hypotheses (H5- H8) as R^2 change associated with the interaction terms are significant.

In addition, the results indicate that the moderation effect created by diagnostic use over the business strategy of cost leadership is more significant than the effect created over the strategy of differentiation (Table 5.21, Step 2). However, the moderation effect created by interactive use over the business strategy of differentiation is more significant than the effect created over the strategy of cost leadership (Table 5.22, Step 2). Also it is interesting to establish that the moderation effect created by the diagnostic use over the relationship between business level strategies and organizational performance is more significant than the effect created by the interactive use over the relationship between business level strategies and organizational performance (Table 5.21 and Table 5.22, Step 3).

5.5 Chapter Overview

This chapter has presented and discussed the results of the quantitative data analyses in a sequential manner. First, the profile of respondent organizations and their respondents were described. Second, the preliminary analyses (correlation matrix, Bartlett's test of sphericity, KMO measure of sampling adequacy, reliability estimates and EFA) resulted in 15 measurement items being removed, leaving 52 items. Third, the results of the CFA confirmed the measurement models of research constructs, except the two uses of MCS as they are in its early stage of theoretical development.

Next, in order to test twelve hypotheses of the study simple regression analysis, multiple regression analysis and hierarchical regression analysis were used as the statistical techniques. The results of the hypotheses testings are summarised in Table 5.23 showing the statistical support over ten study hypotheses.

Having presented the findings and discussion of the quantitative data analyses, the next chapter provides conclusions, implications, limitations and recommendations for future research.

Table 5.23: Summarized Results of Hypotheses Testing

Hypothesis	Supported
H1: There is a positive relationship between low cost competency and cost leadership strategy.	Yes
H2: There is a positive relationship between uniqueness competency and differentiation strategy.	Yes
H3: Cost leadership strategy positively affects organizational performance.	Yes
H4: Differentiation strategy positively affects organizational performance.	Yes
H5: Diagnostic use of MCS moderates the relationship between cost leadership strategy and organizational performance.	Yes
H6: Interactive use of MCS moderates the relationship between cost leadership strategy and organizational performance.	Yes
H7: Diagnostic use of MCS moderates the relationship between differentiation strategy and organizational performance.	Yes
H8: Interactive use of MCS moderates the relationship between differentiation strategy and organizational performance.	Yes
H9: There is a negative relationship between cost leadership strategy and differentiation strategy.	No
H10: There is a negative relationship between low cost competency and uniqueness competency.	No
H11: Low cost competency positively affects organizational performance.	Yes
H12: Uniqueness competency positively affects organizational performance.	Yes

CHAPTER 6

CONCLUSIONS, LIMITATIONS AND RECOMMENDATIONS FOR FUTURE RESEARCH

This chapter is organized into six sections. Firstly, it provides an overall review of the contributions each chapter has made to this study. Secondly, it synthesises the findings and discussions of quantitative analysis in response to the research problem and research objectives of the present study. This chapter then draws major conclusions based on the synthesis. Fourthly, it provides implications for not only academics, but also for practitioners in the Sri Lankan textile and apparel industry. Next, it acknowledges the limitations of the current study. Lastly, this chapter proposes several recommendations for future research in the area of management control systems, strategic capabilities and business strategies.

6.1 Overall Review

Prior to drawing conclusions of the current study, the contributions of each chapter are reviewed. Chapter one has described the decision making context including the industry background (Sri Lankan textile and apparel industry) and motivation for the study. It has indicated the academic and practical significance of the study while recognizing the research problem, associated research questions and the objectives of the research.

Chapter two reviewed the extant literature relating to key research constructs of the study. In order to extend current understanding of the management control systems (MCS)-strategy-performance relationship, the contingency approach is highlighted in the chapter as the main research approach. While examining diagnostic and interactive uses of MCS in the chapter, Porter's generic strategy model (1980) is considered as the principal strategy typology after comparing with, and evaluation of, alternative strategy frameworks to operationalize the concept of business strategy. Then, the resource based view (RBV) is incorporated as a relevant theory by including strategic capabilities as a research variable seeing that RBV has not been adequately used by past researchers to extend the interface between strategy and MCS. This chapter has also defined the concept

of organizational performance as a key research variable while providing information on the historical background and current context of Sri Lankan textile and apparel industry.

Chapter three has presented the theoretical framework of the study by developing twelve research hypotheses. The chapter hypothesizes that the core strategic capabilities, namely low cost competency and uniqueness competency, determine the development of generic business strategies (cost leadership and differentiation), which, in turn, enhance organizational performance (Hypotheses 1 to 4). In this chapter, four hypotheses are developed (Hypotheses 5 to 8) in order to explore the effects created by two uses of MCS (diagnostic and interactive) over the relationship between strategy and organizational performance as the moderating variables. The chapter also hypothesizes that two competences and two generic strategies separately have negative relationships with each other (Hypotheses 9 and 10) while recognizing the potential impact that two capabilities can directly make over organizational performance (Hypotheses 11 and 12).

Chapter four has provided the research design process and justifications for the research approach being used to address the research problem and questions of the current study. The chapter has then explained the sampling procedure based on Churchill and Iacobucci's (2005) six-step process and two stages of the data collection process (pilot testing of the questionnaire and the final questionnaire administration including first-wave, reminder and second-wave). At the end of the chapter, the quantitative data analysis process is briefly presented comprising preliminary analyses, confirmatory factor analysis (CFA) and regression analyses along with hierarchical multiple regression analysis.

Chapter five has presented and discussed the results of the quantitative data analysis including the profile of the respondent organizations and their respondents. In the chapter, the preliminary analyses have been done using correlation matrix, Bartlett's test of sphericity, KMO measure of sampling adequacy, reliability estimates, and exploratory factor analysis (EFA). The chapter has used CFA to test whether the data enables either confirmation or rejection of measurement models relating to low cost competency,

uniqueness competency, cost leadership strategy, differentiation strategy and organizational performance which have been built upon a defined set of theories. Regression analysis has been used in the chapter to test the study hypotheses while using hierarchical multiple regression analysis to test statistical significance of the moderator effect created by diagnostic and interactive uses of management control systems.

6.2 Synthesising Findings and Discussions of Quantitative Data Analysis

In particular, this section synthesises findings and discussions of quantitative data analysis in response to the research problem and research objectives which are outlined in chapter one. The key research problem of the study was to analyse "how do the uses of MCS influence the relationship between business strategies (which are determined by strategic capabilities) and organizational performance". The analysis of this focal research problem is elaborated into five research objectives which form the structure of the following discussion.

(i) To identify moderating effects created by each use of MCS (diagnostic and interactive) over the association between business strategies and organizational performance

(ii) To recognize effects each business strategy (cost leadership and differentiation) has created on organizational performance

(iii) To recognize the interrelationships between cost leadership and differentiation strategies

(iv) To examine the nature of the relationship available between strategic capabilities (low cost competency and uniqueness competency) and business strategies

(v) To find out the degree of influence each strategic capability of organizations produce over organizational performance

6.2.1 Discussion of Research Objective One

The first research objective focused on identifying moderating effects created by each use of MCS (diagnostic and interactive) over the association between business strategies and organizational performance. In the context, of having very little research examining the effects created by uses of MCS (Dent, 1990; Henri, 2005; Langfield-Smith, 1997; Shields, 1997) and ambiguous results (Chenhall, 2003) the first research objective was formulated. This objective was addressed through Hypotheses 5 to 8 of the conceptual framework and the results of hierarchical regression analysis which have been provided in Chapter 5 indicate that both diagnostic and interactive uses of MCS moderate the relationship between each generic business strategy (cost leadership and differentiation) and performance in a significant manner.

Further, it is found that when MCS are used diagnostically, performance of organizations increases more intensively for the strategy of cost leadership (Table 5.21, Step 2). In contrast, if MCS are used interactively more performance can be expected for the strategy of differentiation (Table 5.22, Step 2). However, it is interesting to see that the overall effect created by the diagnostic use over the relationship between business level strategies and organizational performance is more significant than the total effect created by the interactive use (Table 5.21 and Table 5.22, Step 3). Also, it is found from the study that the joint use of MCS (Use of MCS diagnostically and interactively with a single business strategy) is not negative but instead is beneficial to organizations being surveyed.

6.2.2 Discussion of Research Objective Two

Hypotheses 3 and 4 of the conceptual framework have addressed the second objective of the study. The results of this study confirm Porter's assertion (1980, 1985) that cost leadership and differentiation are two generic competitive strategic options which are available for organizations to use at the business level in order to enhance organizational performance. In Chapter 5, the results of multiple regression analysis have indicated the positive relationship between each strategy and organizational performance (Table 5.20).

6.2.3 Discussion of Research Objective Three

Porter (1980, 1985) described generic competitive strategies as alternatives which should be mutually exclusive to guarantee a better performance. Though there has been a considerable support for Porter's single source strategy proposition (Dess and Davis, 1984; Hambrick, 1983; Kim and Lim, 1988; Robinson and Pearce, 1988), Porter's assertion has also been attacked on empirical fronts (Hill, 1988; Miller, 1992; Murray, 1988; Wright, 1987). In the context of having contradicting arguments and results, the third objective of the current research was developed. Following Porter's theory of generic competitive strategy, Hypothesis 9 of the study was developed expecting a negative relationship between the two strategic options to address this research objective. However, the results of simple regression analysis have not confirmed the study hypothesis as it is found that there is a positive relationship between two strategic options (Table 5.18). This positive relationship supports firms practicing a "hybrid strategy" (Porter, 1980; 1985) to generate value and a better performance in their organizations.

As emphasized in the "value innovation model" (one of the popular post-Porter models) developed by Kim and Mauborgne (1999), the positive relationship found in this research between two strategic options allow organizations and their managers to look outside their present paradigms to find new value propositions. Also the empirical support found in relation to the positive association between cost leadership and differentiation strategy highlights the need for being flexible in implementing business strategies to face any contingency, especially in the rapidly changing, highly unpredictable present market contexts (Anderson 1997, Goldman et al. 1995, Radas, 2005). Also this possible hybrid condition will provide extra satisfaction to organizational customers as they will be receiving more value-for-money (Bowman, 2008).

6.2.4 Discussion of Research Objective Four

According to RBV of strategic management (Barney, 1997; 1991), unique strategic capabilities are the basis for a firm's strategy and its ability to earn above-average returns. On these grounds, this study proposes that each core strategic capability (low

cost competency and uniqueness competency) requires a distinctive business level strategy (cost leadership and differentiation). According to Hill et al (2007), as an organization's goal in pursuing a cost leadership strategy is to outperform competitors by producing goods and services at a cost lower than competitors, it is important to achieve a distinctive competency in relation to low cost. Miller and Dess (1993), Miller and Friesen (1986) and Kotha and Vadlamani (1995) confirmed that a differentiation strategy needs unique competencies in quality, product, brand image and creativity. In this backdrop, the fourth objective of the research was set and hypotheses 1 and 2 were developed expecting positive relationships between low cost competency and cost leadership strategy; and uniqueness competency and differentiation strategy respectively. The results of simple regression analysis confirmed the two hypotheses (Table 5.17) and the objective of examining the nature of relationship available between strategic capabilities (low cost competency and uniqueness competency) and business strategies has been realized.

6.2.5 Discussion of Research Objective Five

The fifth objective of the research was to find out the degree of influence each strategic capability of organizations produces over organizational performance. Following the RBV of strategy, Barney (1991), Johnson et al (2008), Prahalad and Hamel (1990) have emphasized the possibility of achieving extraordinary profits or returns by having distinctive capabilities which are valuable, rare, inimitable and non-substitutable. Hypotheses 11 and 12 of this study are constructed in the theoretical framework to address this objective and through simple regression analysis it is found that there is a positive relationship between each competency and organizational performance (Table 5.19).

6.3 Major Conclusions of the Study

This study has empirically examined the research problem and research questions outlined in Chapter one to address the aforesaid objectives by conducting a questionnaire survey in relation to MCS-strategy-performance relationship in the Sri Lankan textile and apparel industry. The results of the hypotheses testings summarized in Table 5.23 signify

that ten out of twelve hypotheses have been supported. Overall, this study concludes that having a proper relationship among strategic capabilities, business level strategies and two uses of MCS is of paramount importance to enhance organizational performance. Based on the synthesis above, the following major conclusions are drawn.

This study has indicated that two uses of MCS significantly moderate the association between business strategies and organizational performance (analysis of H5 to H8). It is also found that diagnostic use creates more impact over the cost leadership strategy while interactive use creates more intense effect over the differentiation strategy. However, the study concludes that joint use of MCS is of no harm though the situation creates a tension as per conflict literature (DeDreu, 1991; Nicotera, 1995).

This study has partly confirmed the theory of Porter's generic competitive strategy (1980, 1985). While it is confirming that generic competitive strategic options increase organizational performance (H3 and H4), the statistical results challenge the Porter's assertion on mutual exclusiveness of two strategic options for better performance (H9).

The current study has emphasized some key aspects of RBV as the statistical results support H1, H2, H11 and H12. The confirmed results of H1 and H2 support the view that strategic capabilities should align with appropriate strategies. In the meantime, the statistical results of H11 and H12 testing confirm the importance of developing strategic capabilities for better organizational performance. However, the survey results challenge the extant literature on two opposing requirements of two competencies as H10 is not supported by the data which has been analysed.

Table 6.1 summarizes the core findings of the current study.

Table 6.1 Key Findings of the Current Study

Research Objective Realized	Findings	Hypotheses Tested
One	Both diagnostic and interactive uses of MCS moderate the relationship between each generic business strategy (cost leadership and differentiation) in a significant manner.	H5, H6, H7, H8
One	When MCS are used diagnostically, performance of organizations increases more intensively for the strategy of cost leadership.	H5, H7
One	When MCS are used interactively more performance can be expected for the strategy of differentiation.	H6, H8
One	The overall effect created by the diagnostic use over the relationship between business level strategies and organizational performance is more significant than the total effect created by the interactive use.	H5, H6, H7, H8
One	The joint use of MCS (Use of MCS diagnostically and interactively with a single business strategy) is not negative but instead is beneficial to organizations being surveyed.	H5, H6, H7, H8
Two	Each business level strategy (cost leadership and differentiation) enhances organizational performance. This finding aligns with Porter's assertion on the use of generic competitive strategies for better performance.	H3, H4
Three	Hybrid strategies also generate a positive value and a better performance in organizations. This refutes Porter's assertion on mutual exclusiveness of competitive business strategies for competitive advantage.	H9
Four	Low cost competency supports cost leadership strategy while uniqueness competency supports differentiation strategy respectively.	H1, H2
Five	Distinctive strategic capabilities enhance organizational performance.	H11, H12

6.4 Research Implications

6.4.1 Theoretical Implications

This study has generated significant theoretical implications. First, this study has taken a holistic approach in studying MCS-strategy-performance interface. Recent developments in management accounting literature display strong claims about the substantive importance of developing a proper relationship among the uses of MCS, strategy variables and organizational performance (Kaplan and Norton, 2001; Langfield-Smith, 1997; 1992; Simons, 1995; 2000; Tucker et al, 2006; 2009). However, most previous studies investigated MCS-strategy-performance relationship in a scattered manner by limiting variables (Langfield-Smith, 1997; Tucker et al, 2006; 2009). Tucker et al (2009) stated that it is better to consider all related variables of MCS-strategy-performance relationship together by future researchers as results of such studies may create new findings relating to the control-strategy-performance relationship and may resolve apparent ambiguities that have been found in studies to date. As this study has taken a more holistic approach to examine MCS-strategy-performance relationship (strategic capabilities, generic business strategies, uses of MCS and organizational performance) particularly in a less developed country like Sri Lanka, where empirical evidence is scarce (Wickramasinghe and Hopper, 2005), the research outcomes are significant to develop the research literature. Particularly, it is found that two uses of MCS are significant moderating variables and also the joint use of the two uses create beneficial results to organizations. Though, dynamic tension created by two opposing variables is generally viewed as negative (Henri, 2005), this study found that diagnostic and interactive uses of MCS contribute both specifically and collectively to create positive results over organizational performance (outcomes of testing of H5 to H8). Thus, the outcomes of this research challenge the extant knowledge.

Then, this research has also challenged the dominant theory of Porter's generic competitive strategy (1980, 1985) as the assertion of mutual exclusiveness has been refuted. It is found that the relationship between cost leadership and differentiation

strategies can also be positive (outcomes of statistical testing of H9). This finding of the study is congruent with comments made by some researchers and scholars. In particular, Miller (1992) claimed that there is a viable middle ground between strategies. According to Miller (1992), many companies have entered a market as a niche player and gradually expanded. According to Baden-Fuller and Stopford (1992, p. 117) the most successful companies are the ones that can resolve "the dilemma of opposites". Also, Kim et al (2004) following Hambrick (1983) identified successful organizations adopting a mixture of low cost and differentiation strategy. Similarly, Prajogo (2007) stated that firms employing the hybrid business strategy outperform the ones adopting one generic strategy. Sharing the same view point, Akan et al. (2006) challenged Porter's concept regarding mutual exclusivity of low cost and differentiation strategy and further argued that successful combination of those two strategies will result in sustainable competitive advantage. As to Akan et al (2006) multiple business strategies are required to respond effectively to any environment condition. The acceptance of this reality by Porter is indicated in his revised thinking which is given below.

…Competitive advantage can be divided into two basic types: lower costs than rivals, or the ability to differentiate and command a premium price that exceeds the extra costs of doing so. Any superior performing firm has achieved one type of advantage, the other or both (Porter cited by Projogo 2007, p. 70).

This research also contributes to the emerging line of research (Henri, 2005) which provides empirical tests for the RBV of strategy. It is confirmed that strategic capabilities are important value drivers and a major source of organizational performance (outcomes of statistical testing of H11 and H12). In addition, it is found that the relationship between low cost competency and uniqueness competency is not necessarily negative, though it is generally viewed as opposing (outcomes of statistical testing of H10). The study indicates the relationship as positive even though it is not very significant (Table 5.18).

6.4.2 Practical Implications

This study has also brought important implications for management practice. As Epstein (2002) indicates, there is a need for managers to be aware of drivers of performance in organizations and the causal relationships critical to drive that value. This study reflects the importance of capabilities and business strategies as drivers of performance and also the potential of two uses of MCS in enhancing organizational performance.

The study reveals another important finding to practising managers, particularly when designing and revising management control systems. Though the importance of using management controls in an interactive manner is highlighted in recent management literature (Henri, 2005; Simons, 1995; Thoren and Brown, 2004), the findings of this study confirm that diagnostic use is of paramount importance to the research setting as the overall impact created by diagnostic use over the strategy-performance relationship is more significant than the effects created by interactive use (Table 5.21 and Table 5.22). The results may be specific to Sri Lankan context due to cultural political economy of management accounting controls and strategies (Wickramasinghe and Hopper, 2005), or could be applicable in general. Thus, executives and managers of Sri Lankan textile and apparel industry should consider formal mechanistic diagnostic controls as an important controlling mechanism, though the findings of research conducted in the Western context could be different.

Further, the current study provides another important finding to practising managers in relation to potential hybrid strategic options. Though, one of the propositions of Porter's generic strategy model was to view cost leadership and differentiation strategy as mutually exclusive, the results of the study challenged this suggestion by emphasizing a positive relationship between two strategic options (Table 5.18). Consequently, executives and managers may think of framing their strategies in a hybrid manner by integrating characteristics of cost leadership and differentiation strategies. Similarly, practitioners have the potential to integrate characteristics of low cost competency and uniqueness competency (Table 5.18) as the statistical results of the study has reported a positive relationship between two opposing competencies.

6.5 Limitations of the Study

Limitations of the study should be acknowledged; however, they do not mar the significance of the findings. Firstly, collecting data from the Sri Lankan textile and apparel industry was quite challenging since the response rate of this study was 14.04 per cent as only 117 (including first wave, reminder and second wave administration) out of 833 questionnaires were received as valid responses. Nevertheless, several approaches were undertaken in this study to increase the response rates: personalisation (an individually addressed letter), providing a response deadline, appeals (convince respondent questionnaire is important and useful), follow-ups and incentives (stamped, addressed envelopes to return information, a promise to provide summarised results of the survey if the respondents are interested). In this context, when generalizing the outcomes of the research both academics and practitioners have to be cautious, even though it is found that non-response bias has not occurred in the study.

Secondly, the findings of this study are presented in an aggregate fashion rather than comparing similarities and differences among different segments of the Sri Lankan textile and apparel industry (e.g. small-medium-scale). The study was conducted in an aggregate manner due to the small sample size being analysed.

Thirdly, the research approach was predominantly deductive and quantitative. In the current study, a deductive approach is principally used as the study hypotheses were developed after reviewing the extant literature and tested with data collected from the questionnaire survey. Even though this study may look to be purely deductive, according to Boswell and Brown (1999) most social research involves both inductive (e.g. case studies) and deductive reasoning processes at some time in the project. In fact, even in this deductive study, the researcher has observed certain patterns in the data that lead to development of new theoretical inputs which have the characteristics of inductive reasoning. Also at the time of doing the pilot testing, a 45-minute interview with 30 senior (top level) executives or middle managers who were employed by Sri Lankan textile and apparel manufacturing firms of Western Province was done and qualitative views were sought and incorporated when developing the final questionnaire.

Fourth, a cross-sectional rather than a longitudinal study was undertaken given that it was constrained by a limited budget and time. Various scholars have suggested that MCS and strategy configurations may have lagged effects on organizational performance (Henri, 2005; Thoren and Brown, 2004), hence collecting data only at a specific point of time may not be sufficient. A longitudinal study is recommended in order to provide potentially more robust findings.

Also in this research, only a limited number of strategic capabilities, control systems and competitive strategy options are taken into account. However, different capabilities, alternative strategic options and diverse management controls would have been plausible and they could provide similar or different conclusions. Thus, the results should be interpreted with caution considering the potential for bias.

6.6 Recommendations for Future Research

The results of this study provide guidance for future research. The influence of uses of MCS as moderating variables should also be examined using non-linear models to reduce the impact of multicollinearity such as structural equation modelling (Frazier et al, 2004), even though hierarchical multiple regression used in the current study appears to be the preferred statistical method for examining moderator effects when either the predictor or the moderator variables (or both) is measured on a continuous scale (Aguinis, 1995).

It is also vital to conduct data analyses by future researchers in a way which would facilitate comparisons among different sectors of the same industry (e.g. comparing outcomes of small and medium scale companies with large scale organizations). Those segregated findings may bring distinctive conclusions and implications.

Further, employing qualitative methodologies in future studies would particularly be useful to provide further explanations and new insights into the context of the current study.

It is also important to conduct longitudinal studies by future researchers to examine the variables relating to MCS-strategy-performance relationship as lagged effects on

organizational performance may bring different conclusions and implications for academia and practitioners.

Moreover, more research is required to understand the relationship among MCS-strategy-performance variables using alternative strategic options, different plausible strategic capabilities and MCS to extend the existing knowledge base. Particularly, similar studies should be conducted in the context of less developed countries as different findings are plausible due to distinctive cultural and political patterns prevailing in those countries (Henri, 2005; Wickramasinghe and Hopper, 2005).

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APPENDICES

Appendix A: Survey Questionnaire

Linking Uses of Management Control Systems with

Strategic Capabilities and Business Level Strategies for

Organizational Performance:

Evidence from the Sri Lanka Textile and Apparel Industry

This questionnaire contains five sections and is designed to gather information about the uses of performance measurement systems, strategic capabilities, business level strategies and organizational performance.

Section A: Demographic Information

Please provide the following demographic data related to you and to your organization.

This data will be used only for the purpose of statistical classification.

1. Name of your organization: ……………………….

2. How many people are employed by your organization: …………………..

2. Title of your position: ……………………………

3. Number of years in your current position: ……………………

4. District in which your organization is located: …………………

Please specify your answer by placing a cross (x) against the relevant box/boxes in answering questions 6 to 8.

5. Type of your organization: ………………………..

Sole Proprietorship		Private Company	
Partnership		Public Company	
Others Please Specify			

7. Type of Performance Measurement Systems (Management Control Systems) used in your organization

Budgetary Controls		Six Sigma	
Variance Analysis		TQM related Measurements	
Balanced Scorecard		Target Costing	
Activity Based Costing		Kaizen Costing	
Others Please specify:			

8. Type of Products

Standard Garments	
Non Standard Garments	
Others (Please specify)	

9. Has your company developed a brand name for the products?

Yes	
No	

10. Please write export destinations based on the descending order of percentage of annual total revenue contributed by that destination (use figures available for the most recent year).

Country	As a percentage of total revenue
1.	
2.	
3.	
4.	
5.	

SECTION B: Uses of Management Control Systems

10. Please indicate, by circling the appropriate number, the level of emphasis placed on uses of Management Control Systems (MCS)..

	Not at all	To a limited extent	To some extent	To a considerable extent	To a great extent
(i).Performance targets are set in advance.	1	2	3	4	5
(ii)MCS are often used as means of questioning and debating ongoing assumptions, decisions and action plans.	1	2	3	4	5
(iii)Performance targets are set by top managers without considering subordinates' viewpoints.	1	2	3	4	5
(iv)MCS evaluate and control subordinates tightly.	1	2	3	4	5
(v)MCS are used to challenge new ideas and ways of doing tasks.	1	2	3	4	5
(vi)MCS are used to align performance measures with strategic goals.	1	2	3	4	5
(vii)MCS are used to follow up present plans and goals.	1	2	3	4	5
(viii)MCS are considered as tools available for learning.	1	2	3	4	5
(ix)MCS are used to follow up significant exceptions and deviations.	1	2	3	4	5
(x)MCS are discussed regularly and frequently in face-to-face meetings between superiors and subordinates.	1	2	3	4	5
(xi)Rewards for employees are determined by a formula based on the achievement of predetermined targets.	1	2	3	4	5
(xii)MCS demand frequent and regular attention from operating managers and	1	2	3	4	5

	Not at all	To a limited extent	To some extent	To a considerable extent	To a great extent
subordinates at all levels of the organization.					
(xiii)MCS generate information that forms an important and recurring agenda in discussions between operational and senior managers.	1	2	3	4	5
(xiv)MCS for employees are determined by employees' contribution towards innovation.	1	2	3	4	5

Section C: Strategic Capabilities

11. Please indicate, by circling the appropriate number, the extent to which the following items describe your organization.

	Not at all	To a limited extent	To some extent	To a considerable extent	To a great extent
(i)Capable of producing products at a lower cost than competitors.	1	2	3	4	5
(ii)Capable of producing unique products relative to competitors.	1	2	3	4	5
(iii)Economies of scale are achieved (efforts are taken to increase production quantity to reduce costs).	1	2	3	4	5
(iv)Capable of designing simple products which are easy to manufacture.	1	2	3	4	5
(v)Capable of using different marketing techniques and methods to those of competitors.	1	2	3	4	5
(vi)Capable in negotiating with suppliers to get raw materials at a lower cost.	1	2	3	4	5
(vii)Innovative in producing unique and quality products.	1	2	3	4	5
(viii)Capable of raising funds from cheaper	1	2	3	4	5

	Not at all	To a limited extent	To some extent	To a considerable extent	To a great extent
sources.					
(ix)Capable of producing high quality products.	1	2	3	4	5
(x)Waste/rejects are strictly controlled in the production process.	1	2	3	4	5
(xi)Innovative in finding cheaper ways to produce and deliver products.	1	2	3	4	5
(xii)Capable of maintaining closer relationships with distributors than competitors	1	2	3	4	5
(xiii)Cheaper methods are used for advertising and product promotions.	1	2	3	4	5
(xiv)Capable of providing outstanding customer service.	1	2	3	4	5
(xv)Brand name is well developed.	1	2	3	4	5
(xvi)Research and development is mainly focused on achieving low cost production.	1	2	3	4	5
(xvii)Research and development is mainly focused on developing unique products.	1	2	3	4	5

Section D: Business Level Strategies

12. Please indicate, by circling the appropriate number, the extent to which the following items describe your organization.

	Not at all	To a limited extent	To some extent	To a considerable extent	To a great extent
(i)Achieving lower cost per unit than competitors is a strategic priority.	1	2	3	4	5
(ii)Attempts being made to differentiate product attributes from competitors.	1	2	3	4	5
(iii)Pricing the products below competitors is a strategic priority.	1	2	3	4	5

(iv)Employs extremely strict cost controls.	1	2	3	4	5
(v)Building brand identification is recognized as a strategic priority.	1	2	3	4	5
(vi)Unique features of products (compared to competitors) are emphasized in promotional activities.	1	2	3	4	5
(vii)Produce standardised products.	1	2	3	4	5
(viii)Produce customised products (specialty products).	1	2	3	4	5
(ix)Innovation takes place in marketing technology and methods.	1	2	3	4	5
(x)Fostering innovation and creativity in the production process is a strategic priority.	1	2	3	4	5
(xi)Providing outstanding customer service is given priority.	1	2	3	4	5
(xii)Major expenditure on technology being incurred to differentiate products.	1	2	3	4	5
(xiii)Outsource organizational functions to control costs.	1	2	3	4	5
(xiv)Major expenditure on technology being incurred to lower costs.	1	2	3	4	5
(xv)Extremely strict product/service quality control procedures are employed.	1	2	3	4	5
(xvi)Performs an analysis of costs associated with various activities.	1	2	3	4	5
(xvii)Rewards are given to those employees who suggest ways of reducing costs of organizational functions.	1	2	3	4	5
(xviii)Rewards are given to those employees who suggest ways of making organizational products/services unique ones.	1	2	3	4	5

Please specify your answer to the following two questions (13 and 14) by placing a cross (x) against the relevant box/boxes

13. Your organization offers products to:

Higher-priced market segments only	
Lower-priced market segments only	
Both higher-priced and lower-priced market segments.	

14. Product range of your organization is:

Broad	
Narrow	

Section E: Organizational Performance

15. Please indicate, by circling the appropriate number, your organization's overall performance over the past **three years** (2005-2007) in the following areas relevant to performance targets. If you are not aware of any of the following indicators please indicate by selecting the option 'Not Known'.

	Not known	Very Low	Low	Moderate	High	Very High
(i)Market share	0	1	2	3	4	5
(ii)Sales growth	0	1	2	3	4	5
(iii)Net profit margin (net profit after tax as a percentage of revenue)	0	1	2	3	4	5
(iv)Cost of goods sold to sales revenue	0	1	2	3	4	5
(v)Cost per unit						
(vi)Return on Investment	0	1	2	3	4	5
(vii) Number of rejects/rework	0	1	2	3	4	5

(viii)Product processing time	0	1	2	3	4	5
(ix)Delivery performance to customers (by date)	0	1	2	3	4	5
(x)Delivery performance to customers (by quantity)	0	1	2	3	4	5
(xi)Number of customer complaints	0	1	2	3	4	5
(xii)Sales returns as a percentage of gross sales	0	1	2	3	4	5
(xiii)Customer drop out rate	0	1	2	3	4	5
(xiv)Employee turnover	0	1	2	3	4	5
(xv)Employee absenteeism						
(xvi)New products introduced to the market	0	1	2	3	4	5
(xvii)Percentage of sales from new products	0	1	2	3	4	5
(xviii)New production techniques and processes used	0	1	2	3	4	5

Thank you for your assistance in this survey.

Appendix B: Cover Letter

…………….2008

Dear Sir,

Linking Uses of Management Control Systems with

Strategic Capabilities and Business Level Strategies for

Organizational Performance:

Evidence from the Sri Lanka Textile and Apparel Industry

I am an academic staff member of the Department of Accounting, University of Sri Jayewardenepura, Sri Lanka and presently engaged in doctoral studies at Edith Cowan University, Western Australia. As part of my PhD (Accounting), I am conducting a research study on management controls - strategic capability-strategies and performance relationship. This proposed study is an interdisciplinary study as it integrates managerial accounting and an aspect of strategic management known as strategic capabilities. The exact title of my study is *"Linking Management Control Systems with Strategic Capabilities and Business Level Strategies for Organizational Performance: Evidence from the Sri Lanka Textile and Apparel Industry"*.

This study aims to examine the problem of "how do the uses of management control systems influence the relationship between business strategies (which are determined by strategic capabilities) and organizational performance. Findings of this study will enable practicing managers in designing and modifying Performance Measurement Systems of their organizations with the view of strengthening strategic capabilities and organizational performance. As you occupy a senior position in your organization, and will have a sophisticated understanding of your organizational practices, I am extremely interested in your response.

The enclosed questionnaire will enable you to anonymously share your opinion and all information you provide in the survey will be used only for the study purpose and will be treated as **strictly confidential**. Individual persons and organizations will not be identified in the analysis, and only aggregate responses will be reported in the discussion of the results. I would be extremely grateful if you would take the time to complete the attached questionnaire, which will take no more than 20 minutes.

I realize that you are likely to be heavily committed to managerial activities of your organization, but it would be much appreciated if you could return your completed response, in the reply-paid envelope, over the next two weeks. I welcome the opportunity to provide you with aggregate responses summarizing the research findings. If you wish to receive this summary, please complete and post the reply- paid postcard enclosed.

If you have any queries about the questionnaire please contact my research supervisor, Professor Malcolm Smith at Edith Cowan University by sending an e-mail to malcolm.smith@ecu.edu.au or me either sending an e-mail to nkapuara@ student.ecu.edu.au or on 94-11-2849808.

If you have any concerns about the research project and wish to talk to an independent person, you may contact:

> Human Research Ethics Officer
>
> Edith Cowan University
>
> 100 Joondalup Drive
>
> JOONDALUP WA 6027
>
> Phone: (61-8) 6304 2170
>
> Email: research.ethics@ecu.edu.au

I look forward to receiving your completed questionnaire by ………………..

Thank you.

……………………………..

Signature of the Researcher

Researcher:

> Dilhani Kapu Arachchilage
>
> School of Accounting, Finance and Economics
>
> Edith Cowan University, 100 Joondalup Drive.
>
> Joondalup WA6027
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> E-mail: nkapuara@student.ecu.edu.au

Research Supervisor:

> Prof. Malcolm Smith
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> School of Accounting, Finance and Economics
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> Edith Cowan University, 100 Joondalup Drive
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> Joondalup WA6027
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> Tel. (61-8) 6304 5263
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> E-mail: malcolm.smith@ecu.edu.au

Appendix C: Questionnaire Reminder

…………….2008

Dear Sir,

Linking Uses of Management Control Systems with

Strategic Capabilities and Business Level Strategies for

Organizational Performance:

Evidence from the Sri Lanka Textile and Apparel Industry

Three weeks ago a questionnaire with the title given above was posted to you. If you have already completed and returned the questionnaire to us, please accept our sincere gratitude. If not, we would appreciate if you could complete and return it at your earliest convenience. We are especially grateful for your help because your response will help to conduct this survey and generate significant findings to enhance organizational performance.

A copy of the questionnaire is attached to this letter and if you have not received the previous questionnaire or if it has been misplaced, please fill the copy.

If you have any concerns about the research project and wish to talk to an independent person, you may contact:

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> Email: research.ethics@ecu.edu.au

I look forward to receiving your completed questionnaire by ……………..

Thank you.

……………………………..

Signature of the Researcher

Researcher:

      Dilhani Kapu Arachchilage

      School of Accounting, Finance and Economics

      Edith Cowan University, 100 Joondalup Drive.

      Joondalup WA6027

      E-mail: nkapuara@student.ecu.edu.au

Research Supervisor:

      Prof. Malcolm Smith

      School of Accounting, Finance and Economics

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      Joondalup WA6027

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