STRATEGY FORMULATION AND IMPLEMENTATION IN MANUFACTURING ORGANISATIONS – THE IMPACT ON PERFORMANCE

A thesis submitted to Middlesex University in partial fulfilment of the requirements for the degree of Doctor of Philosophy

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November 2008

This thesis is dedicated to my late father Padmanabha Menon, and my mother Meenakshikutty, who taught me the value of education and who made sacrifices for us, their children, so that we could have the opportunities they did not have.

ABSTRACT

A key preoccupation of strategy as a field of study is the identification of sources of heterogeneous performance among competing firms. The main theories of strategy include contingency theory, Porter's positioning theory, resource-based view and its derivatives and environmental theories and offer varying views explaining the potential reasons for deriving superior rent.

Empirical studies in the field of strategic management have mainly focussed on two main streams of research: (i) the relationship between how strategy is formulated in a firm and firm performance and (ii) the relationship between the content of strategy and firm performance. A third area of interest is strategy implementation, but unlike the other two areas, strategy implementation has not received much empirical interest.

The results of the previous studies examining the relationship between strategy formulation and performance and strategy content and performance have been inconclusive. Some studies have reported positive relationships, while others found no relationship. The previous studies also suffered from a number of methodological inadequacies such as inconsistent operationalisation of the constructs, unclear definition of industry sectors and small sample size. Only a few studies have focussed on UK based organisations. In addition there is a dearth of empirical research using UK based engineering organisations.

The study reported in this thesis examines the impact of strategy formulation, strategy content and strategy implementation on organisational performance, all within a single study. As far as the author was able to establish by examining the previous studies, none of the previous studies have looked into strategic planning, business-level strategy and

strategy implementation simultaneously in a single study. Furthermore this study considers the moderating effects of environment on the relationship between strategy formulation and performance and strategy content and performance. It also assesses the moderating effect of organisational structure on the relationship between strategy content and performance. Because of the integrated approach taken, this study makes a significant contribution to the literature. This study also addresses some of the methodological shortcomings of the previous studies by clearly defining the industry sectors, using a good sample size and by using properly validated constructs. It gains significance mainly due to its focus on UK based organisations and helps theory development because a robust theory is crucially dependent on empirical studies representing different industry sectors and geographical regions.

Based on the literature review a conceptual model of strategy formulation and implementation was proposed and the hypotheses to be tested were derived. These hypotheses were classified into two groups namely (i) hypotheses for validating the findings of previous studies and (ii) hypotheses which have not been tested in previous studies. Hypotheses in the first group have examined the impact of strategic planning, business-level strategy and planning of strategy implementation on organisational performance. Hypotheses in the second group have examined the interrelationships between strategic planning, business-level strategy and strategy implementation.

The development of the survey instrument involved a number of processes including adaptation of the constructs from previous studies, review by a panel of experts and a pilot study. This process ensured content and face validity of the measures. Using the validated questionnaire a postal survey was conducted among the chief executives of manufacturing organisations in the UK belonging to the electrical and mechanical

engineering sectors. Appropriate analytical techniques were used to test the hypotheses and Partial least squares (PLS), which is a structural equation modelling technique was used to test the conceptual model. Organisational performance was measured using two constructs namely objective fulfilment and relative competitive performance.

The study indicated that strategic planning has a strong positive relationship with objective fulfilment and its relationship with relative competitive performance is not very strong. It was found that strategic planning helps organisations to improve their relative competitive performance in highly dynamic as well as highly hostile environments. The results indicated that organisations that had a clear business-level strategy by adopting one of the strategies namely cost-related, differentiation or integrated strategies performed better than stuck-in-the-middle companies both in terms of objective fulfilment and relative competitive performance. It was also found that external environment moderates the relationship between business-level strategy and performance to some extent. A cost-related strategy helps organisations to improve their performance in environments with low levels of hostility. A differentiation strategy is helpful in improving relative competitive performance in highly hostile environments as well as highly dynamic environments. It was found that an organic structure is helpful for organisations having a clear strategy to improve their performance. The planning of strategy implementation had a significant positive relationship with both the performance measures.

When the conceptual model was tested using PLS it was found that some of the relationships in the model were not statistically significant. The model indicated that it is not possible to effectively predict relative competitive performance using the variables used in this study. However, the model indicated that objective fulfilment can

be predicted using strategic planning and the planning of strategy implementation. Most of the previous studies have examined bivariate relationships. The structural model indicates that some of the bivariate relationships become insignificant when strategic planning is studied along with business-level strategy and strategy implementation simultaneously.

The findings of this study are extremely useful to CEOs and senior managers as they confirm the importance of strategic planning and the need for properly planning and prioritising strategy implementation in order to enhance organisational performance. It also highlights the importance of clearly defining the business-level strategies for improving performance. Some of the main limitations of this study include the use of single respondents, its focus on only two industry sectors, sole dependence on the survey data and common method variance. These limitations, and measures taken to overcome common method variance, are discussed in the thesis.

This thesis comprises of eleven chapters which are organised into four sections. Chapter 1 provides an introduction to the study. It explains the background of the study and presents the conceptual model and study objectives. Part 1 contains a comprehensive literature review which includes strategy development process, strategic planning and performance, business-level strategy and performance and a review of strategy implementation literature. Part 2 describes the main aspects concerning research methodology and survey design. Part 3 provides the details of data analysis carried out and the results obtained by testing the hypotheses. Part 4 provides a summary of discussions outlined in this thesis and the conclusions derived.

ACKNOWLEDGEMENTS

I'm extremely thankful to Middlesex University for funding this research. Many people have helped me while carrying out this study. In particular I wish to express my gratitude to *Professor Abby Ghobadian* who has been my supervisor since the beginning of my research. He provided me with important advice, helpful suggestions and constant encouragement throughout the course of this work. Without Abby's help and support, this study would not have been completed. I'm also grateful to *Professor Nicholas O'Regan* for his continued encouragement and for giving me guidance and constructive advice. I also wish to thank my supervisor, *Dr. Jeff Evans* for helping me with statistical data analysis and methodological issues and for motivating me to finish this thesis. Special gratitude goes to *Professor Richard Croucher* for his support during this study and to *Dr. David Gallear* for providing valuable suggestions.

Special thanks are due to *Professor Arthur Money* for providing proper guidance and direction to carry out statistical data analysis and for teaching me how to conduct analysis using Partial Least Squares (PLS). Sincere thanks are extended to *Dr. Wynne W. Chin* for giving me license to use PLS Graph (Version 3.0) software package. I wish to express my cordial appreciation to *Professor V. K. Narayanan* for his valuable instructions and advice throughout this study. My keen appreciation goes to *David Jarrett* for teaching me the fundamentals of statistical data analysis and for providing suggestions to improve the survey instrument.

Sincere thanks are extended to the following strategy scholars for providing valuable suggestions that improved the quality of this study:
John Parnell, Thomas Powell, Gregory G. Dess, Donald C. Hambrick, K. Mathew Gilley, Jeffrey G. Covin, Jeffrey S. Conant, Stanley F. Slater, Robert M. Grant, Christoph Lechner, Danny Miller, Charles Bradley Shrader, Cliff Bowman, Abdul A. Rasheed, Veronique Ambrosini, Praveen Nayyar, David C. Wilson and *Paul Olk*

I'm deeply indebted to the Chief Executives of various organisations who have supported this study by responding to the postal survey. I want to thank my colleagues *Michael* and *Naaguesh* for their help and support during this research.

At last I would like to thank the people who I care most about in the world, my family. My brother *Dr. Aneeshkumar* has encouraged me to concentrate on my study and without his support I would not have completed this research. My wife *Vineetha* has given me whole-hearted assistance and encouragement for completing this study. Due to the support given by my mother and my wife, I was able to maintain my focus on the PhD even after the birth to our twins, *Dhanvant* and *Bharat* in December 2006.

I'm afraid that I may have left lots of people out who have helped me along the way and to those, I'm sorry but I'm extremely grateful nevertheless for their contributions.

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Chapter 1: Introduction

1.1 Preamble

The primary aim of this chapter is to put the study in context. It provides an overview of the work presented and more specifically, the framework used to carry out the literature review, a brief summary of the literature review, aims and objectives of the study, the conceptual model proposed in the study, the relevance of this study and an overview of the research methodology. A discussion of the extant literature resulted in the identification of the research questions to be addressed in this study. The hypotheses formulated after a comprehensive literature review presented in Part 1 of this thesis are outlined in this chapter. This chapter also discusses the main limitations of this study, the contribution to the existing knowledge and the practical utility of this research.

1.2 Background of the Study

Strategic management is primarily concerned with exploring one central issue of what produces performance heterogeneity among competitors (Rumelt, Schendel and Teece, 1994). The extant literature suggests that among other factors, the quality of strategy formation processes (e.g. Mintzberg, 1990), business-level strategy (e.g. Parnell, 1997) and strategy implementation (e.g. Galbraith and Kazanjian, 1986) account for performance heterogeneity among direct competitors. The impact of these three factors on organisational performance and the current state of literature in these areas is briefly discussed in this section. In this study organisational performance is measured using two constructs namely objective fulfilment and relative competitive performance. Objective fulfilment is defined as the extent to which the organisation has achieved its short-term and long-term performance objectives and minimised the problems. Relative

competitive performance is defined as the extent to which organisational performance has either improved or deteriorated in terms of sales, profit, market share, return on assets, return on equity, return on sales, current ratio and competitive position. A summary of the main issues concerning the operationalisation of strategy formation process, business-level strategy and strategy implementation and the findings of the previous studies are briefly discussed in the sections 1.2.1, 1.2.2 and 1.2.3 respectively. The moderating effect of environment on the relationship between strategic planning and performance, and business-level strategy and performance, as well as the role of organisational structure on the relationship between business-level strategy and performance are discussed in sub-sections 1.2.4 and 1.2.5 respectively.

1.2.1 Strategy Formation Process

The strategy making process in organisations have been broadly explained through two approaches namely planning and learning schools (e.g. Wiltbank, Dew, Read and Sarasvathy, 2006; Cunha and Cunha, 2002; Brews and Hunt, 1999). These two schools are also known as prescriptive and descriptive schools respectively (Mintzberg et al., 1998; Mintzberg and Lampel, 1999).

Planning schools make use of various analytical techniques to analyse the internal and external environments of the organisation and subsequently prescribe a strategy for the organisation. According to the planning schools it is possible to predict and control the performance of an organisation by formulating and implementing rational strategies. The planning school approach is probably the oldest and the most widely used approach in the field of strategic management. This approach involves a systematic analysis of the external environment as well as the resources and capabilities of the organisation on a regular basis, generation and evaluation of strategic alternatives and finally choosing the

best possible strategy (e.g. Andrews, 1987; Fredrickson and Mitchell, 1984; Ansoff, 1991; Miller and Cardinal, 1994).

Broadly speaking the learning schools advocate adaptation, that is to say, moving faster to adapt better to changing environments, thereby minimising the need for predictive rationality (Wiltbank, Dew, Read and Sarasvathy, 2006). The learning schools suggest that organisations experiment and move quickly to capture new opportunities. While learning schools present a holistic approach to strategy making, they may not provide a clear and concrete direction for the organisation.

Some authors, for example, Brews and Hunt (1999), Cunha and Cunha (2002) have tried to bridge the gap between these two types of schools by proposing a synthesis of them. However, this type of research has not made significant progress. In most of the empirical studies conducted so far, the strategy development process has been operationalised based on the assumptions of the planning school approaches. This is mainly because learning schools visualise strategy development process as a highly complex phenomenon involving various factors like power and politics, organisational culture and the intuition of the CEOs. Hence, it is extremely difficult to operationalise it using measurable constructs.

The mode of strategy making to operationalise strategy formation in this study has been identified through a comprehensive review of strategy process literature and this is explained in chapters 2 and 3. Rational choice mode of strategy making which advocates the use of rational-comprehensive strategic planning has been identified as the strategy making mode for this study. A large number of empirical studies have attempted to explain the causes of performance heterogeneity by operationalising strategy making process through the rational choice mode (e.g. Lenz, 1980; Orpen, 1985;

Anderson, 2000). A detailed review of these studies can be found in chapter 4. Most of these studies have looked into the impact of only strategic planning on organisational performance and have not looked into business-level strategy and strategy implementation. Even after three decades of research in this area, there is as yet no consensus among strategy scholars about the effectiveness of rational strategic planning in generating superior returns for the organisation. Even though a majority of the studies have reported a positive relationship between strategic planning and performance (e.g. Sapp & Seiler, 1981; Odom & Boxx, 1988; Rue & Ibrahim, 1998) a significant number (Gable & Topol, 1987; McKiernan & Morris, 1994) did not find a positive impact. Only few studies have examined UK based organisations and there have been inconsistencies in the operationalisation of the strategic planning constructs. The industry sectors were not clearly defined in a sizable number of prior studies. Out of the nineteen studies which examined manufacturing organisations, only five studies focussed on engineering firms. The sample size used in nearly 50% of the studies was below 100. Because of these reasons there is a need for conducting further studies examining this relationship.

1.2.2 Business-level Strategy

A discussion of strategy typologies and taxonomies can be found in chapter 5. In this study business-level strategy has been operationalised through Porter's (1980) typology. Business-level strategy has been defined in a number of ways in the extant literature and these definitions are examined in section 2.3.1 in chapter 2. The definition of business-level strategy used in this study is as follows:

Business-level strategy employed by manufacturing organisations is defined as the competitive methods which are derived on the basis of rational-comprehensive strategic planning enabling them to accomplish one of the following tasks:

- *minimise the operational costs;*
- *differentiate their products from other competitors;*
- *minimise the operational costs and differentiate their products from other competitors.*

Detailed specifications for implementing this strategy are provided and clearly communicated to the personnel involved. Various tasks involved for implementing the strategy are appropriately prioritised.

A number of studies have tried to explain performance heterogeneity by examining the business-level strategies of organisations (e.g. Karnani, 1984; Marlin, Lamont & Hoffman, 1994; Kim, Nam & Stimpert, 2004; Moore, 2005). A detailed review of the studies which have operationalised business-level strategies through Porter's (1980) and Miles & Snow (1978) typologies can be found in chapter 5. Most of these studies have looked into the impact of only business-level strategy on organisational performance and have not taken into consideration strategic planning and strategy implementation. The literature review indicated that strategy typologies can be effectively used to explain performance heterogeneity in organisations. However, there have been inconsistencies in the operationalisation of strategy typologies in the empirical studies. While a large number of studies have concluded that organisations adopting a clear strategy performed better than stuck-in-the-middle organisations, only few studies have looked into the impact of integrated strategies on performance. Some studies have defined stuck-in-the-middle companies as organisations using combination strategies. However, in this study stuck-in-the-middle companies are defined as firms which do not give emphasis to either cost-related or differentiation strategies. Firms adopting integrated strategies give emphasis to both cost-related and differentiation.

Most of the studies have focussed on US based organisations and only very few studies have examined organisations in the UK. Only one study has looked at the relationship between business-level strategy and performance among the manufacturing organisations in the UK. Hence this study can make an important contribution to the literature.

1.2.3 Strategy Implementation

Strategy implementation is the critical link between formulation of strategies and superior organisational performance (Noble and Mokwa, 1999). Nutt (1999) studied strategic decisions in organisations located in the USA and Canada and concluded that half of the strategic decisions failed to attain their initial objectives mainly because of the problems during strategy implementation process. Even though the stream of research which deals with strategic decision making is well developed, there are only a few empirical studies on strategy implementation. A comprehensive review of strategy implementation literature revealed that only very few studies have examined the relationship between strategy implementation and performance (e.g. Hickson, Miller & Wilson, 2003). The literature review also identified the main problems in implementing strategies and the key attributes of successful strategy implementation. A full literature review can be found in chapter 6.

The extant literature suggests that none of the studies have looked into the causes of performance heterogeneity by examining strategic planning, business-level strategy and strategy implementation simultaneously in a single study. This study attempts to identify the causes of performance heterogeneity among manufacturing organisations by examining their level of emphasis on strategic planning, clarity in business-level strategy and the level of emphasis on planning of strategy implementation. The unique

feature of this research is that it takes an integrated approach and looks into the strategy formulation and implementation process by examining all three elements simultaneously in a single study.

1.2.4 The Moderating Effect of Environment

The empirical evidence is divided on whether or not environment moderates the relationship between strategic planning and performance and business-level strategy and performance. The findings of some studies indicate that the rational choice mode of strategy making is beneficial in stable environments and harmful in dynamic environments (e.g. Fredrickson, 1984; Fredrickson and Mitchell, 1984). On the other hand some other studies indicate that planning rationality leads to higher performance in dynamic environments (e.g. Miller and Friesen, 1983; Eisenhardt, 1989; Judge and Miller, 1991; Goll & Rasheed, 1997). There is a need to conduct further studies to examine the moderating effect of the environment on the relationship between strategic planning and performance because findings of previous research are contradictory. This study examines such a relationship among UK based manufacturing organisations.

Miller (1988, 1991) suggested that a cost-related strategy would be more suitable in stable environments and a differentiation strategy would be more advantageous for the organisations operating in dynamic environments. Prescott (1986) found that the environment moderated the strength of relationship between strategy and performance. Lee and Miller (1996) in a study conducted among Korean companies found that those companies using emergent technologies performed well if they employed differentiation strategies in uncertain environments and cost-related strategies in stable environments. No study has examined the moderating effect of environment in the relationship between business-level strategy and performance in UK based manufacturing

organisations. A distinguishing feature of this study is that it examines this moderating effect for the first time in the context of manufacturing organisations in the UK.

1.2.5 The Role of Organisational Structure

Jennings and Seaman (1994) in a study conducted among organisations belonging to the savings and loan industry compared the performance of firms belonging to two groups. The first group included the organisations with a high-level of adaptation to environmental changes having the best prospector strategy-organic structure fit and second group had firms with a low-level of adaptation having the best defender strategy-mechanistic structure fit. It was found that there was no significant difference in the performance between these groups. According to Hutt, Reingen and Ronchetto (1988), organic structures are more likely to promote autonomous strategic initiatives than mechanistic structures. Autonomous strategic initiatives are necessary in organisations employing either a differentiation strategy or integrated strategy. Hence, organisations adopting either of these two strategies are likely to perform well if they have organic structures. In order to ascertain this, the performance of organisations grouped according to their strategic orientation and the type of organisational structure was compared in this study. This study also examined the moderating effect of structure on the relationship between business-level strategy and performance.

1.3 An Evaluation of Porter's Generic Strategies

According to Porter (1980) competitive strategy is defined as proactive or defensive actions taken by organisations to create a defendable position in an industry, to cope successfully with the five competitive forces resulting in superior return on investment for the firm. Porter identified three internally consistent generic strategies for creating a defendable position in the industry and to outperform competitors: (i) overall cost

leadership, (ii) differentiation and (iii) focus. The ways that organisations employing these strategies can mitigate the threat from the five competitive forces namely bargaining power of suppliers, bargaining power of new entrants, bargaining power of buyers, bargaining power of substitutes and rivalry among existing firms (see Porter, 1980) are explained below.

1.3.1 Overall Cost leadership

The cost leadership strategy is an integrated set of actions taken to produce goods or services with features that are acceptable to customers at the lowest cost, relative to that of competitors (Hitt, Ireland & Hoskisson, 2007). Organisations following this strategy strive to achieve overall cost leadership in an industry through aggressive construction of efficient-scale facilities, vigorous pursuit of cost reductions from experience, tight cost and overhead control, avoidance of marginal customer accounts and cost minimisation in areas like R&D, service, sales force and advertising. In spite of the presence of competitive forces the low-cost position of the firm results in the generation of above-average returns. When the intensity of rivalry is high the lower cost position of the cost leader enables them to earn returns. However the competitors deplete their profits by engaging in rivalry. The bargaining power of the buyers may force a cost leader to reduce its prices, but not below the level at which its next-most-efficient competitor can earn average returns. Even though powerful customers are capable of forcing the cost leader to reduce the prices below this level, they may not prefer to do so. If they do that, the next-most-efficient competitor may need to exit the industry and the cost leader will be in a much stronger position. This will result in an erosion of bargaining power of the buyers. The low cost position also shields the company from the bargaining power of suppliers mainly because the cost leader operates with greater margins than those of competitors. The cost leader will be able to absorb the price

increases of its suppliers. Cost leaders maintain high level of efficiency in their operations resulting in increased profit margins. This creates barriers for potential entrants to the industry. Comparatively the lower cost position of the cost leader places it in a more advantageous position than its competitors while facing the threats from substitute products.

1.3.2 Differentiation

A differentiation strategy is defined as an integrated set of actions taken to produce goods and services (at an acceptable cost) that customers perceive as being different in ways that are important to them (Hitt et al 2007). A firm differentiates itself through several dimensions like design or brand image, technology, features, customer service and dealer network. A differentiation strategy helps an organisation to minimise the threats from the five competitive forces. The brand loyalty of the customers makes them less sensitive to price increases and this protects the differentiator from competitive rivalry. Unique products or services could reduce the customer's sensitivity to price increases and this will reduce their bargaining power significantly. Differentiators normally charge premium prices for their products and services resulting in higher profit margins. Higher supplier costs can be paid through these margins and hence the bargaining power of suppliers can be mitigated. Because of customer loyalty and the need to overcome the uniqueness of differentiated products, it becomes difficult for new entrants to enter the industry. Brand name and customer loyalty provide immunity to differentiators against the threat from substitute products.

1.3.3 Focus

The focus strategy is an integrated set of actions taken to produce goods or services that serve the needs of a particular competitive segment (Hitt et al 2007). Firms employing

focus strategies concentrate on a particular buyer group, segment of the product line or geographic market. While organisations adopting either a cost leadership or a differentiation strategy strive to achieve their objectives industry-wide, the ones following a focus strategy try to serve a particular target very well. The organisations adopting a focus strategy either differentiate its products or services from other firms operating in the segment or try to achieve a lower cost position than the other players in the segment. Hence a focus strategy does not enable organisations to achieve either a low cost or differentiation in the whole industry, but it does enable them to achieve one of these positions in its narrow market segment.

The three generic strategies are shown in figure 1.1.

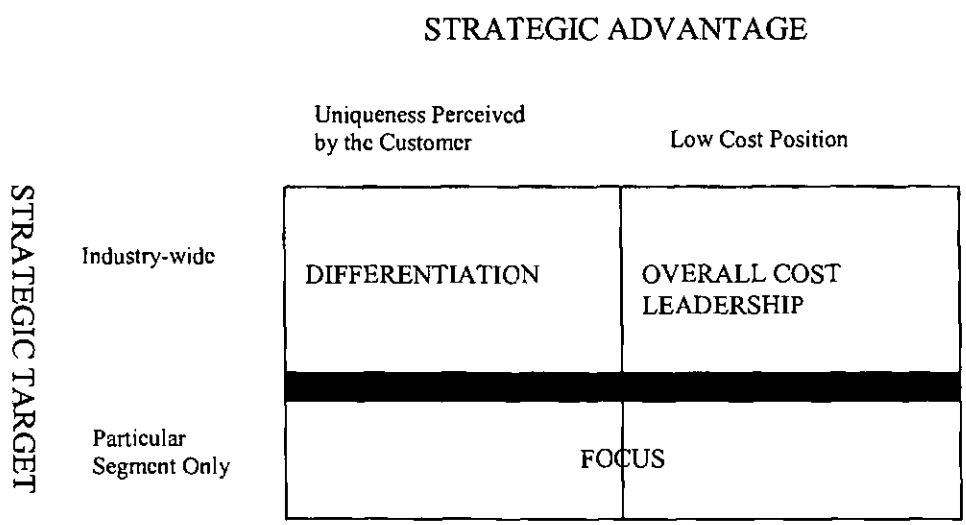

Figure 1.1 Porter's Generic Strategies *(Source: Porter, 1980)*

1.3.4 Risks of the Generic Strategies

According to Porter (1980), basically there are two types of risks in pursuing generic strategies. Firstly, failing to attain or sustain the strategy and secondly, the value of the strategic advantage will be eroded when the industry evolves. According to Porter the first situation can lead to a state called "stuck in the middle" and firms can become

stuck in the middle for one of the two reasons (Kim, Nam & Stimpert, 2004). If firms fail to develop their strategy in at least one of the three directions, it may become stuck in the middle leading to poor performance. If firms try to pursue more than one generic strategy simultaneously they can become stuck in the middle. However, empirical evidence suggests that pursuance of combination strategies by combining both cost leadership and differentiation is helpful in earning above-average returns (e.g. Dess, Lumpkin & McGee, 1999; Kim & Lim, 1988). In this study organisations adopting combination strategies are classified as the ones following integrated strategies. As pointed out in section 1.2.2, in this study stuck in the middle companies are defined as those firms which do not give emphasis to either cost leadership or differentiation strategies.

The risks of the generic strategies associated with industry evolution are summarised in table 1.1.

Table 1.1 Risks of the Generic Strategies

Generic Strategy	Risks
Cost leadership	• Technological change that nullifies past investments or learning; • Low-cost learning by industry newcomers or followers, through imitation or through their ability to invest in state-of-the-art facilities; • Inability to see required product or marketing change because of the attention placed on cost; • Inflation in costs that narrow the firm's ability to maintain enough of a price differential to offset competitors' brand images or other approaches to differentiation.
Differentiation	• The cost differential between low-cost competitors and the differentiated firm becomes too great for differentiation to hold brand loyalty; • Buyers' need for the differentiating factor falls when the buyers become more sophisticated; • Imitation narrows perceived differentiation which normally happens when industries mature.
Focus	• The cost differential between broad-range competitors and the focused firm widens to eliminate the cost advantages of serving a narrow target or to offset the differentiation achieved by focus; • The differences in desired products or services between the strategic target and the market as a whole narrows; • Competitors find submarkets within the strategic target and outfocus the foucuser.

Adapted from Porter (1980)

1.3.5 Criticisms of Porter's Generic Strategies

Many authors have raised concerns about the effectiveness of Porter's generic strategies. Recently Bowman (2008) has pointed out three main limitations of Porter's generic strategies: (i) they confuse 'where to compete' with 'how to compete', (ii) they confuse competitive strategy with corporate strategy and (iii) they exclude other feasible strategy options. Porter suggested that firms should select attractive industries to operate. Bowman challenges this theory by pointing out that, if an industry is not attractive for a firm, it is not clear whether it should then follow Porter's recommendation and consider another industry. Bowman argues that the industry definitions used by Porter are broad and hence the choice between the three generic strategies is more about 'where to compete' rather than it is about 'how to gain and sustain advantage'. The second limitation relates to the confusion between corporate-level strategy and business-level strategy. According to Porter, firms competing in a number of industry segments or related industries should adopt either one or the other of the generic strategy positions in all the markets that they compete in. Bowman argues that since organisations competing in numerous market segments are corporations, the broad scope strategy is not a business-level strategy, but a corporate-level strategy. According to Bowman, firms need to use both differentiation and cost leadership strategies simultaneously. The third limitation of Porter's typology is that it excludes some of the possible strategic options. For example, it may be possible to focus on product enhancement while at the same time maintaining competitive prices. A differentiator could make use of scale and experience effects to bring down their cost level. Bowman argues that Porter's typology is a segmentation theory which divides the market into two segments. In the first segment, average producers sell average products at average prices and average costs to customers who are satisfied with what they are being offered. In the other segment,

producers offer premium products at premium prices to customers who value superior products. Bowman suggests that generic strategies is a very simplistic framework and does not provide answers to the context specific strategic issues of organisations (e.g. environmental conditions).

Miller (1992) contends that pursuing a single generic strategy may lead to dangerous consequences. Strategic specialisation could result in: (i) serious shortcomings in the product offerings, (ii) ignoring important customer needs, (iii) weaker defence against rivals, (iv) inflexibility and (v) narrowing down the vision of the organisation. Miller argued that a mixed strategy by combining differentiation and cost leadership is preferable mainly because it reduces the risks associated with strategic specialisation. It also enables organisations to develop multiple abilities and provides opportunities to exploit potential synergies among the different aspects of strategy. However Miller suggests that in some situations a pure generic strategy is preferable to a mixed strategy. When the market prefers a single feature such as price or quality it is preferable to follow either a cost leadership or a differentiation strategy. In circumstances when customers demand extreme reliability, it may not be possible strive to lower the costs. Similarly if the customers are very sensitive to price increases and it is possible to maintain the cost advantage for the company, it is pointless to introduce differentiated features in the product or service. Strategy is not merely cutting costs or providing unique products, but 'it must represent a winning configuration of complementary product and service attributes and organisational efforts' (Miller, 1992, pp. 41).

1.3.6 Extensions of Porter's Generic Strategies

As an alternative to Porter's generic strategies, Treacy & Wiersema (1997) have empirically derived three strategic options for organisations based on market

segmentation theory. According to this framework there are three generic segments in any industry. The first segment desires a standard product at a low price, the second segment demands innovative products with superior features and customers are prepared to pay a premium price and the third segment requires customised products and services. For serving the first, second and third segments organisations can use operational excellence, product leader and customer intimacy strategies respectively.

Kim & Mauborgne (2005) proposed a Blue Ocean strategy by providing a very narrow definition of competition. According to this school of thought, the aim of strategy is not to outperform the competitors in the industry, but to create a new market space or a blue ocean. As a result of this strategy the competition becomes irrelevant or indirect. This strategy advocates the use of both cost leadership and differentiation strategies simultaneously. The Blue Ocean strategy outlines both strategy formulation and implementation.

In this section a number of criticisms and developments on Porter's framework have been examined. Nevertheless as explained in chapter 5, it has been decided to investigate business-level strategy using Porter's typology in this study.

1.4 Rationale behind the Literature Review

The literature review was carried out in two phases. In the first phase the mode of strategy making employed to operationalise the strategy formulation process in this study was identified through a process consisting of five stages. In the first stage an understanding of the concepts of strategy and strategy process was developed by examining the definitions of strategy and strategy process proposed by various authors. Ten schools of strategy formation proposed by Mintzberg et al. (1998) were examined

for highlighting the complex nature of strategy process. In the second stage strategy process research was examined and the major streams of strategy process research were identified. Subsequently the streams of research for operationalising strategy formulation and implementation in this study were ascertained. In the third stage the strategy making models and frameworks proposed by various authors were examined.

The strategy development process has been broadly explained by three perspectives namely strategic choice, social processes and environmental factors. Four theories namely teleology, life-cycle, dialectics and evolution (Van de Ven, 1992) explain the roots of strategy process. In the fourth stage of the literature review in phase I, the strategy making models identified in the third stage were mapped on a two dimensional plane consisting of the three strategy process perspectives and the four theoretical roots. As a result of this mapping seven strategy making modes were identified and they were defined. In the final stage the mode of strategy making for operationalising the strategy formulation process in this study was chosen.

The second phase of the literature review consists of three parts. In this phase the empirical studies which have looked into strategic planning, business-level strategy and strategy implementation in organisations were examined and the hypotheses to be tested in this study were formulated. Two systematic literature reviews were carried out in this phase. In the first systematic literature review studies which have examined the relationship between strategic planning and performance were analysed and this literature review is presented in Unit 1. In the second systematic literature review studies which have operationalised business-level generic strategies using Porter's (1980) and Miles & Snow (1978) typologies were analysed and this literature review is presented in Unit 2. The main challenges in implementing effective strategies and the

main attributes of successful strategy implementation were identified by examining the strategy implementation literature and this literature review is presented in Unit 3. Hypotheses examining the relationships between these three elements of strategy formulation and implementation process and organisational performance were formulated. The frameworks used to carry out the literature review in two phases are depicted in figures 1.2 and 1.3. The detailed literature review is presented in chapters 2, 3, 4, 5 and 6.

1.5 Aims of the Study

The two systematic literature reviews examining studies on strategic planning and business-level strategy and a review of strategy implementation literature suggest that the following issues need to be addressed:

- *Can performance heterogeneity in organisations be explained in terms of their emphasis on rational planning?*
- *Do Porter's strategy typologies explain the differences in the performance of organisations?*
- *What factors affect the success of strategy implementation? To what extent have organisations been successful in implementing their formulated strategies? Does the emphasis on strategy implementation lead to superior performance?*
- *Does the environment moderate the relationship between strategic planning and organisational performance?*
- *Does the environment have a moderating effect on the relationship between business-level strategy and performance?*
- *Is there a relationship between the type of organisational structure and business strategy? If strategic types are associated with structure types, then does this association explain performance heterogeneity?*

This study makes a significant contribution to the literature by addressing the above issues.

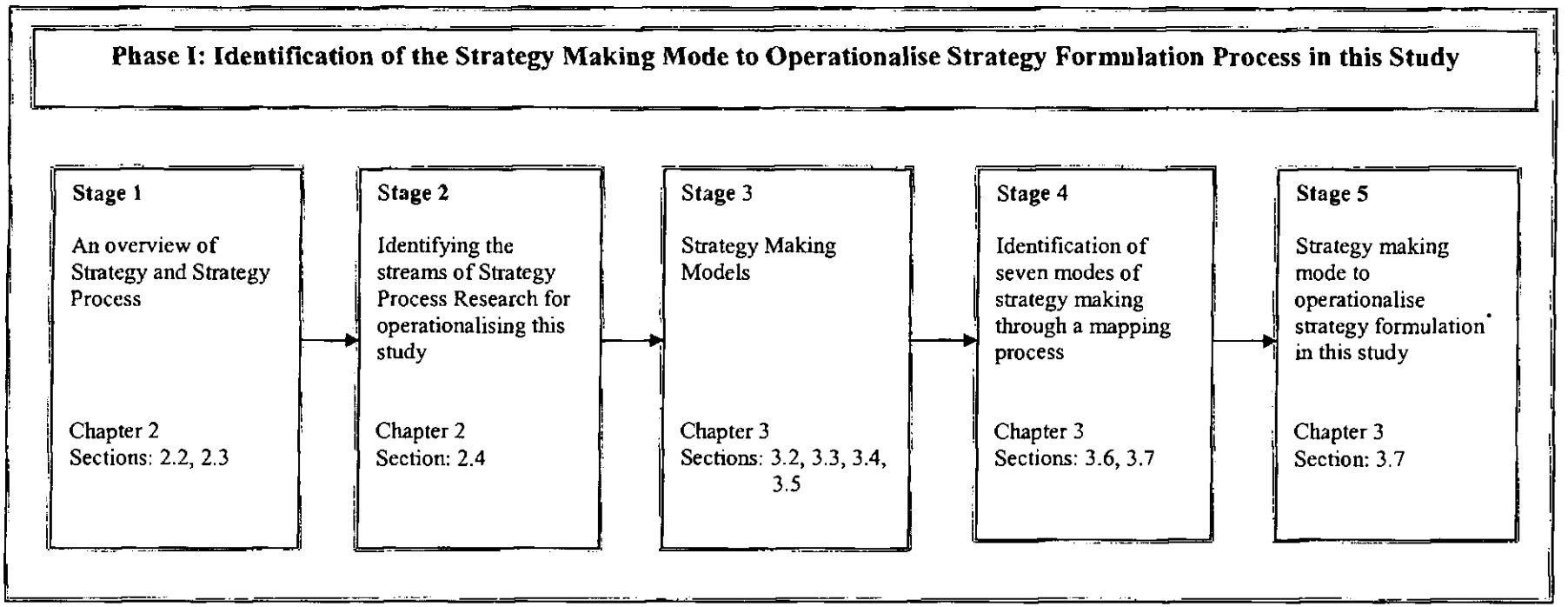

Fig 1.2: Phase I of the Literature Review

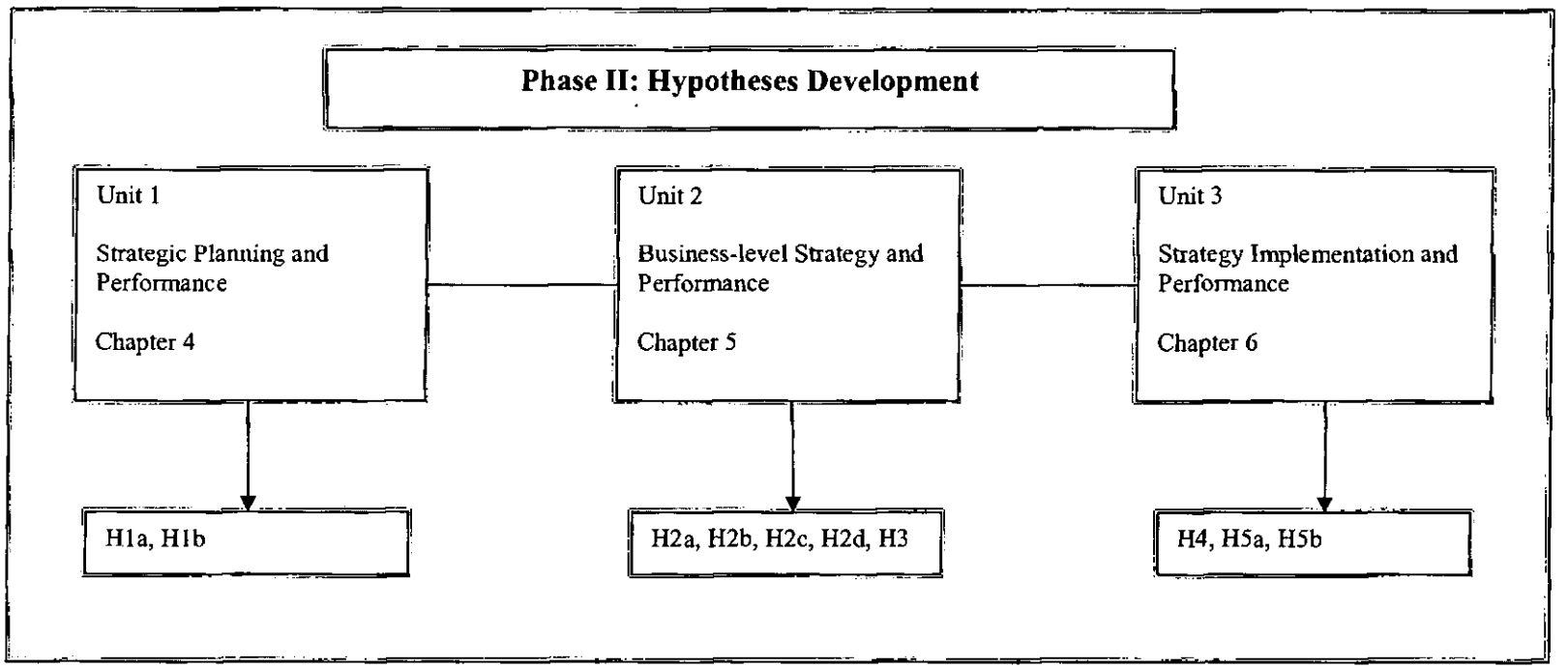

Fig 1.3: Phase II of the Literature Review

In order to find answers to the six research questions outlined above, a number of hypotheses have been derived. The hypotheses to be tested have been classified into two groups namely (i) hypotheses for validating the findings of previous studies and (ii) hypotheses which have not been tested in the previous studies. The hypotheses in the first group have been derived from the literature review. Some of those hypotheses have been tested in different contexts and some others have been tested either once or on a few occasions. The sample for this study has been drawn from electrical and mechanical engineering organisations belonging to Section D – Manufacturing of UK SIC (2003) code. Hence, industry sector is controlled in this study.

However some relationships which have valid theoretical underpinnings but have not been tested by previous studies deserve careful examination. For example the relationship between strategic planning and business-level strategy has not been explored in the literature. The strategic management literature suggests that organisations which give high emphasis to strategic planning are able to clearly identify their competitive strategies resulting in superior performance. In other words such organisations are likely to have a clear business-level strategy. In this study a test was be carried out to establish whether this is true or not. Another area which has not been examined before is the relationship between strategic planning and strategy implementation. It is not clear whether organisations with a strong emphasis on rational strategic planning also properly plan the implementation of their strategies. Another important area which needs attention is the relationship between business-level strategy and the planning of strategy implementation. The assumption is that organisations which develop a dominant strategic orientation will place a strong emphasis on planning the strategy implementation. This may not be the case with stuck-in-the-middle companies which do not give emphasis to any particular strategic orientation. The

hypotheses belonging to the two groups discussed above are presented below. The justification for these hypotheses is presented in chapters 4, 5 and 6.

Hypotheses for validating the findings of previous studies:

H1a: Rational-comprehensive strategic planning will lead to superior performance in organisations

H1b: Environmental dynamism and hostility moderate the relationship between strategic planning and performance

H2a: Organisations having a clear business-level strategy by adopting one of the strategies namely cost-related, differentiation or integrated strategies will perform better than those organisations which are stuck-in-the-middle

H2b: Organisations following integrated strategies will perform better than those pursuing either a cost-related strategy or a differentiation strategy

H2c: Environmental dynamism and hostility moderate the relationship between business-level strategy and organisational performance

H2d: Organisational structure moderates the relationship between business-level strategy and organisational performance

H4[1]*: The degree of planning of strategy implementation has a significant positive impact on organisational performance*

Hypotheses which have not been tested earlier:

H3: Organisations placing a strong emphasis on strategic planning will develop a clear business-level strategy by adopting one of the strategies namely cost-related, differentiation or integrated strategies.

H5a: Organisations placing a strong emphasis on strategic planning will also place a strong emphasis on the planning of strategy implementation.

[1] *The hypotheses numbers have been given according to the sequence of their presentation in the thesis. H4 is presented in chapter 6 and H3 is presented in chapter 5.*

H5b: Organisations having a clear strategy by adopting one of the business-level strategies namely cost-related, differentiation or integrated strategies will give more emphasis to the planning of strategy implementation than those organisations which are stuck-in-the-middle.

A conceptual model linking the variables tested in this study is shown in Fig 1.4.

1.6 The Relevance of this Study and its Contribution to Existing Knowledge

The manufacturing output in the UK accounts for 15% of the economy and it showed some signs of good growth in mid 2007. However, towards the end of 2007 expansion in the UK manufacturing sector slowed down drastically. In the beginning of 2008 it showed some signs of growth but it declined later on. This fluctuation in the manufacturing output indicates that UK manufacturing organisations are suffering from slowing demand and rising price pressures. Because of the rising input costs, organisations are forced to increase the prices although demand is weakening. With so much at stake for manufacturing organisations, strategy formulation and implementation becomes a challenging task for the chief executives and senior managers. This study gains significance in this context.

A review of the strategic management literature revealed that only very few empirical studies have examined the strategy formulation and implementation process in UK based manufacturing organisations. Hence, a study of strategy formulation and implementation focused on manufacturing organisations in the UK becomes relevant. The empirical studies conducted so far have looked at the impact of variables like strategic planning and business-level strategy on organisational performance.

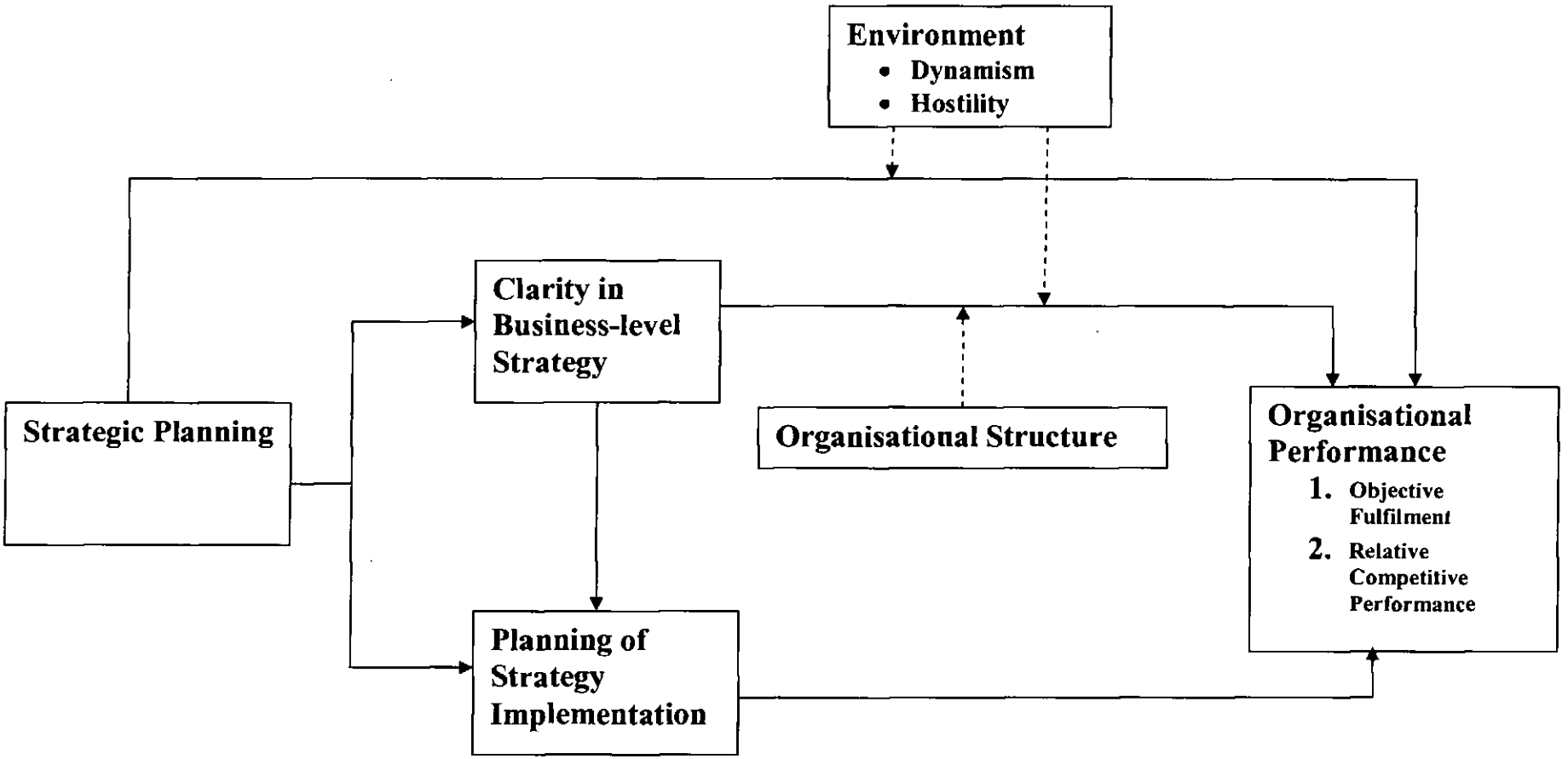

Fig 1.4 – A Model of Strategy Formulation and Implementation

However none of the studies have examined strategic planning, business-level strategy and strategy implementation together in a single study. This study makes a significant contribution to the literature by including all these three strategic variables and examining their impact on organisational performance.

The findings of this study are important both for academics and practicing managers. Practicing managers will be able to gain greater insights regarding the strategic planning approach in their organisations. Strategic planning has been operationalised through the assumptions of rational choice of strategy making (see section 1.2.1). Hence, the relevance of rational strategic planning in enhancing organisational performance is assessed in this study. The importance of strategic positions adopted by firms based on the industry structure (e.g. Caves and Porter, 1977, 1978; Porter, 1979; Gilbert, 1989; Tallman, 1991) in improving organisational performance is also examined in this study. For practicing managers this relationship is extremely important because it ascertains whether organisations need to adopt strategies outlined by typologies like Porter's (1980) and Miles & Snow (1978) for effectively competing in their industry sectors. Strategy implementation is not given the importance it deserves in many organisations. Because of this the processes involved in implementing strategies are not properly planned and prioritised resulting in poor implementation of strategy. This study examines whether proper planning of strategy implementation leads to superior performance or not and practicing managers will find this assessment useful while formulating and implementing strategies. Apart from looking at the bivariate relationships this study also looks at the collective impact of these three elements of strategy formulation and implementation on organisational performance by testing the conceptual model using structural equation modelling. This process will throw some light on the relative

importance of strategic planning, business-level strategy and strategy implementation on organisational performance.

The findings of some of the previous studies about the moderating effect of environment in the relationship between strategic planning and performance were contradictory and hence this moderating effect is examined in this study. The moderating effect of environment in the relationship between business-level strategy and performance has not been examined in the context of UK based organisations and this study examines this moderating effect. The role of organisational structure in the relationship between business-level strategy and performance also is examined in this study.

1.7 Outline of the Research Methodology

The research methodology is discussed and justified in detail in chapter 7. The methodological considerations, the constructs used, development of the survey instrument, sample selection, survey execution, reliability and validity of the measures used and the analytical techniques used to carry out the analyses are discussed in chapter 7. A summary of the research methodology is provided below.

1.7.1 Methodological Considerations

The basic approach followed in this study is that of theory testing through empirical research. The characteristics of this study closely match the attributes of the epistemological position represented by post-positivism. A quantitative research strategy has been adopted in this study.

1.7.2 Constructs used and Development of Survey Instrument

The constructs used to measure the variables included in this study are presented in Table 1.2.

Table 1.2 Constructs used in this Study

Variable	Constructs used
Strategic Planning	Rationality of planning
Business-level Strategy	Cost-related, Differentiation
Strategy Implementation	Degree of emphasis given to planning while implementing strategies
External Environment	Dynamism, Hostility
Organisational Structure	Organic structure, Mechanistic structure
Organisational Performance	Objective fulfilment, Relative Competitive Performance

All these constructs and the scales used to measure them have been adapted from studies published in leading academic journals. A draft of the questionnaire instrument was formed by using these scales. The content and face validity of the measures used were ascertained by seeking expert opinion. The draft of the survey instrument was sent to a panel of strategy scholars and to the Manufacturing Policy Advisor of the Confederation of the British Industry and based on their feedback it was modified. The modified survey instrument was piloted using a small sample of CEOs belonging to the sampling frame. A feedback form was also attached with the instrument and based on the feedback obtained from the CEOs the instrument was modified further.

1.7.3 Sample Selection and Survey Execution

The companies having more than 50 employees belonging to Section – D Manufacturing, Subsections DJ, DK, DL and DM of the UK SIC (2003) code were

included in the sample. These SIC codes represent the Electrical and Mechanical Engineering firms in the United Kingdom. A sample consisting of 700 companies was selected and telephone calls were made to all these 700 companies to verify the names of the Chief Executives and the addresses of the organisations. After excluding the inactive companies and the ones which were not interested in taking part in the survey, a sample consisting of 569 organisations was formed. The questionnaire was mailed to all 569 companies and the strategies suggested by Salant & Dillman (1994) were employed to increase the response rate. One hundred and twenty four usable responses were received and 11 questionnaires were undeliverable. The response rate calculated using the formula suggested by De Vaus (2002) was 22.22%.

1.7.4 Reliability and Validity of the Measures

Using Cronbach's alpha the reliability of the measures was assessed. The composite reliability, convergent validity and discriminant validity of the measures have been assessed using PLS. The measures have construct validity if they have both convergent validity and discriminant validity.

1.7.5 Analytical Techniques used for Analysis

Based on the nature of the dependent and independent variables involved in the hypotheses, appropriate analytical techniques were selected to carry out the analysis. The analytical techniques chosen were correlation analysis, regression analysis, moderated regression analysis, analysis of variance and logistic regression analysis.

1.7.6 Assessing the Homogeneity of the Sample and Non-response Bias

In order to assess the homogeneity of the sample, the organisations were classified into four different groups based on the industry sectors to which they belong, and means of the measures used in the study were compared between these four groups using

ANOVA. The results indicated no significant difference between the means of the measures corresponding to the four groups.

The procedure adopted by Ghobadian and O'Regan (2006) was used to assess non-response bias. Means of the measures used in the study were compared between early respondents and late respondents using t-tests and no significant difference was found between the two groups. Some of the non-respondents were contacted and were requested to answer a few questions relating to strategic planning, business-level strategy and strategy implementation. The difference between the means of these variables of the main sample and that of 35 respondents who answered a small number of questions was statistically compared by doing a t-test. There was no significant difference in the means between these two groups.

1.8 Limitations of this Study

This is a quantitative study involving the collection of survey data from the Chief Executives of manufacturing organisations. One of the main limitations of this study is the problem of single respondents. According to a study conducted by Bowman & Ambrosini (1997) the data collected from one respondent in an organisation may not be reliable and surveying one single top manager may not give a clear picture about a firm's strategy. The survey questions relate to the strategic planning, business-level strategy, strategy implementation, external environment and organisational structure. The perception of the Chief Executives has a significant influence on the responses they make for the questions regarding these variables. If there is a second respondent (another senior manager) from each organisation he or she may have different views about the organisation's strategies which could lead to different conclusions. However a number of authors contend that the CEO is likely to provide accurate information about

organisational strategies (e.g. Hambrick, 1981). Since all the respondents in this study are CEOs the information they have provided about the strategies of their organisations can be considered to be accurate. This approach is extensively used in strategic management research.

Another limitation of this study could be the problem of common method variance (CMV). Measures suggested by Podsakoff & Organ (1986), Podsakoff, Mackenzie, Lee and Podsakoff (2003) and other authors to overcome this problem have been taken in this study so that the CMV problem does not distort the interpretation of the results. The results of the statistical tests (e.g. Harman, 1967) carried out to assess this problem indicated that common method variance is not a serious problem affecting this study. This is discussed in section 7.3.9 in chapter 7.

Other limitations of this study are discussed in section 11.7 in chapter 11.

1.9 Structure of the Thesis

This thesis consists of four distinct parts as shown in Figure 1.5. Part I – The Survey of the Literature (five chapters), Part II – The Methodology (one chapter), Part III – Data analysis (three chapters) and Part IV – Conclusion (one chapter). In the first two chapters of Part I a synthesis of various strategy making models has been provided and seven different forms of strategy making have been proposed. In chapter four findings from a systematic literature review examining the relationship between strategic planning and organisational performance has been presented. In chapter five the details of a systematic literature review consisting of studies which have operationalised business-level strategy has been presented. A critique of the strategy implementation literature has been provided in chapter six.

Chapter seven in Part II examines the methodological considerations and provides the details of the research design. The findings of the data analysis conducted to test the hypotheses and the findings of the analysis conducted using PLS are presented in chapters eight, nine and ten of Part III. Chapter eleven in Part IV summarises the contents of this thesis and provides a discussion of the findings.

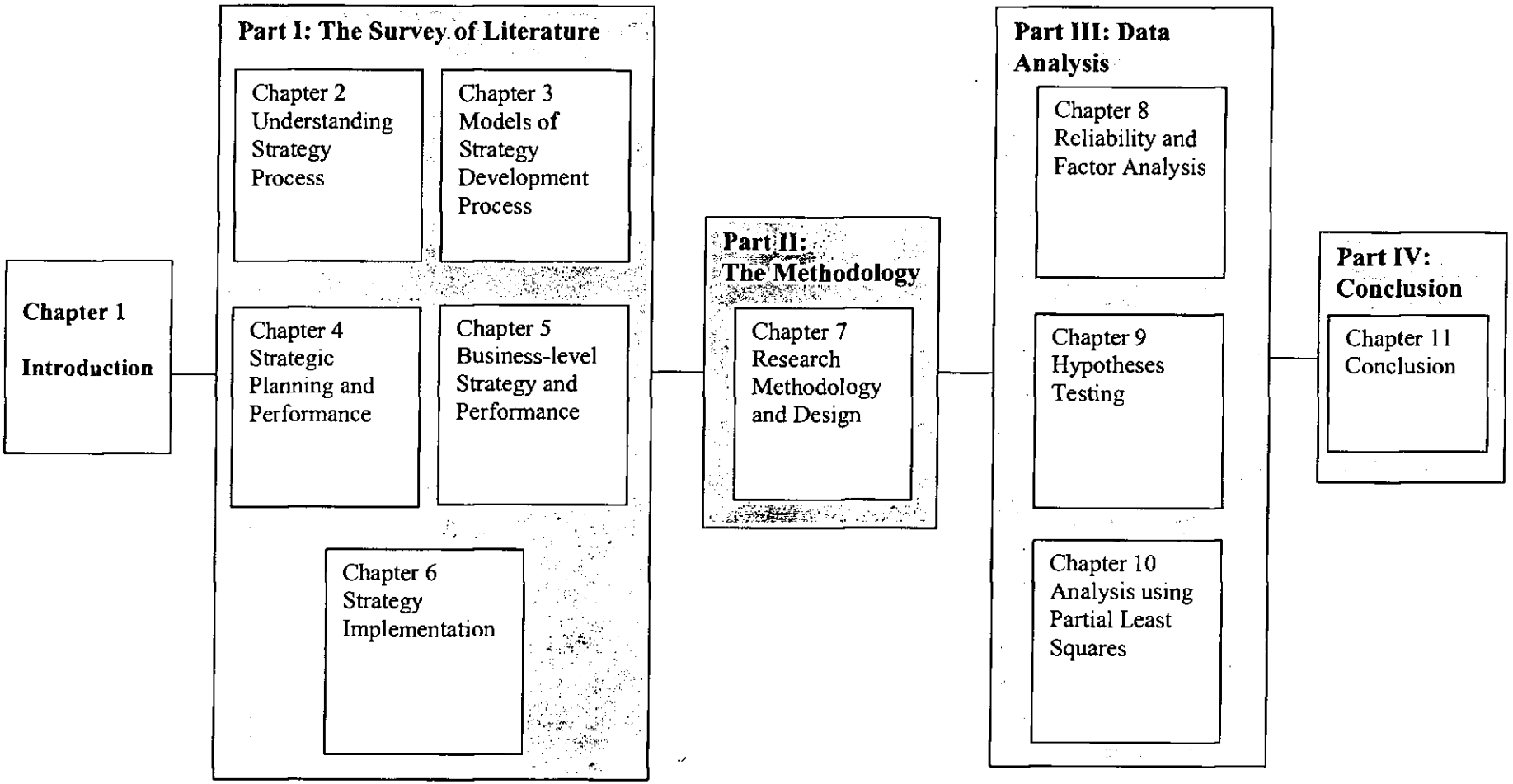

Fig 1.5 Structure of the Thesis

Part 1 – Literature Review

Chapter 2: Strategy Process and Major Streams of Research

2.1 Preamble

The main objective of this chapter is to identify the streams of strategy process research for operationalising strategy formulation and implementation in this study on UK based manufacturing organisations. The process of identification of these streams is carried out in two stages as shown in figure 1.2 of chapter 1. In the first stage the definitions of strategy and strategy process are examined and the ten schools of strategy formation are discussed. In the second stage nine streams of strategy process research highlighted by Huff & Reger (1987) are discussed resulting in the identification of the streams of research for operationalising strategy formulation and implementation in this study.

2.2 Process, Content and Context

The three fundamental dimensions of strategy, which are generally acknowledged by a number of authors (e.g. Pettigrew, 1997; Chakravarthy & White, 2001) are strategy process, strategy content and strategy context. These three dimensions are inter-dependent and hence the actual strategy content will be influenced by the process and context. The definitions of these dimensions provided by de Wit & Meyer (2004) are presented below.

The manner in which strategies come about is referred to as the strategy process and it is concerned with the "how", "who" and "when" of strategy. It tries to answer questions like how are and how should strategies be made, analysed, formulated, implemented, changed and controlled? Who are the main players involved in this process? And when do the activities take place?

The product of a strategy process is referred to as the strategy content and it is concerned with the "what" of a strategy. It explains what is and what should the strategy be for the company and each of its constituent units.

The set of circumstances under which both the strategy process and the strategy content are determined is referred to as the strategy context and it is concerned with the "where" of strategy. According to Chakravarthy & White (2001) the business context of a firm focuses on both its external and internal environments. The external environment is defined by the economic, social, competitive and sectoral forces with which the firm interacts. The internal environment can be defined by its core competencies proposed by Hamel & Prahalad (1994). The financial performance of the firm is influenced by both internal and external environments.

2.3 Strategy and Strategy Process

It is extremely important to understand what strategy is before exploring further into the strategy process literature. Various authors have proposed different types of definitions for strategy and there is hardly any consensus among them. In the next section a number of definitions are presented and subsequently a working definition that will be used in this study is derived.

2.3.1 Definitions of Strategy

A number of authors have proposed various definitions for the term strategy and some of them are presented in Table 2.1.

Table 2.1 Definitions of Strategy

Chandler (1962)	The determination of the basic long-term goals of an enterprise and the adoption of courses of action and the allocation of resources necessary for carrying out these goals.
Pettigrew (1977)	Strategy evolves as a result of partial resolution of environmental and intra-organisational dilemmas and the process of resolving these dilemmas will be influenced by organisational, cultural, task, leadership and internal political factors.

Hofer & Schendel (1978)	Strategy is concerned with the development of a viable match between the opportunities and risks present in the external environment and the organisation's capabilities and resources for exploiting these opportunities.
Andrews (1980)	Corporate strategy is the pattern of decisions in a company that determines and reveals its objectives, purposes or goals, produces the major policies and plans for achieving those goals and defines the range of business the company is to pursue.
Quinn (1981)	Strategy is a pattern or plan that integrates an organisation's major goals, policies, and action sequences into a cohesive whole.
Ohmae (1982)	Strategy is the way in which a corporation endeavours to differentiate itself positively from its competitors, using its relative corporate strengths to better satisfy customer needs.
Van Cauwenbergh & Cool (1982)	Strategy is a calculated behaviour in non-programmed situations
Mintzberg (1987)	Plan: Strategy as plan is some sort of consciously intended course of action or a set of guidelines to deal with a situation and shows the firm how to reach its intended position from its current state. Ploy: Strategy as ploy could be a specific manoeuvre intended to outwit an opponent or competitor so that competitive scenario turns in its favour. Pattern: Strategy as pattern refers to patterns in a stream of actions and by this definition strategy is consistency in behaviour, whether or not intended. Position: It is a means of locating an organisation in an environment and by this definition strategy becomes a mediating force between organisation and environment. Perspective: Strategy as perspective refers to the way a firm perceives the world and suggests that strategy is a concept.
Barney & Hesterly (2006)	A firm's strategy is defined as its theory about how to gain competitive advantages.
Chaharbaghi (2007)	A multi-dimensional, dynamic construct that allows organisations to align the corporate, business and functional dimensions more effectively in making progress and receiving more in terms of the results they want to achieve.
Hitt, Ireland & Hoskisson (2007)	A strategy is an integrated and coordinated set of commitments and actions designed to exploit core competencies and gain a competitive advantage.
Grant (2008)	Strategy is the means by which individuals or organisations achieve their objectives. Corporate strategy defines the scope of the firm in terms of the industries and markets in which it competes. Business strategy is concerned with how the firm competes within a particular industry or market.
Johnson, Scholes & Whittington (2008)	Strategy is the direction and scope of an organisation over the long term, which achieves advantage in a changing environment through its configuration of resources and competences with the aim of fulfilling stakeholder expectations.

The classical definitions of strategy are offered by Chandler (1962) and Andrews (1980). According to Andrews (1980) corporate strategy usually applies to the whole enterprise and it defines the businesses in which a company will compete in a way that focuses resources to convert distinctive competence into competitive advantage. Business strategy which is less comprehensive defines the choice of product or service and market of individual businesses within the firm and it determines how a company will compete in a given business and position itself among its competitors. Hofer & Schendel (1978) discusses environment in their definition of strategy and Pettigrew (1977) takes into consideration a number of factors like leadership, culture and politics. It should be noted that Pettigrew (1977) has used the term "evolves" which conveys a meaning that strategy is not fully pre-planned. According to Quinn (1981) a well formulated strategy helps an organisation to arrange and allocate its resources into a unique position based upon its relative internal competencies and shortcomings, anticipated changes in the environment and contingent moves by intelligent opponents. Quinn (1981) highlights the integration of organisational purpose and activities. According to Ohmae (1982), competitors exert a significant influence of a firm's strategy and the sole purpose of strategic planning is to enable a company to gain a sustainable edge over its competitors. Van Cauwenbergh & Cool (1982) argued that the reality in organisations is not coherent and strategy is not only a concern of top management but an activity involving the entire organisation. The critical factor in accomplishing adequate strategic behaviour is motivation and not information. The involvement of the entire organisation in the activities relating to strategy conforms to the emergent perspective of strategy.

The definitions proposed by Mintzberg (1987) show the complex nature of strategy. For example the notion that strategy could be visualised as a perspective implies that all

strategies are abstractions which exist only in the minds of interested parties. So dissemination of this intention within the organisation and its implementation on a collective and consistent basis become a challenging task. In this case strategy to an organisation can be compared to what personality is to an individual. The recent definitions by Barney & Hesterly (2006), Chaharbaghi (2007), Hitt, Ireland & Hoskisson (2007), Grant (2008) and Johnson, Scholes & Whittington (2008) are comprehensive. They highlight key concepts like core competencies, competitive advantage, configuration of resources and competences and meeting stakeholder expectations. This shows the evolution of the field in the last three decades. In this study business-level strategy is defined as:

Business-level strategy employed by manufacturing organisations is defined as the competitive methods which are derived on the basis of rational-comprehensive strategic planning enabling them to accomplish one of the following tasks:

- *minimise the operational costs;*
- *differentiate their products from other competitors;*
- *minimise the operational costs and differentiate their products from other competitors.*

Detailed specifications for implementing this strategy are provided and clearly communicated to the personnel involved. Various tasks involved for implementing the strategy are appropriately prioritised.

The main purpose of exploring various definitions of strategy is to demonstrate the multitude of factors which influence strategy and the difficulties involved in encapsulating the concept in a single definition. The difficulty involved in defining the concept of strategy can be attributed to its complexity. Due to this complexity, strategy-

making process also becomes a complex phenomena and understanding this phenomena becomes difficult.

2.3.2 The Concept of Strategy Process

Various authors have proposed different approaches to the process of making strategies. In order to explore various aspects of the process, it is important to clearly understand the meaning of strategy process. Definitions proposed by Shrivastava (1983) and Van de Ven (1992) are useful in understanding the meaning of strategy process and hence they are discussed below.

The definition offered by Shrivastava (1983) conforms to the classical approach of strategy making and reflects the rational process involved. According to this definition, strategy processes are methods and practices organisations use to interpret opportunities and threats and make decisions about the effective use of skills and resources. Here two key factors affecting the strategy making process are the environmental factors and internal resources. The definition provided by Shrivastava (1983) conveys a meaning that the strategy making process is quite straightforward and the steps involved in the process are well-defined. This definition of strategy process closely matches the definitions of strategy offered by Chandler (1962), Andrews (1980) and Hofer & Schendel (1978).

Van de Ven (1992) goes deeper into the concept of strategy process and explains it in three different ways as follows:

i. A logic which explains a causal relationship between several observed inputs which are the independent variables and outcomes which are the dependent variables in the input-process-model.

ii. A category of concepts or variables of individual or organisational actions like communication frequency, work flows, decision making techniques, strategy formulation, implementation and corporate venturing.

iii. It can be a sequence of events or activities that describe how phenomena change over time.

The third definition takes a historical perspective and focuses on the sequences of incidents, activities and stages that unfold over the duration of a central subject's existence. Van de Ven (1992) observed that the last approach was the only approach that allows for opening the black box between input and output and for directly observing variable changes over time and this was one of the least understood meanings of strategy process. The definitions provided by Van de Ven (1992) indicate the involvement of a number of variables in the strategy-making process.

The ten schools of strategy formation proposed by Mintzberg et al. (1998) gives an overview of the development in the field of strategy process and demonstrate the nature of its complexity. These ten schools are summarised in Table 2.2.

Table 2.2: Ten Schools of Strategy Formation

School	Description
Design School – A process of conception	It sees strategy formation as achieving the essential fit between internal strengths and weaknesses and external threats and opportunities. Senior management formulates clear, simple and unique strategies in a deliberate process. This was the dominant view of the strategy process in the 1970s. The Strengths, Weaknesses, Opportunities and Threats (SWOT) framework is an important tool used for strategy formation which conforms to the design school assumptions. The design school did not develop, but it combined with other views in rather different contexts.
Planning School – A formal process	The planning school grew in parallel with the design school and it was propagated by Ansoff and Andrews. It dominated in the mid-1970s, but still continues to be an important element of strategy formulation process. It encompasses most of the design school's assumptions in addition to the notion that the process is not just cerebral but formal, decomposable into distinct steps, supported by techniques especially in the case of objectives, budgets, programs and operating plans. From a practitioner perspective, staff planners replaced senior managers as key players in the process.

Positioning School – An analytical process	This was the dominant view of strategy formation in the 1980s and was given impetus by Michael Porter in 1980. In this view strategy is reduced to generic positions selected through formalised analyses of industry situations. The positioning school developed with an analytical orientation and included strategic groups, value chains and game theories. From a practitioner perspective planners became analysts.
Entrepreneurial School – A visionary process	Like in the design school, the strategy process centred on the chief executive in the entrepreneurial school. But unlike the design school and contrary to the planning school the process is dominated by the mysteries of intuition. This shifted strategies from precise designs, plans or positions to vague visions or broad perspectives which focussed the process on particular contexts such as start-up, niche or private ownership as well as turnaround. The chief executive controls the implementation of his or her formulated vision. The planning rationality which is the underlying concept behind the prescriptive schools becomes less important in this school.
Cognitive School – A mental process	Since 1980s research has grown steadily on cognitive biases in strategy making and on cognition as information processing, knowledge structure mapping and concept attainment. Arising from this school, strategists adopted a more subjective interpretative or constructivist view of the strategy process where cognition is used to construct strategies as creative interpretations, rather than simply to map reality in some more or less objective way.
Learning School – An emergent process	Of all the descriptive schools, the learning school achieved a dominant position and challenged the prescriptive schools. According to this view strategies can emerge from any level of the organisational hierarchy and strategists can be found throughout the organisation. There could be overlaps between strategy formulation and implementation.
Power School – A process of negotiation	This focused on strategy making rooted in power which had two separate orientation namely micro power and macro power. Micro power sees the development of strategies within the organisation as a political process involving bargaining, persuasion and confrontation among actors who divide the power. Macro power views the organisation as an entity that uses its power over others and among its partners in alliances, joint ventures and other network relationships to negotiate "collective" strategies in its interest.
Cultural School – A social process	Power focuses on self-interest and fragmentation whereas culture focuses on common interest and integration. In this school strategy formation becomes a social process rooted in culture. Culture became a big issue in the US literature after the impact of Japanese management was fully realised in the 1980s and later some attention to the implications for strategy formation followed.
Environmental School – A reactive process	Contingency theory, population ecology and institutional theory are included in this category. Contingency theory considers which responses are expected of organisations facing particular environmental conditions and population ecology claim severe limits to strategic choice. Institutional theory which is a hybrid of the power and cognitive schools is concerned with the institutional pressures faced by organisations in their environments from other organisations and from the pressures of being an organisation.

Configuration School – A process of transformation	It views strategy as a process of transforming the organisation. Particular types of strategy are shown to match particular types of structure and particular types of context. A particular strategy has relevance within a particular configuration. It lies between the two approaches of implementing radical change and incremental change.

Source: Mintzberg et al. (1998), Mintzberg & Lampel, (1999)

One issue which still remains ambiguous is whether these different schools represent different processes / approaches to strategy formation or different parts of the same process. Some of the schools clearly are stages or aspects of the strategy formation process as illustrated in Figure 2.1.

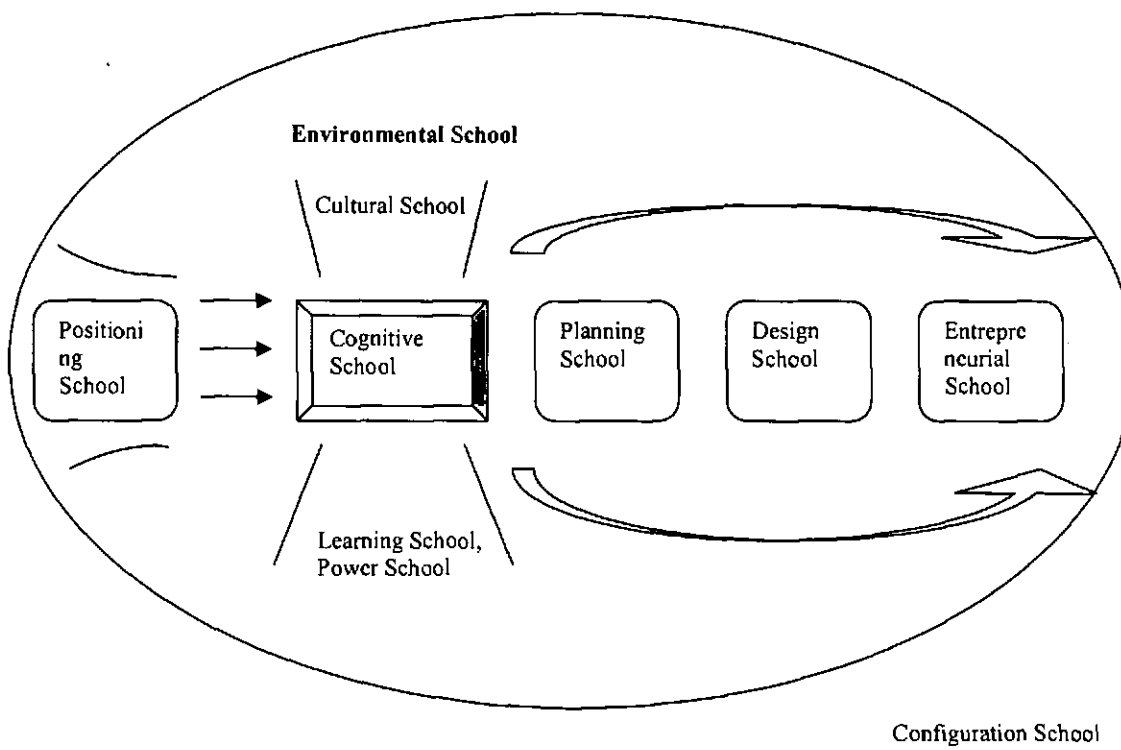

Fig 2.1: Strategy Formation as a Single Process (*Source: Mintzberg & Lampel, 1999*)

According to Mintzberg & Lampel (1999, pp. 27) "The cognitive school resides in the mind of the strategist at the centre. The positioning school looks behind at established data that is analysed and fed into the black box of strategy making. The planning school looks slightly ahead to program the strategies created in other ways. The design school looks farther ahead to a strategic perspective. The entrepreneurial school looks beyond to a unique vision of the future. The learning and power schools look below, involved in

details. Learning looks into the fundamental issues, whereas power looks very deep into organisations. The cultural school looks down, concealed in its beliefs. Above the cultural school, the environmental school looks on, so to speak. The configuration school looks at the process while the cognitive school tries to look inside the process". According to Mintzberg & Lampel (1999, pp. 27) strategy formation is "judgemental designing, intuitive visioning and emergent learning; it is about transformation as well as perpetuation; it must involve individual cognition and social interaction, cooperative as well as conflictive; it has to include analysing before and programming after as well as negotiating during; and all must be in response to what may be a demanding environment."

The conceptualisation of strategy process by Shrivastava (1983), Van de Ven (1992) and Mintzberg et al. (1998) is summarised in figure 2.2.

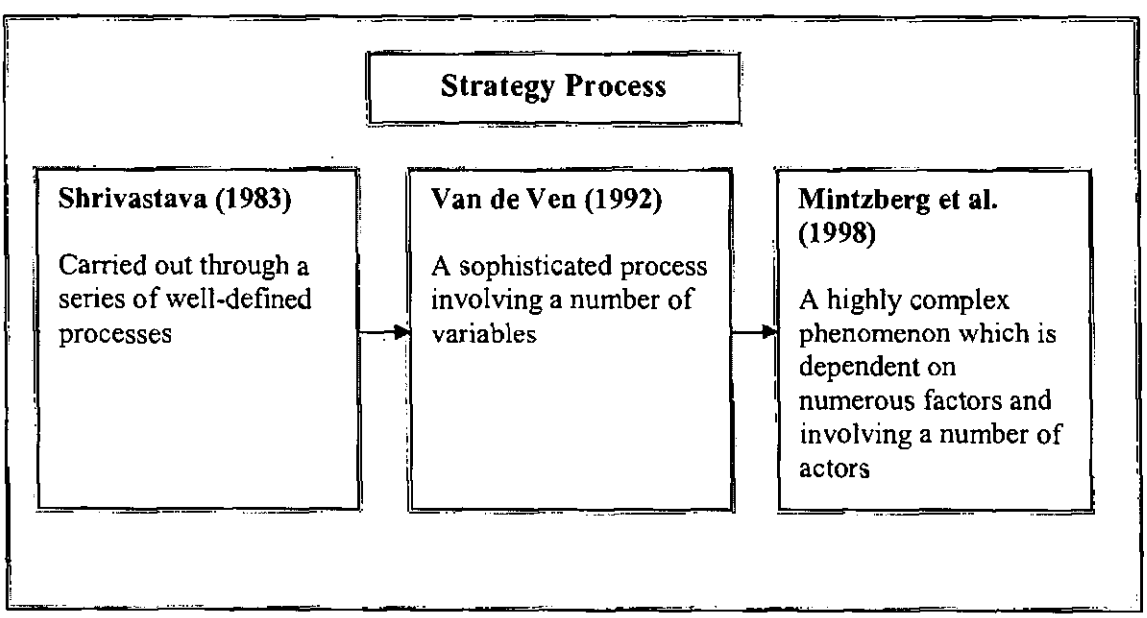

Fig 2.2: Three different Conceptualisations of Strategy Process

According to Shrivastava (1983) strategy making process is carried out through a series of pre-specified steps. However Van de Ven (1992) acknowledges the complexity of the process by explaining strategy process in three ways. Mintzberg et al. (1998) visualises

strategy process as a phenomenon which is extremely difficult of perceive. While carrying out an empirical study like this it becomes difficult to operationalise strategy formulation process because of its complexities. Hence it is absolutely necessary to clearly define the dimensions of process to focus on during the operationalisation. In the next section a brief overview of strategy process research and the nine different streams of research in this area are outlined. A discussion of the streams of strategy process research is useful in narrowly defining the dimensions for operationalising strategy formulation and implementation in this study.

2.4 Strategy Process Research

Many authors have discussed the shortcomings in the area of strategy process research (e.g. Mintzberg & Lampel, 1999; Dess & Lumpkin, 2001). According to Dess & Lumpkin (2001) there is still a lack of coherence to the theoretical and empirical contributions in the area of strategy process research. Lechner & Muller-Stewens (2000) raises some important questions regarding process research. Fundamentally these questions are classified into three types namely: (i) basic questions (ii) phase-specific questions and (iii) cross-sectional questions. The basic questions refer to the existence or non-existence of strategies and phase-specific questions are based on the conception of strategy processes in phases. Cross-sectional questions cover several or all phases of strategy process. The primary objective of strategy process research is to find answers to these questions. By examining the basic questions the nature of strategy employed by the organisations can be determined. The rational strategy making models generally argue that strategy process is carried out in four different phases namely organisational agenda building (Dutton, 1988, pp. 131), decision making, implementation and control. However a number of authors (e.g. Mintzberg, 1978; Quinn, 1980; Hart, 1992) have argued that the process does not take place according to the same sequence of events.

By examining cross-sectional questions the quality of strategy formation process can be assessed and the relevance of factors like cognition (e.g. Burgelman, 1988) while formulating strategies especially when firms deal with uncertainty and ambiguity can be ascertained. Cross-sectional questions also explore important issues like the role of strategic planning in improving the performance of organisations.

Pettigrew (1992) contends that there is a need to encourage more explicit thinking and writing about the analytical and conceptual assumptions which underpin processual research. It is extremely important to draw a distinction between strategy content research and process research in order to facilitate the understanding of the concept of strategy process. According to Chakravarthy & Doz (1992) strategy process is concerned with how effective strategies are shaped within the firm and then validated and implemented efficiently. They distinguish strategy process research from strategy content research by describing content research as a subfield which focuses exclusively on identifying strategic positions of the firm that lead to optimal performance under varying environmental contexts. On the other hand strategy process research is concerned with how a firm's administrative systems and decision processes influence its strategic positions. According to Chakravarthy & Doz (1992) strategy process research can be distinguished from strategy content research in at least three respects namely focus, disciplinary bases and methodologies.

These three aspects are briefly explained below:

(i) Focus: Strategy content research addresses the scope of the firm and the ways of competing within individual markets. Scope refers to the combination of markets in which the firm competes (Montgomery, Wernerfelt, & Balakrishnan, 1989).

(ii) Disciplinary bases: Strategy process research has received contributions from a large number of disciplines. These contributions can give strategy process research unique vitality (Chakravarthy & Doz, 1992).

(iii) Methodologies: Strategy content research could be done through secondary published data on the firm but process research needs a range of more intrusive methods including questionnaire surveys, field studies and action research (Chakravarthy & Doz, 1992).

Even though a distinction is made between process and content research, it is always not possible to strictly compartmentalise them. The literature contends that strategy process research complements content research (Chakravarthy et al 2003).

Huff & Reger (1987) after reviewing the strategy process literature published between 1980 and 1986 identified nine different streams through which the research has been operationalised. This framework is useful for identifying the stream of research for operationalising strategy formulation and implementation in this study. Hence this framework is briefly discussed in the next section and the streams of research for operationalising strategy formulation and implementation is identified.

2.4.1 Streams of Strategy Process Research

According to Huff & Reger (1987) strategy process research has been defined as research primarily focused on the actions that lead to and support strategy unlike content research which focuses on linking specific decisions and broader economic structures to performance outcomes. They classified the process research into normative approach and descriptive approach based on research purpose. Normative or prescriptive approach looks at how things should be done and descriptive approach

looks at how things are done. They further classified the process research using rationality assumptions namely rational, analytical processes and political processes. Using the above two dimensions along with the division proposed by Andrews (1971) namely formulation and implementation, Huff & Reger (1987) proposed eight distinct alternatives for strategic management process research. They also added a ninth alternative called integrative, which identifies work that has encompassed many of the eight alternatives. Figure 2.3 depicts the dimensions of strategic process research proposed by the authors.

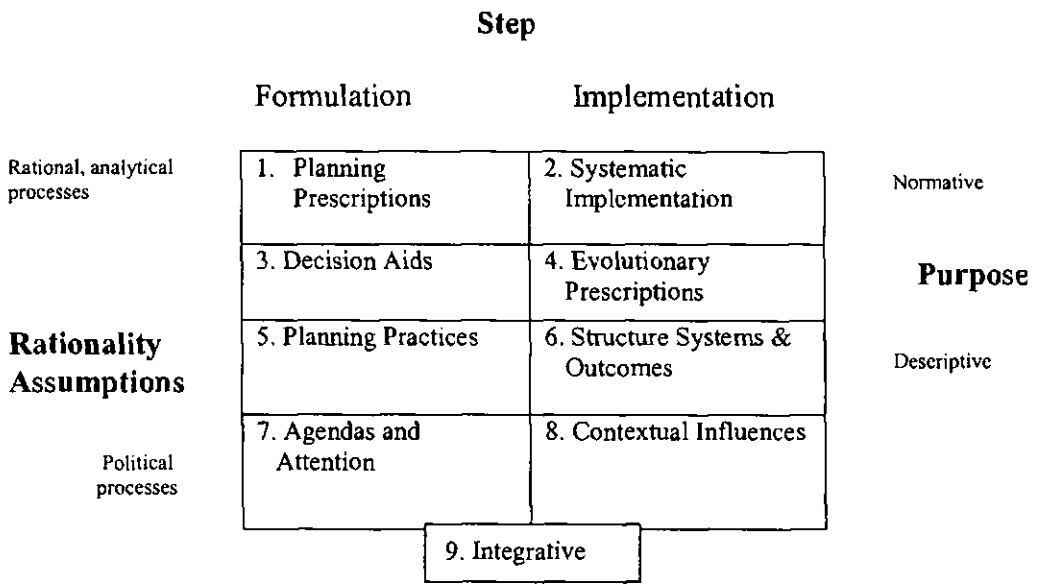

Fig 2.3 Dimensions of Strategic Process Research *(Source: Huff & Reger, 1987)*

The first set of four groupings namely planning prescriptions, systematic implementation, decision aids and evolutionary prescriptions are classified under the normative approach. The studies classified under planning prescriptions have given normative prescriptions for how strategies should be formulated. Research in this area is characterised by systematic rationality and logic and illustrated with case experience (e.g., Leontiades, 1983; King 1981; Dutta & King, 1980). Studies classified in the area of systematic implementation focus on prescriptions for systematic implementation of strategy when it is formulated (e.g., Stonich, 1981; Nutt, 1998). Articles which discuss

tools for decision makers to formulate strategies are classified under decision aids and researchers in this area have assumed that strategy formulation is conceptually problematic (e.g., Schwenk, 1986; Boland, 1984). Decision makers will benefit from structured decision processes and other aids to help them organise and analyse strategic alternatives. Some of the authors were unsure that strategy could be predetermined and hence prescribed introducing small incremental changes and waiting for feedback before making further changes and their works are classified under evolutionary prescriptions (e.g., Hrebiniak & Joyce, 1985; Ring & Perry, 1985). According to Huff & Reger (1987) these studies are the most realistic of all the prescriptive process literature mainly due to their recognition that formulation and implementation are intertwined.

The second set of four groupings is classified under the descriptive approach which looks at how things are done. The studies under planning practices examined strategy formulation processes and industry planning practices and most of the work in this area has been directed at determining whether the use of planning methods developed leads to enhanced organisational performance (e.g., Robinson Jr. & Pearce II, 1988; Anderson, 2000; Lenz & Engledow, 1986). The studies under structures, systems and organisational outcomes explored the relationships between them (e.g., Burgelman, 1985; Horovitz, 1984). Even though organisational theorists and strategic management researchers explore organisational structures and systems they tend to work independently. Strategy researchers have focused on the importance of strategy in determining structure and organisational theorists have focused on the role of technology in determining structure. According to Huff & Reger (1987) it would be mutually beneficial for the researchers of organisational theory and strategic management if they work jointly. Studies under agendas and attention have concentrated on cognitive or psychological, bureaucratic and political impacts on

strategic decision making (e.g., Walsh & Fahey, 1986; Fredrickson, 1986). Studies done in other areas have been classified under contextual influences (e.g., Jauch & Kraft, 1986; Barney, 1986). The integrative school of research has tried to encapsulate many of the concepts outlined in the previous schools (e.g. Jemison & Sitkin, 1986; Pondy & Huff, 1985).

This study on strategy formulation and implementation in manufacturing organisations has been operationalised based on the assumptions of research classified under the cells 1, 2, 3 and 5 in Figure 2.3. Planning rationality is the construct used to measure strategic planning. The strategic planning carried out in organisations has been assessed by examining the analysis carried out while planning and the process involved while making the decision. This assessment of strategic planning conform to the characteristics of research classified in cells 1 and 3. This study also examines whether strategic planning carried out by the organisation leads to superior performance. This stream of research is represented by the planning practices dimension depicted in cell 5 of figure 2.3. Strategy implementation in the manufacturing organisations has been assessed by examining the degree of planning carried out while implementing the strategies. This assessment of strategy implementation conforms to the characteristics of research classified in cell 2.

Based on the discussion of the nine streams of research, the underlying steams of strategy process research for operationalising this study on strategy formulation and implementation have been identified. These streams are planning prescriptions, systematic implementation, decision aids and planning practices. This completes stages 1 and 2 of the first phase of the literature review and the main findings from these two stages of literature review are presented in figure 2.4.

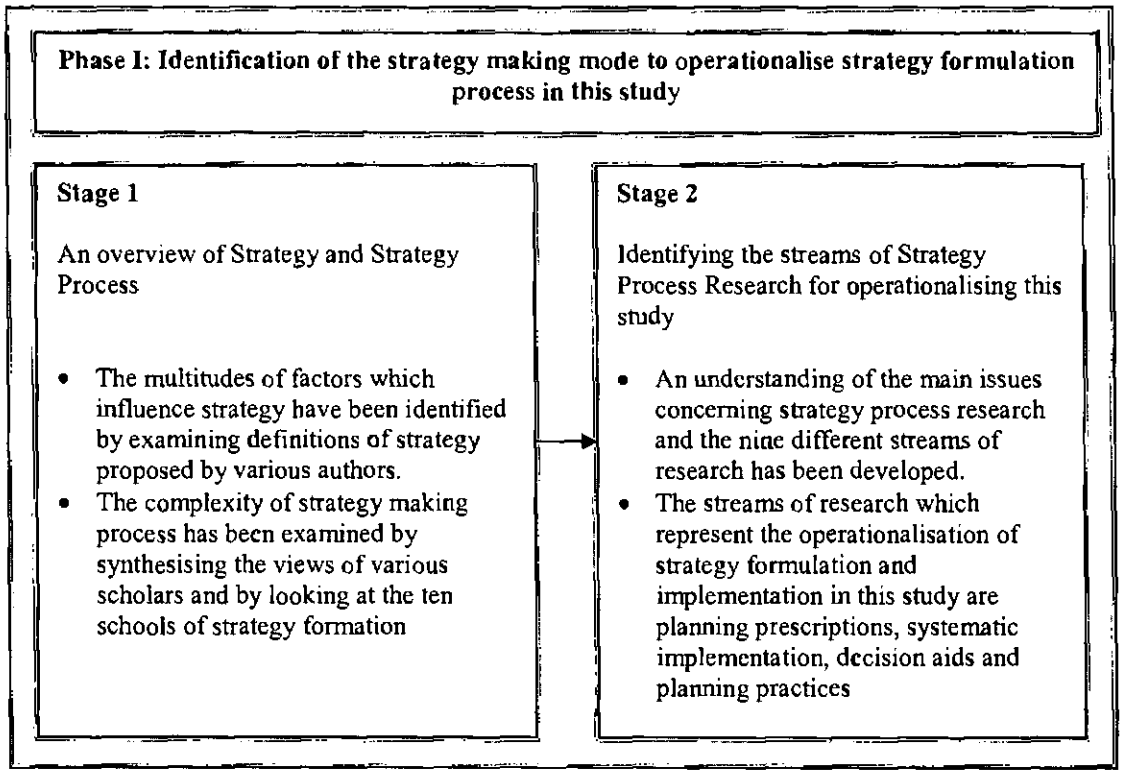

Fig 2.4: Findings from Stages 1 and 2 of the Literature Review

2.5 Summary

In this chapter the conceptualisation of strategy and strategy process by various authors has been discussed resulting in a better understanding of these concepts. The complexity of strategy process involving a number of dimensions has been highlighted and a need for clearly defining the dimensions for operationalising strategy formulation and implementation in this study has been identified. Strategy process research was examined and nine streams of research for operationalising strategy process were reviewed. Subsequently the streams of research to operationalise strategy formulation and implementation in this study were identified and these streams are planning prescriptions, systematic implementation, decision aids and planning practices. Through this process stages 1 and 2 of the first phase of literature review were completed.

Chapter 3: Strategy Making Models

3.1 Preamble

The main objective of this chapter is to identify the strategy making mode to operationalise strategy formulation in this study. This is done in three stages as outlined in figure 1.2 in chapter 1 (stages 3, 4 and 5). In stage 1, the strategy making models proposed by various authors are examined. In stage 2 the strategy making models identified in stage 1 are mapped on a two-dimensional plane consisting of the three strategy process perspectives and the four theoretical roots of strategy process. This mapping process has resulted in the identification of seven modes of strategy making. The strategy making mode to operationalise strategy formulation in this study was identified in the last stage of the literature review carried out in phase 1.

3.2 Fundamental Classification of Strategy Making Models

Fundamentally the strategy making models can be classified as "synoptic" and "incremental" models. Synoptic models argue that strategy making is a rational process whereas according to incremental models, strategy-making is a gradual process in which changes take place incrementally. A discussion of the synoptic and incremental models is necessary to explore into the strategy making models deeper. This discussion will be helpful in identifying the basic characters of various models and understanding them better and hence they are discussed below. Synoptic models characterise the strategy making process as a highly rational, proactive process comprising of setting goals, analysing the environment, evaluating internal resources and capabilities, finding out alternative actions and evaluating them and developing an integrated plan to achieve the goals (Fredrickson & Mitchell, 1984). Some of the authors whose views conform to this model are Andrews (1980); Ansoff (1965); Grant & King (1982); Hofer & Schendel

(1978); Lorange & Vancil (1977); Porter (1980); Steiner (1979) and Thompson & Strickland (1978). The degree of rationality or comprehensiveness of the strategic decision process distinguishes between the rational and incremental processes. According to the traditional approach strategic decisions in organisations are made through a purposeful, consistent, sequential and deliberate process (Papadakis & Barwise, 1997). This view was challenged by Lindblom (1959) and Simon (1957). According to Lindblom (1959) decision making is not a rational process and conceptualised it as an incremental, directionless process of "muddling through". Simon (1957) argued that decision makers are satisficers with bounded rationality who do not evaluate all the possible alternatives. The ideas of Quinn (1980) develops a bridge between the opposite views of rationality and muddling through by proposing the concept of "logical incrementalism" which differs sharply from Lindblom's "muddling through" or "disjointed incrementalism". It combines elements of rational planning and deliberate strategy with elements of incrementalism and intuition.

According to Quinn (1981) when major firms make significant changes in their strategy, the approaches they use bear little resemblance to the rational-analytical systems. He found that the processes used to arrive at the final strategy were typically fragmented, evolutionary and largely intuitive. The top executives used a series of incremental processes which built strategies largely at more disaggregated levels and then integrated these subsystem strategies step by step for the whole organisation. The "incremental" processes model portrays a more complex characterisation of how organisations actually make strategic decisions than the "synoptic" model. Other researchers sharing similar assumptions include Mintzberg (1973) and Wrapp (1967). Table 3.1 summarises the differences between the "synoptic" and "incremental" models. It is adapted from Fredrickson & Mitchell (1984).

One of the main characteristics of the synoptic models is that the goals are predetermined and strategy is directed at achieving those goals. In the case of incremental models the outcome is not predetermined. According to Fredrickson & Mitchell (1984) researchers can make significant contributions to the literature by focusing on the characteristics listed in Table 3.1 and they emphasise that comprehensiveness should receive priority.

Table 3.1 Main differences between "Synoptic" and "Incremental" Models

Characteristic	Synoptic model	Incremental model
Motive for initiation	Strategy making process starts when problems or opportunities are detected during constant surveillance	When there is dissatisfaction or a problem with the current state, strategy process is initiated
Concept of goals	The strategies are directed at achieving goals	It is a remedial process intended to modify a current state
Relationship between alternatives and goals	The goal is identified before starting the process and it is independent of the analysis of alternatives	The processes of identifying the remedial change outcome and analysing the means for achieving it are intertwined and simultaneous
Concept of choice	The final choice of the alternative is mainly dependent on how it is suitable for the achievement of the goal. Decision quality is known only when it is shown that this decision provides the best means to the specified goal	The final selection of the alternative is made by combining the considered alternatives and their possible outcomes and choosing the one which yields the most favourable outcome. The quality of the decision is assessed by the consensus achieved in selecting the alternative
Analytic comprehensiveness	The process of identification and selection of goals and the generation and evaluation of alternatives is an exhaustive process. All possible options are considered	Only a few alternatives to the status quo as alternative actions and a limited range of consequences are considered during the evaluation. All possible options are not considered

Integrative comprehensiveness	Attempts are made to integrate the decisions which form the overall strategy in order to ensure that they reinforce one another	No serious attempt is made to integrate the individual decisions that may affect one another. The final strategy can be visualised as a loosely linked group of decisions that are handled individually.

Source: Fredrickson & Mitchell (1984)

According to Rajagopalan et al. (1993) theoretical models of strategic decision processes range from rational models that present the image of an integrated, well-coordinated decision making body, making reasoned choices from clearly defined alternatives to political and behavioural models in which decisions are viewed as an outcome of bargaining and negotiations among individuals and organisational sub-units with conflicting perceptions, personal stakes and unequal power. The theoretical models of strategy making proposed by Andrews (1971); Chaffee (1985); Mintzberg (1973); Bourgeois & Brodwin (1984); Eisenhardt & Zbaracki (1992) and Mintzberg & Westley (2001) are discussed in sections 3.3.1, 3.3.2, 3.3.3, 3.3.4, 3.3.5 and 3.3.6 respectively.

Empirically derived models have great significance in strategy process research. As pointed out by Papadakis & Barwise (1997) there is a dearth of empirically derived models for strategic decision making. Two empirically derived models developed by Nutt (1997) and Shrivastava & Grant (1985) are discussed in sections 3.4.1 and 3.4.2 respectively.

In one of the classic works in the strategy process literature, Rajagopalan, Rasheed & Datta (1993) developed an integrative framework of strategic decision processes incorporating various dimensions and it is discussed in section 3.5.1. Hart (1992) and Bailey, Johnson & Daniels (2000) have tried to integrate various dimensions of strategy

process research and the models proposed by them are discussed in sections 3.5.2 and 3.5.3.

As indicated earlier, in this stage of the literature review the theoretical models, empirically derived models and integrative models are discussed. The models examined in these three categories are summarised in figure 3.1.

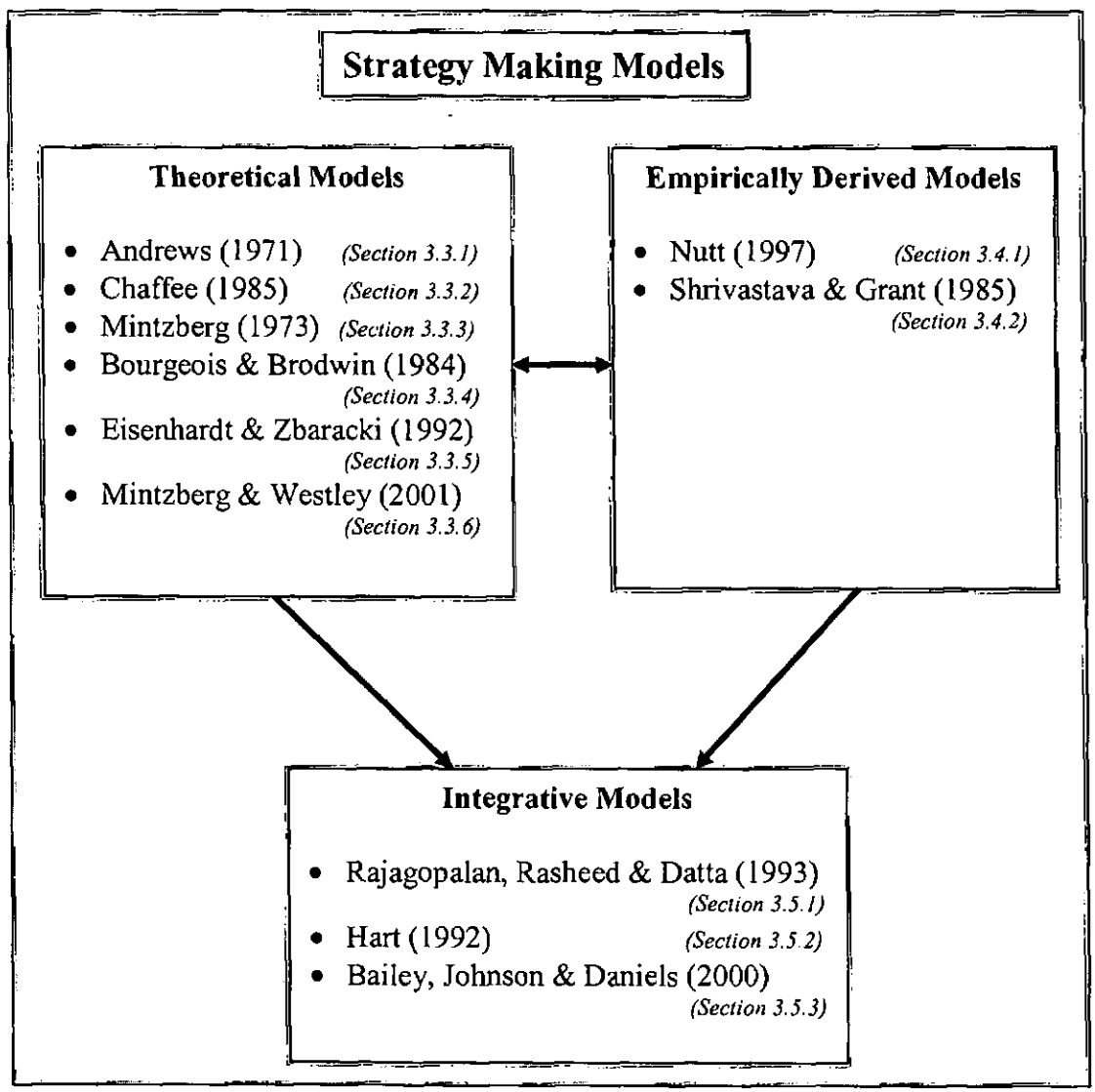

Fig 3.1: Strategy Making Models

3.3 Theoretical Models

The theoretical models depicted in figure 3.1 are presented in sub-sections 3.3.1, 3.3.2, 3.3.3, 3.3.4, 3.3.5 and 3.3.6.

3.3.1 The Classical Process Model (Andrews, 1971)

This model was proposed by Andrews (1971) and it divided strategy process into two phases namely formulation and implementation. This is a purely synoptic model with emphasis on rational and comprehensive processes. The formulation phase deals with strategic decision-making and the implementation phase deals with the transformations of the decisions into actions for generating pre-defined output. According to Andrews (1971), strategy formation is an explicit and creative act by management. According to the author the formulation phase has four elements. The process begins with identification of opportunities and threats in the company's environment and attaching some estimate of risk to the discernible alternatives. Then the resources available to the company should be appraised and the firm's actual or potential capacity to take advantage of perceived market needs or to cope with attendant risks should be estimated as objectively as possible. The choice resulting from the process of matching the opportunities and threats with the corporate capabilities at an acceptable level of risk is termed as economic strategy. These two steps can be regarded as the intellectual processes of determining what an organisation might do in terms of environmental opportunity and evaluating what it can do in terms of it capabilities and arriving at optimal equilibrium. However, the preferences of the chief executive and senior managers will also have an influence on the choice of the strategy. Finally, the ethical aspect should be considered by examining the alternatives against the expectations of society. Hence the four components of strategy according to this model can be stated as (i) market opportunity (ii) corporate competence and resources (iii) personal values and aspirations and (iv) acknowledged obligations to segments of society.

The implementation process of strategy, according to Andrews (1971) is comprised of a series of activities which are administrative in nature. This include mobilisation of resources, devising an organisational structure suitable for carrying out the required tasks, designing performance measurement, compensation, management development based on incentives and controls and providing effective leadership. This model is depicted in Figure 3.2.

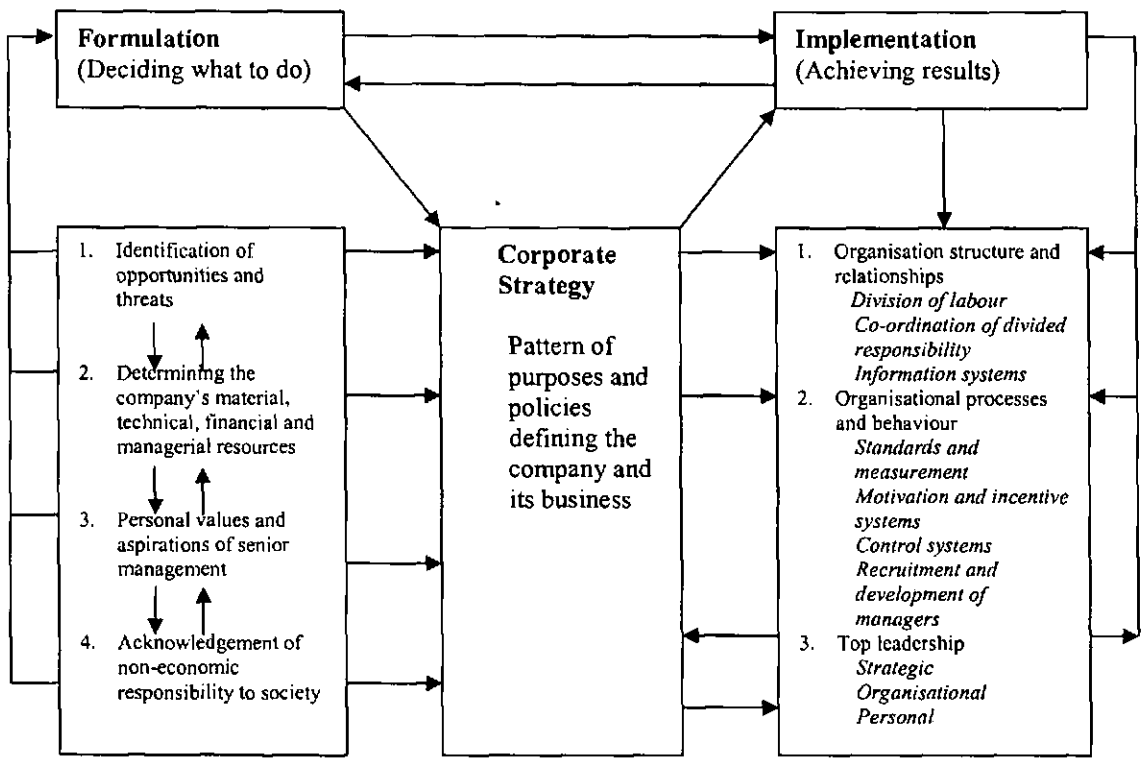

Fig 3.2 The Classical Process Model *(Source: Andrews, 1980)*

3.3.2 Three Models of Strategy (Chaffee, 1985)

The three models of strategy making proposed by Chaffee (1985) namely linear, adaptive and interpretive strategies are briefly outlined in the following sections.

3.3.2.1 Linear Strategy

The linear strategy model focuses on planning and is comprised of methodical, directed and sequential actions. According to this view, strategy consists of integrated decisions,

actions or plans that will set and achieve viable organisational goals. Organisations vary their links with the external environment either by changing their products / markets or through other entrepreneurial actions. The top management takes decisions using a methodical rational process in which identification of goals, generation of alternative methods to achieve them and deciding which one to implement are done sequentially. Profit and productivity are the important measures of results. Some of the assumptions for adopting this type of strategy making process are that (i) the organisation needs to be closely knit so that decisions taken by the top management can be implemented throughout the organisation (ii) the planning process is time-consuming and forward-looking and (iii) the environment is relatively predictable or the organisation is well-insulated from the environment and (iv) organisations have goals and achieving those goals is the most important outcome of strategy. Some of the authors whose views on strategy conform to this model are Andrews (1980); Chandler (1962) and Drucker (1974).

3.3.2.2 Adaptive Strategy

The adaptive model differs from the linear model in the following aspects: (i) the environment has to be monitored continuously and changes have to be made simultaneously (ii) it does not deal with decisions about goals as profoundly as linear model since the focus is on means (iii) the definition of strategic behaviours is wider than that in the linear model and it incorporates changes in style, marketing and quality apart from changes in products and markets (iv) planning is given lesser importance and strategy is multifaceted and less centralised in the top management level and (v) the environment is considered to be a complex organisational life support system and the boundary which separates it from the organisation is very thin.

This model is comparable with the evolutionary biological model of organisations. The basic assumptions for this model are (i) the organisation and its environment is open to each other (ii) the environment consisting of competitors, trends and stakeholders is more dynamic and less susceptible to prediction and (iii) the organisation must change with the environment. The adaptive model incorporates a number of variables for change and some of the authors whose definitions of strategy fit this model are Bourgeois (1980); Chakravarthy (1982); Hambrick (1982); Hatten (1982); Hofer & Schendel (1978); Miller & Friesen (1978); Mintzberg (1978); Quinn (1980) and Steiner (1979).

3.3.2.3 Interpretive Strategy

In the interpretive model, strategy is defined as orienting metaphors or frames of reference that allow the organisation and its environment to be understood by organisational stakeholders. It follows the assumption of the social construct view that describes the organisation as a collection of cooperative agreements entered into by individuals with free will. It also assumes that reality is defined through a process of social exchange in which perceptions are held, modified or replaced according to their apparent congruence with the perceptions of others. Some of the authors whose definitions of strategy fit with this model are Pettigrew (1977) and Van Cauwenbergh & Cool (1982).

The linear model can be clearly classified under synoptic models because goals are predetermined and the strategy intended to achieve this goal is developed through a rational and comprehensive process. However, the adaptive model is an incremental model because it focuses heavily on the means for achieving goals. According to the linear strategy model, leaders of the organisation plan how they will deal with

competitors to achieve their organisational goals and in the adaptive strategy model, the organisation and its parts change proactively or reactively in order to be aligned with consumer preferences. In the interpretive strategy model, organisational representatives convey meanings that are intended to motivate stakeholders in ways that favour the organisation.

3.3.3 Strategy Making in Three Modes (Mintzberg, 1973)

Mintzberg (1973) argued that strategy making in organisations could be classified into three modes namely entrepreneurial mode, adaptive mode and planning mode. These three modes are briefly described below.

3.3.3.1 The Entrepreneurial Mode

According the Mintzberg (1973) there are four main characteristics of the entrepreneurial mode of strategy making: (i) strategy making is dominated by the active search for new opportunities (ii) power is centralised in the hands of the chief executive (iii) strategy making is characterised by dramatic leaps forward in the face of uncertainty and (iv) growth is the main goal. An organisation operating in this mode considers the environment as a factor to be controlled.

3.3.3.2 The Adaptive Mode

This mode was first proposed by Lindblom (1959) as a science of "muddling through" which was later renamed as "disjointed incrementalism". The strategy maker in this mode does not proceed according to clear objectives and the decisions are normally remedial in nature. According to Mintzberg (1973) four major characteristics distinguish the adaptive mode: (i) clear goals do not exist and the strategy-making process reflects a division of power among members of a complex coalition (ii) the strategy-making process is characterised by the reactive solution to the existing

problems rather than the proactive search for new opportunities (iii) the adaptive organisation makes its decisions in incremental, serial steps and (iv) disjointed decisions are characteristic of the adaptive organisation. According to Lindblom (1959) a strategist following the adaptive mode does not strictly follow the analytical procedures but he is a shrewd, resourceful problem-solver.

3.3.3.3 The Planning Mode

In this mode the emphasis is on systematic attainment of goals stated in precise and quantitative terms and the key actor in the process is the analyst who uses scientific techniques to develop formal comprehensive plans. The three main characteristics of this mode are: (i) the analyst plays a major role in strategy making (ii) it focuses on systematic analysis particularly in the assessment of the cost and benefits of competing proposals and (iii) it involves the integration of decision and strategies. The planning mode can obviously be classified under the synoptic models because of its emphasis on goals and analytical techniques used for strategy making. The adaptive mode of strategy making clearly demonstrates how a typical incremental model functions. The trigger for strategy making comes from the need to take remedial action and no clear goals are set for the strategy making process. The characteristics of the organisations which use these three modes of strategy making and the conditions under which they should be used are summarised in Table 3.2.

In the entrepreneurial mode, the strategic decision making authority should rest with one powerful individual, the environment must be yielding, the organisation must be growth-oriented and the entrepreneur should be able to implement drastic strategic change. This mode is often found in organisation having a charismatic leader.

Table 3.2 Characteristics and Conditions of the Three Modes of Strategy Making (Mintzberg, 1973)

Characteristic	Entrepreneurial Mode	Adaptive Mode	Planning Mode
Motive for decisions	Proactive	Reactive	Proactive & Reactive
Goals of Organisation	Growth	Indeterminate	Efficiency & Growth
Evaluation of Proposals	Judgemental	Judgemental	Analytical
Choices made by	Entrepreneur	Bargaining	Management
Decision Horizon	Long Term	Short Term	Long Term
Preferred Environment	Uncertainty	Certainty	Risk
Decision Linkages	Loosely Coupled	Disjointed	Integrated
Flexibility of Mode	Flexible	Adaptive	Constrained
Size of Moves	Bold Decisions	Incremental Steps	Global Strategies
Vision of Direction	General	None	Specific
Conditions for Use			
Source of Power	Entrepreneur	Divided	Management
Objectives of Organisation	Operational	Non-Operational	Operational
Organisational Environment	Yielding	Complex, Dynamic	Predictable, Stable
Status of Organisation	Young, Small or Strong Leadership	Established	Large

Source: Mintzberg (1973)

An organisation following the adaptive mode will be encountering a complex, rapidly changing environment and a divided coalition of influencer forces. An organisation following the planning mode must be large enough to afford the costs involved in formal analysis, it must have goals that could be operationalised and it must face an environment that is reasonably predictable and stable. Very rarely an organisation will rely on a single mode of strategy making. They employ a combination of modes which will reflect their needs.

3.3.4 Five Approaches to Strategy Process (Bourgeois & Brodwin, 1984)

Bourgeois & Brodwin (1984) observed that because of increased inflation, resource depletion and global interdependence, sophisticated tools and models were required to

guide organisations. However, the strategy process models have not advanced too far beyond common-sense formulations or the traditional business policy or strategic planning approaches. Bourgeois & Brodwin (1984) proposed five strategy process approaches: the commander model, change model, collaborative model, cultural model and crescive model. These five models are briefly explained below.

3.3.4.1 Commander Model

In this model the CEO uses analytical methods to plan resource allocations for achieving the stated objectives. This model assumes that the CEO holds a considerable amount of power and has access to complete information. It is based on economic rationality and according to Bourgeois & Brodwin (1984) this model incorporates the concepts of both synoptic and incremental models because of the role taken by the CEO to direct the firm towards objectives defined at the apex of the organisation.

3.3.4.2 Change Model

This model deals with strategy implementation and emphasizes how organisational structure, incentive compensation and control systems can be used to facilitate the execution of a strategy. Here the CEO applies behavioural science techniques to manipulate his organisation into compliance with his strategic plan. It employs the following techniques for successful implementation: (i) using the structure and staffing to effectively convey the firm's new priorities and focus attention on the desired areas (ii) changing the systems used for planning, performance measurement and incentive compensation and (iii) using cultural adaptation techniques to introduce system-wide change.

3.3.4.3 Collaborative Model

This model focuses on group decision making at the senior management level involving top management in the formulation process to secure commitment. The CEO makes use of group dynamics and brainstorming techniques so that managers with differing opinions can air their views during the strategic decision making process. According to this model the role of the CEO is that of a co-ordinator who facilitates the interaction among the decision makers resulting in the acceptance of all good ideas.

3.3.4.4 Cultural Model

According to this model, implementation of strategy is carried out through the infusion of a corporate culture throughout the organisation. The CEO guides the organisation by communicating and instilling his vision and allowing the staff members to participate in designing their work procedures in tune with that vision. The role of the CEO is that of a coach who encourages staff members to take decisions in order to determine the operating details of executing the plan.

3.3.4.5 Crescive Model

This model proposes an alternative to the traditional division of the firm into strategy developers and implementers. Here managers' natural inclinations to develop new strategies during the course of their day-to-day work are an important aspect of strategy formation. Strategy comes upward from the lower levels of management rather than downward from the top and role of the CEO is that of a premise-setter and judge who encourages innovation and who judiciously selects the viable strategic proposals which reach his attention. This model puts forward the following suggestions to the CEOs of large divisionalised firms to generate and implement strategies: (i) maintain an open attitude to new information (ii) use a general strategy to guide the firm (iii) encourage

bottom-up strategy formulation by making necessary changes in the systems and structures (iv) intervene in the logical incrementalist (Quinn, 1980) manner (v) change structure and staff for minimising aberrations.

As stated earlier, the commander model can be classified as both synoptic and incremental model. The collaborative model uses rational methods for arriving at a decision and hence it can be classified as a synoptic model. According to the change model, organisational changes take place in a step-by-step manner and hence it can be termed an incremental model. According to Bourgeois & Brodwin (1984) these five models are not mutually exclusive and firms may use a variety of models with different emphasis.

3.3.5 Eisenhardt & Zbaracki (1992)

Eisenhardt & Zbaracki (1992) explored the three dominant paradigms of strategy making namely "rationality and bounded rationality", "politics and power" and "garbage can". These paradigms are briefly summarised in the next three sections.

3.3.5.1 Rationality and Bounded Rationality

According to this model, decision makers have known objectives and these objectives determine the value of the possible consequences of an action. They accumulate relevant information for generating a set of alternative actions and finally select the optimal alternative. Eisenhardt & Zbaracki (1992) examined a number of studies including Mintzberg, Raisinghani & Théorêt (1976), Nutt (1984), Dean & Sharfman (1993), Janis (1982) and Schweiger, Sandberg, & Ragan (1986) and identified the characteristics of rationality in strategic decision making: (i) cognitive limits exist to the rational model and decision makers satisfice instead of optimise (ii) many decisions are

arrived at through the basic phases of problem identification, development and selection, but not in the same sequence resulting in the repetition of the phases which enables the decision makers to go deep into the important issues and (iii) the shape of the decision path is influenced by the complexity of the problem and the conflict among the decision makers. According to behavioural theory which has challenged the assumptions of rationality, individuals and organisations can achieve only bounded rationality (Simon, 1997).

3.3.5.2 Politics and Power

According to this model organisations are coalitions of people with competing interests and during the strategy making process, the final decision is significantly influenced by the most powerful coalition. Often decision makers attempt to change the power structure by engaging in political tactics such as cooptation, strategic use of information and employment of outside experts. Similar to the bounded rationality model, this model also assumes that organisations possess a single superior goal. This model also assumes that people are individually rational, but not collectively so. The traditional view is that people with conflicting preferences engage in politics in order to gain a favourable decision. However, according to an emerging contradictory view, power imbalances trigger politics and frustrated executives turn to politics as a last resort in autocratic and power-vacuum situations. Many authors have suggested that politics ultimately leads to poor performance. One of the main debates is whether politics is a positive, conflict-driven phenomenon or a power-driven process signalling dysfunctional decision making.

3.3.5.3 Garbage Can

This model was proposed by Cohen, March, & Olsen (1972) and it describes decision making in highly ambiguous settings termed as organised anarchies, which is the central theme of this model. According to Eisenhardt & Zbaracki (1992), the rational and political models lacked sufficient sensitivity to decision making in a complex, unstable and ambiguous world and the garbage can model can be an alternative. Ambiguity in decision making can occur in three ways. They are the inconsistent and poorly defined preferences of decision makers, unclear technology and fluid participation. According to this model, decision making happens during the accidental or random confluence of four streams namely choice opportunities, solutions, participants and problems. Unlike rational and political models, the garbage can model places greater emphasis on chance. Studies have found that when deadlines for making decisions are introduced, the processes tend to become less like a garbage can. When the time span for decision making is limited, rational and political models seem to be more appropriate.

Going back to the fundamental classification, the Rational and Bounded Rational model can be classified as a synoptic model and the Power and Politics model can be classified as an incremental model. Garbage can model does not belong to either of these groups. According to Eisenhardt & Zbaracki (1992) strategic decision making is best described as a combination of bounded rationality and political insights. The cognitive limits and the looping of strategic decision processes are set by bounded rationality and the social context is set by political perspective.

3.3.6 Intuitive and Action-oriented Models (Mintzberg & Westley, 2001)

Mintzberg & Westley (2001) provide some insights into the intricacies of strategic decision making in organisations. They proposed that the rational or "thinking first"

model of decision making should be supplemented with two different models such as "seeing first" and "doing first". The "thinking first" model has clearly defined steps for carrying out the process as follows:

Define ⟶ Diagnose ⟶ Design ⟶ Decide

However strategic decisions in organisations are rarely made through these well defined steps. "Seeing first" model suggests that decisions or actions may be driven as much by what is seen as by what is thought. Vision requires the courage to see what others do not. This is creative discovery and it involves four steps:

Preparation ⟶ Incubation ⟶ Illumination ⟶ Verification

Mintzberg and Westley (2001) emphasize the importance of insight in strategic decision making and state that no theory which ignores insight should be accepted.

When it is not possible to either see it or think it up, it me be necessary to try doing it. The "doing first" model suggests this type of experimentation through which you can try something so that you can learn. The steps involved in the doing first model is shown below:

Enactment ⟶ Selection ⟶ Retention

By initiating various activities, it could be possible to determine which among them works well and the successful activities can be repeated.

Mintzberg and Westley (2001) suggest that the "thinking first" model is most suitable when the issue is clear, the data is reliable and the world is structured like in an established production process. . A "seeing first" model can be applied when many elements have to be combined into creative solutions like in a new-product development scenario. A "doing first" model is useful when the situation is novel and confusing like

in the case of a new industry or an old industry which needs to go for technological change. According to Mintzberg and Westley (2001), art provides the overview or vision, science specifies the structure or plan and craft produces the action or energy. Here it should be noted that the "thinking first" model strictly follows the rational process of decision making and hence it can be classified as a synoptic model. "Doing first" model is an incremental model and "seeing first" model does not belong to either of these two classifications.

3.4 Empirically Derived Models

The empirically derived models outlined in figure 3.1 are presented in sub-sections 3.4.1 and 3.4.2.

3.4.1 Nutt (1997)

Nutt (1997) suggested a wide-ranging set of empirically grounded guidelines for formulating and implementing strategies. This model is briefly explained below:

3.4.1.1 Establishing Directions

Managers should seek out people with different points of view and ask them to diagnose the situation. They should also look for both needs and opportunities that lie behind problem symptoms, reconcile contradictions while considering problems and state the performance objectives in order to keep the search process open to new ideas. Unless the need for change is justified, process should not be initiated and a ready-made solution should not be used.

3.4.1.2 Identifying Options

A number of options should be developed by searching various sources and by observing the best practices observed elsewhere. At least one radically innovative option should be generated. While developing options, creativity should be promoted and premature closure or blind adoption of practices should be avoided.

3.4.1.3 Implementing the Decision

During this phase managers have to show the need for and feasibility of change and should promote wide participation in the implementation process. They should put in tremendous effort for implementation and should take into account the political and social structure of the organisation and the extent to which this does or does not favour the implementation of the decision.

3.4.2 Shrivastava & Grant (1985)

Shrivastava & Grant (1985) after extensively studying computerisation decisions in 32 organisations in India, proposed four strategic decision models namely (i) Managerial Autocracy Model (ii) Systemic Bureaucracy Model (iii) Adaptive Planning Model and (iv) Political Expediency Model. In the Managerial Autocracy Model, a single manager is responsible for taking decisions and the entire decision process revolves around his preferences and actions. The Systemic Bureaucracy Model relies on organisational systems and official rules and regulations for arriving at strategic decisions. According to Shrivastava & Grant (1985), this model is usually applied in large and old private sector firms in mature or regulated industries and in public sector enterprises. The common procedures employed are technical, financial and cost-benefit analysis of each alternative, implementation planning and ratification of choice by the top management. Organisations following the Adaptive Planning Model used long range strategic plans as a guide while taking decisions. Problem familiarisation and solution development normally performed by professional planning staff are part of the planning cycle. In the Political Expediency Model, groups of decision-makers form coalitions around the decision issues and manipulated the decision-making process in order to protect their groups' interests.

The model proposed by Nutt (1997) can be termed as a synoptic model because of the rational process involved in it. In the systemic bureaucracy model proposed by Shrivastava & Grant (1985) technical and financial analysis is carried out before choosing the alternative and the implementation process is well planned. Hence this model can be classified as a synoptic model. In the adaptive planning model, long range strategic plans are used as guidelines for decision making and professional planners exert a significant influence in the strategy making process. Hence this model also can be classified as a synoptic model. The political expediency model is an incremental model and managerial autocracy model is neither synoptic nor incremental in nature.

3.5 Integrative Models

The integrative models shown in figure 3.1 are presented in sub-sections 3.5.1, 3.5.2 and 3.5.3.

3.5.1 An Integrative Framework of Strategic Decision Processes (Rajagopalan, Rasheed & Datta, 1993)

Rajagopalan et al. (1993) developed an integrative strategic decision framework depicting the interrelationships between process characteristics, process outcomes and economic outcomes. The rationale behind this integrative model is that process characteristics (e.g. Schilit & Paine, 1987; Fredrickson, 1984, 1985; Welsh & Slusher, 1986; Duhaume & Baird, 1987) influence process outcomes (e.g. Eisenhardt, 1989; Carter, 1971; Dutton & Duncan, 1987) and both process characteristics and process outcomes have a significant impact on economic outcomes (e.g. Eisenhardt & Bourgeois, 1988; Fredrickson & Mitchell, 1984). This model helps to integrate antecedent and outcome variables associated with strategic decision process characteristics. The model is depicted in figure 3.3.

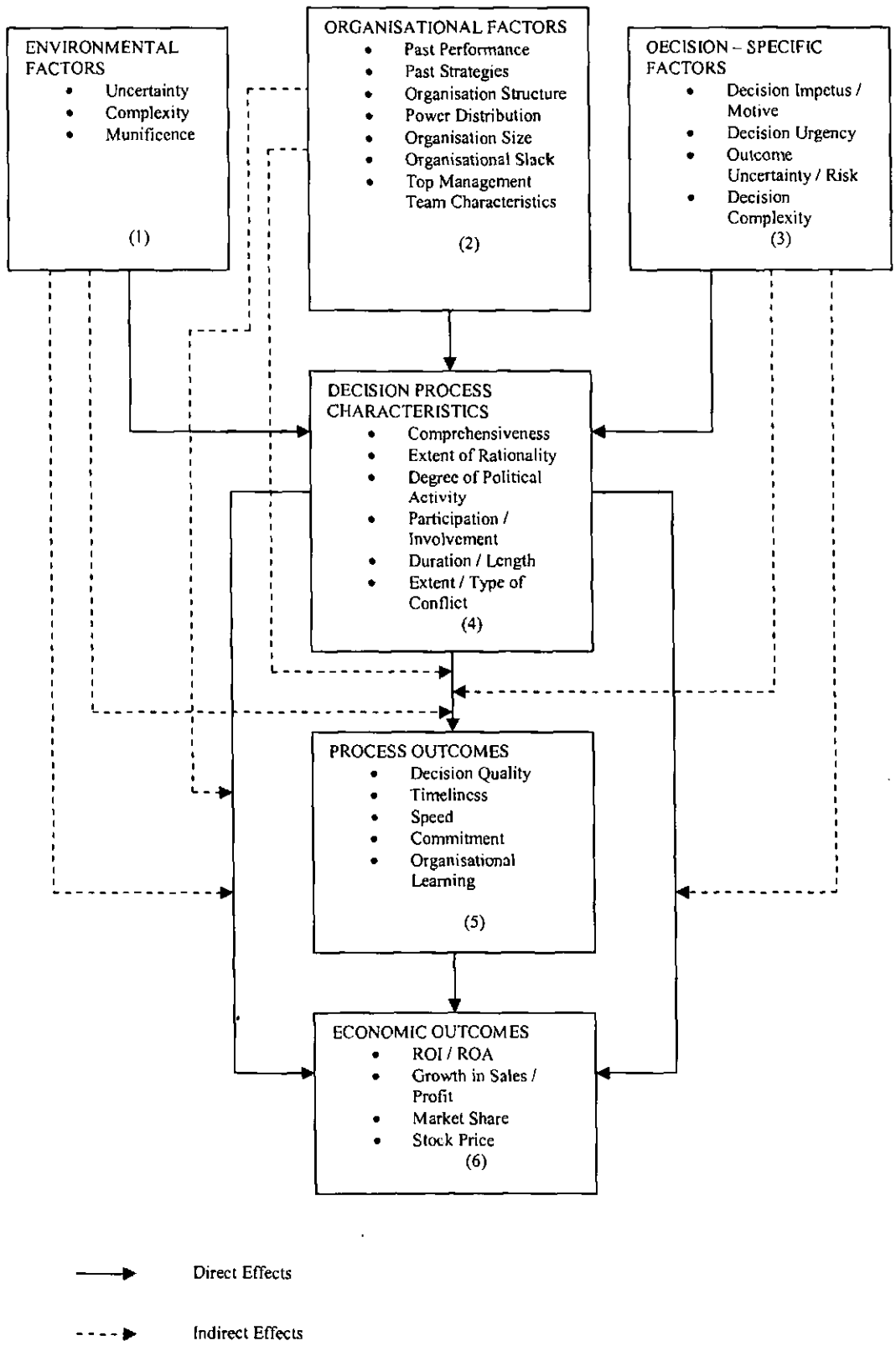

Fig 3.3: Strategic Decision Processes – An Integrative Framework
(Source: Rajagopalan et al., 1993)

This framework identifies three sets of antecedent factors namely environmental factors, organisational factors and decision specific factors and two sets of outcomes namely process outcomes and economic outcomes. Research examining the three antecedent factors is referred to as Streams I, II and III respectively. It also postulates relationships between decision process characteristics and outcomes (Stream IV). Stream I research (Links 1 -4, 4 – 1 – 5 and 4 – 1 – 6) pertains to the relationship between environmental factors and strategic decision process characteristics. The key issue addressed in this stream is how environmental factors like environmental complexity or uncertainty influence strategic decision process characteristics like the extent of rationality and comprehensiveness. Stream II research (Links 2 -4, 4 – 2 -5 and 4 – 2 – 6) has primarily examined how organisational factors such as organisational size, past strategies and performance, structure, top management team characteristics and organisational slack influence decision process characteristics. Research in Stream III (Links 3 -4 , 4 – 3 -5 and 4 – 3 – 6) has addressed the relationships between decision specific factors such as decision urgency, decision impetus, decision complexity and outcome uncertainty and process characteristics. Stream IV (Links 4 - 5, 4 – 6 and 5 – 6) examines relationships between strategic decision process characteristics and process / economic outcomes.

This model is one of the most comprehensive strategic decision making models developed in the history of strategy process research and it is widely quoted in the literature. This model helps strategy process researchers to develop measurable constructs and conduct studies. Using the insights gained by exploring the integrative framework of strategic decision processes proposed by Rajagopalan et al. (1993), Papadakis et al. (1998) investigated the relationship between the process of strategic decision-making and management and contextual factors. They studied 70 strategic decisions in 38 manufacturing firms in Greece and analysed the decision making

process into seven dimensions viz. (i) rationality / comprehensiveness, (ii) financial reporting, (iii) rule formalisation, (iv) hierarchical decentralisation, (v) lateral communication, (vi) politicisation and (vii) problem-solving dissension. These process dimensions were related to (i) decision-specific characteristics, both perceived characteristics and objective typologies of strategic decisions, (ii) top management characteristics and (iii) contextual factors referring to external corporate environment and internal firm characteristics. The findings of the study supported the view that an integrative model which included decision-specific, management, environmental and organisational factors was required for understanding strategic decision making processes in depth. The most important finding was that the decision-specific characteristics had the most prominent influence on the strategic decision making process, as decisions with different decision-specific characteristics are handled through different processes.

3.5.2 Hart's (1992) Framework for Strategy Making

Hart (1992) proposed an integrative framework for strategy-making which is based on the contrasting roles that top managers and organisational members play in the strategy-making process. It is composed of five modes namely command, symbolic, rational, transactive and generative. According to Hart (1992) three themes organise strategy-making process typologies. They are (i) rationality – the extent to which the strategic process should be comprehensive, exhaustive and analytical in approach (ii) vision - the extent to which leaders can articulate a clear strategic vision and motivate organisational members to adopt it and (iii) involvement - the extent and type of involvement of organisational members in the strategy-making process which is a critical theme derived from the implementation problems. Hart (1992) summarised eleven key typologies for

strategy process and categorised them into the above three themes namely rationality (comprehensive and bounded), vision and involvement as shown in Table 3.3.

Table 3.3 Categorisation of the Strategy-making Process Typologies

Themes from the literature				
	Rationality			
Citation	Comprehensive	Bounded	**Vision**	**Involvement**
Allison (1971)	Rational	Organisational, Bureaucratic		
Nutt (1981, 1984)	Normative, Bureaucratic	Behavioural, Group, Adaptive		
Mintzberg (1973, 1978)	Entrepreneurial, Planning	Adaptive		
Chaffee (1985)	Linear	Adaptive	Interpretive	
Mintzberg, (1987)	Plan, Ploy, Position	Pattern	Perspective	
Bourgeois & Brodwin (1984)	Commander, Change	Collaborative	Cultural	Crescive
Nonaka (1988)	Deductive			Inductive, Compressive
Ansoff (1987)	Systematic	Ad Hoc, Reactive		Organic
Grandori (1984)	Optimising	Satisficing, Incremental	Cybernetic	Random
Shrivastava & Grant (1985)	Managerial autocracy, Systematic bureaucracy	Adaptive planning		Political expediency
Mintzberg & Waters (1985)	Entrepreneurial, Planned	Process, Consensus	Ideological, Umbrella	Unconnected, Imposed

Source: Hart (1992)

According to Hart (1992) all the individual typologies described above emphasise only a portion of the strategy-making process and none of them captures the range of themes and dimensions associated with it. The author proposed an integrative framework constructed around the complementary roles that top managers and organisational members play in the making of strategy. He defined five strategy-making modes namely command, symbolic, rational, transactive and generative. The styles adopted while formulating and implementing strategies in each of these five modes and the roles

adopted by the top management and organisational members are summarised in Table 3.4.

Table 3.4 An Integrative Framework for Strategy-making Processes

Descriptors	Command	Symbolic	Rational	Transactive	Generative
Style	*Imperial* Strategy driven by leader or small top team	*Cultural* Strategy driven by mission and a vision of the future	*Analytical* Strategy driven by formal structure and planning systems	*Procedure* Strategy driven by internal process and mutual adjustment	*Organic* Strategy driven by organisational actors' initiative
Role of top management	*Commander* Provide direction	*Coach* Motivate and inspire	*Boss* Evaluate and control	*Facilitator* Empower and enable	*Sponsor* Endorse and support
Role of organisational members	*Soldier* Obey orders	*Player* Respond to challenge	*Subordinate* Follow the system	*Participant* Learn and improve	*Entrepreneur* Experiment and take risks

Source: Hart (1992)

The key typologies used in Table 3.3 are mapped into this framework as shown in Table 3.5. The five modes of strategy making proposed by the author can give valuable insights to strategy process researchers.

Table 3.5 Mapping the Typologies on the Integrative Framework

Citation	Command	Symbolic	Rational	Transactive	Generative
Allison (1971)			Rational	Organisational, Bureaucratic	
Nutt (1981, 1984)	Normative		Bureaucratic	Behavioural, Group, Adaptive	
Mintzberg (1973, 1978)	Entrepreneurial		Planning	Adaptive	
Chaffee (1985)		Interpretive	Linear	Adaptive	
Mintzberg (1987)		Perspective	Plan, Position, Ploy	Pattern	
Bourgeois & Brodwin (1984)	Commander	Cultural	Change, Collaborative		Crescive

Nonaka (1988)		Compressive	Deductive		Inductive
Ansoff (1987)			Systematic	Ad hoc reactive	Organic
Grandori (1984)		Cybernetic	Optimising	Satisficing, Incremental	Random
Shrivastava & Grant (1985)	Managerial autocracy		Systematic bureaucracy	Adaptive planning	Political expediency
Mintzberg & Waters (1985)	Entrepreneurial	Ideological, Umbrella	Planned	Process, Consensus	Unconnected, Imposed

Source: Hart (1992

3.5.3 Six Dimensions of Strategy Development (Bailey, Johnson & Daniels, 2000)

Bailey, Johnson & Daniels (2000) have identified six different dimensions of strategy development within the three broad perspectives namely strategic choice, social processes and environmental factors. These dimensions are command, planning, incrementalism, political, cultural and enforced choice. Hart (1992) had proposed five different dimensions of strategy development namely command, rational, transactive, generative and symbolic and they correspond closely to the command, planning, incremental, political and cultural dimensions respectively suggested by Bailey, Johnson & Daniels (2000). Bailey & Johnson (1991, 1995) have explained the characteristics of these dimensions and Table 3.6 provides a summary which includes the studies which have examined each of the dimensions.

Table 3.6 Characteristics of Strategy Process Dimensions

Dimension	Description	Studies which have examined these dimensions
Command	The CEO or a senior manager controls the strategy development process. The personality and vision of the individual significantly affects the outcome of the process.	Bennis & Nanus (1985) Shrivastava & Nachman (1989) Westley & Mintzberg (1989) Kotter (1990) Farkas & Wetlaufer (1996) Hayward & Hambrick (1997)

Planning	Planning is an intentional process involving a logical, sequential, analytic and deliberate set of procedures. It assumes that strategy is developed by top executives and implemented by those below. Based on the environmental analysis and internal analysis strategic options are generated. Based on the evaluation the most suitable option is selected.	Ansoff (1965) Mintzberg (1978) Steiner (1969) Argenti (1980) Rowe, Dickle, Mason & Snyder (1994)
Incremental	The goals of the organisation may not be defined precisely but in a general manner. Managers try to be sensitive to the uncertain environment through constant scanning and evaluation. Strategic options are reviewed and changes are made if necessary in the early stages of development.	Lindblom (1959) Mintzberg et al. (1976) Quinn (1980) Quinn (1982) Johnson (1988)
Political	Power and politics play an important role in strategy development. Coalitions may be formed to achieve the shared objectives and their influence will be strong if the organisation is heavily dependent on them.	Cyert and March (1963) Pettigrew (1973) Hinings et al. (1974) Pfeffer & Salancik (1978) Wilson (1982) Feldman (1986) Hickson et al. (1986)
Cultural	Choice of strategy is influenced by the organisational culture.	Weick (1979) Deal & Kennedy (1982) Schon (1983) Gioia & Poole (1984) Trice & Beyer (1985) Johnson (1987) Spender (1989)
Enforced choice	Based on environmental factors, organisations adopt organisational structures and activities which best fit the environment. Due to the external factors the organisational members have limited role in the choice of strategy and hence most of the organisations belonging to a particular industry sector are likely to have common strategy.	Aldrich (1979) DiMaggio & Powell (1983) Hannan & Freeman (1989) Deephouse (1996)

Adapted from Bailey, Johnson and Daniels (2000)

Hart (1992) had indicated the need for developing valid and reliable measures to operationalise the strategy process in order to assess the relationship between process and organisational performance. Bailey, Johnson & Daniels (2000) have made a significant contribution to the literature by developing an instrument which measures all the above six dimensions of strategy process. This instrument can be used in empirical studies to determine the extent to which these dimensions are significant in the strategy

making process. It will also be interesting to examine the impact of these modes on the performance of organisations.

This review of the strategy making models presented in sections 3.3, 3.4 and 3.5 portray the advancement of the field over the last three decades. The field has evolved from the basic strategy formulation and implementation model (Andrews, 1971) to integrative models proposed by Rajagopalan et al. (1993), Hart (1992) and Bailey, Johnson & Daniels (2000). The literature review indicates that there is a dearth of empirically derived models which explain strategy process. The integrative models proposed by Hart (1992) and Bailey, Johnson & Daniels (2000) endeavour to represent the entirety of the strategy process. However these two frameworks have not looked at the theoretical roots of strategy process. In order to identify strategy making modes which are more theoretically robust than the ones proposed by Hart (1992) and Bailey, Johnson & Daniels (2000) a mapping process was carried out in the fourth stage of this literature review in the first phase. The underlying theories of strategy process are identified in section 3.6 and the mapping process is explained in section 3.7.

3.6 Theories Related to Strategy Process

Van de Ven (1992) identified a number of different theories behind strategy process and classified them into four basic families of theories. They are life cycle, teleology, dialectics and evolution. These families of theories are briefly explained below. Also the various theories included in these classifications are listed.

According to life cycle theory change is immanent which means that developing entity contains within it an underlying logic, program or code that regulates the process of change and moves it from a given point of departure toward a subsequent end which is

already prefigured in the present state. This theory has its roots in biology in which each successive stage of development of a foetus is evolved from the previous one. The life cycle theory of organisations operates on the basis of institutional rules or programs that require developmental activities to progress in prescribed sequence. This family of theories include organisational development (Greiner, 1972; Kimberly & Miles, 1980) and group decision making (Gersick, 1988) along with some other theories.

Teleological models of development incorporate the systems theory assumption of equifinality which states that there are several equally effective ways to achieve a given goal. This theory differs from life cycle theory because it does not presume a necessary sequence of events. Teleology is based on the assumption that the developing entity is purposeful and adaptive and socially constructs an envisioned end state and selects from alternatives a course of action to reach it. This family of theories underlies many theories of administrative behaviour like decision making (March & Simon, 1958), models of strategic planning and goal setting (Chakravarthy & Lorange, 1991) and some other theories.

Dialectics assumes that the developing entity exists in a pluralistic world of colliding events, forces or contradictory values which compete with each other for domination and control. It explains stability and change through the relative balance of power between opposing forces. As a result of partisan struggles and accommodations which maintain the status quo between oppositions, stability is created. When these opposing values, forces or events go out of balance change occurs. This theory can explain organisational changes that move toward equilibrium, oscillation and chaos.

Evolution explains change as a recurrent, cumulative and probabilistic progression of variation, selection and retention. Alternative theories of social evolution can be

distinguished in terms of how traits can be inherited, whether change proceeds gradually and incrementally or rapidly and radically and whether the unit of analysis focuses on populations of organisms or species. Examples of these theories are Social Evolution (e.g. Nelson & Winter, 1982); Cultural Evolution (e.g. Burgelman, 1991; Weick, 1979). In organisation and management applications this theory is used to depict global changes in Organisational populations (Carroll & Hannan, 1989); Strategy making process (Burgelman, 1991) and Socio-psychological processes of organising (Weick, 1979). The main underlying assumptions of the above theories are summarised in Table 3.7.

Table 3.7 Underlying Assumptions of the Four Theories

Teleology	Life Cycle	Dialectics	Evolution
Goals are predetermined, but the progression does not take place according to a particular sequence of events. Development takes place as a result of goal formulation, implementation, evaluation and modification of goals based on what was learned or intended.	Goals are predetermined and progression takes place according to a sequence of stages or phases.	Stability is created as a result of struggles and accommodations between oppositions. Change occurs when there is imbalance.	Change happens through a continuous cycle of variation, selection and retention. Variations occur by random chance, selection takes place through competition among forms and environment selects those forms that are best suited to the resource base of an environmental niche. Retention involves the forces that perpetuate and maintain certain organisational forms.

Adapted from Garud & Van de Ven (2002)

These four underlying theories and the three theoretical perspectives which broadly explain the strategy making models namely strategic choice, social processes and environmental factors are used to classify the strategy making models discussed in the previous sections. This classification is explained in the next section.

3.7 Mapping of the Strategy Making Models

A number of strategy making models have been discussed in the previous sections and they explain various modes of strategy making. Hart (1992) and Bailey, Johnson & Daniels (2000) have tried to identify several modes of strategy making by exploring the published literature in the field. The strategy development process has been explained using three broad perspectives namely strategic choice, social processes and environmental factors. The Literature suggests that three different strategy making approaches namely the role of CEOs (Christensen et al 1987; Drucker, 1970), planning approach (Ansoff, 1965; Steiner, 1969) and logical incrementalism (Quinn, 1980) conform to the strategic choice perspective. According to the planning approach strategy formulation is an intentional process involving a logical and sequential set of procedures. On the other hand an incremental approach involves lobbying, bargaining and debate. The literature contends that the social processes include 'muddling through' (Lindblom, 1959), the political process (Cyert & March, 1963; Pfeffer and Salancik, 1978) and the cultural process (Johnson, 1987). According to Mintzberg and Waters (1985), even though 'muddling through' represents an incremental approach the decision making processes involved are based on the social processes. The environmental perspective argues that organisations choose organisational structure and activities which best fit the environment (DiMaggio and Powell, 1983; Hannan & Freeman, 1989). These environmental factors prescribe or constrain strategies and limit the role of managers in the choice of strategy (Aldrich, 1979).

In the previous section the four underlying theories namely teleology, life cycle, dialectics and evolution which explain the strategy development processes have been discussed. However no study published in the literature has used the three perspectives

and the four theories together to explain the strategy making models. This study provides a significant contribution to the literature by mapping the strategy making models on a two-dimensional plane consisting of the three perspectives and the four theories. First of all the models were grouped according to their belongingness to the three different perspectives. Subsequently the characteristics of the strategy making models were matched with the underlying assumptions of the theories and they were plotted in the appropriate cells. This mapping is shown in Table 3.8.

As shown in Table 3.8, most of the strategy making models belong to the strategic choice perspective. Most of the models belonging to the strategic choice perspective have been grouped under the teleology theory. These include the Classical Process Model (Andrews, 1971); Linear Strategy (Chaffee, 1985); the Planning Mode (Mintzberg, 1973); the planning school (Mintzberg et al., 1998) and the positioning school (Mintzberg et al., 1998) because they advocate the achievement of predefined goals through a rational and comprehensive process. Models like the Commander model (Bourgeois & Brodwin, 1984); Managerial autocracy model (Shrivastava & Grant, 1985); Command mode (Hart, 1992) and Command (Bailey, Johnson & Daniels, 2000) which highlight the importance of CEOs in the strategy making process have also been listed under teleology because goals are predetermined to a large extent and formulation, implementation and evaluation take place during the strategy process. Linear Strategy (Chaffee, 1985), empirically grounded guidelines (Nutt, 1997) and Thinking first model (Mintzberg & Westley, 2001) have been grouped under life-cycle theory because they follow a particular sequence of events during the strategy process. Logical incrementalism (Quinn, 1980) and Incremental mode (Bailey, Johnson & Daniels, 2000) have been classified under dialectics because the process involves extensive lobbying, bargaining and debate. The Doing first model (Mintzberg & Westley, 2001) emphasises

experimentation and the Seeing first model (Mintzberg & Westley, 2001) outlines creative discovery; the Entrepreneurial Mode (Mintzberg, 1973) and the Entrepreneurial school (Mintzberg et al., 1998) follows the pattern of variation, selection and retention and hence they have been grouped under evolution.

A significant number of the models belong to the social processes perspective and they are grouped under dialectics and evolution. None of these models are listed under either teleology or life-cycle mainly because goals are not predetermined to a large extent in this perspective. The strategy making models based on power and politics (e.g. Mintzberg et al., 1998; Shrivastava & Grant, 1985) and organisational culture (e.g. Mintzberg et al., 1998; Bourgeois & Brodwin, 1984) have been classified under dialectics because strategy formation is a result of either struggles or consensus. Models like the Crescive model (Bourgeois & Brodwin, 1984) and the Learning school (Mintzberg et al., 1998) which support the emergent perspective of strategy formation have been classified under evolution since they follow the variation – selection – retention pattern.

Four models belong to the environmental factors perspective and all of them have been grouped under evolution theory. In Garbage Can model (Cohen, March, & Olsen, 1972) variations occur by random chance. According to evolution theory environment has a significant influence in the strategy process. The Environmental School (Mintzberg et al., 1998), the Adaptive Strategy (Chaffee, 1985) and Enforced choice (Bailey, Johnson & Daniels, 2000) which highlight the importance of environment in strategy making have also been grouped under evolution theory.

Table 3.8: Mapping of Various Strategy Making Models on a Two-dimensional Plane

Theories / Strategy Process Perspectives	Teleology	Life-cycle	Dialectics	Evolution
Strategic Choice	*Design School* (Mintzberg et al., 1998) *Planning School* (Mintzberg et al., 1998) *Positioning School* (Mintzberg et al., 1998) *Classical Process Model* (Andrews, 1971) *The Planning Mode* (Mintzberg, 1973) *Commander Model* (Bourgeois & Brodwin, 1984) *Change Model* (Bourgeois & Brodwin, 1984) *Rationality & Bounded Rationality* (Eisenhardt & Zbaracki, 1992) *Managerial Autocracy Model* (Shrivastava & Grant, 1985) *Systematic Bureaucracy Model* (Shrivastava & Grant, 1985) *Adaptive Planning Model* (Shrivastava & Grant, 1985) *Command Mode* (Hart, 1992)	*Linear Strategy* (Chaffee, 1985) *Empirically grounded guidelines* (Nutt, 1997) *Thinking First Model* (Mintzberg & Westley, 2001)	*Lagical Incrementalism* (Quinn, 1980) *Incremental* (Bailey, Johnson & Daniels, 2000)	*Entrepreneurial School* (Mintzberg et al., 1998) *The Entrepreneurial Mode* (Mintzberg, 1973) *Doing First Model* (Mintzberg & Westley, 2001) *Seeing First Model* (Mintzberg & Westley, 2001)

	Symbolic Mode (Hart, 1992) *Rational Mode* (Hart, 1992) *Command* (Bailey, Johnson & Daniels, 2000) *Planning* (Bailey, Johnson & Daniels, 2000)		
Social Processes		*Muddling through* (Lindblom, 1959) *Power School* (Mintzberg et al., 1998) *Cultural School* (Mintzberg et al., 1998) *Interpretive Strategy* (Chaffee, 1985) *The Adaptive Mode* (Mintzberg, 1973) *Collaborative Model* (Bourgeois & Brodwin, 1984) *Cultural Model* (Bourgeois & Brodwin, 1984) *Politics & Power* (Eisenhardt & Zbaracki, 1992) *Political Expediency Model* (Shrivastava & Grant, 1985) *Transactive Mode* (Hart, 1992) *Political* (Bailey, Johnson & Daniels, 2000) *Cultural* (Bailey, Johnson & Daniels, 2000)	*Cognitive School* (Mintzberg et al., 1998) *Learning School* (Mintzberg et al., 1998) *Configuration School* (Mintzberg et al., 1998) *Crescive Model* (Bourgeois & Brodwin, 1984) *Generative Mode* (Hart, 1992)

Environmental Factors	*Environmental School* (Mintzberg et al., 1998) *Adaptive Strategy* (Chaffee, 1985) *Garbage Can* (Cohen, March, & Olsen, 1972) *Enforced Choice* (Bailey, Johnson & Daniels, 2000)

The mapping of the models resulted in the identification of seven different forms of strategy making. These seven different forms have been identified by effectively matching the three strategy process perspectives and the four underlying theories. These seven modes of strategy making have been named as Rational Choice, Sequential Choice, Equilibrium Choice, Evolutionary Choice, Social Equilibrium, Social Evolution and Adaptation. The strategy process perspective, the underlying theory and a brief definition of each of these seven modes have been provided in Table 3.9.

Table 3.9 Seven Strategy Making Modes

Strategy Process Perspective	Underlying Theory	Name of the Strategy Making Mode	Definition of the Strategy Making Mode
Strategic Choice	Teleology	Rational Choice	On the basis of the organisational goals strategy is formulated after detailed analysis
Strategic Choice	Life-cycle	Sequential Choice	On the basis of the organisational goals strategy is formulated through a process consisting of a sequence of events
Strategic Choice	Dialectics	Equilibrium Choice	Managers choose a strategy on the basis of the equilibrium created through the balance of forces within the organisation
Strategic Choice	Evolution	Evolutionary Choice	Strategy is chosen through a continuous process of variation, selection and retention
Social Processes	Dialectics	Social Equilibrium	The organisational strategy is a result of the equilibrium created through the balance of forces within the organisation. The main difference between this mode and Equilibrium Choice mode is that in Equilibrium Choice mode the strategy is chosen by managers.
Social Processes	Evolution	Social Evolution	Strategy evolves as a result of a continuous process of variation, selection and retention. The main difference between this mode and the Evolutionary Choice mode is that in Evolutionary Choice mode the strategy is chosen by managers.
Environmental Factors	Evolution	Adaptation	The organisation adapts to the changes in environment and organisational strategy is a result of this adaptation.

The rational choice mode of strategy making is widely used by organisations and it involves a systematic search for environmental opportunities and a systematic

consideration of costs and benefits. Most of the empirical studies have operationalised strategy making in terms of the rational choice mode mainly due to the easiness in the operationalisation of the constructs. In this study the strategy formulation process has been operationalised through the rational choice mode of strategy making. While forming strategies in this mode organisations use a number of tools for conducting strategic analysis and they are briefly explained in Table 3.10. These tools are useful in identifying the relevant variables and the questions which the manager must answer in order to develop conclusions tailored to a particular industry and firm (Furrer & Thomas, 2000).

Table 3.10: Tools for Strategic Analysis

SWOT	Companies use the SWOT framework to develop strategies by matching internal strengths and weaknesses with the external opportunities and threats. They try to achieve sustainable competitive advantage by implementing those strategies It was originated in the 1960s.
BCG Growth-Share Matrix	This is a portfolio model which enables firms to evaluate various opportunities and to determine which businesses should receive funds and which should be divested. This was developed by the Boston Consulting Group (BCG) and became popular in the 1970s. It is based on the close relationship between market share and cash generation. Based on its cash flow characteristics and relative market share, each product could be positioned in a product portfolio matrix.
GE Matrix: Market Attractiveness – Business Strength	The market attractiveness-business strength matrix was developed by General Electric (GE) and McKinsey. The basis of this matrix is that the long-term profitability of an investment alternative is a function of the attractiveness of the market in which the business operates. Variations of this model are Directional Policy Matrix developed by Royal Dutch Shell and Industry Maturity – Competitive Matrix developed by Arthur D. Little.
Industry Analysis using Five Forces	The five forces model for analysing the industry proposed by Porter (1979, 1980) based on the concepts of industrial organisation economics. The five forces which might influence the ability of a firm to either maintain or create above-average returns are barriers to entry, the intensity of rivalry, barriers to substitutes and the relative power of suppliers and buyers. This model is extremely useful in analysing the environment when a SWOT analysis is also conducted.

Value Chain Analysis	Organisations produce and sell goods or services by involving in a series of business activities namely inflow of raw materials, operations, outbound logistics, sales and marketing and service and these five activities are known as primary activities. The supporting activities namely firm infrastructure, human resource management, technological development and procurement provide assistance to carry out the primary activities (Porter, 1985). Using value chain analysis it is possible for an organisation to examine the value created during each of the primary and supporting activities. This analysis helps strategists to decide the investment to be made in various links, develop recommendations on outsourcing or expansion of particular activities.
Scenario Analysis	Scenario analysis enables decision-makers to visualise future states through a limited set of internally consistent scenarios and it could be applied in testing the viability of alternative strategies. It can be used as background information in strategy formulation or contexts to evaluate specific capital investment projects.
Seven – S Framework	According to the 7-S framework developed by McKinsey, effective strategic management is at least a function of seven variables namely strategy, structure, systems, style, staff, skill and shared values and successful strategies are formed as a result of a fit between these variables.
Value Based Planning	Value based planning is based on the assumption that maximisation of shareholder wealth is the decision criterion and managers can examine their strategies in the context of the contributions of each investment decision to shareholder value.
Economic Value Added (EVA)	EVA measures the value added over all costs including cost of capital and ultimately it measures the productivity of all factors of production. EVA can show which product, service operation or activity has unusually high productivity and which activities can add unusually high value.
Capability Analysis	Capability-based competition is based on four basic principles namely (i) the building blocks of corporate strategy are not products and markets but business processes (ii) competitive success depends on transforming a company's key processes into strategic capabilities that consistently provide superior value to the customer (iii) companies create these capabilities by making strategic investments in a support infrastructure that links together and transcends traditional SBUs and functions and (iv) because capabilities necessarily cross functions, the champion of a capabilities-based strategy is the CEO (Stalk et al., 1992 cf. Bowman et al 2002).
Strategic Option Analysis	According to this approach, business strategy is conceptualised as a series of options in the face of uncertainty and executing it involves making a sequence of major decisions. The strategy sets a framework within which future decisions will be made and it also leaves room for learning from ongoing developments and for discretion to act based on what is learned. This approach considers strategies as portfolios of related real options (Luehrman, 1998 cf. Bowman et al 2002).

Adapted from Bowman, Singh & Thomas (2002)

Hart (1992) had emphasised the need for developing valid and reliable measures for operationalising the different modes of strategy making in empirical research. The relationship between strategy making modes and organisational performance can be assessed only after developing these measures. This opens up a new avenue for future research. In the first phase of the research the focus should be on the development of valid and reliable measures for the seven modes of strategy making identified after the mapping process. In the subsequent phase empirical studies on different industry sectors should be conducted examining the relationship between these strategy making modes and organisational performance. The empirical research will be helpful in determining the nature of strategy making process in organisations. In other words it will be possible to determine the extent to which these strategy making modes are used in organisations for the development and implementation of strategies. These empirical studies will make a significant contribution to the literature by ascertaining the nature of relationship between these seven strategy making modes and performance.

Phase 1 of the literature review comes to a conclusion with the identification of the mode of strategy making for operationalising the strategy formulation and implementation process for this study. The main findings of all the five stages of the first phase of literature review are summarised in figure 3.4.

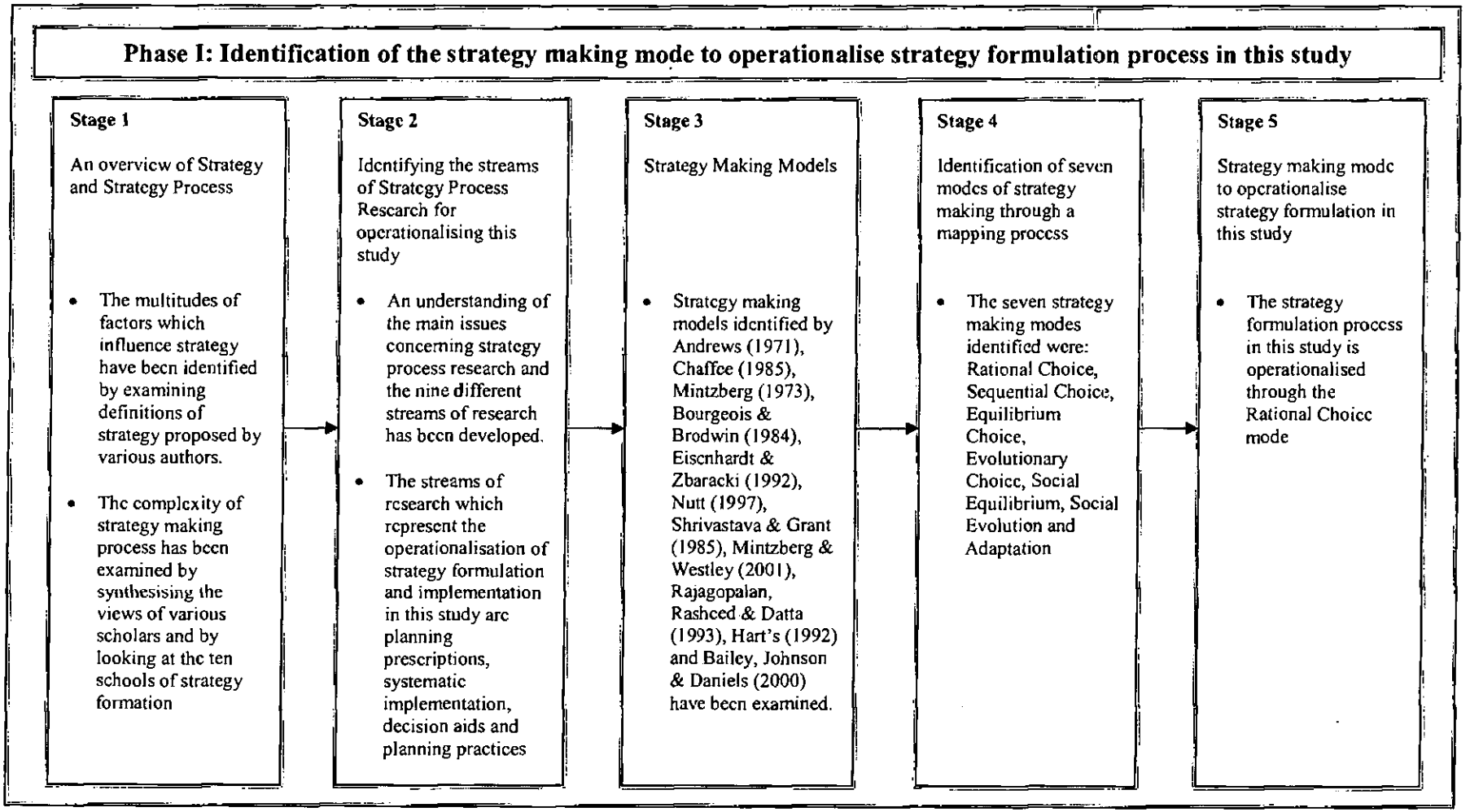

Fig 3.4: Findings from Phase I of the Literature Review

3.8 Summary

In this chapter the strategy making mode to operationalise strategy formulation in this study has been identified in three stages as outlined by figure 1.2 in chapter 1. A distinction between synoptic and incremental models has been made and the characteristics of these two types of models have been examined. The models examined in this study have been classified into three categories namely theoretical models, empirically derived models and integrative models. Four theoretical roots of the strategy process literature namely teleology, life cycle, dialectics and evolution have been discussed. The strategy making models have been mapped on a two-dimensional plane consisting of the three perspectives of strategy process namely strategic choice, social processes and environmental factors and the four underlying theories. As a result of this mapping it was possible to identify seven different modes of strategy making namely Rational Choice, Sequential Choice, Equilibrium Choice, Evolutionary Choice, Social Equilibrium, Social Evolution and Adaptation. The Rational Choice mode of strategy making has been chosen to operationalise strategy formulation process in this study.

Chapter 4 – Strategic Planning and Performance

4.1 Preamble

The objective of this chapter is to formulate hypotheses examining the relationship between strategic planning and performance by carrying out a systematic literature review. This comprises of Unit 1 of the literature review as shown in figure 1.3 in chapter 1. Sixty eight papers published in leading academic journals have been included in this literature review. The framework followed by Podsakoff and Dalton (1987) was adapted to conduct the literature review. Based on the findings of the literature review two hypotheses examining the relationship between strategic planning and organisational performance have been posited.

4.2 Literature Review

In chapter 3, seven modes of strategy making were identified by mapping the strategy making models on a two-dimensional plane consisting of the four underlying theories of strategy process and the three perspectives. Subsequently it was decided to operationalise strategy making process in this study through the Rational Choice mode. In this mode strategies are formed through formal strategic planning by conducting analysis using the tools explained in table 3.10 of chapter 3. Formal strategic planning is an explicit and ongoing organisational process with several components, including establishment of goals and generation and evaluation of strategies (Armstrong, 1982; Steiner, 1979; Boyd, 1991). According to Ansoff (1991) strategic planning generally results in better alignment and financial performance than trial-and-error learning. However this view is challenged by a number of scholars and they argue that strategic planning causes too much rigidity. Empirical research conducted in the last three decades has not produced conclusive evidence to support either of these views

(Mintzberg, 1991; Pearce, Freeman & Robinson, 1987). In order to examine the findings of previous studies a systematic literature review of the papers published in leading academic journals between 1975 and 2005 was conducted. The contents pages of the following journals were thoroughly searched for articles examining the relationship between strategic planning and performance:

Strategic Management Journal;
Academy of Management Journal;
Academy of Management Review;
Journal of Management;
Journal of Management Studies;
Long Range Planning; and
British Journal of Management.

The electronic databases namely Business Source Complete, JSTOR and Emerald were also searched in the title, author supplied key words and abstract using the key words like 'strategic planning', 'planning', 'strategy' and 'performance'. Following the guidelines provided by Podsakoff and Dalton (1987) the following details in the papers were examined: (i) Type of firm / Industry sector, (ii) Sample size, (iii) Sampling technique, (iv) Country of origin, (v) Aim of the study, (vi) Data collection method, (vii) Positions of the respondents, (viii) Constructs used to measure strategic planning, (ix) Constructs used to measure organisational performance, (x) Method(s) of analysis and (xi) Results. Altogether sixty seven studies were examined and the full literature review is provided in Appendix A. The main findings from the literature review are presented in the following sections.

4.2.1 Type of Firms / Industry Sector

Organisations belonging to both manufacturing and service sectors were studied by the scholars. A number of studies were focussed only on either manufacturing firms or

service firms. However in some studies both manufacturing and service organisations were included in the sample. Altogether twenty studies focussed on small firms, but many of them did not clearly define small firms and hence it is difficult to generalise the findings of these studies. The industry sectors were not clearly specified in a number of studies and hence it is difficult to compare the findings. The number studies focusing on the manufacturing, service and other sectors are shown in Table 4.1.

Table 4.1: Number of Studies Focusing on Different Sectors

Industry Sector	Number of Studies
Manufacturing	19
Service	17
Both Manufacturing and Service	7
Others	2
Not Known	23
Total	68

Among the studies focusing on manufacturing and service organisations the number of studies focusing on single industry and different industries are shown in Table 4.2.

Table 4.2: Studies Focusing on Single Industry and Different Industries

Manufacturing Firms		Service Firms	
Single Industry	Different Industries	Single Industry	Different Industries
5	14	17	0

While there were only five studies focusing on single industry in the manufacturing sector, all the studies in the service sector focused on single industry. Out of the seventeen studies in the service sector, ten were based on financial organisations including commercial banks. However among studies in the manufacturing sector, only five studies focused on engineering firms.

The above analysis indicates that a substantial number of studies did not clearly define the target industry sectors. In the studies focussing on service organisations, the sectors were clearly defined. There is a need to conduct more studies on the manufacturing organisations by clearly defining the industry sector. Hence this study will make a significant contribution to the literature by focusing on the manufacturing sector and targeting electrical and mechanical engineering firms.

4.2.2 Sample Size

The sample size used in the studies are summarised in Table 4.3.

Table 4.3: Sample Size used

Range	Number of Studies
≤50	7
Between 51 and 100	24
Between 101 and 150	13
Between 151 and 200	9
Above 200	13
Not Specified	2
Total	68

This table indicates that in thirty one studies out of sixty eight (nearly 50%) the sample size used was below 100. This may affect the accuracy of the findings.

4.2.3 Sampling Technique

The sampling technique used was specified in sixty six out of sixty eight studies. In most of the studies the sampling frame was selected on the basis of a combination of criteria like industry classification codes, geographical location and membership of associations like credit unions. In order to identify the method of selecting samples in those studies a four-fold classification scheme consisting of methods namely geographical location, membership of associations, listings in commercial databases and

listings in indices like Fortune 500, has been developed. The studies have been classified under these four headings on the basis of the fundamental method used for generating samples and this classification is shown in Table 4.4.

Table 4.4 Sampling Methods

Method	Studies
Geographical location	Burt (1978) Klein (1979) Wood Jr. & LaForge (1979) Grinyer, Yasai-Ardekani & Al-Bazzaz (1980) Lenz (1980) Klein (1981) Robinson Jr. and Pearce II (1983) Fredrickson (1984) Fredrickson & Mitchell (1984) Capon, Farley & Hulbert (1987) Pearce II, Robbins & Robinson Jr. (1987) Cragg & King (1988) Robinson Jr. & Pearce II (1988) Shrader, Mulford & Blackburn (1989) Lyles, Baird, Orris & Kuratko (1993) Kargar (1996) Rue & Ibrahim (1998) Baker & Leidecker (2001)
Membership of Associations	Robinson and Littlejohn (1981) Unni (1981) Robinson, Jr. (1982) Robinson Jr., Pearce II, Vozikis & Mescon (1984) Ackelsberg & Arlow (1985) Bracker & Pearson (1986) Robinson Jr., Logan & Salem (1986) Miller (1987) Gable & Topol (1987) Odom & Boxx (1988) Bracker, Keats & Pearson (1988) Jenster & Overstreet Jr. (1990) Kukalis (1991) Matthews & Scott (1995) Shrader, Chacko, Herrmann & Mulford (2004)
Listings in Commercial Databases	Grinyer & Norburn (1975) Kallman & Shapiro (1978) Sapp & Seiler (1981) Powell (1992) McKiernan & Morris (1994) Glaister & Falshaw (1999) Rogers, Miller & Judge (1999) Andersen (2000) Baker (2003) Tegarden, Sarason & Banbury (2003) French, Kelly & Harrison (2004) Hoque (2004) O'Regan & Ghobadian (2004)

Listings in Indices like Fortune 500	Karger & Malik (1975) Kudla (1980) Leontiades & Tezel (1980) Beard & Dess (1981) Kudla (1981) Kudla & Cesta (1982) Jones (1982) Welch (1984) Rhyne (1986) Ramanujam, Venkatraman & Camillus (1986) Shuman & Seeger (1986) Ramanujam & Venkatraman (1987a) Ramanujam & Venkatraman (1987b) Rhyne (1987) Ramanujam & Venkatraman (1988) Olson & Bokor (1995) Goll & Rasheed (1997) Gibson & Cassar (2002)
Others	Woodburn (1984) Orpen (1985) Orpen (1993) Hopkins & Hopkins (1997)

In some of the studies organisations belonging to the whole sampling frame were included. However when a large number of organisations is present in the sampling frame, authors have generated either a simple random sample or a stratified random sample. As shown in Table 4.4 most of the recent studies have used commercial databases for generating samples. Arguably this is because of the increased availability of commercial databases in the recent years. In this study a simple random sample of organisations was generated from a leading commercial database.

4.2.4 Aims of the Studies

Basically all the studies have examined the impact of strategic planning on organisational performance. The extent of planning carried out in organisations have been measured using various constructs (discussed in section 4.2.6) and its relationship with organisational performance measured using the constructs indicated in section 4.2.7 have been examined.

4.2.5 Country of Origin, Data Collection Methods and Respondents

Fifty four out of sixty eight studies have been conducted in the United States. Only seven studies have examined UK based organisations and hence there is a need for more studies focused on the UK.

In fifty four out of sixty eight studies, postal survey was used to collect primary data. However in five of those studies postal survey data was augmented by interviews. Two studies relied solely on secondary data.

In forty seven out of sixty eight studies Chief Executives and Senior Managers were the respondents. However in fourteen studies the positions of the respondents in the organisations were not specified. Other executives were the respondents in the remaining studies.

4.2.6 Constructs used to measure Strategic Planning

Authors used a number of constructs to measure strategic planning while conducting these studies. These constructs are shown in Table A.3 in Appendix A. An examination of these constructs indicates that there are substantial differences in the constructs used by various authors in their studies. Boyd and Reuning-Elliott (1998), after examining several studies concluded that there was remarkably little consistency in the operationalisation of the strategic planning construct. The authors found that planning was defined in numerous ways in the studies. The dimensions used to define strategic planning in those studies were the following: formality, sophistication, effectiveness, comprehensiveness, extensiveness, completeness, importance, rationality, analysis, goal setting, scanning and analysis, process, factors, systems, openness, innovativeness, characteristics, capabilities and strategy. A vast majority of the studies have defined

strategic planning as the formality or importance associated with its indicators (Pearce, Freeman and Robinson, 1987) a small number of studies used skills and abilities vs. aspects or elements (e.g. Venkatraman and Ramanujam, 1987). Boyd and Reuning-Elliott (1998) defined strategic planning as a normative process and identified the following items as key indicators of strategic planning: mission statements, trend analysis, competitor analysis, long-term and annual goals, action plans and ongoing evaluation.

4.2.7 Constructs used to Measure Organisational Performance

The constructs used to measure organisational performance in the studies are shown in Table A.3 in Appendix A. As indicated in this table, financial performance measures like financial ratios, sales growth and profitability growth have been used in most of the studies. Return on Assets (ROA), Return on Equity (ROE) and Return on Sales (ROS) are the most commonly used financial ratios to measure performance. However Kudla (1981) used reduction of risk as a performance measure. This is an important construct because the findings of Kudla (1981) indicate that while the firms were engaged in strategic planning they were able to reduce the risk. The literature review shows that only a few non-financial performance measures were used in the studies linking strategic planning and performance.

4.2.8 Methods of Data Analysis

A number of analytical techniques like correlation analysis, regression analysis, t-test, ANOVA and Chi-Square test have been used in the studies. The extent of the use of these analytical techniques is summarised in Table 4.5.

Table 4.5: Analytical Techniques used

Analytical Technique	No. of times used
Correlation Analysis	24
Regression Analysis	14
Logistic Regression	1
Moderated Regression Analysis	1
t-test	23
Chi-Square test	15
Percentage Comparisons	8
Cross Tabulations	4
ANOVA	13
MANOVA	4
ANCOVA	1
Discriminant Analysis	6
Canonical Correlation Analysis	4
Kendall Tau Rank Correlation	2
Wilcoxon Test	1
Structural Equation Modelling	2

As indicated in Table 4.5 the most widely used analytical methods in examining the relationship between strategic planning and performance are correlation analysis, regression analysis, t-test, Chi-Square test and ANOVA. Regression analysis and correlation analysis were used to determine the relationship between strategic planning on performance. The t-test, ANOVA and Chi-Square test are mainly used to compare the performance of planners and non-planners. Most of the studies have examined bivariate relationships and this could be one of the main drawbacks of the studies. The relationships may change if more variables are studied together. Structural equation modelling technique which could be used to examine multivariate causal relationships

was used only twice. In this study, multivariate relationships are examined using partial least squares (PLS) which is a structural equation modelling technique.

4.2.9 Results of the Studies

The results of the studies examining the relationship between strategic planning and organisational performance are presented in Table 4.6.

Table 4.6: Results of the Studies

Author	Whether Strategic Planning has a significant positive impact on performance or not?
Grinyer & Norburn (1975)	No impact
Karger & Malik (1975)	Positive impact
Burt (1978)	Positive impact
Kallman & Shapiro (1978)	No impact
Klein (1979)	No impact
Wood Jr. & LaForge (1979)	Positive impact
Kudla (1980)	No significant difference between planners and non-planners in terms of returns. However strategic planning has led to reduction in risk among planners.
Grinyer, Yasai-Ardekani & Al-Bazzaz (1980)	No impact
Leontiades & Tezel (1980)	No impact
Lenz (1980)	Positive impact
Beard & Dess (1981)	Positive impact
Klein (1981)	Positive impact
Kudla (1981)	Positive impact
Robinson and Littlejohn (1981)	Positive impact
Sapp & Seiler (1981)	Positive impact
Unni (1981)	Partially supports the relationship
Kudla & Cesta (1982	No impact
Jones (1982)	Positive impact
Robinson, Jr. (1982)	Positive impact
Robinson Jr. and Pearce II (1983)	No impact
Fredrickson (1984)	Positive impact
Fredrickson & Mitchell (1984)	No impact

Robinson Jr., Pearce II, Vozikis & Mescon (1984)	Positive impact
Welch (1984)	Positive impact
Woodburn (1984)	Positive impact
Ackelsberg and Arlow (1985)	Positive impact
Orpen (1985)	Positive impact
Rhyne (1986)	Positive impact
Bracker and Pearson (1986)	Positive impact
Robinson Jr., Logan & Salem (1986)	Positive impact
Ramanujam, Venkatraman & Camillus (1986)	Positive impact
Shuman & Seeger (1986)	Positive impact
Miller (1987)	Positive impact
Ramanujam & Venkatraman (1987a)	Positive impact
Capon, Farley and Hulbert (1987)	Partially supports the relationship
Gable & Topol (1987)	No impact
Pearce II, Robbins & Robinson Jr. (1987)	Positive impact
Ramanujam & Venkatraman (1987b)	Positive impact
Rhyne (1987)	Positive impact
Ramanujam & Venkatraman (1988)	Positive impact
Odom & Boxx (1988)	Positive impact
Bracker, Keats & Pearson (1988)	Positive impact
Cragg & King (1988)	No impact
Robinson Jr. & Pearce II (1988)	Positive impact
Shrader, Mulford & Blackburn (1989)	Positive impact
Jenster and Overstreet Jr. (1990)	Positive impact
Kukalis (1991)	Positive impact
Powell (1992)	Relationship is industry dependent
Lyles, Baird, Orris & Kuratko (1993)	Partially supports the relationship
Orpen (1993)	Positive impact
McKiernan & Morris (1994)	No impact
Matthews & Scott (1995)	Strategic planning decreases if perceived environmental uncertainty increases
Olson & Bokor (1995)	Positive impact
Kargar (1996)	Partially supports the relationship

Goll and Rasheed (1997)	Positive impact
Hopkins & Hopkins (1997)	Positive impact
Rue & Ibrahim (1998)	Positive impact
Glaister & Falshaw (1999)	Partially supports the relationship
Rogers, Miller & Judge (1999)	Positive impact
Andersen (2000)	Positive impact
Baker & Leidecker (2001)	Positive impact
Gibson & Cassar (2002)	Positive impact
Baker (2003)	Positive impact
Tegarden, Sarason & Banbury (2003)	Partially supports the relationship
French, Kelly & Harrison (2004)	Partially supports the relationship
Shrader, Chacko, Herrmann & Mulford (2004)	Positive impact
Hoque (2004)	Partially supports the relationship
O'Regan & Ghobadian (2004)	Positive impact

The numbers of the studies which have found a positive relationship between strategic planning and performance and the ones which have not found this relationship significant are summarised in Table 4.7.

Table 4.7: Summary of the Findings

Nature of Relationship	**No. of Studies**
Positive impact of strategic planning on performance	46
Partially supports this relationship	8
No impact of strategic planning on performance	11
Other results	3
Total	68

The results indicate that a vast majority of the studies have reported a positive relationship between strategic planning and organisational performance. However some of the studies have reported that the relationship between strategic planning and performance is contingent on the operating environment (e.g. Fredrickson, 1984; Fredrickson & Mitchell, 1984; Goll & Rasheed, 1997). Eleven studies did not find a positive relationship between planning and performance. There could be number of

reasons behind these findings like differences in the characteristics of operating environments and variations in the constructs used to measure strategic planning and performance. This also indicates the need for further studies examining this relationship.

The studies which found a positive relationship between strategic planning and organisational performance and the studies which found no impact were grouped separately. The constructs used to operationalise strategic planning in these two groups of studies are presented in Table 4.8.

Table 4.8: Comparison of Constructs used in two Groups of Studies

Constructs used in Studies which found a positive impact of strategic planning on performance (Group 1)	Constructs used in Studies which found no impact of strategic planning on performance (Group2)
• Mission statement • Duration of the existence of planning systems • Long-term goals, • Short-term action plans • Written strategic plans • Use of analytical techniques • Environmental analysis • Competitor analysis, • Evaluation of internal resources • Matching internal capabilities with external trends • Identifying and analysing alternative strategic options • Time period covered by the plan • Quantified objectives covered in the strategic plan • Schedules for completion of long-range plans • Fulfilment of planning objectives • Control systems for detecting the differences between the plan and actual performance • Size of the organisation • Planning methods • Management philosophy or style • The content of plans and the frequency of revision • Manager's attitudes toward planning and • Percentage of time each manager spent on long-range planning • Participative decision-making at management levels, • Open channels of communication • Company characteristics such as nature of	• Corporate objectives, • Role perception, • Formal planning systems, • Channels of information, • The number of items of information received and used • Extent of common perception • Presence of change inducing strategic managers • Duration of the existence of planning systems • Planning guidelines like economic forecasts, forecasts of competitor action and policy statements • Lateral and vertical spans of control • Strategy, structure and size • Charter, geographical dispersion and number of sites, number of employees, annual sales and capital employed • Environmental analysis • CEO's rating of planning as performed by his planning staff • CPO's evaluation of the planning department's contribution to the success of his firm • Written long-range plan • Time period covered by the long-range plan • Quantified objectives • Inclusion of specific action programmes • Schedules for completion of long-range plans • Provision for detection of differences between the plan and actual performance • Degree of emphasis in strategic decision-

ownership, number of employees, owner's age, average working hours per week, age of the company, experience of the owner and educational background. • Inclusion of plans and budgets for human resources, hiring and personnel development, plant expansion, equipment acquisition, R&D, advertising, technology acquisition and utilisation	making process • Organisation comprehensiveness and size • Goal setting • Consideration of the firm's strengths and weaknesses in the course of planning activities • Consideration of alternative strategies • Preparation of budgets and contingency plans • Updating the plans • Organisational characteristics and owner / manager characteristics

As shown in Table 4.8 the constructs used to operationalise strategic planning in the studies belonging to Group 1 are more or less consistent with the key indicators of strategic planning identified by Reuning-Elliott (1998). However some of the constructs used in studies belonging to Group 2 such as the number of items of information received and used, the extent of common perception and organisation comprehensiveness are not consistent with the key indicators identified by Reuning-Elliott (1998) and could be difficult to measure in empirical studies. Lack of conformity of strategic planning constructs to the key indicators could be one of the main reasons why studies belonging to Group 2 did not find a positive relationship between strategic planning and performance.

4.3 Development of Hypotheses

A summary of the key findings from the literature review are:

- There is a need to conduct more studies on the manufacturing organisations by clearly defining the industry sector;
- In almost 50% of the studies, the sample size used was below 100 which could be a serious drawback;
- Only seven studies have examined UK based organisations and hence there is a need for more studies focused on the UK;

- There has been little consistency in the operationalisation of the strategic planning construct;

- Financial measures like financial ratios, sales growth, profitability growth etc have been used in most of the studies to measure organisational performance;

- The most widely used analytical methods in examining the relationship between strategic planning and performance are correlation analysis, regression analysis, t-test, Chi-Square test and ANOVA; and

- Even though a vast majority of the studies have reported a positive relationship between strategic planning and organisational performance, a significant number of studies did not confirm this relationship.

The literature review indicated the need for conducting further studies examining the relationship between strategic planning and performance. While some of the studies found a positive relationship between strategic planning and performance (e.g. Jones, 1982; Orpen, 1985; Baker 2003) some others did not find a significant impact (e.g. Robinson Jr. and Pearce II, 1983; Gable & Topol, 1987; McKiernan & Morris, 1994). As indicated by some of the studies, since this relationship is contingent upon the operating environment, the moderating effect of environment in this relationship also needs to be examined.

The planning mode of strategy making proposed by Mintzberg (1973) and the rational mode of strategy making suggested by Hart (1992) are characterised by the rational-comprehensive approach to strategy making (Priem, Rasheed & Kotulic, 1995). The findings of some studies indicate that the rational-comprehensive approach to strategy making is beneficial in stable environments and harmful in dynamic environments. Fredrickson (1984) found a positive relationship between planning rationality and performance in a stable environment. Fredrickson and Mitchell (1984) conducted a

study among companies belonging to the sawmills and planing industry (dynamic environment) in the United States and found that there was a negative relationship between planning and performance. However some other studies indicate that planning rationality leads to higher performance in dynamic environments. Miller and Friesen (1983) after studying two samples of organisations consisting of US firms and Canadian firms found that for high performing firms, increases in environmental dynamism are accompanied by increases in planning rationality. Eisenhardt (1989) studied microcomputer industry (dynamic environment) and found that effective organisations belonging to that industry analyse more strategic alternatives which is an indication of planning rationality. Judge and Miller (1991) found that in a dynamic environment, speedy and comprehensive decision making is associated with high performance. In a study on manufacturing firms, Priem, Rasheed and Kotulic (1995) found a positive relationship between rationality in strategic decision processes and performance in a dynamic environment and no relationship between rationality and performance in a stable environment. Goll and Rasheed (1997) studied manufacturing firms and found that environmental munificence and dynamism moderate the relationship between rationality and performance. They found that rationality in strategic decision-making was strongly related to performance in highly munificent and dynamic environments. Hough and White (2003) in a study conducted among Fortune 100 diversified technology companies found that environmental dynamism moderated the relationship between rational strategic decision making and decision quality. The studies have not produced conclusive evidence regarding the moderating effect of environment in the relationship between strategic planning and performance. Hence the nature and degree of environmental moderation need to be investigated in future studies.

Based on the literature review the following hypotheses are posited:

H1a: Rational-comprehensive strategic planning will lead to superior performance in organisations.

H1b: Environmental dynamism and hostility moderate the relationship between strategic planning and performance.

This study aims to clarify the nature of relationship between strategic planning and organisational performance and also to assess the moderating effect of environment in this relationship by testing the above two hypotheses.

4.4 Summary

The systematic literature review identified the need for conducting more studies examining the relationship between strategic planning and performance. It was found that there were inconsistencies in the operationalisation of strategic planning in empirical studies. One hypothesis examining the impact of strategic planning on organisational performance and another one examining the moderating effect of operating environment on this relationship have been posited.

Chapter 5 – Business-level Strategy and Performance

5.1 Preamble

The main objective of this chapter is to develop hypotheses examining the relationship between business-level strategy and performance through a systematic literature review. This comprises of Unit 2 of the second phase of literature review as outlined in figure 1.3 in chapter 1. The strategy typologies and taxonomies proposed by various authors are explained and the importance of Miles and Snow and Porter's typologies in operationalising business-level strategies is highlighted. The different approaches to operationalising business-level strategies are discussed. Following the guidelines of Podsakoff and Dalton (1987), empirical studies assessing Miles and Snow and Porter's typologies were systematically reviewed. Based on the findings of the literature review the hypotheses examining the relationship between business-level strategy and performance have been posited.

5.2 Business-level Strategy

The extant literature suggests that organisational strategies can be broadly classified into three different levels namely the corporate-level strategy, business-level strategy and functional-level strategy (Hax and Majluf, 1984; Grant and King, 1982; Bourgeois, 1980). The corporate-level strategy is concerned with domain selection, that is to say, the vertical, horizontal, and market scope and linkage and level of integration among different businesses (Bourgeois, 1980; Rumelt, 1974). The business-level strategy is concerned with domain navigation, that is to say how the firm competes effectively in a particular market segment (Hambrick, 1980; Beard and Dess, 1981). Functional-level strategies focus on the maximisation of resource productivity within each specific function and they are generally derived from the business strategy (Schendel and Hofer,

1979). Corporate-level strategy is too aggregated for understanding the strategic response to environmental influences such as competitive moves, technological changes, entry and exit of competitors, while a key role of strategy is to integrate activities of various functions and as such functional level strategies are not particularly important (Venkatraman, 1989). Not surprisingly business strategy provides the focus for a significant majority of the strategy research. By examining the business-level strategy of organisations it is possible to identify the market positions adopted by organisations in their selected industry sectors. These market positions or strategic orientations will have a greater impact on organisational performance than corporate-level strategy and functional strategy. Hence this study will focus on business-level strategy.

Generic business strategies can be organised broadly into two groups namely typologies and taxonomies. Typologies are inductively driven qualitative characterisation of the "strategic behaviour of business organisation", where the strategic types are rooted in a set of parsimonious classificatory dimensions or conceptual criteria (Venkatraman, 1989, pp. 943). The strategic management literature outlines a number of typologies (e.g. Miles & Snow, 1978; Abell, 1980; Porter, 1980; Miles 1982). Taxonomies are empirically derived based on the measurement of a few indicators of firms' strategic behaviour and they represent the existence of internally consistent configurations. Prominent taxonomies include Miller & Friesen (1978) and Galbraith & Schendel (1983). Their development is sensitive to the choice of underlying dimensions as well as the analytical method used to extract the taxonomies (Hambrick, 1984; Miller and Friesen, 1984). "While taxonomies serve to capture the comprehensiveness and integrative nature of strategy through their internal coherence, they do not reflect the 'within-group' differences along the underlying dimensions" (Venkatraman, 1989, pp. 943). Typologies are theoretically derived dimensions which rely on identifying and

measuring the key traits of the strategy and assessing differences and similarities across a profile consisting of a set of characteristics that collectively describe the strategy (Robinson and Pearce, 1988; Venkatraman, 1989). This type of strategy classification has attracted greater attention because they aid understanding and focus on the ordering of information. Hence, in this study the focus will be on typologies.

5.3 Strategy Typologies / Taxonomies

In this section a summary of key typologies and taxonomies will be provided. The range of strategic behaviours and their key characteristics for each typology are summarised in Table 5.1.

A number of studies which have operationalised business-level generic strategies have been published in leading academic journals (e.g. Hambrick, 1982; Dess & Davis, 1984; Miller, 1987; Conant, Mokwa & Varadarajan, 1990; Jennings & Lumpkin, 1992; Jennings & Seaman, 1994; Marlin, Lamont & Hoffman, 1994; Frambach, Prabhu and Verhallen, 2003; Andrews, Boyne & Walker, 2006). Most of these studies have operationalised business-level strategies using either Miles & Snow (1978) typology or Porters (1980) typology. Even the recently published studies in leading academic journals have used these typologies to operationalise business-level strategies (e.g. Kim, Nam and Stimpert, 2004; Jermias & Gani, 2004; Allen, Helms, Takeda, White and White, 2006; Desarbo, Di Benedetto, Song and Sinha, 2005; Moore, 2005). This indicates that these typologies are valid for measuring business-level strategies. The literature suggests that the Miles and Snow (1978) typology "has generated a comparatively large amount of interest, investigation and support" (Conant, Mokwa & Varadarajan, 1990, pp. 365).

Table 5.1 Typologies and Taxonomies of Business-Level Generic Strategies

Author(s)	Typologies / Taxonomies	Characteristics
Buzzell, Gale & Sultan (1975)	(1) Building	(1) Improving market share by introducing new products and increasing marketing efforts
	(2) Holding	(2) Maintaining existing level of market share
	(3) Harvesting	(3) Achieving high short-term earnings and cash flow by permitting market share to decline
Utterback & Abernathy (1975)	(1) Performance maximising	(1) Emphasis in product and/or service performance; technology, and product R&D emphasised
	(2) Sales maximising	(2) Marketing emphasis to increase total sales and market share of firm
	(3) Cost minimising	(3) Emphasis placed on process technology/R&D to decrease total cost of production
Hofer & Schendel (1978)	(1) Share increasing	(1) High investment to increase share of market
	(2) Growth	(2) Maintain position in expanding markets, investment at industry norms
	(3) Profit	(3) Investment at industry norms, cost controls to 'throw off cash'
	(4) Market concentration and asset reduction	(4) Realignment of resources to focused, smaller segments
	(5) Turnaround	(5) Improve strategic posture, may require investment
	(6) Liquidation	(6) Generate cash while withdrawing from market
Miles & Snow (1978)	(1) Defenders	(1) Organisations which have narrow product-market domains
	(2) Analysers	(2) Organisations which operate in two types of product-market domains, one relatively stable, the other changing
	(3) Prospectors	(3) Organisations which almost continually search for market opportunities, and they regularly experiment with potential responses to emerging environmental trends
	(4) Reactors	(4) Organisations in which top managers frequently perceive change and uncertainty occurring in their organisational environments but are unable to respond effectively
Vesper (1979)	(1) Multiplication	(1) Expansion of market share by multiplying present market structures
	(2) Monopolising	(2) Eliminate competition, establish barriers to entry, and control resources
	(3) Specialisation	(3) Specialise in products and/or production process
	(4) Liquidation	(4) Give up business and market position
Abell (1980)	(1) Dimensions of scope of offerings	(1) Scope of a business in terms of customers it serves, the customer functions it serves or the technologies it utilises
	(2) Extent of differentiation across product-market segments	(2) Extent to which the company differentiates its offering across segments like customer groups, customer functions and technologies
	(3) Degree of competitive differentiation	(3) Degree to which a company differentiates itself from its competitors.

Wissema, Van Der Pol & Messer (1980)	(1) Explosion	(1) Improve competitive position in short term
	(2) Expansion	(2) Improve competitive position in long term
	(3) Continuous growth	(3) Maintain position in expanding markets, normal investment
	(4) Slip	(4) Give up market share to generate cash in growing market
	(5) Consolidation	(5) Give up market share to generate cash in stable market
	(6) Contraction	(6) Liquidate assets and terminate market position
Porter (1980)	(1) Cost leadership	(1) Efficiency, experience curve policies, overhead control, and other cost reductions
	(2) Differentiation	(2) Creating uniqueness in product and/or service
	(3) Focus	(3) Focusing on specific buyer group, or market
Miles (1982)	(1) Domain defence	(1) Preservation of traditional product-market through (i) creation and control of vital information and (ii) lobbying and co-opting of influential elements of the institutional environment
	(2) Domain offence	(2) Improvement of economic performance in traditional product-market through (i) product innovation and (ii) market segmentation
Galbraith & Schendel (1983)	Strategy types for consumer products:	
	(1) Harvest	(1) Strategy of disinvestment. Firms using this strategy type show a clear and consistent effort to harvest the business by their actions
	(2) Builder	(2) Strategies of firms with strong commitments to their products, promotion and R&D. Builder strategies are used by firms attempting to rapidly expand sales and/or gain market share position.
	(3) Cashout	(3) Firms following this strategy may utilise advertising and promotion to inflate their product's perceived worth to command higher prices, higher margins and hence higher profits. Firms operating in declining markets may employ a form of promotional hype in order to extend the life of their product.
	(4) Niche or specialisation	(4) Firms follow a specialisation strategy emphasising high quality product or service characteristics. They give importance to R&D efforts and new product introductions.
	(5) Climber	(5) Firms display narrow product bases, low prices and inferior quality postures.
	(6) Continuity	(6) Corresponds to continuity or Status quo strategy.
Galbraith & Schendel (1983)	Strategy types for industrial products:	
	(1) Low commitment	(1) This is a strategy of low commitment. This strategy type coincides with the harvest strategy type for consumer products.
	(2) Growth	(2) A growth strategy for firms with a strong commitment to their products. Investment is very high and there is a strong commitment to expand market position.
	(3) Maintenance	(3) This is a hybrid strategy combining the characteristics of a continuity strategy with those of a cost reduction strategy.

	(4) Niche or specialisation	(4) Specialisation strategy similar to that of consumer goods organisations. Superior quality posture, high pricing policies and narrow product line with only marginal emphasis on promotional activities are some of the characteristics of this strategy.
Herbert & Deresky (1987)	(1) Develop	(1) The basic strategy is to grow through locating and exploiting new product and market opportunities.
	(2) Stabilise	(2) The basic strategy is to maintain its competitive position through efficient asset utilisation and/or market segmentation.
	(3) Turnaround	(3) The basic strategy is to arrest and reverse the declining fortunes of the business as quickly as possible.
	(4) Harvest	(4) The basic strategy is to disinvest while retaining interim operational viability in order to generate at least minimum returns toward financial target such as cash flow or ROA and to attract buyers.
Douglas & Rhee (1989)	(1) Broad-liner	(1) Focus on high product quality and consistent with their broad market scope/product quality strategy; these types of organisations have high levels of market share and ROI.
	(2) Innovator	(2) They have extremely high proportion of new products in their product line and they emphasise innovativeness rather than marketing effort.
	(3) Integrated Marketer	(3) Exhibit some characteristics of broad-liner like broad market scope and above average quality. They also exhibit high customer concentration and a high degree of vertical integration.
	(4) Low Quality	(4) Low product quality, narrow market scope and have below average market share.
	(5) Nicher	(5) Adopt a highly focused market niche strategy and target a small number of highly concentrated customers. They focus on high product quality and target a premium high quality segment.
	(6) Synergist	(6) They have a relatively narrow market scope, but product quality and percentage of new products were below average.

Adapted from Galbriath & Schendel (1983)

However the literature contends that Porter's (1980) strategy framework has "spurred the most theoretical refinement and empirical analysis" (Dess et al 1995, pp. 375).This framework suggests that organisations adopt three potentially successful generic strategic approaches namely cost-related, differentiation and focus strategies for outperforming other firms in an industry. Hence in this study Porter's (1980) typology was used to operationalise business-level strategy.

5.3.1 Operationalisations of Strategy Typologies

According to Snow & Hambrick (1980) there are four different approaches for operationalising and measuring business level strategies namely (i) investigator inference (ii) self-typing (iii) external assessment and (iv) objective indicators. In the investigator inference approach, the researcher conducts interviews with the managers of the organisation and uses all the available information about the organisation contained in annual reports, government documents and press releases and assesses the organisation's strategy. This information is processed using a typological framework and the strategy of the organisation is identified.

In the self-typing approach, senior managers of the organisation are asked to characterise the organisation's strategies. According to Conant, Mokwa & Varadarajan (1990) there could be two types of self-typing. In the normal self-typing approach, respondents are asked to classify their organisation as a particular strategic type based on paragraph descriptions of various strategy typologies explained earlier. The other one is the self-typing approach complemented by investigator-specified decision rules. In this approach, the extent to which a firm's strategy is conformed to a particular strategic type is assessed using multi-item Likert-type scales intended to measure each of the strategic types in a particular typology.

In the external assessment approach, the self-typing measures of strategy is confirmed by obtaining the ratings of individuals external to the organisation like competitors, consultants, industry analysts and expert panels. While using objective indicators, there is no reliance on the perceptions of either the managers of the organisation or external individuals. Instead the objective indicators approach uses quantifiable published data like the product-market data.

5.4 Literature Review

In order to examine the operationalisations of business-level strategy and its relationship with other strategic variables a systematic literature review of the papers published in leading academic journals was conducted. The contents pages of the following journals were thoroughly searched to identify the articles in which business-level strategy was operationalised:

Strategic Management Journal;
Academy of Management Journal;
Academy of Management Review;
Journal of Management;
Journal of Management Studies;
Long Range Planning; and
British Journal of Management.

Only those studies which have operationalised business-level strategy using the Miles and Snow typology and Porter's typology were selected for the literature review. The electronic databases namely Business Source Complete, JSTOR and Emerald were also searched in the title, author supplied key words and abstract using the key words like 'business-level strategy', 'strategy', 'porter' and 'Miles and Snow'. Following the guidelines provided by Podsakoff and Dalton (1987) the following details in the papers

were examined: (i) Aim(s) of the study, (ii) Type of organisations, (iii) Sample size, (iv) Respondents, (v) Data collection method, (vi) Primary location of data collection, (vii) Basic approach for measurement of strategy, (viii) Constructs used to operationalise strategy, (ix) Validity and Reliability of the measures, (x) Dependent variable(s), (xi) Type of Analysis and (xii) Results. The searches generated a large number of papers of which thirty five were chosen for the systematic literature review. In twenty one out of these thirty five papers, business-level strategy was operationalised using Porter's typology and in the remaining fourteen papers business-level strategy was operationalised using Miles and Snow typology. The full literature review is presented in Appendix B. The main findings from the literature review are presented in the following sections.

5.4.1 Aim(s) of the Studies

Most of the studies examined the nature of relationship between business-level strategy and organisational performance. However some of the studies also examined the role of environment in the relationship between strategy and performance (e.g. Prescott, 1986; Kotha & Nair, 1995). Some of the studies like Miller (1987) and Jennings and Seaman (1994) examined how organisational structure affects this relationship.

5.4.2 Type of Organisations

While most of the studies focussed on either manufacturing or service organisations, a few studies examined both manufacturing and service organisations together. There was only one study that focussed on online companies. The number of studies focusing on manufacturing and service sectors are shown in Table 5.2.

Table 5.2: Number of Studies Focusing on Different Sectors

Industry Sector	Number of Studies
Manufacturing	11
Service	12
Both Manufacturing and Service	7
Others	2
Not Specified	3
Total	35

Out of the eleven studies which focused on manufacturing sector, eight studies operationalised business-level strategy on the basis of Porter's typology. However eight out of twelve studies which were focused on the service sector operationalised strategy using the Miles and Snow typology. The number of studies focusing on single industry and different industries among the studies conducted on manufacturing and services organisations are shown in Table 5.3.

Table 5.3: Studies Focusing on Single Industry and Different Industries

Manufacturing Firms		Service Firms	
Single Industry	Different Industries	Single Industry	Different Industries
5	6	10	2

Most of the studies which focused on service organisations studied firms belonging to a single industry. This finding is consistent with the analysis of the literature review in section 4.2.1.

5.4.3 Sample Size

The sample sizes used in the studies are shown in Table 5.4.

Table 5.4: Sample Size used

Range	Number of Studies
≤50	3
Between 51 and 100	9
Between 101 and 150	10
Between 151 and 200	3
Above 200	10
Total	35

In twelve out of thirty five studies the sample size used was below 100. Hence both academics and practitioners need to interpret the findings of these studies with caution. However, in the remaining twenty three studies the sample size is above 100 and in ten of them it is above 200.

5.4.4 Data Collection Method, Respondents and Location of Data Collection

In twenty three studies a postal survey was used to collect data, but in two of those studies interviews were also used along with the postal surveys. In four studies data was collected through personal interviews and telephone interviews and in the remaining eight studies secondary data was used. Either CEOs or senior managers were the respondents in twenty seven studies in which primary data was collected. In seventeen out of thirty five studies the primary location of data collection was United States. In four studies data was collected from two countries. There was only one study which was focused on the UK firms.

5.4.5 Basic Approach and Constructs used in Strategy Measurement

The different approaches for operationalising business-level strategies namely investigator inference, self-typing, external assessment and objective indicators were

explained in section 5.3.1. The approaches used to operationalise business-level strategies in the studies and the constructs used to measure strategies are summarised in Tables B.1b and B.2b in Appendix B. Table B.1b contains the constructs used to operationalise Porter's typology and Table B.2b contains the constructs used to operationalise Miles & Snow typology. As shown in these tables, in many studies more than one approach has been used to operationalise business-level strategy. The number of times each approach has been used in the studies is shown in Table 5.5.

Table 5.5 Approaches used in the Studies

Strategy Measurement Approach	No. of Times Used
Self-typing	7
Self-typing complemented by investigator-specified decision rules	23
External Assessment	7
Objective Indicators	9
Investigator Inference	0

Table 5.5 shows that self-typing complemented by investigator-specified decision rules has been used twenty three times. Self-typing using paragraph descriptions of strategies has been used only once while operationalising strategies using Porter's typology. However it has been used six times in the studies based on the Miles and Snow typology. Investigator inference has not been used at all in the thirty five studies examined.

There has been a lack of consistency in the use of constructs for measuring strategies in the studies belonging to both the groups (Porter's and Miles and Snow). While the paragraph descriptions used to describe the strategies proposed by Miles and Snow (1978) in the studies has been consistent, the constructs used in the self-typing

complemented by investigator-specified decision rules approach in both the categories has been inconsistent.

For example Kotha and Nair (1995) had measured differentiation strategy using the advertising intensity construct, Homburg, Krohmer and Workman Jr. (1999) used constructs namely creating customer value, premium product or brand image and high prices to measure differentiation strategy. While cost-related strategy was measured using the manufacturing costs and prices construct by Lee and Miller (1996), it was measured by Chan and Wong (1999) in terms of availability of surplus funding, back-up by the parent / holding company and low financing costs. Such inconsistency in measuring strategy is visible in the studies which have operationalised strategy using Miles and Snow typology. While Ramaswamy, Thomas and Litschert (1994) measured prospector strategy in airline industry using the constructs namely service expenditure, first class service, service emphasis and promotion expenditure, Moore (2005) operationalised it using innovative trading practices and entry into new markets. Similarly defender strategy was operationalised by Ramaswamy, Thomas and Litschert (1994) in terms of operational expenditure, schedule completion rate and revenue load factor, Moore (2005) assessed it using constructs such as maintaining a safe niche, sticking to the existing trading practices and giving emphasis to improving current ways of trading rather than developing new methods.

The examples cited above illustrates the inconsistency in using the constructs while measuring strategy and this could be a serious drawback of the studies. In order to overcome this problem the constructs chosen to measure business-level strategy in this study were reviewed by a panel of strategy scholars. The changes suggested by them

have been incorporated in the measurement scale. The process involved in validating the measurement scales is explained in chapter 7.

5.4.6 Validity and Reliability of the Measures

Generally the authors have assessed the content validity and face validity of the measures used. In most of the studies, measures used in previously published studies have been used and in some of the studies the measures have been evaluated by a panel of practitioners and academics. The methods used to ensure validity and reliability of the measures in the thirty five studies is shown in Table 5.6.

Table 5.6 Methods used to Ensure Validity and Reliability

Author(s)	Validity	Reliability
	Porter's Typology	
Dess & Davis (1984)	Previously published measures, Evaluation by a panel of experts	Not specified
Prescott (1986)	Previously published measures	Not specified
Miller (1987)	Previously published measures	Comparing the scores of multiple respondents
Lawless & Finch (1989)	Previously published measures	Not specified
Miller (1989)	Previously published measures, Evaluation by a panel of experts	Cronbach's Alpha
Jennings & Lumpkin (1992)	Evaluation by a panel of experts	Not specified
Roth & Morrison (1992)	Previously published measures	Not specified
Miller & Dess (1993)	Previously published measures	Not specified
Marlin, Lamont & Hoffman (1994)	Exploratory Factor Analysis	Cronbach's alpha
Kotha & Nair (1995)	Previously published measures	Not specified
Lee & Miller (1996)	Previously published measures	Not specified
Chan & Wong (1999)	Evaluation by a panel of experts, Exploratory Factor Analysis, Confirmatory Factor Analysis	Cronbach's alpha
Homburg, Krohmer & Workman, Jr. (1999)	Previously published measures	Cronbach's alpha, Composite Reliability
Chang, Yang, Cheng and Sheu (2003)	Previously published measures	Cronbach's alpha
Frambach, Prabhu and Verhallen (2003)	Previously published measures, Evaluation by a panel of experts, Confirmatory Factor Analysis	Cronbach's alpha
Chan, Shaffer & Snape (2004)	Previously published measures, Exploratory factor analysis	Cronbach's alpha

Jermias & Gani (2004)	Previously published measures, Pre-testing	Cronbach's alpha
Kim, Nam & Stimpert (2004)	Previously published measures	Cronbach's alpha
Auzair & Langfield-Smith (2005)	Previously published measures, Evaluation by a panel of experts	Cronbach's alpha
Ge & Ding (2005)	Previously published measures, Confirmatory Factor Analysis	Cronbach's alpha
Allen, Helms, Takeda, White and White (2006)	Previously published measures, Double translation	Cronbach's alpha
	Miles and Snow Typology	
Hambrick (1982)	Convergence between two measures	Coefficient of concordance
Hambrick (1983)	Consistency with conceptual definitions	Not specified
Conant, Mokwa & Varadarajan (1990)	Evaluation by a panel of experts	Test-retest procedure
Beekun & Ginn (1993)	Previously published measures	Multiple methods of measurement
Parnell & Wright (1993)	Previously published measures	Not specified
James & Hatten (1994)	Previously published measures	Not specified
Jennings & Seaman (1994)	Previously published measures	Comparing the scores of multiple respondents
Ramaswamy, Thomas & Litschert (1994)	Convergence between two measures	Not specified
Parnell (1997)	Previously published measures, Convergence between two measures	Comparing the scores of multiple respondents
Borch, Huse & Senneseth (1999)	Not specified	Test-retest procedure
Hoque (2004)	Previously published measures	Not specified
Desarbo, Di Benedetto, Song and Sinha (2005)	Previously published measures, Double translation	Cronbach's alpha
Moore (2005)	Previously published measures, Pre-testing	Cronbach's alpha
Andrews, Boyne & Walker (2006)	Pre-testing	Not specified

Exploratory factor analysis has been used in some of the studies to find out whether the variables have been loaded properly on the constructs and this has also been used as a test of validity. However some of the studies have used confirmatory factor analysis to ensure convergent validity and discriminant validity. In the majority of studies Cronbach's alpha has been used to assess reliability. In very few studies the composite reliability (Fornell and Larcker, 1981) of the measures has been assessed. However in

studies like Kotha & Nair (1995) and Hoque (2004) the procedure for assessing reliability has not been specified.

5.4.7 Dependent Variable and Analytical Methods

Organisational performance has been used as a dependent variable in twenty five studies. The dependence relationships between independent variables like strategic types and the dependent variables have been examined using analytical techniques like regression ANOVA etc. The number of times each analytical technique has been used in these thirty five studies is shown in Table 5.7.

Table 5.7: Analytical Techniques used

Analytical Technique	No. of Times used
Correlation Analysis	13
Regression Analysis	13
ANOVA	13
ANCOVA	1
MANOVA	4
MANCOVA	1
Discriminant Analysis	2
Three-stage Least Squares	1
t-test	2
Duncan Grouping Test	1
Chi-Square Test	4
Mann-Whitney Test	1
Turkey-Kramer Pairwise Comparisons	1
Network Analysis	1
Z-test	1
Sign Test (Nonparametric)	1
NORMCLUS	1
Structural Equation Modelling	1

As shown in Table 5.7, regression analysis, correlation analysis and ANOVA are the three most widely used analytical techniques in the studies. Cluster analysis has been used in some of the studies to classify the organisations in the sample into different groups mainly on the basis of their strategic orientations. Most of the studies have examined bivariate relationships. Structural equation modelling technique was used only once. In this study structural equation modelling technique has been used to examine causal multivariate relationships.

5.4.8 Results of the Studies

The main findings of the principal studies examining the relationship between strategic types and organisational performance are summarised in Table 5.8. This includes papers included in the systematic literature review and some other relevant papers which have examined the relationship between business-level strategy and performance.

Table 5.8 Results of the Studies

Author(s)	Findings
Porter's Typology	
Dess & Davis (1984)	Organisations adopting one of the strategies perform better than stuck-in-the-middle companies
Karnani (1984)	Organisations adopting either a cost-related or differentiation strategy were able to increase their market share and profitability
Prescott (1986)	Environment moderates the strength of relationship between strategy and performance
White (1986)	Firms following a cost-related strategy performed well when they had low autonomy and differentiators performed well in conditions of high autonomy
Lawless & Finch (1989)	The relationship between strategy and performance vary by environment
Wright, Kroll, Tu and Helms (1991)	Firms which adopted a cost-related strategy performed better than others competing with alternative strategies if the cost-leaders were able to achieve a lower cost position than others. Similarly the performances of differentiators were better than other firms following alternative strategies if they exhibited superior differentiation characteristics than others. Firms which employed integrated strategies by combining cost-related and differentiation strategies outperformed other firms

O'Farrell, Hitchens & Moffat (1992)	Among service firms, those adopting a differentiation strategy performed better than the ones which are stuck in the middle
Parker & Helms (1992)	The performance of firms pursuing mixed strategies in the textile mill products industry was almost on a par with firms pursuing a single strategy
Miller & Dess (1993)	Performance across strategic types vary significantly
Cronshaw, Davis & Kay (1994)	Sainsbury's in the UK uses both cost-related and differentiation strategies and they are able to perform well in the market by using this integrated strategy
Marlin, Lamont & Hoffman (1994)	Performance in maximum and differentiated choice situations was greater than performance in minimum and incremental choice situations
James & Ken (1995)	Those airlines which were pursuing one of the three generic strategies enjoy better competitive positions in the industry and superior profitability
Kotha & Nair (1995)	Strategy and environment significantly influence firm profitability
Lee & Miller (1996)	The strategy-environment match is positively associated with performance
Kumar, Subramanian & Yauger (1997)	The hospitals pursuing focussed cost-related and focussed differentiation strategies performed well. However those hospitals using combination strategies by combining cost-related and differentiation strategies performed poorly
Chan & Wong (1999)	Banks adopting more than one strategy outperform others which follow only one strategy
Smith & Reece (1999)	A business-strategy focussed on customer service indirectly affected performance through its significant effect on productivity
Huang (2001)	No significant difference in the performance of stuck-in-the-middle firms and firms pursuing innovation and cost-related strategies. Firms following an innovation strategy outperformed firms following cost-related strategy
Kumar, Subramanian & Strandholm (2002)	Differentiators had stronger market orientation than the firms following cost-related strategies and market orientation had a more positive impact on performance of differentiators than the firms using cost-related strategies
Powers & Hahn (2004)	Banks pursuing a cost-related strategy performed better than the ones which were stuck-in-the-middle and the ones which used either a differentiation strategy or a focus strategy did not perform better than stuck-in-the-middle banks
Kim, Nam & Stimpert (2004)	Firms pursuing cost-related strategy performed at the lowest level and firms combining cost-related and differentiation strategies performed at the highest level
Koo, Koh & Nam (2004)	Differentiation strategy was associated with superior performance in on-line firms and focus strategy was correlated with good performance in click-and-mortar firms
Ge & Ding (2005)	Customer orientation had the strongest relationship with business-level strategy and performance

Torgovicky et al (2005)	Among ambulatory health care service providers in Israel, those firms which adopted either a differentiation strategy or a focus strategy resulted in superior organisational performance than stuck-in-the-middle companies
Miles and Snow Typology	
Hambrick (1983)	Environment had a significant influence in the relationship between strategic types and performance
Conant, Mokwa & Varadarajan (1990)	Marketing competencies of prospectors were superior to those of analysers, defenders and reactors. But the prospectors, analysers and defenders performed equally well and outperformed reactors.
Parnell & Wright (1993)	In terms of revenue growth Prospectors outperformed others, but in terms of profitability Analysers outperformed others. Reactors had the lowest level of performance. Integrated strategies were useful for sustaining competitive advantage.
James & Hatten (1994)	Strategic type had a small effect on performance.
Ramaswamy, Thomas & Litschert (1994)	Defenders performed better than Prospectors
Parnell (1997)	Reactors had the lowest and balancers had the highest level of performance in terms of ROA.
Hoque (2004)	There was a significant relationship between management's strategic choice and performance
Moore (2005)	Prospectors, defenders and analysers performed consistently while reactors performed inconsistently. Prospectors had a stronger positive relationship with performance.
Andrews, Boyne & Walker (2006)	There was a positive relationship between Prospector strategy and performance and a negative relationship between Reactor strategy and performance.
O'Regan & Ghobadian (2006)	Among manufacturing SMEs, Prospectors perform better than Defenders

The results of the thirty four studies analysed in Table 5.8 indicate that some strategic types have performed better than others and hence strategy typologies can be effectively used to explain performance heterogeneity in organisations. The results also indicate that the environment has a significant role in the relationship between business-level strategy and performance. Another significant finding is that stuck-in-the-middle companies that did not have a dominant strategic orientation and Reactors (Miles and Snow, 1978) had the lowest level of performance.

The numbers of studies which found support and which did not find support for the views such as (i) firms adopting a dominant strategic orientation perform better than

stuck-in-the-middle firms, (ii) firms adopting integrated strategies perform better than those which adopt only one particular strategy and (iii) environment influences the relationship between business-level strategy and performance are shown in Table 5.9.

Table 5.9: Strategy and Performance

Findings	Studies which supported this finding	Studies which did not support this finding
Firms adopting a dominant strategic orientation perform better than stuck-in-the-middle firms	10 1 – Partially supported	1
Firms adopting integrated strategies perform better than those which adopt only one particular strategy	4	2
Environment influences the relationship between business-level strategy and performance	5	0

According to the findings of the studies shown in Table 5.9, there is strong evidence to support the views that firms adopting a dominant strategic orientation perform better than those firms which do not have one (stuck-in-the-middle firms) and environment influences the relationship between business-level strategy and performance.

5.5 Development of Hypotheses

The key findings from the literature review are summarised below:

- There is a need to conduct more studies on manufacturing organisations by clearly defining the industry sectors;
- Only a limited number of studies examining UK based organisations have been published in academic journals;
- Self-typing complemented by investigator-specified decision rules has been the most widely used approach for measuring business-level strategy;

- There has been a lack of consistency in the use of constructs for measuring business-level strategy;
- In order to ensure content validity, measures from previously published studies have been used in the studies;
- In order to assess reliability, Cronbach's alpha has been widely used in the studies;
- A number of studies have examined the relationship between strategic types and organisational performance;
- Regression analysis, correlation analysis and ANOVA are the three most widely used analytical techniques in the studies which have operationalised business-level strategies;
- Strategy typologies can be effectively used to explain performance heterogeneity in organisations;
- Environment has a significant role in the relationship between business-level strategy and performance; and
- Organisations which do not have a dominant strategic orientation (stuck-in-the-middle companies) and Reactors (Miles and Snow, 1978) have been the lowest level of performers.

One of the significant findings of this literature review is that strategy typologies are an effective tool for explaining performance heterogeneity in organisations. The literature review also highlights the importance of adopting a particular strategic orientation while competing with others in its chosen domain of operations. However only five studies (O'Farrell, Hitchens & Moffat, 1992; Parker & Helms, 1992; Cronshaw, Davis & Kay, 1994; Andrews, Boyne & Walker, 2006 and O'Regan & Ghobadian, 2006) have examined the relationship between business-level strategy and performance among UK

based organisations. Out of these five studies, only O'Regan and Ghobadian (2006) have focussed on manufacturing organisations belonging to the engineering sectors.

From the above discussion it becomes obvious that studies examining the relationship between business-level strategies and performance have not been able to provide conclusive evidence about the nature of relationship between these variables. By and large the findings indicate that organisations adhering to one of the three strategic types perform better than firms without a dominant strategic orientation (stuck-in-the-middle companies). Based on the literature review the following hypotheses have been formulated to assess the nature of relationship between business-level strategy and performance:

H2a: Organisations having a clear business-level strategy by adopting one of the strategies namely cost-related, differentiation or integrated strategies will perform better than those organisations which are stuck-in-the-middle.

H2b: Organisations following integrated strategies will perform better than those pursuing either a cost-related strategy or a differentiation strategy.

The studies conducted by Prescott (1986), Lawless & Finch (1989), Kotha & Nair (1995), Lee & Miller (1996) and Hambrick (1983) found that the environment had a significant impact in the relationship between business-level strategy and performance. Environment has been operationalised in this study using three constructs namely dynamism, hostility and heterogeneity (Miller, 1987). However after the data reduction process which is explained in chapter 9, two measures of environment namely dynamism and hostility have been identified and they are used to test the following hypothesis:

H2c: Environmental dynamism and hostility moderate the relationship between business-level strategy and organisational performance.

A few studies have examined the impact of organisational structure on the relationship between strategy and performance. Jennings and Seaman (1994) in a study conducted among organisations belonging to the savings and loan industry compared the performance of firms belonging to the following two groups: (i) the organisations with a high-level of adaptation to environmental changes having the best prospector strategy-organic structure fit and (ii) firms with a low-level of adaptation having the best defender strategy-mechanistic structure fit. It was found that there was no significant difference in the performance between these groups. The attributes of mechanistic structures include centralised decision making, strict adherence to formal rules and procedures and carefully constructed reporting relationships whereas organic structures facilitate decentralised decision making, organisational adaptiveness and flexibility and de-emphasis on formal rules and procedures (Slevin and Covin, 1997). According to Hutt, Reingen and Ronchetto (1988) organic structures are more likely to promote autonomous strategic initiatives than mechanistic structures. Autonomous strategic initiatives are necessary in organisations employing either a differentiation strategy or an integrated strategy. This study will examine the nature of relationship between strategy, structure and performance by testing the following hypothesis:

H2d: Organisational structure moderates the relationship between business-level strategy and organisational performance.

The conceptual model shown in Fig 1.4 in chapter 1 contends that strategic planning has a direct impact on the business-level strategy of an organisation. However the literature review indicated that previously published studies have not examined the relationship between these variables. In this study this relationship will be examined by testing the following hypothesis:

H3: Organisations placing a strong emphasis on strategic planning will develop a clear business-level strategy by adopting one of the strategies namely cost-related, differentiation or integrated strategies.

By testing these five hypotheses this study aims to ascertain the nature of relationship between strategic types and performance and the moderating effect of environment and structure in this relationship. By testing hypothesis H3, the relationship between strategic planning and the business-level strategy of organisations can be ascertained.

5.6 Summary

Business-level generic strategies can be broadly organised into two groups namely typologies and taxonomies. Typologies are theoretically derived and taxonomies are empirically derived. One of the main findings of the systematic literature review was that strategy typologies can be effectively used to explain performance heterogeneity among organisations. The review identified the need for conducting more studies on manufacturing organisations. It was also found that there was a lack of consistency in the use of constructs. Two hypotheses examining the relationship between strategic types and performance and another two examining the moderating effects of environment and structure in the relationship between strategy and performance have been posited. Another hypothesis exploring the relationship between strategic planning and business-level strategy has been developed in order to examine the relationship between these two variables.

Chapter 6: Strategy Implementation

6.1 Preamble

The main objective of this chapter is to formulate hypotheses examining the relationship between strategy implementation and organisational performance by examining the strategy implementation literature. The importance of strategy implementation is highlighted by emphasising its critical link between strategy formulation and organisational performance. The challenges and problems in implementing strategies and the key attributes of successful strategy implementation suggested by various studies have been identified through a comprehensive literature review. A parsimonious set of variables to assess strategy implementation suggested by one of the studies has been highlighted because this is an important contribution to the literature. The findings of the previous studies have been examined and three hypotheses examining the relationship between strategy implementation and performance and the other two strategy formulation variables namely strategic planning and business-level strategy have been posited.

6.2 Challenges in Implementing Strategies

Effective organisation design directed toward strategy implementation is a potential contributor to performance heterogeneity (Galbraith & Kazanjian, 1986). Strategy implementation is the critical link between formulation of strategies and superior organisational performance (Noble and Mokwa, 1999). Nutt (1999) studied strategic decisions in organisations located in the USA and Canada and concluded that half of the strategic decisions failed to attain their initial objectives mainly because of the problems during strategy implementation process. Even though the stream of research which deals

with strategic decision making is well developed, there are only few empirical studies on strategy implementation. Some of the main problems for effectively implementing strategies identified in the literature are summarised in Table 6.1.

Table 6.1: Problems in Implementing Strategies

Author(s)	Problems of Strategy Implementation
Alexander (1985)	1. Longer time than expected, 2. problems during implementation which have not been identified earlier, 3. ineffective coordination of implementation activities, 4. distraction of attention by competing activities, 5. insufficient capabilities, 6. inadequate training, 7. uncontrollable external factors, 8. inadequate leadership and direction, 9. insufficient definition of implementation tasks, 10. inadequate information systems for monitoring, 11. key people leaving the organisation, 12. lack of understanding of overall goals by employees, 13. unclear definitions of responsibility changes, 14. key formulators did not actively participate in implementation, 15. the problems which require top management involvement were not communicated early enough
Wernham (1985)	Goals and strategies pursued by the top management were not clearly perceived by the unit managers based at the periphery
Wessel (1993)	1. Too many and conflicting priorities, 2. inadequate functioning of the top management team, 3. top down management style, 4. interfunctional conflicts, 5. poor vertical communication, 6. inadequate management development
Al-Ghamdi (1998)	1. Longer time for implementation than expected, 2. major problems during implementation which had not been anticipated, 3. ineffective coordination of implementation activities, 4. distraction of attention by competing activities, 5. lack of proper definition of key implementation tasks and activities, 6. inadequate information systems used to monitor implementation
Meldrum and Atkinson (1998)	1. Flawed vision of senior managers and 2. myopic view about the management of operational activities
Beer & Eisenstat (2000)	1. Ineffective senior management team, 2. Unclear strategies and conflicting priorities, 3. Top-down or laissez-faire senior management style, 4. Poor vertical communication, 5. Poor coordination across functions, businesses or borders and 6. Inadequate down-the-line leadership skills and development
Freedman (2003)	1. Strategic inertia, 2. Lack of stakeholder commitment, 3. Strategic drift, 4. Strategic dilution, 5. Strategic isolation, 6. Failure to understand progress, 7. Initiative fatigue, 8. Impatience and 9. Not celebrating success.
Shah (2005)	1. Inadequate management skills, 2. Poor comprehension of roles, 3. Inadequate leadership and direction provided by departmental managers, 4. Ill-defined key implementation tasks and activities, 5. Lack of employee commitment, 6. Inadequate training and instructions given to lower-level employees, 7. Insufficient coordination across departmental boundaries, 8. Insufficient capabilities of employees, 9. Unclear lines of accountability, 10. Poor information systems and 11. Ineffective monitoring

The main problems of implementation identified from Table 6.1 can be summarised as follows 1. Longer time duration than expected, 2. Unanticipated problems, 3. Ineffective coordination, 4. Distraction, 5. Inadequate preparation, 6. External factors, 7. Leadership problems, 8. Key people leaving the organisation, 9. Lack of clarity in objectives and 10. Poor communication, 11. Conflicting priorities, 12. Ineffective management, 13. Interfunctional conflicts, 14. Unclear strategies, 15. Lack of stakeholder commitment, 16. Failure to understand progress, 17. Lack of employee commitment and 18. Inadequate resources.

6.3 Successful Strategy Implementation

Some authors have tried to identify the attributes / processes of successful implementation and they are summarised in Table 6.2.

Table 6.2 Attributes / Processes of Successful Strategy Implementation

Author(s)	Attributes / Processes
Pinto & Slevin (1987)	1. Clarity of direction, 2. Resourcing and 3. specification of action and communication
Walker & Ruekert (1987)	1. The degree to which business units' managers have autonomy, 2. The degree to which a unit shares functional programs and facilities with other units for achieving synergies and 3. The manner in which corporate-level mangers evaluate and reward the performance of business unit's managers.
Hambrick & Cannella, Jr. (1989)	1. Obtain broad-based inputs and participation at the formulation stage, 2. Assess the obstacles to implementation, 3. Make early use of the levers of implementation levers namely resource commitments, subunit policies and programs, structure, people and rewards, 4. Make the strategy acceptable to everyone in the organisation and 5. Steadily, fine tune, adjust and respond as events and trends arise.
Bryson & Bromiley (1993)	1. Having experienced planning staff, 2. giving the implementation priority and 3. ensuring that those affected are aware of what is being done
Lingle & Schiemann (1994)	1. Meeting customer expectations, 2. Deployment of human resources, 3. Meeting investor expectations, 4. Efficiently operating the enterprise, 5. Adapting to changing requirements both within and outside the organisation and 6. Dealing with environmental or regulatory forces

Schmidt (1994)	1. Assessing organisational capabilities needed to move from what the company is to what it needs to become, 2. Determining what work processes would be required to implement the strategy and design current work processes to fit those requirements, 3. Identify what information needs the work processes generate and determine what information systems and databases would be required to meet those needs and 4. Determine which organisational structure would best support those work processes.
Al-Ghamdi (1998)	Communication, management support and good information system are the key factors affecting the success of strategy implementation.
Nutt (1998)	1. Intervention, 2. Participation, 3. Persuasion and 4. Edict
Noble & Mokwa (1999)	1. Fit with vision, 2. Importance, 3. Scope, 4. Championing, 5. Senior management support, 6. Buy-in, 7. Role involvement, 8. Role autonomy, 9. Role significance, 10. Organisational commitment, 11. Strategy commitment, 12. Role commitment and 13. Role performance
Beer & Eisenstat (2000)	1. A leadership style which learns from feedback 2. Clear strategy and clear priorities, 3. An effective top team having a general-management orientation, 4. Open vertical communication, 5. Effective coordination, 6. Down-the-line leadership
Dooley, Fryxell & Judge (2000)	1. Decision consensus and 2. Decision commitment
Michlitsch (2000)	High performing loyal employees are key to the success of strategy implementation
Freedman (2003)	1. Communicate the strategy, 2. Drive planning, 3. Align the organisation, 4. Reduce complexity and 5. Install an issue resolution system
Hickson, Miller and Wilson (2003)	Discussed in this section later on
Allio (2005)	1. Keep the strategy simple, 2. Establish a common language, 3. Delineate roles, responsibilities, timeframes, 4. Devise straightforward quantitative and qualitative metrices, 5. Balance short term with longer term, 6. Be precise, use action verbs, 7. Use a common format to enhance clarity and communication, 8. Meet regularly, but in structured, time-limited sessions, 9. Anchor implementation activities in the firm's financial infrastructure: budget, metrices, rewards and 10. Be prepared to consistently manage the implementation process.
Shah (2005)	1. Sound strategy, 2. Sufficient resources, 3. Management commitment and leadership, 4. Employee understanding and commitment, 5. Financial rewards and 6. Information systems

A synthesis of the attributes and processes shown in Table 6.2 resulted in the identification of the following attributes / processes which are key to the success of strategy implementation: 1. A leadership style with willingness to learn from feedback, 2. Clarity of objectives, 3. Sound strategy, 4. Fitness with vision, 5. Decision consensus,

6. Specifying the actions, 7. Communication, 8. Availability of resources and capabilities, 9. Giving priority, 10. Meeting the expectations of the stakeholders, 11. Adaptation to internal and external changes, 12. Structural facilitation, 13. Intervention, 14. Participation, 15. Financial rewards, 16. Coordination, 17. Effective coordination, 18. Autonomy for lower level managers, 19. Sharing of functional programs and facilities with other units for achieving synergies, 20. Support given by senior managers, 21. Acceptability, 22. Role involvement, 23. Role significance, 24. Organisational commitment of the employees, 25. Role performance, 26. Clear definition of individual responsibilities, 27. Effective use of analytical tools and 28. Using common format. Organisations need to focus on these attributes / processes in order to overcome the ten main problems identified earlier for effective strategy implementation.

The above list which contains the factors which affect the success of strategy implementation is very long and without having a parsimonious set of constructs it will not be possible to properly assess strategy implementation in empirical research. In this context the studies of Miller (1997) and Hickson, Miller and Wilson (2003) gain significance. Miller (1997) after studying eleven strategic decisions implemented by six organisations belonging to the manufacturing and service sectors, identified ten factors which were important for successfully implementing strategic decisions and they were 1. Backing, 2. Assessability, 3. Specificity, 4. Cultural receptivity, 5. Propitiousness, 6. Familiarity, 7. Priority, 8. Resource availability, 9. Structural facilitation and 10. Flexibility. This study also found that the factors which have the most significant influence on the success of strategy implementation were backing, assessability, specificity, cultural receptivity and propitiousness. Miller (1997) named this group of variables as realisers and the group consisting of the remaining five variables as

enablers which support the success of implementation without taking an active role in realising the success.

In a follow-on study Hickson, Miller and Wilson (2003) identified eight variables which have a significant impact on the success of strategy implementation and they grouped them into two categories which represent two distinct approaches to successfully managing strategy implementation namely the Experience-based approach and the Readiness-based approach. The variables representing the Experience-based approach were assessability, resourcing, familiarity, acceptability and specificity and the variables representing the Readiness-based approach were structural facilitation, priority and receptivity. This study suggested that organisations have two options to follow for implementing the strategies namely the Planned Option which was Experience-based and the Prioritised Option which was Readiness-based. The study posited that although following either of these options would enhance the performance of strategy implementation, the greatest chance for success was associated with a dual option. Organisations which choose neither of these options would be less successful in implementing strategies. This study is an important contribution to the strategic implementation literature because it provides a parsimonious set of variables which could be used to measure the success of strategy implementation.

6.4 Development of Hypotheses

The findings of previously published studies have been used as a basis for developing hypothesis in this study. In order to examine the findings of previous studies a comprehensive literature review was conducted and the studies involving strategy implementation were identified. The details such as location of data collection, industry sector and main findings are summarised in Table 6.3.

Table 6.3 Findings of the Studies Involving Strategy Implementation

Author(s)	Location of the study	Industry Sector	Findings
Wernham (1985)	United Kingdom	Telecommunications (British Telecom)	Goals and strategies pursued by the top management were not clearly perceived by the unit managers based at the periphery.
Skivington & Daft (1991)	United States	Integrated circuits, petroleum and health care firms	Strategy implementation is strongly related to the organisational framework consisting of structure and systems and the organisational processes consisting of interaction (information processing behaviour) and sanctions (use of power to provide support to new meanings and actions).
Kargar & Blumenthal (1994)	North Carolina, United States	Small commercial banks	The banks which had fewer problems during implementation were more successful than those which had more problems
Miller (1997)	United States	Public and private sector organisations belonging to both manufacturing and service sectors	Four factors namely backing, clear aims, planning and a conducive climate are crucial for the successful management of implementation.
Al-Ghamdi (1998)	Bradford area in the United Kingdom	Not specified	Communication, management support and good information system are the key factors affecting the success of strategy implementation.
Nutt (1998)	Not specified	A variety of organisations belonging to both manufacturing and sectors	The study identified four distinct approaches for strategy implementation namely intervention, participation, persuasion and edict. Intervention was found to be the most successful approach.
Nutt (1999)	United States, Canada	Medium to large organisations belonging to manufacturing and service sectors	Half the decisions in organisations fail because of the following reasons: 1. Managers imposing solutions, 2. Limiting the search for alternatives and 3. Using power to implement plans.

Dooley, Fryxell & Judge (2000)	South-eastern United States	Hospitals	Decisions consensus helps build decision commitment which has got a positive relationship with implementation success. Decision commitment slows down the implementation speed.
Okumus (2001)	United Kingdom	Hotels	The success of strategy implementation is dependent on strategy content, internal and external contexts and strategy process. Internal context plays a key role in implementation.
Aaltonen & Ikavalko (2002)	Not known	Service organisations	One of the main problems of strategy implementation was poor communication. A lack of understanding of strategy was one of the obstacles of strategy implementation.
Hickson, Miller and Wilson (2003)	Discussed in section 6.3		

The literature review suggests that only a few papers involving strategy implementation have been published in leading academic journals. Only a few studies (e.g. Hickson, Miller & Wilson, 2003) have examined the relationship between strategy implementation and organisational performance. It was also found that strategy implementation was not studied along with other strategic variables like strategic planning and business-level strategy in any of the studies. Hence the nature of relationships between these variables and the impact of strategy implementation on organisational performance is unclear.

As indicated earlier, the study conducted by Hickson, Miller & Wilson (2003) has made a significant contribution to the literature by providing a set of parsimonious variables which could be used to measure the success of strategy implementation. The constructs proposed by the authors have been used in this study. The two options for strategy implementation namely the planned option and prioritised option have been suggested

in this study. The following hypothesis has been posited to examine the relationship between strategy implementation and performance:

H4: The degree of planning of strategy implementation has a significant positive impact on organisational performance.

This study includes the two key components of the strategy formulation process namely strategic planning and business-level strategy. No other study has examined the relationships between these key strategic variables and strategic implementation. The following two hypotheses have been developed for examining these relationships:

H5a: Organisations which give a strong emphasis to strategic planning will also give a strong emphasis to the planning of strategy implementation.

H5b: Organisations having a clear strategy by adopting one of the business-level strategies namely cost-related, differentiation or integrated strategies will give more emphasis to the planning of strategy implementation than those organisations which are stuck-in-the-middle.

Since strategy implementation is the critical link between strategy formulation and organisational performance, the extent to which an organisation has been successful in implementing strategies will have a direct impact on organisational performance. This study aims to assess this relationship and the relationship between strategy implementation and the other key strategy formulation variables namely strategic planning and business-level strategy by testing the above three hypotheses.

6.5 Summary

A comprehensive literature review covering the studies involving strategy implementation identified the problems affecting strategy implementation and the

factors affecting the success of strategy implementation. It was found that only very few studies have examined strategy implementation and there is a need to conduct more studies in order to assess its relationship with organisational performance. None of the studies have examined the relationship between strategy implementation and other variables namely strategic planning and business-level strategy. By testing the three hypotheses formulated, it will be possible to ascertain the nature of relationship between these variables and hence this study will make a significant contribution to the literature. The main findings from phase II of the literature review are summarised in figure 6.1.

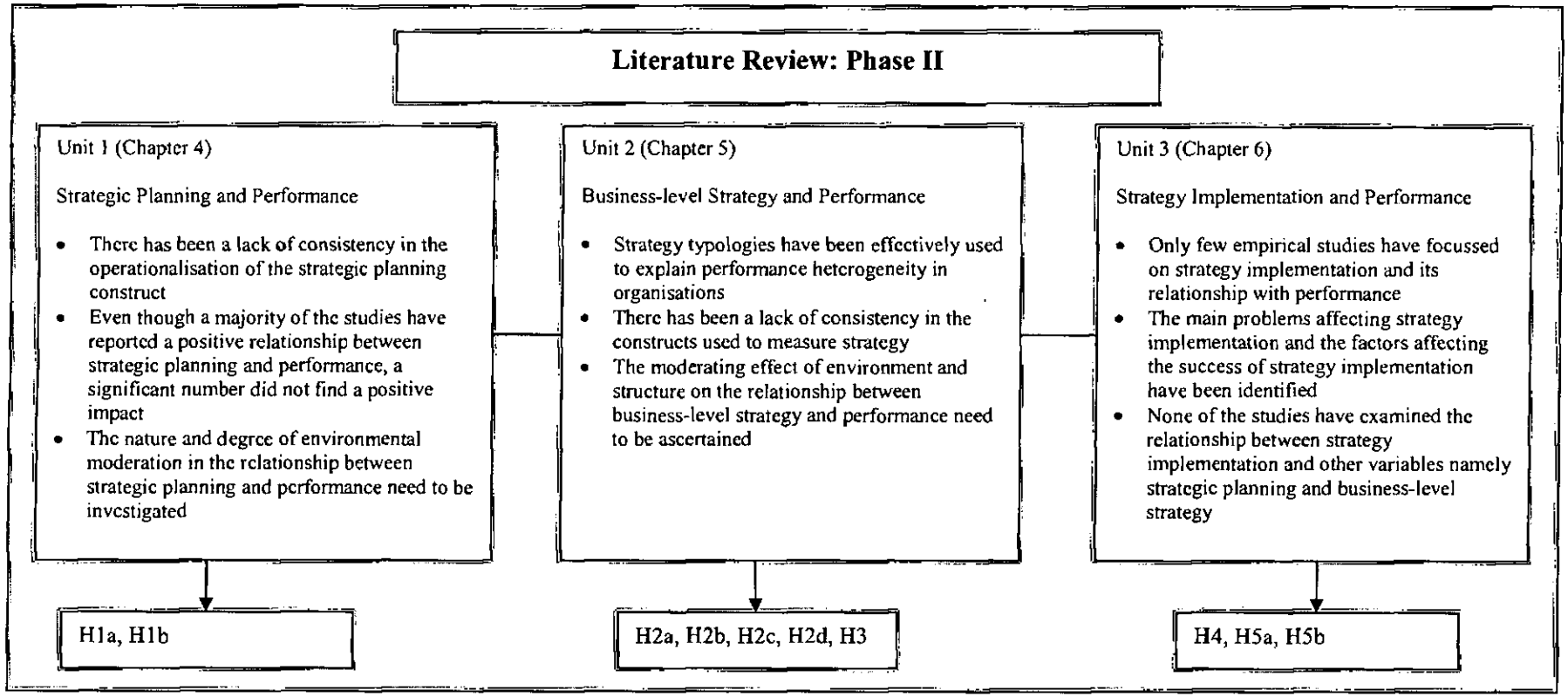

Fig 6.1: Main Findings from Phase II of the Literature Review

Part 2 – Research Methodology

Chapter 7: Research Methodology

7.1 Preamble

The objective of this chapter is to discuss some of the key methodological issues concerning this study and to specify the research design. Various aspects of the research design such as the constructs used in the study, development of the survey instrument, selection of sample, execution of the survey, data analyses techniques and procedure and assessment of the sample homogeneity and non-response bias are discussed.

7.2 Methodological Considerations

The basic approach followed in this study is that of theory testing through empirical research. A set of testable hypotheses have been formulated on the basis of theoretical underpinnings and the findings of previous studies. These hypotheses have been tested using survey data and conclusions have been derived.

Epistemological issues relate to the question of what is or what should be regarded as acceptable knowledge in a discipline (Bryman & Bell, 2003). This study takes a broadly post-positivistic position. Post-positivism has refined the views and beliefs of positivism, the view that advocates the application of the methods of the natural sciences to the study of social reality and beyond (Bryman & Bell, 2003). Post-positivism acknowledges that the theories, hypotheses, background knowledge and values of the researcher need to be taken account of and can influence what is observed (Reichardt and Rallis, 1994). According to post-positivism, a reality does exist but it can be known only imperfectly because of the researcher's limitations.

7.2.1 Research Strategy

The two types of research strategies commonly employed while conducting research are quantitative and qualitative strategies. This study involves the deduction of hypotheses from the existing theory and testing those hypotheses using primary data. It also operationalises the concepts used in this study such as strategic planning, business-level strategy and strategy implementation using measurable constructs. A simple random sample of manufacturing organisations was selected for this study and the findings are generalised. Because of the above reasons a quantitative research strategy is appropriate for this study. The hypothesised relationships between the variables are tested using appropriate statistical techniques in order to assess and model the relationships.

7.3 Research Design

A research design provides a framework for the collection and analysis of data. In this study the method of data collection and the procedure for data analysis have been pre-specified to a large extent. Data was collected through a postal survey using the survey instrument which was validated by a panel of strategy scholars. Responses were received from 124 manufacturing organisations and the respondents were CEOs. The data analysis relies on multivariate statistical methods. The constructs used in this study, the procedure followed for developing the survey instrument, selection of the sample, execution of the survey and the data analysis procedure are explained in the following sections.

7.3.1 The Constructs used in this Study

The conceptual model used in this study (see Fig 1.4 in chapter 1) includes strategic planning, business-level strategy, planning of strategy implementation, external environment, organisational structure and organisational performance. The constructs used to measure these elements of the model and the studies from which the measurement scales for these constructs were drawn are shown in Table 7.1.

Table 7.1 Constructs and Measurement Scales

Element of the Conceptual Model	Constructs used	Sources for measurement scales
Strategic Planning	Rationality of planning	Goll & Rashid (1997)
Business-level Strategy	Cost-related strategy, Differentiation strategy	Luo & Zhao (2004)
Strategy Implementation	Degree of emphasis given to planning while implementing strategies	Hickson, Miller & Wilson (2003)
External Environment	Dynamism, Hostility	Miller (1987)
Organisational Structure	Organic structure, Mechanistic structure	Parthasarthy & Sethi (1993)
Organisational Performance	Objective fulfilment, Relative Competitive Performance	Ramanujam, Venkatraman & Camillus (1988)

The scales used to measure these constructs are shown in Appendix G. The rationality of planning was measured using eight items indicating various aspects of planning and the respondents were asked to indicate the extent to which emphasis was given to these activities in the last five years. There were six items measuring the cost-related strategy and nine items measuring the differentiation strategy (Focus was excluded from the analysis because of the reasons indicated in section 8.4.1 in chapter 8). These items highlighted various competitive activities and the CEOs were asked to indicate the extent to which their firms focussed on these activities in comparison to their main

competitors in the last five years. In the section measuring strategy implementation, the respondents were asked to indicate their responses concerning the implementation of strategies in the last five years. The questionnaire contained scales to measure three environmental constructs namely dynamism, hostility and heterogeneity. However heterogeneity construct was not used for data analysis because of the reasons explained in section 8.4.2 in chapter 8. The respondents were asked to indicate the changes in their organisations' external environment in the last five years. Organisational structure was measured using eleven items. One end of the seven-point scale (1) was oriented towards a mechanistic structure and the other end (7) towards an organic structure. The CEOs were asked to indicate their assessment of the organisational structure during the last five years.

Traditional measures of performance widely used in empirical studies are primarily centred on financial indicators (Witcher & Chau, 2007). These measures do not take into consideration non-financial objectives of organisations. In this study organisational performance is measured using two constructs namely objective fulfilment and relative competitive performance. Objective fulfilment is defined as the extent to which the organisation has achieved its short-term and long-term performance objectives and minimised the problems. The CEOs were asked to indicate the extent to which their organisation has fulfilled their objectives in the last five years. Relative competitive performance is defined as the extent to which organisational performance has either improved or deteriorated in terms of sales, profit, market share, return on assets, return on equity, return on sales, current ratio, overall firm performance and competitive position. The respondents were asked to compare their performance in the last five years with their main competitors based on these nine factors. Prior empirical evidence (e.g. Hart & Banbury, 1994) indicates that there is a strong correlation between perceived

performance measures and hard measures. Hence the performance measures used in this study can be considered to be robust.

7.3.2 Development of the Survey Instrument

The process involved in the development of the survey instrument is depicted in figure 7.1.

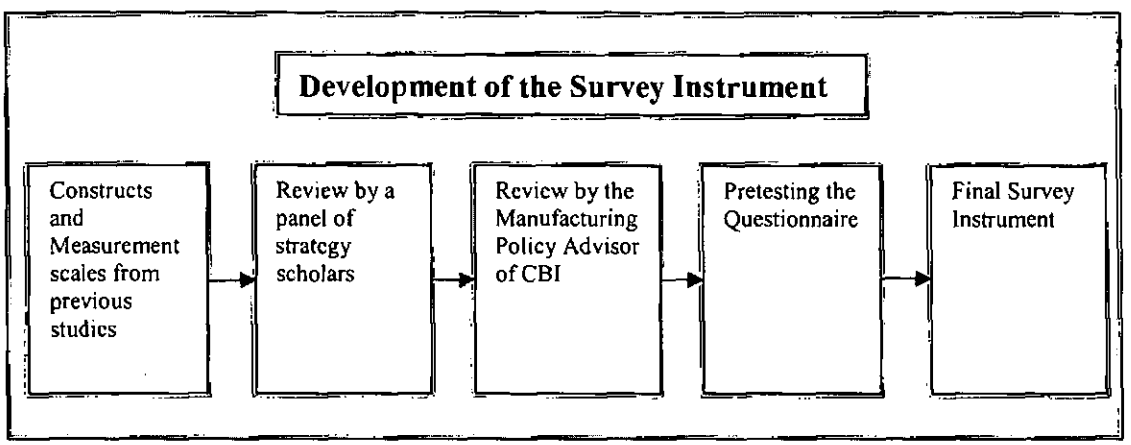

Fig 7.1: Development of the Survey Instrument

Following the common practice in business research (e.g. Cooper & Schindler, 2006); scales used in previous studies were used to measure the constructs. These measurement scales are shown in Table 7.1. Wherever necessary the wordings of the items were slightly modified in order to make them suitable to the context of the study. A draft version of the questionnaire was mailed to a panel of strategy scholars. The comments received from the strategy scholars are shown in Appendix C. Advice from the practitioner sector was also sought from the Manufacturing Policy Advisor of the Confederation of the British Industry. Based on their comments the questionnaire was further modified. The modified questionnaire was pretested by sending it to fifty Chief Executives belonging to the working population chosen for this study. A feedback form was attached to the questionnaire (shown in Appendix D). The Chief Executives were

requested to indicate the time taken to fill in the questionnaire and to comment on the following aspects in the feedback form:

- The relevance of the contents to their organisation and their principal industry;
- Whether they had any difficulty in understanding the meanings of the questions; and
- Ease in reading the questions.

They were also given the opportunity to forward suggestions for improving the questionnaire further. Altogether ten responses were received for this pilot survey and six respondents provided some suggestions for modifying the questionnaire. Based on the responses received from the Chief Executives the questionnaire was modified again. Through this process the content validity and face validity of the measures used in this study were assessed.

7.3.3 Selection of the Sample and Execution of the Survey

The sample of companies for the survey was selected from a leading commercial database. UK SIC (2003) codes have been used as the basis for selecting the sample. Companies having more than 50 employees belonging to Section – D Manufacturing, Subsections DJ, DK, DL and DM were included in the sample. These SIC codes represent the Electrical and Mechanical Engineering firms in the United Kingdom. Altogether there were 4511 companies in the sampling frame. The minimum sample size required for this study was calculated following the guidelines provided by Salant & Dillman (1994). The minimum sample sizes necessary for different population sizes at 95% confidence level and +/- 10% sampling error are shown in Table 7.2. The sample sizes shown in the table are based on the conservative assumption that the population is relatively varied (50/50 split). The numbers in the table under the heading sample size, refer to completed, usable questionnaires needed.

Table 7.2 Sample Size for the 95% Confidence Level

Population Size	Sample Size
100	49
250	70
500	81
750	85
1,000	88
2,500	93
5,000	94
10,000	95
25,000	96
50,000	96
100,000	96
1,000,000	96
100,000,000	96

Source: Salant & Dillman (1994)

A simple random sample of 700 organisations was generated from the population consisting of 4511 companies. Telephone calls were made to these 700 organisations to verify the names of the Chief Executives and the addresses of the organisations. Some of the organisations clearly indicated that they did not want to take part in a survey and they were removed from the sample. 8 firms had gone into administration and hence could not take part in the survey. 16 organisations were inactive and had to be excluded from the sample. Finally a sample consisting of 569 organisations was obtained.

Questionnaires were mailed to the Chief Executives of these 569 organisations with a covering letter (shown in Appendix E) and business reply envelopes. The survey instrument used in this study is shown in Appendix F. Salant & Dillman (1994) suggested sending a follow-up postcard to the members of the sample eight days after sending the questionnaire. However since a telephone call is more effective than a postcard, telephone calls were made to all the companies that had not responded eight days after receiving the questionnaires. Following Salant & Dillman (1994), three

weeks after the first mailing, questionnaires with covering letters and business reply envelopes were mailed again to the non-respondents. This data collection process resulted in 124 usable responses. Altogether there were 4511 companies in the population. According to Table 7.2, for a population size of 5000, the minimum sample size necessary at +/-10% sampling error is 94. In this study, 124 usable responses were received and it is above the minimum sample size specified. 11 questionnaires were undeliverable. De Vaus (2002) has suggested the following formula to calculate response rate:

$$Response\ rate = \frac{Number\ returned}{N\ in\ sample - (ineligible + unreachable)} \times 100$$

Using this formula the response rate for this survey is calculated as follows:

$$Response\ rate = \frac{124}{569 - (11)} \times 100 = 22.22$$

Hence the response rate for this survey is 22.22% which is acceptable in strategic management research (see Robinson, Jr., Logan & Salem, 1986; Rogers, Miller & Judge, 1999).

7.3.4 Reliability and Validity of the Measures used

The reliability of the measures was assessed using Cronbach's alpha (Churchill, 1979) and this is explained in chapter 8. Using Partial Least Squares (PLS) the composite reliability (Fornell & Larcker, 1981) and convergent validity of the measures were assessed. This procedure is explained in chapter 8. The discriminant validity of the measures was also assessed using PLS and this procedure is explained in chapter 10. If the measures have both convergent validity and discriminant validity, it implies that these measures have construct validity.

7.3.5 Assessing Non-response Bias

The procedure adopted by Ghobadian and O'Regan (2006) was used to assess non-response bias. Non-response bias was examined by comparing the means of the responses received from early and late respondents. t-tests were conducted to find out whether significant differences existed in the means of strategic planning, cost-related, differentiation, environmental dynamism, hostility, strategy implementation, structure, performance – objective fulfilment, and relative competitive performance variables between these two groups. The *p* values obtained from the t-tests corresponding each of these variables are shown in Table 7.3.

Table 7.3 Results of the t-tests Comparing Early and Late Respondents

Variable	*p value (two-tailed)*
Cost-related	0.40
Differentiation	1.00
Environmental Dynamism	0.23
Environmental Hostility	0.48
Strategic Planning	0.89
Planning of Strategy Implementation	1.00
Structure	0.26
Performance - Objective Fulfilment	0.85
Relative Competitive Performance	0.81

The tests indicated that no significant difference existed between the means of the responses received from early and late respondents.

Some of the non-respondents were contacted and were requested to answer a few questions relating to strategic planning, business-level strategy and strategy implementation. The difference between the means of the measures main sample and

that of 35 respondents who answered a small number of questions was statistically compared by doing a t-test. The differences were not statistically significant. The non-respondents who did not agree to answer the small number of questions were requested to explain the reasons for non-participation. In most of the cases they said that it was because of lack of time to complete the questionnaire. In some cases the company policy did not allow them to respond to surveys.

7.3.6 Analytical Techniques

The development of hypotheses has been explained in chapters 4, 5 and 6 and they are summarised in chapter 1. For convenience these hypotheses are presented below:

Hypotheses for validating the findings of previous studies:

H1a: Rational-comprehensive strategic planning will lead to superior performance in organisations.

H1b: Environmental dynamism and hostility moderate the relationship between strategic planning and performance.

H2a: Organisations having a clear business-level strategy by adopting one of the strategies namely cost-related, differentiation or integrated strategies will perform better than those organisations which are stuck-in-the-middle.

H2b: Organisations following integrated strategies will perform better than those pursuing either a cost-related strategy or a differentiation strategy.

H2c: Environmental dynamism and hostility moderate the relationship between business-level strategy and organisational performance.

H2d: Organisational structure moderates the relationship between business-level strategy and organisational performance.

H4[2]*: The degree of planning of strategy implementation has a significant positive impact on organisational performance.*

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[2] *The hypotheses numbers have been given according to the sequence of their presentation in the thesis. H4 is presented in chapter 6 and H3 is presented in chapter 5.*

Hypotheses which have not been tested in previous studies:

H3: Organisations placing a strong emphasis on strategic planning will develop a clear business-level strategy by adopting one of the strategies namely cost-related, differentiation or integrated strategies.

H5a: Organisations placing a strong emphasis on strategic planning will also place a strong emphasis on the planning of strategy implementation.

H5b: Organisations having a clear strategy by adopting one of the business-level strategies namely cost-related, differentiation or integrated strategies will give more emphasis to the planning of strategy implementation than those organisations which are stuck-in-the-middle.

The analytical techniques were selected on the basis of the types of independent and dependent variables involved in the hypotheses. The independent variables, dependent variables, the nature of these variables and the analytical techniques chosen for analysis are shown in Table 7.4. All the questions in the questionnaire were coded by giving appropriate variable names and labels. The variable names and labels of all the items in the questionnaire are presented in section G.1 of Appendix G.

Table 7.4: Choice of Analytical Techniques for Hypotheses Testing

Hypo-thesis	Independent Variable(s)	Dependent Variable(s) Whether Metric / Nonmetric	Analytical Technique(s)
H1a	Strategic Planning	Organisational Performance Both variables are metric.	1. Bivariate linear regression analysis, since there is only one independent variable 2. Correlation analysis

H1b	Strategic planning is the independent variable and environmental dynamism and hostility are moderating variables	Organisational performance	The independent variable, the moderating variables and the dependent variable are all metric	Multiple moderated regression analysis
H2a	Strategic type	Organisational performance	A nonmetric variable indicating the strategic types of organisations was created using continuous variables namely cost-related and differentiation. The dependent variable is metric.	Analysis of Variance
H2b	Strategic type	Organisational Performance	Independent variable is nonmetric and dependent variable is metric.	Analysis of Variance
H2c	Business-level strategy measured using the constructs namely cost-related and differentiation is the independent variable. Moderating variables are environmental dynamism and hostility.	Organisational Performance	The independent variables, the moderating variables and the dependent variable are all metric.	Multiple moderated regression analysis.
H2d	Business-level strategy measured using the constructs namely cost-related and differentiation is the independent variable and organisational structure is the moderating variable.	Organisational Performance	1. The independent variables, the moderating variable and the dependent variable are all metric. 2. However this hypothesis is also tested using the newly created nonmetric variables used to identify strategy type and structure type.	1. Multiple moderated regression analysis is used to test this hypothesis using metric variables. 2. Two way Analysis of Variance is used to test it with nonmetric independent and moderating variables.

H3	Strategic Planning	Clarity in Business-level strategy	A nonmetric variable which identifies the clarity in business-level strategy was created using the continuous variables namely cost-related and differentiation and this was used as the dependent variable. The independent variable is metric.	Logistic regression analysis was used to find out whether strategic planning leads to clarity in business-level strategy or not.
H4	Planning of strategy implementation	Organisational Performance	1. Both the independent and dependent variables are metric. 2. However this hypothesis is also tested using a newly created nonmetric variable used to identify the degree of emphasis given to the planning of strategy implementation.	1. Bivariate linear regression analysis and correlation analysis are used to test this hypothesis using metric variables 2. Analysis of Variance is used to test it using nonmetric independent variable
H5a	Strategic Planning	Planning of Strategy Implementation	1. Both the independent and dependent variables are metric. 2. However this hypothesis is also tested using a newly created nonmetric variable used to identify the degree of emphasis given to strategic planning by organisations.	1. Bivariate linear regression analysis and correlation analysis are used to test this hypothesis using metric variables 2. Analysis of Variance is used to test it using nonmetric independent variable
H5b	Business-level Strategy	Planning of Strategy Implementation	The newly created nonmetric variable used to identify the strategic types is used as the independent variable. The dependent variable is metric.	Analysis of Variance

As shown in table 7.4 more than one analytical technique is used to test hypotheses H1a, H2d, H4 and H5a. The results obtained by using one analytical technique were confirmed by carrying out analysis using another analytical technique for these four hypotheses.

7.3.7 Procedure for Conducting the Analyses

The procedures for conducting analyses using regression analysis, moderated regression analysis, analysis of variance and logistic regression are briefly explained below.

7.3.7.1 Regression Analysis

In bivariate regression the relationship between two variables is represented by a straight line which is fitted by the method of least squares. In multiple regression analysis the relationship between one dependent (criterion) variable and several independent (predictor) variables is assessed. Through multiple regression analysis the researcher uses the independent variables whose values are known to predict a single dependent value. The coefficient of determination (R^2) indicates the level of prediction accuracy and if the regression model perfectly predicts the dependent variable, $R^2 = 1$. For assessing the R^2 values Hair et al (2006) provides some guidelines and these guidelines are used to assess the R^2 values in this study. According to Hair et al (2006), the minimum R^2 values that can be considered statistically significant with a Power of 0.80 for varying numbers of independent variables and sample sizes are shown in Table 7.5.

Table 7.5: Acceptable R^2 Values (%)

Sample Size	Significance level (α) = 0.01 No. of Independent variables				Significance level (α) = 0.05 No. of Independent variables			
	2	5	10	20	2	5	10	20
20	45	56	71	NA	39	48	64	NA
50	23	29	36	49	19	23	29	42
100	13	16	20	26	10	12	15	21
250	5	7	8	11	4	5	6	8
500	3	3	4	6	3	4	5	9
1000	1	2	2	3	1	1	2	2

Source: Hair et al (2006)

This table has been referred to in the data analysis section presented in chapters 9 and 10.

7.3.7.2 Moderated Regression Analysis

A moderator is either a metric (e.g. level of reward) or a nonmetric (e.g. sex, race, class) variable that affects the direction and/or strength of the relation between an independent variable and a dependent variable (Baron & Kenny, 1986). Various authors have defined moderator variables in different ways and have adopted different procedures for determining the moderating effects. Three different approaches specified in the literature for determining the moderating effects are summarised in Table 7.6.

Table 7.6: Approaches for Determining Moderating Effects

Citation	Approach
Fry (1971); Horton (1979) and Peters & Champoux (1979)	A variable is considered as a moderator if it interacts with a predictor variable irrespective of whether this variable contributes significantly towards the prediction of the criterion variable.
Cohen and Cohen (1975) and Zedeck (1971)	A moderator variable should neither contribute significantly towards the prediction of the criterion variable nor correlate significantly with other predictor variables.
Bennett & Harrell (1975); Ghiselli (1960, 1963) and Hobert & Dunnette (1967)	Examine the differences between cases grouped on the basis of the moderator variable.

Adapted from Sharma, Durand and Gur-Arie (1981)

The lack of uniformity in determining the moderating effects as outlined in Table 7.6 had led to confusion in interpreting the results of the studies. However Sharma, Durand and Gur-Arie (1981) have developed a methodology for determining the moderating effects of variables and this procedure was adopted by Prescott (1986), Goll and Sambharya (1995), Goll and Rasheed (1997) and Goll and Rasheed (2004). This procedure was adopted in this study and is briefly explained below. A specification variable is one which specifies the form or magnitude or both of the relationship between a predictor and a criterion variable (Lazarsfeld, 1955; Rosenberg, 1968). Moderator variables can be considered to be subset of specification variables. According to Sharma, Durand and Gur-Arie (1981) there are two types of moderator variables. One type of moderator variable influences the strength of relationship between the predictor variables and the criterion variable and the other type modifies the form of relationship (e.g. changing the sign of the slope). Sharma et al (1981) developed a typology of specification variables using two dimensions namely the relationship with the criterion variable and interaction with the predictor variable. This typological framework is shown in Figure 7.2.

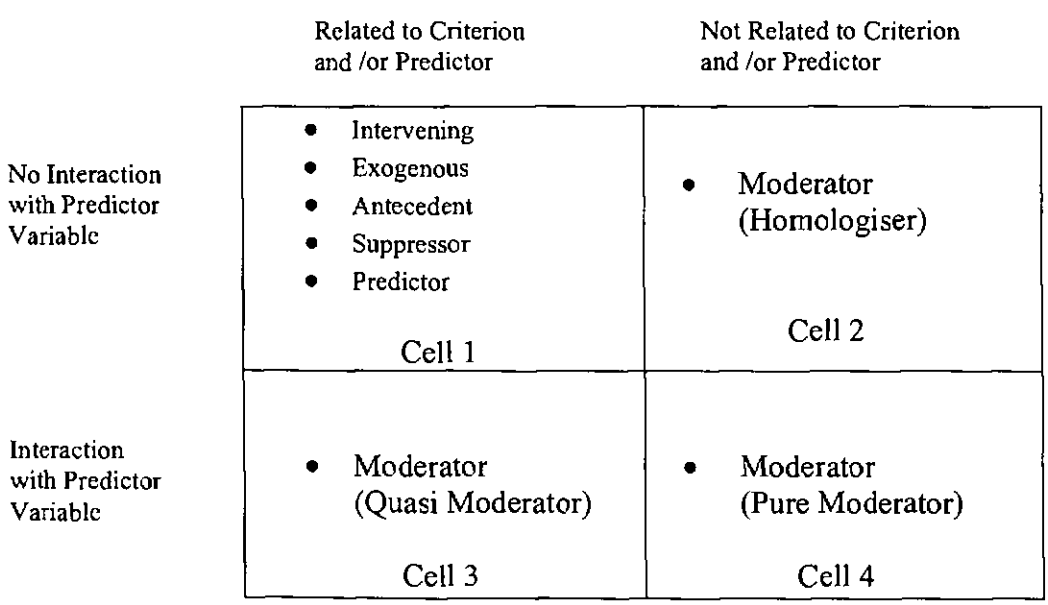

Fig 7.2: A Typology of Specification Variables *(Source: Sharma et al 1981)*

If the specification variable is related to the criterion or predictor variable or both but does not interact with the predictor variable, the variable is referred to as an intervening, exogenous, antecedent, suppressor or additional predictor variable depending on its other characteristics. These types of variables are shown in Cell1. The variables shown in Cells 2, 3 and 4 are generally classified as moderators and they represent two types of moderator variables. The moderator variable in Cell 2 (homologiser) affects the strength of the relationship whereas the variables in Cells 3 (quasi moderator) and 4 (pure moderator) influence the form of the relationship between the predictor and criterion variables. The type of moderator variable referred to as homologiser shown in Cell 2 does not interact with the predictor variable and is not significantly related to either the predictor or criterion variable. This type of variable influences the strength of relationship between the predictor and criterion variables. The Quasi Moderator shown in Cell 3 interacts with the predictor variable and is related to the criterion and / or predictor variable. The Pure Moderator variable shown in Cell 4 interacts with the predictor variable but it is not related to the criterion and / or predictor variable. These two types of variables modify the form of relationship between the criterion and predictor variables.

Two basic approaches have been used in the literature to identify the presence of moderator variables and they are subgroup analysis and moderated regression analysis. In the subgroup analysis the sample is split into subgroups on the basis of the moderator variable and regression analysis is used to examine the relationship between the predictor and criterion variables for each subgroup. Moderated regression analysis is an analytical approach which provides a basis for controlling the effects of a moderator variable while maintaining the integrity of the sample. Moderated regression analysis will identify only moderator variables which modify the form of the relationship but it

will not identify homologisers. On the other hand subgroup analysis may identify moderator variables depending on the type of analysis used.

Sharma, Durand and Gur-Arie (1981) developed a framework incorporating both moderated regression analysis and subgroup analysis to determine the presence and type of moderator variables. Prescott (1986) had adopted this framework consisting of four steps and it is shown in Table 7.7.

Table 7.7: Framework for Identifying Moderator Variables

Step	Procedure
1	Determine whether a significant interaction is present between the hypothesised moderator variable z and the predictor variable by the moderated regression analysis procedure. If a significant interaction is found, proceed to Step 2. Otherwise go to Step 3.
2	Determine whether z is significantly related to the criterion variable. If it is, z is a quasi moderator variable (cell 3, Figure 7.2). If not, z is a pure moderator variable (cell 4, Figure 7.2). In both cases, the moderator influences the form of the relationship between the predictor and criterion variables.
3	Determine whether z is significantly related to the predictor variable. If it is related, z is not a moderator but an intervening, exogenous, antecedent, suppressor or a predictor variable (cell I, Figure 7.2). If z is not related to either the predictor or criterion variable, proceed to Step4.
4	Split the total sample into subgroups on the basis of the hypothesised moderator variable. The groups can be formed by a median, quartile, or other type of split. After segmenting the total sample into subgroups, do a test of significance for differences in predictive validity across subgroups. If significant differences are found, z is a homologiser variable operating through the error term (cell 2, Figure 7.2). If no significant differences are found, z is not a moderator variable and the analysis concludes.

Adapted from Prescott (1986) and Sharma, Durand and Gur-Arie (1981)

The procedure adopted by Prescott (1986) which is summarised in Table 7.7 was adopted for conducting moderated regression analysis in this study.

7.3.7.3 Analysis of Variance (ANOVA)

ANOVA is a statistical technique used to determine whether samples from two or more groups come from populations with equal means. In other words it tests whether the group means differ significantly. ANOVA compares the variance between different

groups with the variability within each of the groups. An F ratio is calculated and this represents the variance between the groups divided by the variance within the groups. A large F ratio indicates that there is more variability between the groups than there is within each group. When the F test is significant the null hypothesis which states that the population group means are equal, is rejected.

7.3.7.4 Logistic Regression

In logistic regression the outcome variable is dichotomous which represents two different categories. It represents two groups of interest as a binary variable with values of 0 and 1. If the groups represent characteristics like gender, then either group can be assigned the value of 1 (e.g., females) and the other group the value of 0 (e.g., males). In that situation the coefficients would reflect the impact of the independent variable(s) on the likelihood of the person being female. However if the dependent variable represents outcomes (e.g., success or failure) it is preferable to code the desirable outcome (success) as 1 for easy interpretation of the results. In this situation the coefficients represent the impacts on the likelihood of success.

7.3.8 Assessing the Homogeneity of the Sample

The importance of the industry in which a firm competes as a significant predictor of firm-level performance is well established (Dess, Ireland & Hitt, 1990).The sample consists of manufacturing organisations belonging to the Electrical and Mechanical engineering sectors. The organisations were classified into four different groups based on the industry sectors to which they belong and they are shown in Table 7.8. In order to assess the homogeneity of the sample, means of the measures used in the study were compared between these four groups using ANOVA.

Table 7.8: Classification of Industry Sectors

Industry Sectors	Name of the Group	No. of Organisations in this Group
Basic Metals Fabricated Metal Products	Group 1	34
Machinery and Equipment Electrical Machinery and Apparatus	Group 2	37
Office Machinery and Computers Radio, Television and Communication Equipment and Apparatus	Group 3	24
Motor Vehicles, Trailers and Semi-trailers Others	Group 4	29

The results of the ANOVA tests indicated no significant difference between the means of the measures corresponding to the four groups. The results of the post-hoc tests comparing the means of the measures between the groups are presented in section G.3 of Appendix G.

7.3.9 Assessing Common Method Variance

Common method variance (CMV) refers to the amount of spurious covariance shared among variables because of the common method used in collecting data (Buckley et al. 1990). In typical survey studies in which the same rater responds to the items in a single questionnaire at the same point in time, data are likely to be susceptible to CMV (Kemery and Dunlap 1986; Lindell and Whitney 2001). Potential causes for spurious correlation between self-report measures are consistency motif, social desirability, behaviour due to stimuli setting and knowledge deficiency (Podsakoff & Organ, 1986; Miller & Roth, 1994). The constructs used in this study required the respondents to report on discrete events reducing the likelihood of distorted self-reports and / or socially desirable responses. Hence the CMV problem is minimised to a great extent. For reducing the impact of consistency motif, Salancik & Pfeffer (1977) suggested that

the questionnaire could be designed in such a way that the dependent variables follow the independent variables. In this study the questionnaire was designed in line with this suggestion. CMV problem can be moderated by choosing the right informant (Miller & Roth, 1994). High ranking informants can be a more reliable source of information than their lower ranking counterparts (Phillips, 1981). Strategic decisions are top-level decisions and only those directly involved can provide valid answers (Tan and Tan, 2005). In this study the CEOs of the participating organisations were the respondents and hence the CMV problem is moderated. Podsakoff, MacKenzie, Lee & Podsakoff (2003) have suggested that protecting respondent anonymity could reduce method bias. In this study, the covering letter accompanying the questionnaires clearly indicated that all replies would be treated in the strictest confidence and no names or identities of individual firms would be revealed or disclosed to third parities.

The one factor test proposed by Harman (1967) offers a statistical procedure for testing the magnitude of CMV problem. According to this test all the variables of interest are entered into a factor analysis. If there is a major CMV problem the test result will indicate: (i) emergence of a single or very small number of factors from the factor analysis and / or (ii) one general factor accounting for the majority of covariance in the predictor and criterion variables (Podsakoff and Organ 1986, pp. 536). All the 69 variables were entered into an exploratory factor analysis, using unrotated principal components factor analysis, principal component analysis with varimax rotation, and principal axis analysis with varimax rotation to determine the number of factors that are necessary to account for the variance in the variables. The exploratory factor analysis carried out using all these three methods revealed the presence of nineteen distinct factors with eigenvalue greater than 1.0, rather than a single factor. The nineteen factors

together accounted for 74.5 percent of the total variance; the first (largest) factor did not account for a majority of the variance (20.6%). Thus, no general factor is apparent.

Moreover, all 69 variables were loaded on one factor to examine the fit of the confirmatory factor analysis model using PLS. If common method variance is largely responsible for the relationship among the variables, the one-factor CFA model should fit the data well (Korsgaard & Roberson, 1995; Mossholder, Bennett, Kemery, & Wesolowski, 1998; Podsakoff et al, 2003). The results indicated that the factor loadings of 47 out of 69 variables were below 0.5 and the AVE value obtained was 0.206. Hence a single-factor model did not fit the data well. While the results of these analyses do not preclude the possibility of common method variance, they do suggest that common method variance is not of great concern and thus is unlikely to distort the interpretations of results.

7.4 Summary

This chapter focused on the methodological aspects and research design. The attributes of this study closely match the methodological position outlined by post-positivism. A quantitative research strategy was followed in this study. The scales for measuring the constructs used in this study were adapted from previous studies and they have been validated. A sample of manufacturing organisations belonging to the electrical and mechanical engineering sectors was generated and the survey was executed according to the specifications. The analytical techniques used to test all the hypotheses were identified and the data analyses procedure followed was explained. The homogeneity of the sample was assessed and it was found that there was no significant difference in the measures between the groups. The statistical tests indicated that common method variance problem is unlikely to distort the interpretations of the results.

Part 3 - Data Analyses

Chapter 8: Reliability and Factor Analyses

8.1 Preamble

The procedures for reducing the data by conducting reliability and factor analyses and for assessing the composite reliability and convergent validity are explained in this chapter. Cronbach's alpha values of the scales measuring each construct were computed in order to ascertain whether these values are within the acceptable limits. Subsequently exploratory factor analysis was performed using the methods of Principal Components Analysis (PCA) and Factor Analysis (FA) to determine the factor loadings. Confirmatory factor analysis was conducted using Partial Least Squares (PLS) and the factor loadings obtained for the variables measuring the constructs and their corresponding 't' values are presented in this chapter. The composite reliabilities and convergent validity estimates of the measures obtained while conducting analysis using PLS are also presented in this chapter.

8.2 Reliability and Factor Analyses

Reliability assesses the degree of consistency between multiple measurements of a variable (Hair et al, 2006). Generally two different methods namely test-retest reliability and internal consistency are used to assess the reliability of the measures used in empirical research. In the first method, the responses from an individual at two different points of time are assessed to determine whether they are consistent or not. The internal consistency method is the most commonly used method to assess the reliability of measures and it assesses the consistency among the variables in a summated scale. According to this approach the individual items of a scale should all be measuring the same construct and hence they should be highly intercorrelated. One way of assessing

the internal consistency is to examine the correlation of each item to the summated scale score and the correlation among the items to find out whether these correlations are significant or not. Another type of diagnostic measure of internal consistency which is commonly used in management research is the reliability coefficient which assesses the consistency of the whole scale. Cronbach's alpha (Cronbach, 1951; Nunnally, 1979; Churchill, 1979; Peter, 1979) is the most widely used reliability coefficient to measure internal consistency. In this study Cronbach's alpha was used to assess the reliability of the scales. Even though many authors have suggested that the lower limit of acceptability for Cronbach's alpha value is 0.7, in exploratory research 0.6 is also acceptable (Robinson, Shaver and Wrightsman, 1991).

Factor analysis is an interdependence oriented technique whose main purpose is to define the underlying structure among the variables in the analysis. Unlike dependence oriented techniques like regression analysis and ANOVA, factor analysis provides the tools for analysing the structure of the interrelationships among a large number of variables by defining sets of variables that are highly interrelated, known as factors (Hair et al, 2006). The main purpose of conducting a factor analysis is to summarise the information contained in a number of original variables into a smaller number of factors without losing much information. In other words the newly created variables should represent the fundamental constructs which underlie the original variables (Gorsuch, 1983; Rummel, 1970). There are two methods for generating the factors which represent the structure of the variables in the analysis. These methods are known as Principal Component Analysis (PCA) and Factor Analysis (FA). In PCA, the variance in the observed variables is analysed whereas in FA only the common or shared variance is analysed. There are two approaches to factor analyses namely exploratory factor analysis and confirmatory factor analysis. In exploratory factor analysis data is

summarised by grouping together variables that are correlated thereby creating a factor structure inductively. Confirmatory factor analysis is a way of testing a hypothesised factor structure by assessing how well measured variables represent a smaller number of constructs and can be performed through Structural Equation Modelling (SEM).

Three types of checks are generally carried out for determining whether the data is suitable for factor analysis or not. As a first step the correlations between the variables measuring a construct is examined to see whether they are correlated or not. Another method is to do the Bartlett's test of sphericity to examine the presence of correlations among the variables using one measure. It provides the statistical significance that the correlation matrix has significant correlations among at least some of the variables. The third method which can be used to assess the intercorrelations among the variables and the appropriateness of factor analysis is the measure of sampling adequacy (MSA). The value of this measure ranges from 0 to 1 and 1 indicates that each variable can be perfectly predicted without error by the other variables. According to the guidelines provided by Kaiser (1970) and Kaiser (1974) the MSA values can be interpreted as follows: Above 0.80 – excellent, above 0.70 – good, above 0.60 – average, above 0.50 – miserable and below 0.50 – unacceptable. Hair et al (2006) have suggested that for conducting factor analysis, the MSA value of the variables should be at least 0.50. The above three checks were carried out in this study prior to conducting factor analysis.

In this study, the process of data reduction is carried out in three stages. First of all the reliabilities of all the variables measuring a construct are examined (Churchill, 1979). Then an exploratory factor analysis is conducted to examine the loadings of the variables. Finally confirmatory factor analysis (CFA) is carried out using Partial Least Squares, and the composite reliability (Fornell and Larcker, 1981) which is a measure of

internal consistency similar to Cronbach's alpha, convergent validity and discriminant validity of the measures were assessed. PLS-Graph (Version 3.0), a Graphical User Interface software program developed by Wynne Chin and Tim Frye was used to implement the PLS technique. The acceptable level of composite reliability is 0.7 and an Average Variance Extracted (AVE) of 0.5 indicated convergent validity. AVE is the shared average variance between a construct and its measures. All the variables corresponding to each construct were included in the first run of PLS while testing the models. For improving the composite reliabilities and AVE values certain items were excluded in the subsequent runs. The items for exclusion were chosen by examining the factor loadings, communality estimates and t-statistic corresponding to each item. Finally the items representing each construct were selected when acceptable Composite Reliabilities and AVE values were obtained. A detailed explanation of the PLS analysis is provided in chapter 10. The data reduction procedure carried out on all the measures used in this study is explained in the following sections. The means, standard deviations, skewness and kurtosis values of the final set of variables representing each construct obtained after the data reduction process and these values of the overall constructs are presented are presented in section G.2 of Appendix G.

8.3 Reliability Analyses of the Scales

The Cronbach's alpha values obtained for each of the scales and the values reported in the studies from which these scales were adapted are shown in Table 8.1.

Table 8.1 Reliability of the Scales

Section in the Questionnaire	Constructs Measured	Value of Cronbach's Alpha in this Study	Value of Cronbach's Alpha in the Original Study
Business-level Strategy	Cost-related	0.823	0.75
	Differentiation	0.732	0.72
	Focus	0.532	0.73
External Business Environment	Dynamism	0.680	Not available
	Hostility	0.433	
	Heterogeneity	0.283	
Strategic Planning	Extent of Rationality in Strategic Planning	0.836	0.85
Strategy Implementation	Planned Option	0.867	Not available
	Prioritised Option	0.817	
Structure	Organic and Mechanistic Structure	0.587	0.82
Organisational Performance	Objective Fulfilment	0.750	0.748
	Relative Competitive Performance	0.916	0.953

All the measures except focus, hostility, heterogeneity and structure have acceptable Cronbach's alpha values. The data reduction process carried out for those measures which do not have acceptable levels of Cronbach's alpha are explained in the subsequent sections. It can also be noted that the Cronbach's alpha values of cost-related, differentiation, strategic planning and the two measures of organisational performance are very close to the values reported in studies from which these scales were selected. The items in the questionnaire corresponding to different variable names and value labels used while presenting the analysis can be found in section G.1 in Appendix G.

8.4 Factor Analyses

Exploratory factor analysis was conducted to reduce the variables into a smaller number of factors which represent the constructs. In order to verify the results, the results

obtained from the Principal Component Analyses were compared with the results obtained from Factor analysis. The results of the factor analyses conducted on each of the constructs are presented in the following sections. The factor loadings which are less than 0.3 are not shown in the tables for ease of interpretation.

8.4.1 Business-level Strategy

The results of the KMO measure of sampling adequacy and Bartlett's Test of Sphericity for all the three constructs are shown in Table 8.2. The results indicate that the variables used to measure all the three constructs can be factor analysed. Principal Components analysis was carried out separately on all the three business-level strategy constructs namely Cost-related, differentiation and focus.

Table 8.2: KMO and Bartlett's Test Results for Strategy Variables

Variable	KMO Measure of Sampling Adequacy	Bartlett's Test of Sphericity
Cost-related	0.855	Significant*
Differentiation	0.729	Significant*
Focus	0.593	Significant*

** Significant at P<0.001 level*

The correlations between the variables corresponding to the three constructs are presented in tables H.1, H.2 and H.3 in Appendix H. A number of correlations shown in these three tables are significant and this indicates that they could be factor analysed. A principal components analysis was conducted on the cost-related strategy variables and the component loadings are shown in Table 8.3.

Table 8.3: Component Matrix for Cost-related Strategy Variables

Items in the Scale	Component
	1
Emphasis on production capacity utilisation (Cost-related4)	.807
Emphasis on operating efficiency (e.g. productivity in production or efficiency in outbound logistics) (Cost-related3)	.788
Emphasis on finding ways to reduce costs (e.g. standardising the product or increasing the economy of scale) (Cost-related2)	.780
Emphasis on efficiency of securing raw materials or components (e.g. bargaining down the purchase price) (Cost-related1)	.710
Emphasis on tight control of selling/general/ administrative expenses (Cost-related6)	.649
Emphasis on price competition (i.e. offering competitive prices) (Cost-related5)	.630

Extraction Method: Principal Component Analysis.

All the variables are strongly loaded on the first component indicating that these variables measure the cost-related strategy construct. This was ascertained by examining the composite reliability (.867) and average variance extracted (.525) using PLS (See Table 8.4). It was decided to take the mean of the summated scale of all these variables as a measure of the cost-related strategy construct.

Table 8.4: CFA – Cost-related Strategy

	Original sample estimate	Mean of subsamples	Standard error	T-Statistic
(Composite Reliability = 0.872, AVE = 0.534)				
cr1	0.7097	0.7188	0.0529	13.4033
cr2	0.7803	0.7723	0.0427	18.2907
cr3	0.7880	0.7893	0.0391	20.1279
cr4	0.8067	0.8198	0.0287	28.0971
cr5	0.6303	0.6191	0.0738	8.5376
cr6	0.6486	0.6003	0.0885	7.3274

In order to summarise the differentiation variables a principal components analysis was conducted on the variables used to measure differentiation strategy. The communality estimates and the percentage variances are shown in tables H.4 and H.5 in Appendix H. The rotated component matrix is shown in Table 8.5.

Table 8.5: Rotated Component Matrix for Differentiation Variables

Items in the Scale	Component		
	1	2	3
Rate of new product introduction to market (Differentiation3)	.900		
Emphasis on the number of new products offered to the market (Differentiation4)	.791	.333	
Emphasis on new product development or existing product adaptation to better serve customers (Differentiation2)	.751		
Intensity of your advertising and marketing (Differentiation5)		.810	
Emphasis on building strong brand identification (Differentiation7)		.781	
Emphasis on developing and utilising sales force (Differentiation6)		.558	
Emphasis on producing high quality products (Differentiation8)			.816
Quick delivery and immediate response to customer orders (Differentiation9)			.606
Emphasis on using innovative methods and technologies to create superior products (Differentiation1)			.515

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

The communality estimates of two variables namely diff1 and diff9 are .315 and .373 respectively indicating that the two variables do not make a significant contribution towards measuring the factors. The first factor consisting of three variables (diff3, diff4 and diff2) represent the innovation dimension of differentiation and the second factor consisting of another three variables (diff5, diff7 and diff6) represent the marketing dimension of differentiation. This finding is consistent with the operationalisation of differentiation strategy by Miller (1991) using two constructs namely innovative differentiation and marketing differentiation. However the third factor consisting of diff8, diff9 and diff1 collectively do not represent any particular dimension. Even though the rotated component matrix indicates that three factors could be formed with these variables, when Cronbach's alpha values were calculated for the variables belonging to these factors, it was found that only the first factor had a satisfactory value (0.799). Hence a common factor analysis with varimax rotation was conducted and the factor matrix is presented in Table 8.6.

Table 8.6: Rotated Factor Matrix for Differentiation Variables

	Factor		
	1	2	3
Differentiation3	.886		
Differentiation4	.677	.403	
Differentiation2	.615		.323
Differentiation5		.727	
Differentiation7		.578	
Differentiation6		.365	
Differentiation8			.692
Differentiation9			.338
Differentiation1			.321

Extraction Method: Principal Axis Factoring.
Rotation Method: Varimax with Kaiser Normalization.
Rotation converged in 4 iterations.

The results are similar to the results of the principal components analysis and hence do not give a clear indication about summarising the variables. A second order factor analysis was conducted to find out whether these three factors load on one factor and it was found that all the three factors loaded on one factor. This shows that the variables loaded on the three factors could be effectively combined to form a single factor which represents the construct. In order to identify the variables which could be used to form this single factor the composite reliability and convergent validity of the variables were examined using PLS. The factor loadings, the composite reliability and the average variance extracted are shown in Table 8.7.

Table 8.7: CFA - Differentiation

	Original sample estimate	Mean of subsamples	Standard error	T-Statistic
(Composite Reliability = 0.841, AVE = 0.520)				
diff2	0.8169	0.8026	0.0446	18.3173
diff3	0.8072	0.8142	0.0302	26.6915
diff4	0.7743	0.7826	0.0389	19.9167
diff6	0.5767	0.5762	0.0965	5.9788
diff7	0.5910	0.5864	0.1040	5.6811

This result gives a clear indication that the variables shown in Table 8.7 can be combined to represent the differentiation strategy construct because they have acceptable levels of composite reliability and convergent validity. The variables namely diff1, diff5, diff8 and diff9 had to be excluded in order to achieve acceptable levels of composite reliability and convergent validity. The Conbach's alpha value for these five variables is .754 which is acceptable. It was decided to compute the mean of the summated scale of these five variables for use in further analysis.

Principal components analysis was carried out on the focus variable and the rotated component matrix obtained is shown in Table 8.8 and the results indicate that Focus strategy can be represented by two factors obtained by combining the variables focus2 and focus4 to form one factor and focus1 and focus3 to form another factor.

Table 8.8: Rotated Component Matrix for Focus Variables

Items in the Scale	Component	
	1	2
Targeting a clearly identified segment (e.g. emphasising a geographical region or a specific group of consumers) (Focus2)	.819	
Offering specialty products tailored to a particular group of customers or users (Focus4)	.741	
Uniqueness of your products (e.g. unique function or design) (Focus1)		.873
Offering products suitable for a high price segment (Focus3)	.379	.714

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

The Cronbach's alpha values for these two combinations were calculated and these values were 0.45 for focus2 and focus4 and 0.502 for focus1 and focus3. Both these values are below the acceptable levels. Due to the limited number of variables it was not possible to find an effective combination of variables which would satisfy the requirements of reliability and validity hence the focus strategy variable was excluded from the analysis.

8.4.2 External Business Environment

Miller (1987) had used dynamism, hostility and heterogeneity as three separate measures of the external business environment. The reliabilities of these constructs were assessed and found to have Cronbach's alpha values of 0.680, 0.283 and 0.433 respectively. Because of the low Cronbach's alpha values, all the eleven items used to measure these three constructs were pooled and a factor analysis was performed with the view to identify the underlying dimensions. The correlation matrix is shown in Table 8.9.

Table 8.9: Correlation Matrix of Environment Variables

Variable	1	2	3	4	5	6	7	8	9	10
Env_dyn1	1									
Env_dyn2	.216*	1								
Env_dyn3	.232**	.465**	1							
Env_dyn4	.342**	.346**	.574**	1						
Env_het1	.195*	.250**	.233**	.316**	1					
Env_het2	.227*	.329**	.464**	.331**	.165	1				
Env_hos1	-.334**	.009	.096	-.009	.171	.032	1			
Env_hos2	-.028	.081	.117	-.003	.148	-.092	.021	1		
Env_hos3	-.075	.183*	.182*	.045	.186*	-.066	-.029	.631**	1	
Env_hos4	-.199*	.159	.196*	.127	.202*	.101	.074	.105	.170	1

* Correlation is significant at the 0.05 level (2-tailed).
** Correlation is significant at the 0.01 level (2-tailed).

A number of correlations are significant indicating that the variables can be factor analysed. The KMO measure of sampling adequacy is acceptable (.644) and Bartlett's test of sphericity produced significant result. Hence factor analysis can be conducted on the environment variables.

A principal components analysis with varimax rotation was conducted and the communality estimates and percentage variances are shown in tables H.6 and H.7 in Appendix H. The factor loadings are shown in Table 8.10. The communality estimates

of a few items are below 0.5. Three factors have Eigen values greater than 1 indicating that three factors could be extracted and the three factor solution explains a total of 58.43% variance.

Table 8.10: Rotated Component Matrix for Environment Variables

Items in the Scale	Component		
	1	2	3
The rate of innovation of new operating processes and new products or services in your principal industry has (decreased / increased dramatically) (Env. - Dynamism3)	.806		
Research and development (R&D) activity in your principal industry has (decreased / increased dramatically) (Env. - Dynamism4)	.762		
Required variety in your production methods to cater to your different customers has (decreased / increased dramatically) (Env. - Heterogeneity2)	.670		
Production technology in your principal industry has (remained the same / changed very much) (Env. - Dynamism2)	.666		
Required variety in your marketing tactics to cater to your different customers (has decreased / increased dramatically) (Env. - Heterogeneity1)	.501		
Market activities of our key competitors now affect our firm in many more areas (e.g. pricing, marketing, delivery, service, production, quality) than before (Env. - Hostility3)		.889	
Market activities of our key competitors have become far more hostile (Env. - Hostility2)		.874	
Market activities of our key competitors have become far more predictable (This item was reverse coded) (Env. - Hostility1)			.774
Growth opportunities in the overall business environment have (decreased / increased dramatically) (Env. - Dynamism1)	.443		-.723
Legal, political and economic constraints (e.g. Government regulations) have (Not changed / Increased dramatically) (Env. - Hostility4)			.516

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

The rotated component matrix shows that the items are loaded on three different factors. In order to bring clarity to formation of factors, Common Factor analyses and Maximum likelihood factoring with varimax rotation were conducted on these variables and factor loadings are shown in tables 8.11 and 8.12 respectively.

Table 8.11: Rotated Factor Matrix for Environment Variables – Principal Axis Factoring

	Factor		
	1	2	3
Env. - Dynamism3	.799		
Env. - Dynamism4	.680		
Env. - Dynamism2	.563		
Env. - Heterogeneity2	.556		
Env. - Heterogeneity1	.391		
Env. - Hostility3		.884	
Env. - Hostility2		.711	
Env. - Dynamism1	.415		.908
Env. - Hostility1			-.388
Env. - Hostility4			

Extraction Method: Principal Axis Factoring.
Rotation Method: Varimax with Kaiser Normalization.
Rotation converged in 4 iterations.

Table 8.12: Rotated Factor Matrix for Environment Variables – Maximum Likelihood Factoring

	Factor		
	1	2	3
Env. - Dynamism3	.819		
Env. - Dynamism4	.689		
Env. - Heterogeneity2	.559		
Env. - Dynamism2	.552		
Env. - Heterogeneity1	.358		
Env. - Hostility3		.940	
Env. - Hostility2		.669	
Env. - Dynamism1	.438		.896
Env. - Hostility1			-.401
Env. - Hostility4			-.308

Extraction Method: Maximum Likelihood.
Rotation Method: Varimax with Kaiser Normalization.
Rotation converged in 4 iterations.

The results obtained from the two factor analyses are similar to the ones obtained from Principal Components analysis. An examination of the factor loadings indicate that the dynamism and heterogeneity variables are loaded on one factor and two hostility variables (Env. – Hostility3 and Env. – Hostility2) are loaded on another factor. The Cronbach's alpha values for the variables loaded in the first factor is .725 and for the variables loaded on the second factor is .773. The communality estimates obtained as a

result of common factor analysis for Env.-Hostility 1 and Env.-Hostility 4 are .156 and .158 respectively indicating that they could be excluded from the analysis. The factor analysis clearly indicates that the variables loaded on the first factor can be used as a measure of environmental dynamism and the ones loaded on the second factor can be used as a measure of hostility. The composite reliability and convergent validity of the variables were examined using PLS. The factor loadings, composite reliability values and AVEs of the variables corresponding to environmental dynamism and hostility are shown in Tables 8.13 and 8.14 respectively. The variables namely dyn1 and het1 corresponding to the environmental dynamism construct had to be dropped in order to obtain an acceptable level of composite reliability and AVE.

Table 8.13 CFA – Environmental Dynamism

	Original sample estimate	Mean of subsamples	Standard error	T-Statistic
(Composite Reliability = 0.839, AVE = 0.567)				
dyn2	0.6992	0.7049	0.0537	13.0258
dyn3	0.8528	0.8562	0.0223	38.1947
dyn4	0.7575	0.7663	0.0440	17.2190
het2	0.6913	0.6720	0.0582	11.8870

Table 8.14 CFA – Environmental Hostility

	Original sample estimate	Mean of subsamples	Standard error	T-Statistic
(Composite Reliability = 0.899, AVE = 0.816)				
hos2	0.9032	0.8972	0.0207	43.7284
hos3	0.9032	0.8972	0.0207	43.7284

Both the measures have acceptable levels of composite reliability and convergent validity indicating that these measures are both reliable and valid. The Cronbach's alpha

values for environmental dynamism and hostility are 0.725 and 0.773 respectively. It was decided to use these variables to measure the two constructs representing external environment and the means of the summated scales of these two sets of variables were calculated.

8.4.3 Strategic Planning

A reliability analysis was conducted on the scale used to measure strategic planning and it had a Cronbach's alpha of 0.836. The correlation matrix of all the variables used to measure this construct is shown in table H.8 in Appendix H. Most of the correlations are significant indicating that the variables can be factor analysed. The KMO measure of sampling adequacy is .829 and Bartlett's test of sphericity produced significant result. A principal components analysis with varimax rotation was conducted and the communality estimates and percentage variances are shown in tables H.9 and H.10 in Appendix H. The factor loadings are shown in Table 8.15.

Table 8.15: Rotated Component Matrix for Strategic Planning Variables

Items in the Scale	Component	
	1	2
Open channels of communication (Strategic Planning7)	.871	
Participative consensus-seeking decision-making with feedback (Strategic Planning6)	.836	
The explanation of proposed organisational changes to those affected by them (Strategic Planning5)	.721	
The strategic and long-term importance of participative decision-making at management levels (Strategic Planning3)	.708	.443
Written strategic plan(s) (Strategic Planning8)	.604	.368
A systematic consideration of costs and benefits when planning (Strategic Planning2)		.811
A systematic search for opportunities and problems when planning (Strategic Planning1)	.360	.794
The application of operations research techniques (Strategic Planning4)		.671

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

The first factor consisting of variables namely sp7, sp6, sp5, sp3 and sp8 represents the process involved and the second factor consisting of three variables (sp2, sp1 and sp4)

represents the analysis. Miller & Friesen (1983) had used "analysis" as one of the dimensions for operationalising strategy-making in their study. A common factor analysis was conducted on these variables and the loadings are shown in Table 8.16.

Table 8.16: Rotated Factor Matrix for Strategic Planning Variables

	Factor	
	1	2
Strategic Planning7	.842	
Strategic Planning6	.778	
Strategic Planning3	.657	.464
Strategic Planning5	.597	
Strategic Planning8	.510	.371
Strategic Planning1		.880
Strategic Planning2		.579
Strategic Planning4		.481

Extraction Method: Principal Axis Factoring.
Rotation Method: Varimax with Kaiser Normalization.

The results are similar to the ones obtained from PCA. However Goll & Rasheed (1997) who had used this scale to measure strategic planning used the summated scale consisting of all the items for analysis. In order to keep the measures parsimonious, a second order factor analysis was conducted and it was found that both these factors loaded on one factor. The composite reliability and convergent validity of these items were assessed using PLS and the results are presented in Table 8.17.

Table 8.17: CFA – Strategic Planning

	Original sample estimate	Mean of subsamples	Standard error	T-Statistic
(Composite Reliability = 0.884, AVE = 0.526)				
sp1	0.7104	0.7145	0.0645	11.0193
sp3	0.8430	0.8527	0.0286	29.4933
sp4	0.5265	0.5574	0.0894	5.8861
sp5	0.6790	0.6884	0.0782	8.6884
sp6	0.7818	0.7887	0.0461	16.9469
sp7	0.7853	0.8004	0.0402	19.5579
sp8	0.7090	0.6374	0.1050	6.7510

The variable sp2 had to be dropped in order to obtain acceptable levels of composite reliability and convergent validity. This measure has acceptable levels of composite reliability and convergent validity. The Cronbach's alpha for these variables is 0.839. It was decided to use the mean of the summated scale consisting of the variables shown in Table 8.17 as the measure of strategic planning.

8.4.4 Strategy Implementation

Strategy implementation was measured in terms of the degree of emphasis given to planning and prioritisation while implementing strategies. The planning emphasis was measured using five items in the scale and the prioritisation emphasis was measured using three items. The sub-scale used to measure the planning emphasis had a Cronbach's alpha value of 0.867 and the sub-scale used to measure prioritisation emphasis had a Cronbach's alpha value of 0.817. However, a factor analysis was conducted to find out whether these two sub-scales were measuring two constructs or not. A principal components analysis was conducted first with all the eight items in the scale and subsequently common factor analysis and maximum likelihood factoring were carried out. In order to assess whether these variables are factor analysable or not, the correlation matrix of these variables was examined and tests to check the KMO measure of sampling adequacy and Bartlett's test of sphericity were conducted. The correlation matrix (shown in table H.11 in Appendix H) indicates good correlations among the variables. The KMO measure of sampling adequacy is 0.880 and Bartlett's test of sphericity value is significant. Hence factor analysis can be conducted on these variables. The communality estimates and percentage variances are shown in tables H.12 and H.13 in Appendix H. All the communality estimates are above 0.5 indicating that the entire eight variables can be retained in the analysis. Only one factor has an

Eigen value greater than 1 explaining 61% of variance, indicating that this construct could possibly be represented by one factor.

Table 8.18: Component Matrix for Strategy Implementation Variables

Items in the Scale	Component
	1
The tasks to be performed were specified beforehand to ensure effective strategy implementation (Imp. – Specificity)	.828
Organisational structure facilitated the strategy implementation process through appropriate allocation of responsibilities and roles (Imp. - Structural Facilitation)	.824
Resources (including people, money and time) were available during the strategy implementation process (Imp. – Resourcing)	.795
The criteria for success of strategy implementation were clear (Imp. – Assessability)	.794
Strategy implementation had a receptive context at the outset due to the conditions within and/or external to your organisation (Imp. – Receptivity)	.767
What was done during the implementation process was acceptable to those involved (Imp. – Acceptability)	.748
Strategy implementation was given priority over other commitments (Imp. – Priority)	.746
Relevant experience was available (either in-house, outsourced, or bought-in) to implement strategies in your organisation (Imp. – Familiarity)	.737

Extraction Method: Principal Component Analysis.
1 component extracted.

The factor loadings obtained from Principal Component analysis, common factor analysis and maximum likelihood factoring are shown in Tables 8.18, 8.19 and 8.20 respectively. In all the three cases the variables are strongly loaded on one factor, giving a strong indication that only one single factor will represent the construct. This shows that these variables are not measuring the two options for strategy implementation namely planned option and prioritised option, but they all measure the degree of emphasis given to planning while implementing strategies.

Table 8.19: Factor Matrix for Strategy Implementation Variables – Principal Axis Factoring

	Factor
	1
Imp. - Specificity	.805
Imp. - Structural Facilitation	.801
Imp. - Resourcing	.762
Imp. - Assessability	.760
Imp. - Receptivity	.727
Imp. - Acceptability	.703
Imp. - Priority	.702
Imp. - Familiarity	.690

Extraction Method: Principal Axis Factoring.
1 factor extracted. 5 iterations required.

Table 8.20: Factor Matrix for Strategy Implementation Variables – Maximum Likelihood Factoring

	Factor
	1
Imp. - Specificity	.802
Imp. - Structural Facilitation	.798
Imp. - Resourcing	.759
Imp. - Assessability	.759
Imp. - Receptivity	.728
Imp. - Priority	.709
Imp. - Acceptability	.703
Imp. - Familiarity	.692

Extraction Method: Maximum Likelihood.
1 factor extracted. 4 iterations required.

A reliability analysis was conducted with all these eight variables produced a Cronbach's alpha value of 0.908. As shown in Table 8.21, all items have high corrected item – total correlation values indicating that there are strong correlations between each item and the overall score from the scale.

Table 8.21: Item-Total Statistics – Strategy Implementation

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Imp. - Familiarity	32.4839	54.236	.655	.467	.900
Imp. - Assessability	32.4355	53.288	.718	.566	.895
Imp. - Specificity	32.4677	51.405	.761	.646	.891
Imp. - Resourcing	32.7258	52.054	.721	.549	.894
Imp. - Acceptability	32.4839	56.089	.665	.532	.900
Imp. - Receptivity	32.6210	53.977	.686	.634	.897
Imp. - Structural Facilitation	32.6290	50.772	.759	.666	.891
Imp. - Priority	32.8468	52.830	.669	.511	.899

The composite reliability and convergent validity of these items were assessed using PLS and the results are shown in Table 8.22.

Table 8.22: CFA – Strategy Implementation

	Original sample estimate	Mean of subsamples	Standard error	T-Statistic
(Composite Reliability = 0.926, AVE = 0.609)				
imp_fami	0.7374	0.6963	0.0772	9.5551
imp_asse	0.7936	0.7881	0.0435	18.2350
imp_spec	0.8275	0.8225	0.0338	24.4697
imp_reso	0.7951	0.8049	0.0434	18.3141
imp_acce	0.7484	0.7415	0.0667	11.2242
imp_rece	0.7673	0.7737	0.0482	15.9090
imp_s_fa	0.8244	0.8248	0.0351	23.4870
imp_prio	0.7463	0.7482	0.0557	13.3868

The measure of planning of strategy implementation has a good composite reliability and convergent validity. Hence, a summated scale comprising of all these eight variables was computed and its mean was calculated. This new variable represents the degree of emphasis given to planning while implementing strategies.

8.4.5 Organisational Structure

Organisational structure was measured using eleven variables with the underlying constructs namely mechanistic and organic structures. The lower values indicate a mechanistic structure and higher values indicate an organic structure. The Cronbach's alpha value of the eleven items used in this scale was 0.587 indicating an unsatisfactory level of reliability. Many correlations among the variables shown in table H.14 in Appendix H are significant giving an indication that they are factor analysable. The KMO measure of sampling adequacy value is acceptable and the Bartlett's test of sphericity value is significant. A PCA with varimax rotation was conducted on these variables. The communality estimates and percentage variances are shown in tables H.15 and H.16 in Appendix H. The communality estimates of all the variables except three of them are above 0.5 indicating that most of the variables could be included in the analysis. The Eigen values corresponding to four components are above 1 giving an indication that four factors could be extracted. The factor loadings shown in the rotated component matrix in Table 8.23 do not give a clear indication about how the variables could be combined to form factors. It was not possible to obtain good Cronbach's alpha values for the variables loaded on the four factors. Hence a common factor analysis was conducted to identify the factors.

The factor matrix obtained as a result of FA shown in Table 8.24 indicates that the variables could be combined to form two factors. A reliability analysis was conducted on the variables loaded on factors 1 and 2 and the Cronbach's alpha values were 0.655 and 0.313 respectively. This gives a strong indication that it would not be possible to form more than one factor with a good Cronbach's alpha value.

Table 8.23: Rotated Component Matrix for Structure Variables

Items in the Scale	Component			
	1	2	3	4
Seniority or expertise was used as the main criteria for rewards (Structure8)	.743			
Organisational control systems were enforced according to the rules or shared norms (Structure4)	.610			
Decision-making process was centralised or decentralised (Structure3)	.606			
Interdepartmental committees for new product decisions (Structure10)		.767		
Task forces (Structure9)		.673		
Interdepartmental communication was a formal process or informal process (Structure7)		-.613	.396	
Management information systems (Structure11)	.458	.604		
Coordination was done according to work standards or mutual adjustment (Structure2)			.868	
Departmentalisation was done according to formal grouping or informal grouping (Structure1)	.358		.720	
Line-staff responsibilities in the organisation were distinct or blurred (Structure5)				-.789
Organisational hierarchy had many levels or minimal levels (Structure6)	.510			.676

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

Table 8.24: Factor Matrix for Structure Variables

	Factor			
	1	2	3	4
Structure8	.605			
Structure11	.588	-.362		
Structure10	.581	-.379	.319	
Structure6	.511		-.470	-.307
Structure3	.447			
Structure9	.361			
Structure4	.317			
Structure1	.386	.565		
Structure7		.507		
Structure2		.458	.511	
Structure5		.450		.503

Extraction Method: Principal Axis Factoring.

Hence Cronbach's alpha values were computed by introducing the three variables one by one to the combination of variables loaded in Factor 1. The best Cronbach's value (0.660) obtainable was for the combination of variables loaded on factor 1 and structure2 which is loaded on factor 2. The composite reliability and convergent validity of this measure was assessed using PLS. After excluding the items one by one on the

basis of factor loadings, communality estimates and '*t*' values it was possible to obtain a composite reliability value of 0.795 and an AVE value of 0.567 with three items namely str8, str10 and str11. However eight out of eleven variables measuring this construct had to be excluded for obtaining acceptable levels of composite reliability and AVE. Excluding some many variables may affect the accuracy of the measure and hence it was decided to compute the mean of the summated variable formed by combining all the variables loaded in factor 1 (structure8, structure11, structure10, structure6, structure3, structure9, structrue4, structure1) and structure2 loaded in factor2 based on the Cronbach's alpha obtained (0.660). This variable was used in carrying out further analysis using this construct.

8.4.6 Organisational Performance

Organisational performance was measured using two constructs namely objective fulfilment and relative competitive performance. The scale used to measure objective fulfilment had a Cronbach's alpha value of 0.750 and the scale used to measure relative competitive performance had a Cronbach's alpha value of 0.916. The correlation matrices of the variables representing these two constructs are shown in tables H.17 and H.20 in Appendix H and a number of these correlations are significant.

The KMO measure of sampling adequacy for the objective fulfilment measures is .751 and for relative competitive performance measures is .869.The Bartlett's test of sphericity is significant for both the performance measures. Hence the variables corresponding to both the measures can be factor analysed. A principal components analysis with varimax rotation was carried out on objective fulfilment measures and the communality estimates and the percentage variances are shown in tables H.18 and H.19 in Appendix H. The factor loadings are shown in 8.25.

Table 8.25: Rotated Component Matrix for Performance – Objective Fulfilment Variables

Items in the Scale	Component	
	1	2
Predicting future trends (Perf. - Obj. Fulfilment3)	.838	
Evaluating alternatives based on relevant information (Perf. - Obj. Fulfilment4)	.830	
Avoiding problem areas (Perf. - Obj. Fulfilment5)	.489	.372
Improvement in short-term performance (Perf. - Obj. Fulfilment1)		.791
Improvement in long-term performance (Perf. - Obj. Fulfilment2)		.713
Resolving Problems (Perf. - Obj. Fulfilment6)	.318	.587
Enhancing management development (Perf. - Obj. Fulfilment7)	.479	.555

Extraction Method: Principal Component Analysis.
Rotation Metbod: Varimax with Kaiser Normalization.

The factor loadings obtained from principal components analysis do not provide a clear indication about the number of factors which can be extracted. Hence, factor analysis was conducted using the principal axis factoring and maximum likelihood methods and the factor loadings are shown in Table 8.26 and 8.27 respectively.

Table 8.26: Rotated Factor Matrix for Objective Fulfilment – Principal Axis Factoring

	Factor	
	1	2
Perf. - Obj. Fulfilment2	.594	
Perf. - Obj. Fulfilment7	.585	.334
Perf. - Obj. Fulfilment6	.553	
Perf. - Obj. Fulfilment1	.484	
Perf. - Obj. Fulfilment5	.408	.301
Perf. - Obj. Fulfilment3		.778
Perf. - Obj. Fulfilment4		.718

Extraction Method: Principal Axis Factoring.
Rotation Method: Varimax with Kaiser Normalization.

Table 8.27: Rotated Factor Matrix for Objective Fulfilment – Maximum Likelihood Factoring

	Factor	
	1	2
Perf. - Obj. Fulfilment7	.635	
Perf. - Obj. Fulfilment6	.627	
Perf. - Obj. Fulfilment2	.530	
Perf. - Obj. Fulfilment5	.464	
Perf. - Obj. Fulfilment1	.411	
Perf. - Obj. Fulfilment3		.993
Perf. - Obj. Fulfilment4	.331	.566

Extraction Method: Maximum Likelihood.
Rotation Method: Varimax with Kaiser Normalization.

The results obtained from the two factor analyses are similar because of the pattern of the loading of the variables. According to the results of factors analysis it could be possible to form two factors representing this construct. This contrasts with the research of Ramanujam and Venkatraman (1987a) where only one measure was used for this construct in their analysis. The composite reliability and convergent validity of this measure were assessed using PLS and the results are shown in Table 8.28.

Table 8.28: CFA – Objective Fulfilment

	Original sample estimate	Mean of subsamples	Standard error	T-Statistic
(Composite Reliability = 0.815, AVE = 0.527)				
per_of3	0.7474	0.7787	0.0483	15.4636
per_of4	0.8093	0.8068	0.0332	24.3458
per_of6	0.6106	0.6312	0.0914	6.6781
per_of7	0.7232	0.7433	0.0531	13.6232

The set of four variables shown in Table 8.28 measuring objective fulfilment has acceptable levels of composite reliability and AVE. Hence the mean of the summated scale consisting of these four variables was computed, and this variable was used as a measure of objective fulfilment in the analysis.

Principal components analysis with varimax rotation was conducted on the variables measuring relative competitive performance and the communality estimates and percentage variances are shown in tables H.21 and H.22 in Appendix H. The rotated component matrix is shown in Table 8.29. Factor analysis was conducted using principal axis factoring method and the factor loadings are shown in Table 8.30.

Table 8.29: Rotated Component Matrix for Relative Competitive Performance Variables

Items in the Scale	Component	
	1	2
Return on Assets (ROA) (Perf. - Rel. Comp. Perf.4)	.908	
Return on Equity (ROE) (Perf. - Rel. Comp. Perf.5)	.898	
Return on Sales (ROS) (Perf. - Rel. Comp. Perf.6)	.850	
Current Ratio (Perf. - Rel. Comp. Perf.7)	.815	
Growth in profit after tax (Perf. - Rel. Comp. Perf.2)	.757	.424
Overall firm performance and success (Perf. - Rel. Comp. Perf.8)	.618	.568
Market share change (Perf. - Rel. Comp. Perf.3)		.836
Sales growth (Perf. - Rel. Comp. Perf.1)		.808
Our competitive position (Perf. - Rel. Comp. Perf.9)		.790

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

Table 8.30: Rotated Factor Matrix for Relative Competitive Performance Variables

	Factor	
	1	2
Perf. - Rel. Comp. Perf.4	.904	
Perf. - Rel. Comp. Perf.5	.866	
Perf. - Rel. Comp. Perf.6	.808	.338
Perf. - Rel. Comp. Perf.7	.739	
Perf. - Rel. Comp. Perf.2	.712	.452
Perf. - Rel. Comp. Perf.8	.574	.574
Perf. - Rel. Comp. Perf.3		.773
Perf. - Rel. Comp. Perf.9		.710
Perf. - Rel. Comp. Perf.1		.686

Extraction Method: Principal Axis Factoring.
Rotation Method: Varimax with Kaiser Normalization.

The results obtained from the PCA are similar to the results obtained from factor analysis. However, Ramanujam and Venkatraman (1987a) used only one measure for this construct in their study. The composite reliability and convergent validity of these items were assessed using PLS and the results are presented in Table 8.31.

Table 8.31: CFA – Relative Competitive Performance

	Original sample estimate	Mean of subsamples	Standard error	T-Statistic
(Composite Reliability = 0.930, AVE = 0.602)				
per_rcp1	0.5963	0.5787	0.0887	6.7236
per_rcp2	0.8643	0.8637	0.0263	32.9128
per_rcp3	0.6429	0.6295	0.0795	8.0876
per_rcp4	0.8670	0.8696	0.0208	41.6974
per_rcp5	0.8120	0.8216	0.0395	20.5418
per_rcp6	0.8671	0.8685	0.0264	32.7984
per_rcp7	0.7855	0.7834	0.0444	17.6954
per_rcp8	0.8312	0.8264	0.0389	21.3878
per_rcp9	0.6550	0.6367	0.0866	7.5658

The composite reliability value is very high and AVE is above 0.5. Hence the items measuring relative competitive performance have both composite reliability and convergent validity. A new variable was computed by taking the mean of the summated scale consisting of all the above variables and it was used in the analysis as a measure of relative competitive performance.

8.5 Summary

Factor analysis was conducted on the variables in order to facilitate data reduction. Both PCA and FA were used for conducting the factor analysis on the variables. As a result the variables which should be used as measures for each construct were identified. The details of these variables including their Cronbach's alpha, composite reliability and AVEs are summarised in Table 8.32.

Table 8.32: The Variables Representing Different Constructs used in this Study

Section in the Questionnaire	Constructs	Variables Used	Cronbach's Alpha	Composite Reliability	AVE
Business-level Strategy	1. Differentiation	1. Mean of the summated scale consisting of diff2, diff3, diff4, diff6 and diff7.	0.754	0.841	0.517
	2. Cost-related	2. Mean of the summated scale consisting of all cost-related variables	0.823	0.866	0.525
External Business Environment	1. Dynamism	1. Mean of the summated scale consisting of the variables namely dyn2, dyn3, dyn4 and het2	0.725	0.839	0.567
	2. Hostility	2. Mean of the two variables namely hos2 and hos3	0.773	0.899	0.816
Strategic Planning	Extant of Rationality in Strategic Planning	Mean of the summated scale consisting of the variables namely sp1, sp3, sp4, sp5, sp6, sp7 and sp8.	0.839	0.884	0.525
Strategy Implementation	Degree of emphasis given to planning while implementing strategies	Mean of the summated scale consisting of the first eight items in the scale	0.908	0.926	0.609
Structure	Organic structure and Mechanistic structure	Mean of the summated scale consisting of all the variables excluding str5 and str7	0.660	-----	------
Organisational Performance	1. Objective Fulfilment	1. Mean of the summated scale consisting the variables namely per_of3, per_of4, per_of6 and per_of7	0.693	0.814	0.523
	2. Relative Competitive Performance	2. Mean of the summated scale consisting of all the variables used to measure relative competitive performance	0.916	0.929	0.594

Chapter 9: Hypothesis Testing

9.1 Preamble

This chapter discusses hypothesis testing using various statistical techniques. The hypotheses to be tested are classified into two groups. The first group consists of relationships between variables which have been tested by previous studies in different contexts. The purpose of testing those hypotheses is to validate the previous findings in the context of this study. The second group of hypotheses examine the relationships which have good theoretical backing but have not been tested in previously published studies. The analytical techniques used to test these hypotheses have been identified and data analyses have been carried out using those statistical procedures. The analytical techniques used to test these hypotheses are correlation analysis, regression analysis, moderated regression analysis and analysis of variance (ANOVA). Finally the summary of the findings are presented at the end of the chapter.

9.2 Classification of Hypotheses

The hypotheses to be tested are classified into two groups namely (i) hypotheses for validating the findings of previous studies and (ii) hypotheses which have not been tested earlier. These hypotheses are presented in sections 9.2.1 and 9.2.2.

9.2.1 Hypotheses for validating the findings of previous studies

The hypotheses presented in this section were derived on the basis of a comprehensive literature review presented in chapters 2, 3, 4, 5 and 6.

H1a: Rational-comprehensive strategic planning will lead to superior performance in organisations.

H1b: Environmental dynamism and hostility moderate the relationship between strategic planning and organisational performance.

H2a: Organisations having a clear business-level strategy by adopting one of the strategies namely cost-related, differentiation or integrated strategies will perform better than those organisations which are stuck-in-the-middle.

H2b: Organisations following integrated strategies will perform better than those pursuing either a cost-related strategy or a differentiation strategy.

H2c: Environmental dynamism and hostility moderate the relationship between business-level strategy and organisational performance.

H2d: Organisational structure moderates the relationship between business-level strategy and organisational performance.

H4: The degree of planning of strategy implementation has a significant positive impact on organisational performance.

9.2.2 Hypotheses which have not been tested in previous studies

The hypotheses presented in this section have valid theoretical underpinnings, but they have not been tested in the previous studies. The development of these hypotheses has been discussed in chapters 5 and 6.

H3: Organisations placing a strong emphasis on strategic planning will develop a clear business-level strategy by adopting one of the strategies namely cost-related, differentiation or integrated strategies.

H5a: Organisations placing a strong emphasis on strategic planning will also give a strong emphasis to the planning of strategy implementation.

H5b: Organisations having a clear strategy by adopting one of the strategies namely cost-related, differentiation or integrated strategies will give more emphasis to the planning of strategy implementation than those organisations which are stuck-in-the-middle.

9.3 Hypotheses Testing

All the hypotheses have been tested using the analytical techniques indicated in Table 7.4 in chapter 7 and the results are presented in the following sections. In this study organisational performance is measured using two constructs namely objective fulfilment and relative competitive performance. Objective fulfilment is defined as the

extent to which the organisation has achieved its short-term and long-term performance objectives and minimised the problems. Relative competitive performance is defined as the extent to which organisational performance has either improved or deteriorated in terms of sales, profit, market share, return on assets, return on equity, return on sales, current ratio and competitive position.

9.3.1 Strategic Planning (Hypotheses H1a and H1b)

Hypothesis H1a examines the relationship between strategic planning and performance and H1b looks at the moderating effect of environment on this relationship. The analyses carried out to test these two hypotheses and the results are presented below.

9.3.1.1 Hypothesis H1a: Strategic Planning and Performance

H1a: Rational-comprehensive strategic planning will lead to superior performance in organisations.

First of all the correlations between the strategic planning variable and the performance measures were examined and the results are presented in Table 9.1.

Table 9.1: Correlations between Strategic Planning and Performance Variables

	1	2	3
Strategic Planning	1.000		
Performance Objective Fulfilment	0.636**	1.000	
Mean of Performance - Relative Competitive Performance	0.309**	0.335**	1.000

** Correlation is significant at the 0.01 level (2-tailed).

The correlations coefficients indicate that strategic planning is significantly correlated with both the performance variables. A bivariate linear regression analysis was carried out with Performance – Objective Fulfilment as the dependent variable and Strategic Planning as the independent variable. The model summary is presented in Table 9.2.

Table 9.2: Regression Model Summary – Strategic Planning and Objective Fulfilment

R^2	F	*p*
0.404	82.700	0.000

The model summary presented in Table 9.2 indicates a good R Square value. This indicates that 40.4 % of the variance in Performance – Objective Fulfilment is explained by Strategic Planning. The beta value corresponding to the strategic planning variable is 0.636 which is significant at the 0.0001 level. This regression analysis indicates that strategic planning has a significant positive impact on performance measured in terms of objective fulfilment.

The regression analysis was carried out using the second performance measure namely Performance – Relative Competitive Performance as the dependent variable and the model summary is presented in Table 9.3.

Table 9.3: Regression Model Summary – Strategic Planning and Relative Competitive Performance

R^2	F	*p*
0.096	12.919	0.000

9.6% of the variance in Performance – Relative Competitive Performance is explained by strategic planning and this is statistically significant. The beta value corresponding to strategic planning is 0.309 which is statistically significant at the 0.0001 level. The R^2 values obtained from both these regressions (40.4% and 9.6%) are acceptable according to the guidelines provided by Hair et al (2006) (see Table 7.5, chapter 7). The results of the regression analysis provide confirmatory evidence for hypothesis H1a.

9.3.1.2 Hypothesis H1b: The Moderating Effect of Environment

H1b: Environmental dynamism and hostility moderate the relationship between strategic planning and organisational performance.

Moderated multiple regression analysis was carried out to examine the moderating effect of environmental dynamism and hostility on the relationship between strategic planning and performance. Objective Fulfilment was used as the dependent variable in the first regression and Relative Competitive Performance was used as the dependent variable in the second regression. The means, standard deviations and correlations of all the variables included in this regression analysis are shown in Table 9.4.

Table 9.4: Correlations, Means and Standard Deviations of Strategic Planning, Environment and Performance Variables

Variable	Mean	S.D.	1	2	3	4	5
1. Strategic Planning	4.7753	0.9988	1				
2. Dynamism	4.4314	0.8996	0.469**	1			
3. Hostility	4.8185	1.0675	0.083	0.097	1		
4. Objective Fulfilment	4.9173	0.8176	0.636**	0.326**	0.080	1	
5. Relative Competitive Performance	4.9749	0.8873	0.309**	0.138	-0.164	0.335**	1

** Correlation is significant at the 0.01 level (2-tailed).

Objective fulfilment was regressed on dynamism, hostility and strategic planning and the results are presented below. Table 9.5 shows the beta coefficients obtained and Table 9.6 indicates the model summary. Model 1 shows the main effects of the independent variables and Model 2 includes the interactions between strategic planning and dynamism, strategic planning and hostility and dynamism and hostility.

The R^2 for model 1 is 0.406 and the related F is significant. But the R^2 change between model 1 and model 2 is not significant and hence it can be concluded that there is no significant interaction effect.

Table 9.5: Beta Coefficients – Objective Fulfilment Regressed on Strategic Planning, Environment

Independent Variables	Beta Coefficients	
	Model 1	Model 2
Strategic Planning	0.618**	1.093*
Dynamism	0.033	-.299
Hostility	0.026	0.212
Strategic Planning X Dynamism		0.007
Strategic Planning X Hostility		-.737
Dynamism X Hostility		.492

* $p \leq 0.05$; ** $p \leq 0.001$

Table 9.6: Model Summary - Objective Fulfilment Regressed on Strategic Planning, Environment

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.637[a]	.406	.391	.63813544	.406	27.298	3	120	.000
2	.644[b]	.415	.385	.64114227	.009	.626	3	117	.600

a. Predictors: (Constant), Mean of hos2 and hos3, Strategic Planning (PLS), Environmental Dynamism (PLS)

b. Predictors: (Constant), Mean of hos2 and hos3, Strategic Planning (PLS), Environmental Dynamism (PLS), Strategic Planning X Environmental Dynamism, Strategic Planning Final X Env. Hostility, Environmental Dynamism Final X Environmental Hostility

Following Prescott (1986) in the next step of the analysis, the correlations between the environmental variables and the predictor and criterion variables were examined. As shown in Table 9.4 environmental dynamism is significantly correlated with strategic planning and objective fulfilment. This indicates that it could be an exogenous, predictor, intervening, antecedent or suppressor variable. Further analysis (e.g. Rosenberg, 1968) need to be conducted to ascertain the nature of this variable. However environmental hostility is not significantly correlated with either predictor or criterion variables. To determine whether environmental hostility acts as a homologiser in the relationship between strategic planning and objective fulfilment a sub-group analysis was conducted by splitting the sample at the median on hostility. Results of the sub-group analysis are shown in Table 9.7.

Table 9.7: Correlations between Strategic Planning and Objective Fulfilment broken down by High-Low Hostility

High Hostility	Low Hostility
0.599**	0.667**

** Correlation is significant at the 0.01 level (2-tailed).

Since the two correlations are not significantly different there is no difference in the predictive validity of strategic planning for objective fulfilment across the two groups. Hence environmental hostility is not a moderator in this relationship.

The moderated regression analysis was repeated with relative competitive performance as the dependent variable and the results are presented below. The model summary presented in Table 9.8 indicates that the R Square change for model 2 is significant at the borderline level ($p \leq 0.055$) and hence there is interaction to some extent. The coefficient matrix is shown in Table 9.9.

Table 9.8: Model Summary – Relative Competitive Performance Regressed on Strategic Planning, Environment

Model	R	R Square	Adjusted R Square	R Square Change	F Change	Sig. F Change
1	0.363	0.132	0.110	0.132	6.088	0.001
2	0.432	0.186	0.145	0.054	2.606	0.055

Table 9.9: Beta Coefficients – Relative Competitive Performance Regressed on Strategic Planning, Environment

Independent Variables	Beta Coefficients	
	Model 1	Model 2
Strategic Planning	0.323**	-0.323
Dynamism	0.004	-1.156†
Hostility	-0.192*	-1.303**
Strategic Planning X Dynamism		0.595
Strategic Planning X Hostility		0.483
Dynamism X Hostility		1.185†

† $p \leq 0.10$; * $p \leq 0.05$; ** $p \leq 0.001$

Following Prescott (1986) the correlations between the environmental variables and both the predictor and criterion variables were examined. As shown in Table 9.4, environmental dynamism is significantly correlated with strategic planning and not with relative competitive performance. Environmental hostility is not significantly correlated with either strategic planning or relative competitive performance. Hence according to figure 7.2 in chapter 7, environmental dynamism could act as a quasi moderator and environmental hostility would be a pure moderator in the relationship between strategic planning and relative competitive performance. A sub-group analysis was conducted by splitting the sample at median on dynamism and hostility and the correlations between strategic planning and relative competitive performance for the sub-groups are shown in table 9.10.

Table 9.10: Correlations between Strategic Planning and Relative Competitive Performance broken down by High-Low Dynamism and Hostility

High Dynamism	Low Dynamism	High Hostility	Low Hostility
0.360**	0.294*	0.414**	0.217

*. Correlation is significant at the 0.05 level (2-tailed)
**.Correlation is significant at the 0.01 level (2-tailed)

Table 9.10 shows highly significant relationship between strategic planning and relative competitive performance in high-dynamism environments as well as high-hostility environments. The results of the moderated regression analysis are summarised in table 9.11.

Table 9.11: Results of the Moderated Regression Analysis - Performance Regressed on Strategic Planning, Environment

Regression	Hypothesised Moderators	Correlations with		Interaction Effect	Results of the Sub-group Analysis	Type of Effect
		Predictor Variable	Criterion Variable			
1		Strategic Planning	Objective Fulfilment	No		Intervening, exogenous, antecedent, suppressor or predictor
	Dynamism	Significant	Significant		Not Applicable	
	Hostility	Not Significant	Not Significant		Correlations between the predictor and criterion variables are not significantly different for both the groups	Not a Moderator
2		Strategic Planning	Relative Competitive Performance	Yes (Borderline significance)		
	Dynamism	Significant	Not significant		Correlations between the predictor and criterion variables are highly significant in high-dynamism environment	Quasi Moderator
	Hostility	Not significant	Not significant		Correlations between the predictor and criterion variables are highly significant in high-hostility environment	Pure Moderator

Environmental dynamism and hostility do not act as moderators in the relationship between strategic planning and objective fulfilment. In the relationship between strategic planning and relative competitive performance, environmental dynamism acts as a quasi moderator and hostility acts as a pure moderator. Both the quasi moderators and pure moderators modify the form of the relationship between predictor and criterion variables. The results of the moderated regression analysis summarised in table 9.11 provide partial support for hypothesis H1b.

9.3.2 Business-level Strategy (Hypotheses: H2a, H2b, H2c and H2d)

Hypotheses H2a and H2b examine the relationship between business-level strategy and performance. In H2c the moderating effect of environmental dynamism and hostility on this relationship and in H2d the moderating effect of organisational structure on this relationship are examined. The analyses carried out to test these hypotheses and the results obtained are presented below.

9.3.2.1 Hypothesis H2a: Business-level Strategy and Performance

H2a: Organisations having a clear business-level strategy by adopting one of the strategies namely cost-related, differentiation or integrated strategies will perform better than those organisations which are stuck-in-the-middle.

In order to test this hypothesis a new nonmetric variable representing the four strategic types namely cost-related, differentiation, integrated strategies and stuck-in-the-middle was created[3]. The organisations which have above-median scores in cost-related and below-median scores in differentiation were classified as firms following cost-related strategies and the ones which have above-median scores in differentiation and below-median scores in cost-related were classified as differentiators. The organisations which have above-median scores in both cost-related and differentiation were classified as firms following integrated strategies. In this study stuck-in-the-middle companies are defined as those organisations which do not give emphasis to cost-related, differentiation or integrated strategy. In other words those organisations do not have a clearly defined strategy. Hence organisations having below-median scores in both cost-

[3] *The medians of cost-related and differentiation variables are 4.8333 and 4.8000 respectively. The four strategic types were identified as follows:*
If cost-related > 4.8333 and differentiation < 4.8000, strategic type = 1 (Cost-related Strategy)
If cost-related < 4.8333 and differentiation > 4.8000, strategic type = 2 (Differentiation)
If cost-related > 4.8333 and differentiation > 4.8000, strategic type = 3 (Integrated Strategy)
If cost-related < 4.8333 and differentiation < 4.8000, strategic type = 4 (Stuck-in-the-middle)

related and differentiation were classified as stuck-in-the-middle companies. The numbers of organisations belonging to each of these groups are: cost-related – 39, differentiation – 26, integrated strategies – 32 and stuck-in-the-middle – 27. Analysis of Variance was conducted with this variable as the independent variable and performance as dependent variable. ANOVA was conducted twice with the two performance variables namely objective fulfilment and relative competitive performance as dependent variables. The results of this analysis are presented below.

First of all ANOVA was conducted with objective fulfilment as the dependent variable and the observed statistical power with a significance level (α) of 0.05 was 0.823. The Levene's test for homogeneity of variances did not produce significant result ($p = 0.388$) and hence this assumption was not violated. There was a statistically significant difference at the $p < 0.05$ level in the performance for the four groups: F (3, 120) = 3.962, $p = .010$ and the effect size calculated using eta squared was 0.09. An eta square value of 0 indicates that there are no differences in the mean scores among groups. An eta square value of 1 indicates that there are differences between at least two of the means on the dependent variable and that there are no differences on the dependent variable scores within each of the groups. In general eta square is interpreted as the proportion of variance of the dependent variable that is related to the factor. Eta square values of 0.01, 0.06 and 0.14 are by convention interpreted as small, medium and large effect sizes respectively (Green & Salkind, 2008). The Post Hoc test results using the Bonferroni's method is shown in Table 9.12 indicate that organisations following one of the strategies namely cost-related, differentiation or integrated strategy perform better than those organisations which are stuck-in-the-middle. The Bonferroni's test indicates that difference in performance is statistically significant ($p<0.05$) only between companies following integrated strategies and stuck-in-the-middle companies. However,

Tukey's extension of the Fisher least significant difference (LSD) test (see Table I.1, Appendix I) indicates that the difference between the performance levels of organisations having clear strategies (cost-related, differentiation, integrated strategies) and stuck-in-the-middle companies are statistically significant at $p<0.05$ level. The results obtained using other Post Hoc methods like Tukey's Honestly Significant Difference (HSD) method, the Scheffé method are presented in table I.1 in Appendix I.

Table 9.12: Post Hoc Tests – Strategic Types and Objective Fulfilment

	(I) Business Strategy type	(J) Business Strategy type	Mean Difference (I-J)	Std. Error	Sig.
Bonferroni	Cost-related	Differentiation	.0192308	.19989987	1.000
		Integrated Strategies	-.1911058	.18832011	1.000
		Stuck-in-the-middle	.4992877	.19766628	.077
	Differentiation	Cost-related	-.0192308	.19989987	1.000
		Integrated Strategies	-.2103365	.20846212	1.000
		Stuck-in-the-middle	.4800570	.21694228	.173
	Integrated Strategies	Cost-related	.1911058	.18832011	1.000
		Differentiation	.2103365	.20846212	1.000
		Stuck-in-the-middle	.6903935(*)	.20632125	.007
	Stuck-in-the-middle	Cost-related	-.4992877	.19766628	.077
		Differentiation	-.4800570	.21694228	.173
		Integrated Strategies	-.6903935(*)	.20632125	.007

* The mean difference is significant at the .05 level.

The ANOVA test was conducted again with relative competitive performance as the dependent variable. The observed statistical power with a significance level (α) of 0.05 was 0.884. The 'p' value for Levene's test for homogeneity of variances was 0.106 and hence the homogeneity assumption was not violated. The ANOVA test indicated that there was significant difference at $p < 0.05$ level in the relative competitive performance for the four groups: $F(3,120) = 4.649$, $p = 0.004$ and the effect size calculated using eta squared was 0.104. The results of the Post Hoc test using Bonferroni's method are shown in Table 9.13 and they indicate that organisations following one of the strategies namely cost-related, differentiation or integrated strategy perform better than those

organisations which are stuck-in-the-middle. According to this method, this difference is significant ($p<0.05$) only between differentiation group and stuck-in-the-middle group and between integrated strategy group and stuck-in-the-middle group. However, according to the LSD method (see Table I.2, Appendix I) there is a significant difference at $p<0.05$ level in the performance levels of organisations having a clear strategy (cost-related, differentiation, integrated strategies) and stuck-in-the-middle companies. The results obtained using other Post Hoc methods like Tukey's HSD method and the Scheffé method are presented in table I.2 in Appendix I. The results of these two ANOVAs provide support for hypothesis H2a[4].

Table 9.13: Post Hoc Tests - Strategic Types and Relative Comp. Performance

	(I) Business Strategy type	(J) Business Strategy type	Mean Difference (I-J)	Std. Error	Sig.
Bonferroni	Cost-related	Differentiation	-.2650	.21527	1.000
		Integrated Strategies	-.3218	.20280	.691
		Stuck-in-the-middle	.4378	.21287	.251
	Differentiation	Cost-related	.2650	.21527	1.000
		Integrated Strategies	-.0569	.22449	1.000
		Stuck-in-the-middle	.7028(*)	.23363	.019
	Integrated Strategies	Cost-related	.3218	.20280	.691
		Differentiation	.0569	.22449	1.000
		Stuck-in-the-middle	.7596(*)	.22219	.005
	Stuck-in-the-middle	Cost-related	-.4378	.21287	.251
		Differentiation	-.7028(*)	.23363	.019
		Integrated Strategies	-.7596(*)	.22219	.005

* The mean difference is significant at the .05 level.

9.3.2.2 Hypothesis H2b: Integrated Strategies

H2b: Organisations following integrated strategies will perform better than those pursuing either a cost-related strategy or a differentiation strategy.

[4] *In order to confirm the results this test was repeated with another nonmetric variable representing the strategic types and this variable was created by dichotomising the business-level strategy variables using their means. ANOVA was conducted on the dependent variables objective fulfilment and relative competitive performance and Post Hoc test results are presented in tables I.3 and I.4 in Appendix I. The results obtained from these two ANOVA tests are similar to the results obtained from the previous two ANOVA tests conducted using the strategic type variable based on medians.*

In this hypothesis the performance of organisations following integrated strategies was compared to the performance of organisations pursuing cost-related strategy and differentiation strategy. The results of the Post Hoc tests presented in Table 9.12 and 9.13 indicate that organisations following integrated strategies perform better than organisations using either cost-related or differentiation strategies. However the difference in performance is not statistically significant at $p<0.05$ level in both cases. Similar results were obtained when the second set of Post Hoc tests were conducted with the nonmetric variable representing the strategic types created by dichotomising the business-level strategy variables using their means.

The mean plot comparing the performance of organisations having the four strategic orientations in terms of objective fulfilment is presented in Figure 9.1. Figure 9.1 was generated during the ANOVA test using the variable created for defining the strategic types by splitting the continuous strategy variables at the median[5]. This graph indicates that organisations with integrated strategies perform better than the organisations adopting either a cost-related or a differentiation strategy.

[5] *Similarly the graph obtained during the ANOVA test using the strategic type variable created by splitting the continuous strategy variables at mean is presented in figure I.1 in Appendix I.*

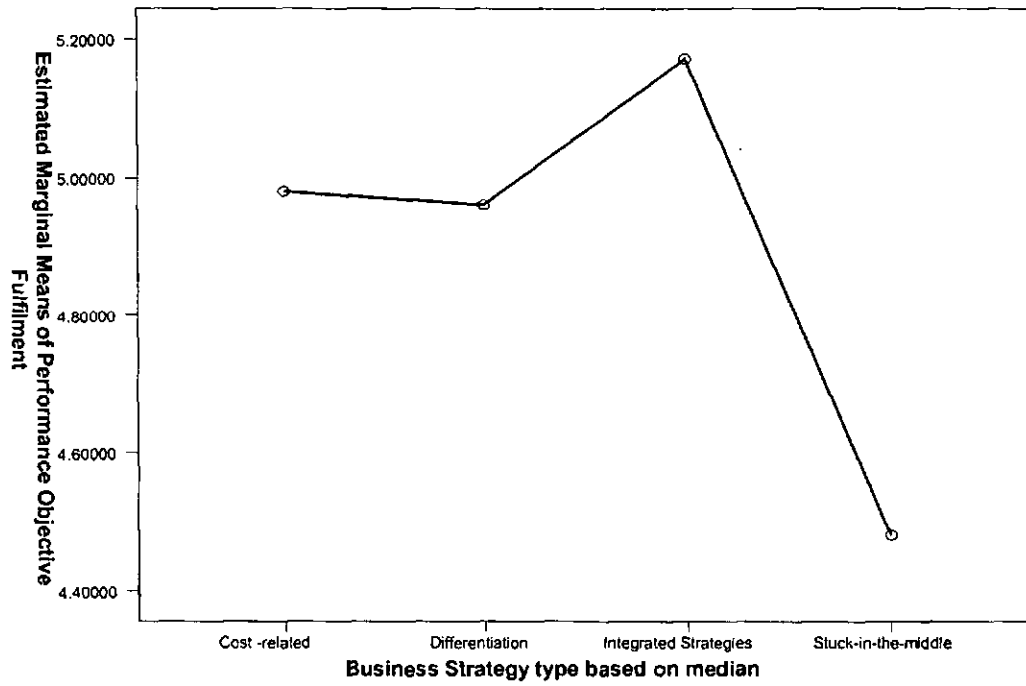

Fig 9.1: Strategic Types and Objective Fulfilment

The mean plots comparing the relative competitive performance of organisations having the four strategic orientations are shown in Figure 9.2.

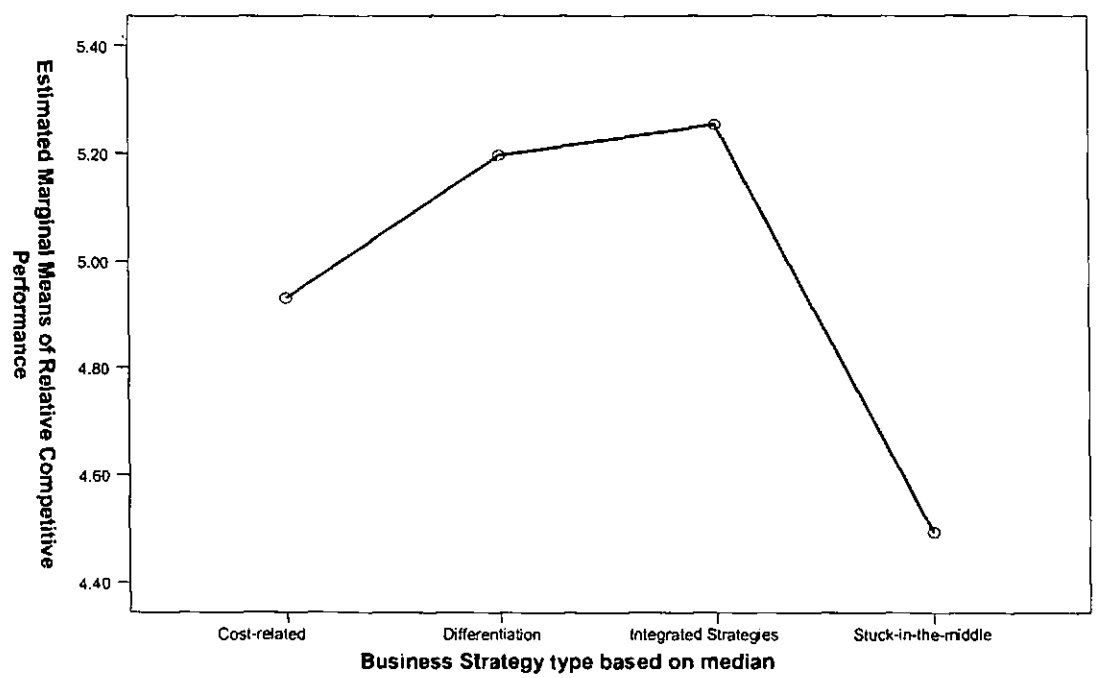

Fig 9.2: Strategic Types and Relative Comp. Performance

Figure 9.2 was generated during the ANOVA test using the variable created for defining the strategic types by splitting the continuous strategy variables at median[6]. Figure 9.2 indicates that the organisations adopting integrated strategies perform marginally better than the ones adopting either a cost-related strategy or a differentiation strategy. The difference in the performance levels between the integrated strategy group and the rest is not remarkable. The results of the ANOVA tests provide partial support for hypothesis H2b.

9.3.2.3 Hypothesis H2c: The Moderating Effect of Environment

H2c: Environmental dynamism and hostility moderate the relationship between business-level strategy and organisational performance.

Multiple moderated regression analysis was conducted to examine the moderating effect of environment on the relationship between business-level strategy and performance. Regression analysis was carried out separately on the two dependent variables namely objective fulfilment and relative competitive performance. Four regression analyses were carried out and the details of the independent and dependent variables are shown in Table 9.14. The means, standard deviations and correlations of all the variables involved in testing this hypothesis are shown in Table 9.15.

The correlations between objective fulfilment and the two types of business-level strategies are significant. However, the correlations of these two types of strategies with relative competitive performance are not significant.

[6] *Similarly the plot obtained during the ANOVA test using the strategic type variable created by splitting the continuous strategy variables at mean is presented in figure I.2 in Appendix I.*

Table 9.14: Variables used for Regressing Performance on Business-level Strategy, Environment

Regression	Independent Variables	Interaction Terms	Dependent Variable
1	Cost-related Dynamism Hostility	Cost-related x Dynamism Cost-related x Hostility Dynamism x Hostility	Objective Fulfilment
2	Cost-related Dynamism Hostility	Cost-related x Dynamism Cost-related x Hostility Dynamism x Hostility	Relative Competitive Performance
3	Differentiation Dynamism Hostility	Differentiation x Dynamism Differentiation x Hostility Dynamism x Hostility	Objective Fulfilment
4	Differentiation Dynamism Hostility	Differentiation x Dynamism Differentiation x Hostility Dynamism x Hostility	Relative Competitive Performance

Table 9.15: Correlations, Means and Standard Deviations of Business-level Strategy, Environment and Performance Variables

Variable	Mean	S.D.	1	2	3	4	5	6
1. Cost-related (CR)	4.8253	0.9916	1					
2. Differentiation (DIFF)	4.7645	1.0034	0.062	1				
3. Dynamism (ED)	4.4314	0.8996	0.166	0.445**	1			
4. Hostility (HOS)	4.8185	1.0675	0.084	0.132	0.097	1		
5. Objective Fulfilment (OF)	4.9173	0.8176	0.340**	0.278**	0.326**	0.080	1	
6. Relative Competitive Performance (RCP)	4.9749	0.8873	0.167	0.146	0.138	-0.164	0.335**	1

*. Correlation is significant at the 0.05 level
**. Correlation is significant at the 0.01 level

Table 9.16 shows the Beta coefficients obtained by regressing objective fulfilment on dynamism, hostility and cost-related strategy.

Model 1 comprises of cost-related strategy, dynamism and hostility as independent variables and model 2 includes the interaction terms in addition to these three variables.

Table 9.16: Beta Coefficients – Objective Fulfilment Regressed on Cost-related Strategy, Environment

Independent Variables	Beta Coefficients	
	Model 1	Model 2
Cost-related Strategy	0.292**	1.300*
Dynamism	0.275**	0.642
Hostility	0.029	0.882
Cost-related X Dynamism	----	-0.453
Cost-related X Hostility	----	-1.129
Dynamism X Hostility	----	-0.080

* Significant at the 0.05 level; ** Significant at the 0.01 level

Table 9.17: Model Summary - Objective Fulfilment Regressed on Cost-related Strategy, Environment

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.437[a]	.191	.171	.7444814	.191	9.445	3	120	.000
2	.468[b]	.219	.179	.7409103	.028	1.387	3	117	.250

a. Predictors: (Constant), Mean of hos2 and hos3, Mean of Cost-related, Environmental Dynamism (PLS)

b. Predictors: (Constant), Mean of hos2 and hos3, Mean of Cost-related, Environmental Dynamism (PLS), Environmental Dynamism Final X Environmental Hostility, Cost-related X Hostility, Cost-related X Env. Dynamism (PLS)

The model summary presented in Table 9.17 gives the R^2 values for both the models. It can be seen that the change in R^2 value is not significant and hence there is no significant interaction between environmental variables namely dynamism and hostility and cost-related strategy.

In the second step of the analysis the correlations between the environmental variables and both the predictor and criterion variables were examined to determine whether they are significantly related to each other or not. The correlation matrix shown in Table 9.15 indicates that cost-related strategy is not significantly correlated with either environmental dynamism or hostility. Objective fulfilment is significantly correlated

with environmental dynamism but not with hostility. Following Prescott (1986) a sub-group analysis was conducted to determine whether environmental dynamism and hostility act as a homologiser in the relationship between cost-related strategy and objective fulfilment by splitting the sample at the median on dynamism and hostility. Results of the sub-group analysis are shown in Table 9.18.

Table 9.18: Correlations between Cost-related Strategy and Objective Fulfilment broken down by High-Low Dynamism and Hostility

High Dynamism	Low Dynamism	High Hostility	Low Hostility
0.307*	0.350**	0.238	0.440**

*. Correlation is significant at the 0.05 level (2-tailed)
**.Correlation is significant at the 0.01 level (2-tailed)

The correlations between cost-related strategy and objective fulfilment are not significantly different in environments having high dynamism and low dynamism. Hence environmental dynamism is not a moderator in this relationship. This correlation is significant in environments having low hostility and not significant in highly hostile environments. Hence environmental hostility acts as homologiser in the relationship between cost-related strategy and objective fulfilment.

The second moderated regression analysis as shown in Table 9.14 with relative competitive performance as the dependent variable was carried out and the beta coefficients are shown in Table 9.19. The model summary presented in Table 9.20 gives the R^2 values for both the models. As indicated by the model summary the R^2 change is not significant and hence there is no significant interaction effect of the environment variables in the relationship between cost-related strategy and relative competitive performance.

Table 9.19: Beta Coefficients – Relative Competitive Performance Regressed on Cost-related Strategy, Environment

Independent Variables	Beta Coefficients	
	Model 1	Model 2
Cost-related	0.161	0.489
Dynamism	0.129	-0.866
Hostility	-0.190*	-0.475
Cost-related X Dynamism	----	0.225
Cost-related X Hostility	----	-0.766
Dynamism X Hostility	----	1.260*

* Significant at the 0.05 level

Table 9.20: Model Summary - Relative Competitive Performance Regressed on Cost-related Strategy, Environment

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.276[a]	.076	.053	.86352	.076	3.266	3	120	.023
2	.345[b]	.119	.074	.85379	.043	1.917	3	117	.131

a. Predictors: (Constant), Mean of hos2 and hos3, Mean of Cost-related, Environmental Dynamism (PLS)

b. Predictors: (Constant), Mean of hos2 and hos3, Mean of Cost-related, Environmental Dynamism (PLS), Environmental Dynamism Final X Environmental Hostility, Cost-related X Hostility, Cost-related X Env. Dynamism (PLS)

Following Prescott (1986) the correlations between environmental variables and the criterion variables were examined. As shown in Table 9.15, relative competitive performance is not significantly correlated with either environmental dynamism or hostility. A sub-group analysis was conducted to ascertain whether environmental dynamism and hostility act as a homologiser in the relationship between cost-related strategy and relative competitive performance by splitting the sample at the median on dynamism and hostility. The results of the sub-group analysis are shown in Table 9.21.

Table 9.21: Correlations between Cost-related Strategy and Relative Competitive Performance broken down by High-Low Dynamism and Hostility

High Dynamism	Low Dynamism	High Hostility	Low Hostility
0.226	0.115	0.064	0.296*

*. Correlation is significant at the 0.05 level (2-tailed)

**.Correlation is significant at the 0.01 level (2-tailed)

The correlations between cost-related strategy and relative competitive performance are not significantly different for both high dynamism and low dynamism groups and hence environmental dynamism does not act as a moderator in this relationship. However this correlation is significant for the low hostility group and not significant for the high hostility group and hence environmental hostility acts as a homologiser in this relationship.

The third moderated regression analysis as shown in Table 9.14 was carried out with differentiation as the independent variable and objective fulfilment as the dependent variable. The beta coefficients are shown in Table 9.22 and the model summary is presented in Table 9.23.

Table 9.22: Beta Coefficients – Objective Fulfilment Regressed on Differentiation, Environment

Independent Variables	Beta Coefficients	
	Model 1	Model 2
Differentiation	0.162	0.380
Dynamism	0.250*	0.068
Hostility	0.035	0.135
Differentiation X Dynamism	----	0.038
Differentiation X Hostility	----	-.375
Dynamism X Hostility	----	.235

* Significant at the 0.05 level

Table 9.23: Model Summary - Objective Fulfilment Regressed on Differentiation, Environment

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.360[a]	.130	.108	.77223629	.130	5.955	3	120	.001
2	.364[b]	.133	.088	.76068071	.003	.139	3	117	.936

a. Predictors: (Constant), Mean of hos2 and hos3, Environmental Dynamism (PLS), Differentiation (PLS)

b. Predictors: (Constant), Mean of hos2 and hos3, Environmental Dynamism (PLS), Differentiation (PLS), Differentiation (PLS) X Env. Hostility, Differentiation (PLS) X Env. Dynamism (PLS), Environmental Dynamism Final X Environmental Hostility

The R^2 change is not significant and hence there is no significant interaction effect of environment. In the next step of the moderated regression analysis, the correlations

between the environmental variables and differentiation were examined. As shown in Table 9.15, differentiation is significantly correlated with environmental dynamism hence dynamism is an intervening, exogenous, antecedent, suppressor or predictor variable. Further analysis need to be conducted to ascertain the nature of this variable. Environmental hostility is not significantly correlated with either differentiation or objective fulfilment. A sub-group analysis was conducted to determine whether environmental hostility acts as a homologiser in the relationship between differentiation and objective fulfilment by splitting the sample at the median on hostility. The results of the sub-group analysis are presented in Table 9.24.

Table 9.24: Correlations between Differentiation and Objective Fulfilment broken down by High-Low Hostility

High Hostility	Low Hostility
0.254*	0.290*

*. Correlation is significant at the 0.05 level (2-tailed)

The correlations are not significantly different for both the high hostility and low hostility groups and hence environmental hostility does not act as moderator in the relationship between differentiation and objective fulfilment.

The fourth moderated regression analysis as shown in Table 9.14 was conducted with relative competitive performance as the dependent variable. The beta coefficients are shown in Table 9.25 and the Model summary is presented in Table 9.26. The R^2 change as indicated in Table 9.26 is significant indicating an interaction effect. Following Prescott (1986) the correlations between environmental variables and relative competitive performance were examined.

Table 9.25: Beta Coefficients – Relative Competitive Performance Regressed on Differentiation, Environment

Independent Variables	Beta Coefficients	
	Model 1	Model 2
Differentiation	0.126	-0.606
Dynamism	0.100	-1.139
Hostility	-0.190*	-1.275**
Differentiation X Dynamism	----	.760
Differentiation X Hostility	----	.505
Dynamism X Hostility	----	1.135

* Significant at the 0.05 level; ** Significant at the 0.01 level

Table 9.26: Model Summary - Relative Competitive Performance Regressed on Differentiation, Environment

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.252[a]	.063	.040	.86938	.083	2.706	3	120	.048
2	.359[b]	.129	.084	.64927	.065	2.917	3	117	.037

a. Predictors: (Constant), Mean of hos2 and hos3, Environmental Dynamism (PLS), Differentiation (PLS)

b. Predictors: (Constant), Mean of hos2 and hos3, Environmental Dynamism (PLS), Differentiation (PLS), Differentiation (PLS) X Env. Hostility, Differentiation (PLS) X Env. Dynamism (PLS), Environmental Dynamism Final X Environmental Hostility

As mentioned earlier relative competitive performance is not significantly correlated with either environmental dynamism or hostility. Hence both environmental dynamism and hostility act as pure moderators that influence the form of the relationship between differentiation and relative competitive performance (see Prescott, 1986). A sub-group analysis was conducted by splitting the sample at the median on dynamism and hostility and the correlations between differentiation and relative competitive performance for the groups are shown in Table 9.27.

Table 9.27: Correlations between Differentiation and Relative Competitive Performance broken down by High-Low Dynamism and Hostility

High Dynamism	Low Dynamism	High Hostility	Low Hostility
0.271*	0.058	0.299*	0.032

*. Correlation is significant at the 0.05 level (2-tailed)

**.Correlation is significant at the 0.01 level (2-tailed)

The results presented in table 9.27 indicate that differentiation is significantly related to relative competitive performance in high-dynamism and high-hostility environments. The results of the moderated regression analysis are summarised in Table 9.28[7].

Table 9.28: Results of the Moderated Regression Analysis - Performance Regressed on Business-level Strategy, Environment

Regression	Hypothesised Moderators	Correlations with		Interaction Effect	Results of the Sub-group Analysis	Type of Effect
		Predictor Variable	Criterion Variable			
1		Cost-related	Objective Fulfilment	No	Correlations between the predictor and criterion variables are not significantly different for both the groups	Not a moderator
	Dynamism	Not Significant	Significant			
	Hostility	Not significant	Not significant		Correlations are significantly different for both the groups	Moderator (Homologiser)
2		Cost-related	Relative Competitive Performance	No	Correlations between the predictor and criterion variables are not significantly different for both the groups	Not a moderator
	Dynamism	Not significant	Not significant			
	Hostility	Not significant	Not significant		Correlations are significantly different for both the groups	Moderator (Homologiser)
3		Differentiation	Objective Fulfilment	No	Not applicable	Intervening, Exogenous, Antecedent, Suppressor or Predictor
	Dynamism	Significant	Significant			
	Hostility	Not Significant	Not Significant		Correlations between the predictor and criterion variables are not significantly different for both the groups	Not a moderator

[7] *In order to assess whether environment moderates the relationship between integrated strategies and performance, moderated regression analysis was carried out by including both cost-related strategy and differentiation as predictors along with environmental dynamism and hostility. It was found that there were no interaction effects. Hence environmental dynamism and hostility do not act as either quasi moderators or pure moderators in the relationship between integrated strategies and the performance measures.*

4	Dynamism	Differentiation	Relative Competitive Performance	Yes	Correlation between predictor and criterion variables is significant for the high-dynamism group	Pure moderator
		Significant	Not Significant			
	Hostility	Not significant	Not significant		Correlation between predictor and criterion variables is significant for the high-hostility group	Pure moderator

The moderated regression analysis indicates that environmental dynamism does not act as a moderator in the relationship between cost-related strategy and both the performance measures. In the relationship between differentiation and relative competitive performance, dynamism acts as a pure moderator which modifies the form of the relationship. However, in the relationship between differentiation and objective fulfilment, it does not have a moderating effect. Environmental hostility acts as a homologiser in the relationship between cost-related strategy and both the performance measures. A homologiser influences the strength of the relationship between the predictor and criterion variables. Hostility acts as a pure moderator in the relationship between differentiation and relative competitive performance and does not act as a moderator in the relationship between differentiation and objective fulfilment. The results of the analysis provide partial support to Hypothesis H2c.

9.3.2.4 Hypothesis H2d: The Moderating Effect of Structure

H2d: Organisational structure moderates the relationship between business-level strategy and organisational performance.

In this hypothesis the moderating effect of organisational structure on the relationship between business-level strategy and performance is examined. As indicated in Table 7.4 in chapter 7, this relationship was examined by using the moderated regression analysis

and two-way ANOVA. Four moderated regression analyses as shown in Table 9.29 were conducted and the details of the variables used are shown in the table.

Table 9.29: Variables Used for Regressing Performance on Business-level Strategy, Structure

Regression	Independent Variables	Interaction Terms	Dependent Variable
1	Cost-related Structure	Cost-related x Structure	Objective Fulfilment
2	Cost-related Structure	Cost-related x Structure	Relative Competitive Performance
3	Differentiation Structure	Differentiation x Structure	Objective Fulfilment
4	Differentiation Structure	Differentiation x Structure	Relative Competitive Performance

The correlations, means and standard deviations are shown in Table 9.30.

Table 9.30: Correlations, Means and Standard Deviations of Business-level Strategy, Structure and Performance Variables

Variable	Mean	S.D.	1	2	3	4	5
1 Cost-related (CR)	4.8253	0.9916	1				
2 Differentiation (DIFF)	4.7645	1.0034	0.062	1			
3 Structure (STRUCT)	4.2858	0.8097	0.097	0.448**	1		
4 Objective Fulfilment (OF)	4.9173	0.8176	0.340**	0.278**	0.448**	1	
5 Relative Competitive Performance (RCP)	4.9749	0.8873	0.167	0.146	0.406**	0.335**	1

**.Correlation is significant at the 0.01 level

The first moderated regression analysis as shown in Table 9.29 was carried out and the beta coefficients are presented in Table 9.31 and the model summary is provided in Table 9.32.

Table 9.31: Beta Coefficients – Objective Fulfilment Regressed on Cost-related Strategy and Structure

Independent Variables	Beta Coefficients	
	Model 1	Model 2
Cost-related	0.299**	0.918*
Structure	0.419**	0.977**
Cost-related X Structure		-0.881

* .Significant at the 0.05 level; **.Significant at the 0.01 level

Table 9.32: Model Summary - Objective Fulfilment Regressed on Cost-related Strategy and Structure

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.538[a]	.289	.278	.69491737	.289	24.825	2	121	.000
2	.551[b]	.304	.288	.69065115	.015	2.499	1	120	.117

a. Predictors: (Constant), Mean of Structure variables excluding str5 and str7, Mean of Cost-related

b. Predictors: (Constant), Mean of Structure variables excluding str5 and str7, Mean of Cost-related, Cost-related X Structure

The R^2 change is not significant and hence there is no significant interaction effect. In the next step of the analysis the correlations between structure and the predictor variable was examined. As shown in Table 9.30, structure is not significantly correlated with cost-related strategy and hence a sub-group analysis was conducted to determine whether structure acts as a homologiser in the relationship between cost-related strategy and objective fulfilment by splitting the sample at median on structure. The above-median group represents organic structure and below-median group represents mechanistic structure. The results of the sub-group analysis are presented in Table 9.33.

Table 9.33: Correlations between Cost-related Strategy and Objective Fulfilment broken down by Mechanistic and Organic Structure

Mechanistic Structure	Organic Structure
0.330*	0.371**

*. Correlation is significant at the 0.05 level (2-tailed)

**.Correlation is significant at the 0.01 level (2-tailed)

Both the correlations are not significantly different and hence structure does not act as a moderator in the relationship between cost-related strategy and objective fulfilment. The second regression as indicated in Table 9.29 was carried out and the Beta Coefficients are shown in Table 9.34 and the model summary is presented in Table 9.35.

Table 9.34: Beta Coefficients – Relative Competitive Performance Regressed on Cost-related Strategy and Structure

Independent Variables	Beta Coefficients	
	Model 1	Model 2
Cost-related	0.129	-0.073
Structure	0.393**	0.212
Cost-related X Structure		0.286

**.Significant at the 0.01 level

Table 9.35: Model Summary - Relative Competitive Performance Regressed on Cost-related and Structure

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.426[a]	.181	.168	.80949	.181	13.390	2	121	.000
2	.427[b]	.183	.162	.81209	.002	.225	1	120	.838

a. Predictors: (Constant), Mean of Structure variables excluding str5 and str7, Mean of Cost-related

b. Predictors: (Constant), Mean of Structure variables excluding str5 and str7, Mean of Cost-related, Cost-related X Structure

As shown in Table 9.35, the R^2 change is not significant and hence there is no interaction effect. As shown in Table 9.30, structure is not significantly correlated with cost-related strategy and hence a sub-group analysis was conducted to determine whether structure acts as homologiser in the relationship between cost-related strategy and relative competitive performance by splitting the sample at median for structure. The results of the sub-group analysis are presented in Table 9.36.

Table 9.36: Correlations between Cost-related Strategy and Relative Competitive Performance broken down by Mechanistic and Organic Structure

Mechanistic Structure	Organic Structure
0.149	0.187

Since both the correlations are not significantly different, structure does not act as a moderator in the relationship between cost-related strategy and relative competitive performance.

The third regression analysis as shown in Table 9.29 was carried out and the beta coefficients are shown in Table 9.37 and the model summary is presented in Table 9.38.

Table 9.37: Beta Coefficients – Objective Fulfilment Regressed on Differentiation and Structure

Independent Variables	Beta Coefficients	
	Model 1	Model 2
Differentiation	0.097	0.589
Structure	0.405**	0.826**
Differentiation X Structure		-0.786

* Significant at the 0.05 level; **.Significant at the 0.01 level

Table 9.38: Model Summary - Objective Fulfilment Regressed on Differentiation and Structure

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.456[a]	.208	.195	.73343429	.208	15.919	2	121	.000
2	.469[b]	.220	.200	.73105373	.012	1.769	1	120	.184

a. Predictors: (Constant), Mean of Structure variables excluding str5 and str7, Differentiation (PLS)

b. Predictors: (Constant), Mean of Structure variables excluding str5 and str7, Differentiation (PLS), Differentiation (PLS) X Structure

The R^2 change is not significant and hence there is no significant interaction effect. Structure significantly correlates with differentiation and hence structure acts as an intervening, exogenous, antecedent, suppressor or predictor variable in the relationship between differentiation and objective fulfilment.

The fourth regression analysis as shown in Table 9.29 was carried out and the beta coefficients are shown in Table 9.39 and the model summary is presented in Table 9.40.

Table 9.39: Beta Coefficients – Relative Competitive Performance Regressed on Differentiation and Structure

Independent Variables	Beta Coefficients	
	Model 1	Model 2
Differentiation	-0.045	-0.498
Structure	0.426**	0.039
Differentiation X Structure		0.722

**.Significant at the 0.01 level

Table 9.40: Model Summary - Relative Competitive Performance Regressed on Differentiation and Structure

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.408[a]	.166	.153	.81674	.166	12.083	2	121	.000
2	.420[b]	.176	.158	.81529	.010	1.432	1	120	.234

a. Predictors: (Constant), Mean of Structure variables excluding str5 and str7, Differentiation (PLS)

b. Predictors: (Constant), Mean of Structure variables excluding str5 and str7, Differentiation (PLS), Differentiation (PLS) X Structure

The R^2 change is not significant and hence there is no interaction effect. Structure significantly correlates with differentiation and hence structure acts as an intervening, exogenous, antecedent, suppressor or predictor variable in the relationship between differentiation and relative competitive performance.

The results of the moderated regression analysis are summarised in Table 9.41.

Table 9.41: Results of the Moderated Regression Analysis – Performance Regressed on Business-level Strategy, Structure

Regression	Hypothesised Moderator	Correlations with		Interaction Effect	Results of the Sub-group Analysis	Type of Effect
		Predictor Variable	Criterion Variable			
1	Structure	Cost-related	Objective Fulfilment	No	Correlations between the predictor and criterion variables are not significantly different for both the groups	Not a Moderator
		Not Significant	Significant			
2	Structure	Cost-related	Relative Competitive Performance	No	Correlations between the predictor and criterion variables are not significantly different for both the groups	Not a Moderator
		Not Significant	Not Significant			

3	Structure	Differentiation Significant	Objective Fulfilment Significant	No	Not applicable	intervening, exogenous, antecedent, suppressor or predictor
4	Structure	Differentiation Significant	Relative Competitive Performance Significant	No	Not applicable	intervening, exogenous, antecedent, suppressor or predictor

As per the guidelines provided by Sharma, Durand and Gur-Arie (1981) and Prescott (1986), the moderated regression analysis does not indicate that structure acts as a moderator in the relationship between business-level strategy and performance. The moderated regression analysis provides insufficient evidence to support hypothesis H2d.

In order to confirm the results obtained from moderated regression analysis, a two-way ANOVA was carried out as indicated in Table 7.4 in chapter 7. A new dichotomous, nonmetric variable to identify the structure type of organisations was created[8]. The nonmetric variable created to identify the strategic types by splitting the continuous strategy variables at median was used as the second independent variable in the two-way ANOVA.

In the first part of the analysis, two-way ANOVA was conducted with objective fulfilment as the dependent variable and the observed statistical power with a significance level (α) of 0.05 was 0.963. Levene's test for homogeneity of variances produced non-significant result ($p = 0.160$) and hence the assumption was not violated. The ANOVA results do not show a statistically significant interaction between strategy and structure, F (3,116) = 0.844, p = 0.472 and hence there is no indication of a

[8] *The median of the continuous variable representing organisational structure is 4.3333 and a new variable to identify the structure type of organisations was created as follows.*
If structure > 4.3333, structure type = 1 (Organic Structure)
If structure ≤4.3333, structure type = 2 (Mechanistic Structure)

moderating effect of organisational structure on the relationship between strategy and objective fulfilment. Figure 9.3 shows the nature of relationship between strategy, structure and objective fulfilment. As shown in this graph, organisations employing integrated strategies and having an organic structure perform extremely well. This graph also shows that within the group of organisations having a clear strategy (cost-related, differentiation or integrated strategy), those having an organic structure perform better than those firms which have a mechanistic structure.

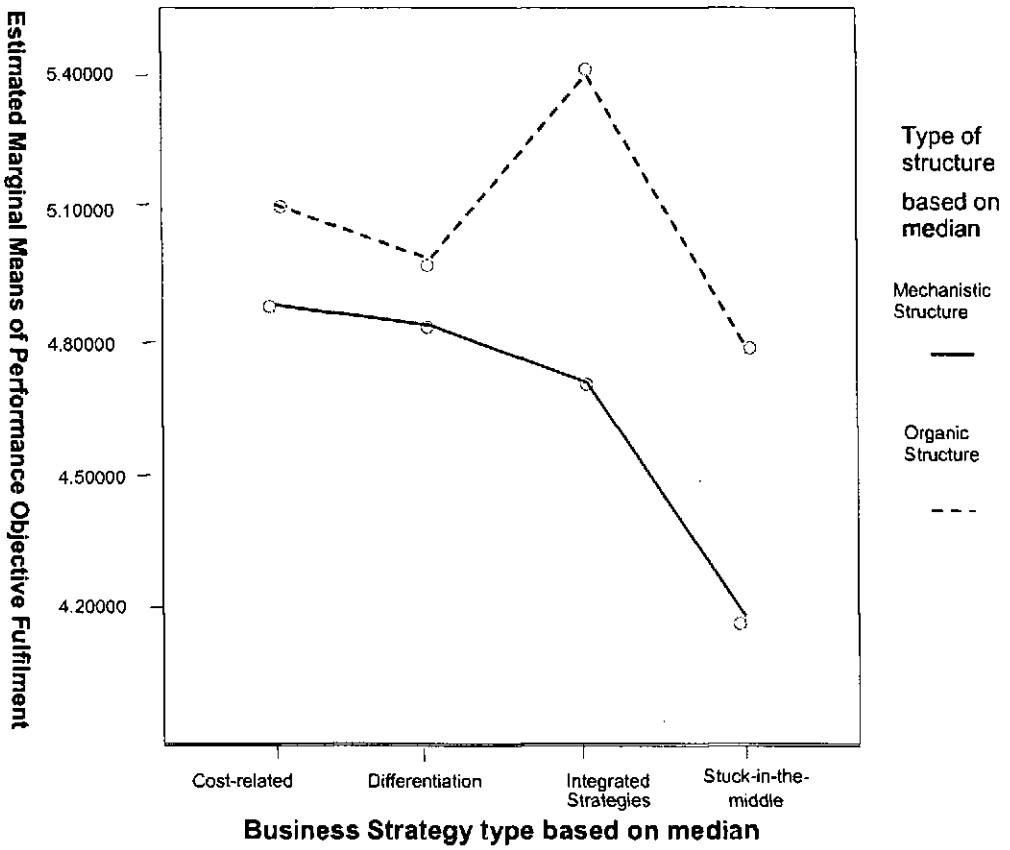

Fig 9.3: Strategy – Structure Relationship and Objective Fulfilment

In the second part of the analysis two-way ANOVA was conducted with relative competitive performance as the dependent variable and the observed statistical power with a significance level (α) of 0.05 was 0.934. Levene's test for homogeneity of variances did not produce significant result (p = 0.151) and hence the assumption was

not violated. The results do not show a significant interaction between strategy and structure, $F(3,116) = 0.665$, $p = 0.576$ and hence there is no indication of a moderating effect of organisational structure in the relationship between strategy and relative competitive performance. Figure 9.4 shows the relationship between strategy, structure and relative competitive performance. Within the group of organisations having a clear strategy (cost-related, differentiation or integrated strategy), those firms adopting an organic structure perform better than those firms adopting a mechanistic structure.

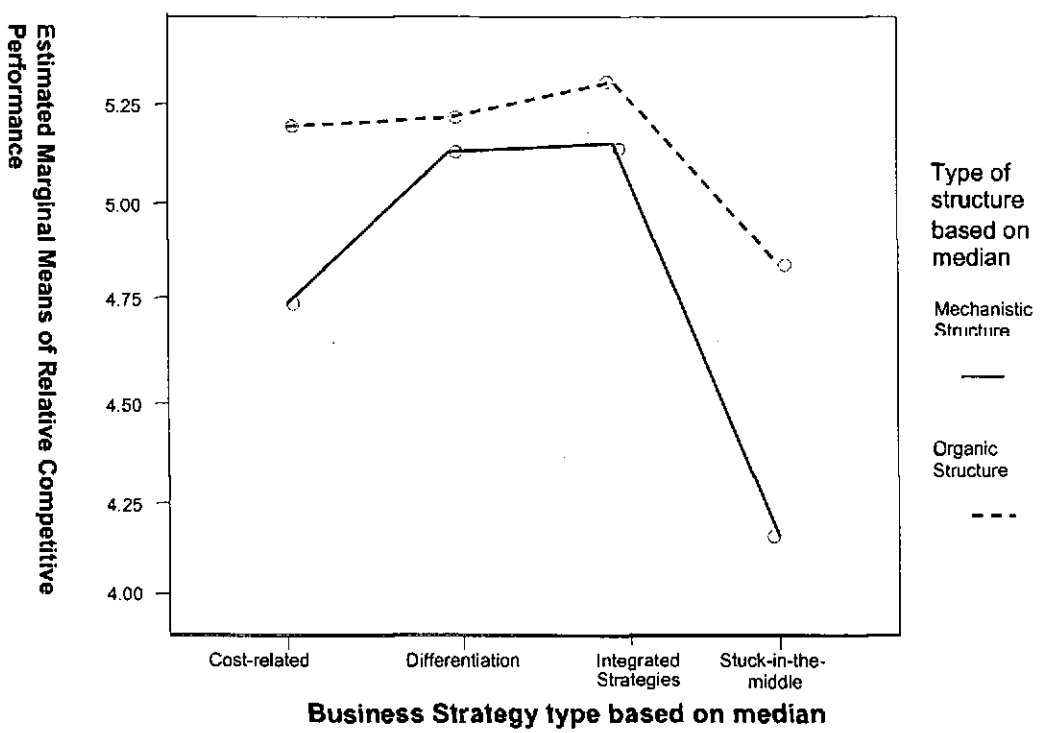

Fig 9.4: Strategy – Structure Relationship and Relative Competitive Performance

As indicated earlier, the results of both the ANOVAs do not show an interaction effect and hence there is no indication of a moderating effect of organisational structure in the relationship between business-level strategy and organisational performance. The findings of the two way ANOVA provide further confirmation for the results of the

moderated regression analysis carried out to test hypothesis H2d. The findings of the moderated regression analysis and the two-way ANOVA do not support hypothesis H2d.

9.3.3 Hypothesis H3: Strategic Planning and Business-level Strategy

H3: Organisations which give a strong emphasis to strategic planning will develop a clear business-level strategy by adopting one of the strategies namely cost-related, differentiation or integrated strategies.

As indicated in Table 7.4 in chapter 7, direct logistic regression was performed to examine whether strategic planning leads to clarity in business-level strategy or not. Strategic planning was used as the independent variable. A new categorical variable representing the clarity in business-level strategy was created[9]. This variable splits the sample into two categories: (i) group of firms having clear strategy and (ii) group of firms which do not have a clear strategy.

The model containing the predictor variable was statistically significant, χ^2 (1, N=124) = 13.33, p<0.001, indicating that the model was able to distinguish between organisations which had clarity in strategy and those not having clarity in strategy. The model explained between 10.2% (Cox and Snell R square) and 15.7% (Nagelkerke R square) of the variance in clarity and correctly classified 82.3% of cases.

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[9] *A categorical variable representing the business strategy type has already been created with the following values:*
1 = Cost-related
2 = Differentiation
3 = Integrated Strategy
4 = Stuck-in-the-middle
The variable representing clarity in business-level strategy is defined as:
If business strategy type = 1 OR 2 OR 3, then clarity in strategy = 1 (Clear strategy)
If business strategy type = 4, then clarity in strategy = 0 (Unclear strategy)

Table 9.42 Logistic Regression Predicting Likelihood of having Clarity in Strategy

	B	S.E.	Wald	df	p	Odds Ratio	95.0% C.I. for Odds Ratio	
							Lower	Upper
Strategic Planning	.810	.238	11.602	1	.001	2.247	1.410	3.581
Constant	-2.430	1.079	5.073	1	.024	.088		

As shown in Table 9.42, strategic planning makes a statistically significant contribution to the model, recording an odds ratio of 2.247. The B value is positive (0.810) indicating that when strategic planning increases the probability of having clarity in strategy increases. The findings of this analysis indicate that organisations placing a high degree of emphasis on strategic planning are likely to have a clear strategy. This finding supports hypothesis H3.

9.3.4 Hypothesis H4: Strategy Implementation and Performance

H4: The degree of planning of strategy implementation has a significant positive impact on organisational performance

As indicated in Table 7.4 in chapter 7, this hypothesis was tested initially using regression and correlation analyses and ANOVA was used to examine this relationship further. The correlations between planning of strategy implementation and the performance measures namely objective fulfilment and relative competitive performance are shown in Table 9.43.

Table 9.43: Correlations between Strategy Implementation and Performance

Variables	Mean	S.D.	1	2	3
1. Planning of Strategy Implementation (IMP)	4.6552	1.0340	1		
2. Objective Fulfilment (OF)	4.9173	0.8176	0.586**	1	
3. Relative Competitive Performance (RCP)	4.9749	0.8873	0.280**	0.335**	1

* Significant at the 0.01 level (2-tailed)

As shown in Table 9.43, planning of strategy implementation is significantly correlated with both performance measures and this association provides support for hypothesis H4. Objective Fulfilment was regressed on planning of strategy implementation and the beta coefficient was 0.586 which is significant at $p<0.01$ level. The R^2 value is 0.343 which is acceptable as per the guidelines provided by Hair et al (2006) (see Table 7.5, chapter 7). Relative competitive performance was regressed on planning of strategy implementation and the beta coefficient was 0.280 which is significant at $p<0.01$ level. However the R^2 value is quite low (0.078). Hence the results of the regression analysis provide partial support for hypothesis H4.

ANOVA was conducted in order to examine the relationship between planning of strategy implementation and performance further. A new nonmetric variable which represents the degree of planning of strategy implementation was created[10]. The number of organisations belonging to the high and low emphasis groups is shown in Table 9.44.

Table 9.44: Number of Organisations belonging to the Groups Placing High-Low Emphasis to Strategy Implementation

Level of Emphasis given to the Planning of Strategy Implementation	Number of Organisations belonging to the subgroup
Low Emphasis	65
High Emphasis	59

First of all ANOVA was conducted with objective fulfilment as the dependent variable and the observed statistical power with a significance level (α) of 0.05 was 1.000. The 'p' value obtained for Levene's test for homogeneity of variances was 0.319 and hence

[10] *The median of the continuous variable representing the planning of implementation is 4.750. A dichotomous variable representing the level of emphasis given to the planning of implementation was created as follows:*
If IMP ≤4.750, emphasis given to implementation planning = 1 (Low Emphasis)
If IMP > 4.750, emphasis given to implementation planning = 2 (High Emphasis)

this assumption was not violated. There was a statistically significant difference at the p < 0.001 level in the performance of the two groups: F (1,122) = 32.499, p = 0.000 and the effect size calculated using eta squared was 0.210.

The ANOVA was repeated with relative competitive performance as the dependent variable. The observed statistical power at 5% significance level was 0.661 and Levene's test for homogeneity of variances was not significant (p = 0.965). The ANOVA test indicated that there was significant difference at $p < 0.05$ level in the relative competitive performance of the two groups: F (1,122) = 5.730, p = 0.018 and the effect size calculated using eta squared was 0.045. The results of these two ANOVA tests indicate that organisations placing a high emphasis on planning of strategy implementation perform better than the ones which give low emphasis to it.

The results of the ANOVA and the correlation analysis provide support for hypothesis H3. However the regression analysis does not provide conclusive evidence to establish the relationship between planning of strategy implementation and relative competitive performance. To summarise, the results of the statistical tests provide partial support for hypothesis H4.

9.3.5 Hypothesis H5a: Strategic Planning and Strategy Implementation

H5a: Organisations which give a strong emphasis to strategic planning will also give a strong emphasis to the planning of strategy implementation.

This hypothesis examines the relationship between strategic planning and planning of strategy implementation. As indicated in Table 7.4 in chapter 7, this hypothesis is tested using three statistical methods namely correlation analysis, regression analysis and ANOVA. The mean and standard deviation of both the variables and the correlation between strategic planning and the planning of implementation are shown in Table 9.45.

The correlation is highly significant at $P<0.01$ level indicating that organisations which give emphasis to strategic planning also give emphasis to the planning of strategy implementation.

Table 9.45: Correlation between Strategic Planning and Strategy Implementation

	Mean	Std. Deviation	Pearson Correlation	Sig.
Strategic Planning	4.7753	.9988		
Planning of Strategy Implementation	4.6552	1.03402	0.595**	.000

** Correlation is significant at the 0.01 level (2-tailed)

In the second stage of the analysis, bivariate linear regression analysis was carried out with planning of strategy implementation as the dependent variable and strategic planning as the independent variable. The R^2 value obtained was 0.354 and the ANOVA indicated that this is statistically significant: F (1,122) = 66.980, p = .000. This R^2 value is acceptable as per the guidelines provided by Hair et al (2006). The beta coefficient was 0.595 which is significant at 0.01 level (p = .000). The results of the regression analysis provide support for the hypothesis.

In the final stage of the analysis, ANOVA was carried out with the dichotomous variable representing the level of emphasis given to strategic planning as the independent variable and the planning of implementation as the dependent variable. The observed statistical power at 5% significance level was 1.000 and Levene's test of homogeneity of variances did not produce significant result (p = 0.062). There was a significant difference in the degree of emphasis given to planning of implementation between planners and non-planners: F (1,122) = 39.211, p = 0.000, and the effect size calculated using eta squared was 0.243. It clearly shows that organisations which give a

high emphasis to strategic planning also plan the implementation of strategies to a great extent.

The results of the correlation analysis, regression analysis and ANOVA test provide support for hypothesis H5a. These tests indicate that strategic planners also give a high emphasis to the planning of strategy implementation.

9.3.6 Hypothesis H5b: Business-level Strategy and Strategy Implementation

H5b: Organisations having a clear strategy by adopting one of the business-level strategies namely cost-related, differentiation or integrated strategies will give more emphasis to the planning of strategy implementation than those organisations which are stuck-in-the-middle

This hypothesis examines the degree of emphasis given to the planning of strategy implementation by organisations having different strategic orientations. As indicated in Table 7.4 in chapter 7, this hypothesis is tested using ANOVA with the variable representing the strategic types as the independent variable and planning of strategy implementation as the dependent variable. The nonmetric variable created for defining the strategic types by splitting the continuous variables namely cost-related and differentiation at median was used as the independent variable. The observed statistical power of the ANOVA test with 5% level of significance was 0.817 and Levene's test for homogeneity of variances was not significant ($p = .122$). The ANOVA test indicated that there is a significant difference at $p < 0.05$ level in the degree of emphasis given to the planning of strategy implementation between groups of organisations having different strategic orientations: $F(3,120) = 3.904$, $p = 0.011$, and the effect size calculated using eta squared was 0.089.

The Post Hoc test using Bonferroni's method shown in Table 9.46 clarify this difference in the emphasis between groups. Organisations adopting three dominant strategic orientations namely cost-related, differentiation and integrated strategies give greater

emphasis to the planning of strategy implementation than stuck-in-the-middle companies. According to Bonferroni's method, the difference in the degree of emphasis is statistically significant ($p<0.05$) only between the integrated strategies group and the stuck-in-the-middle group. However the results obtained from LSD method (see Table 1.5, Appendix I) show a significant difference at $p<0.05$ level in the degree of emphasis to strategy implementation between organisations having a clear strategy (cost-related, differentiation, integrated strategies) and stuck-in-the-middle companies. It is interesting to note that organisations adopting integrated strategies give greater emphasis to the planning of strategy implementation than the ones following cost-related and differentiation strategies, but this difference is not statistically significant. The graph shown in Figure 9.5 further confirms the findings from Post Hoc tests. It clearly shows that organisations adopting one of the strategies namely cost-related, differentiation or integrated strategies give greater emphasis to the planning of strategy implementation than stuck-in-the-middle companies. It also shows that organisations following integrated strategies give greater emphasis to the planning of strategy implementation than the ones using cost-related and differentiation strategies. The findings of this ANOVA test provide support for hypothesis H5b.

Table 9.46: Post Hoc Tests – Strategic Types and Strategy Implementation

Dependent Variable: Planning of Strategy Implementation

	(I) Business Strategy type based on median	(J) Business Strategy type based on median	Mean Difference (I-J)	Std. Error	Sig.
Bonferroni	Cost-related	Differentiation	-.1667	.25299	1.000
		Integrated Strategies	-.3046	.23834	1.000
		Stuck-in-the-middle	.5445	.25017	.189
	Differentiation	Cost-related	.1667	.25299	1.000
		Integrated Strategies	-.1379	.26383	1.000
		Stuck-in-the-middle	.7112	.27456	.065
	Integrated Strategies	Cost-related	.3046	.23834	1.000
		Differentiation	.1379	.26383	1.000
		Stuck-in-the-middle	.8491(*)	.26112	.009
	Stuck-in-the-middle	Cost-related	-.5445	.25017	.189
		Differentiation	-.7112	.27456	.065
		Integrated Strategies	-.8491(*)	.26112	.009

*The mean difference is significant at the .05 level.

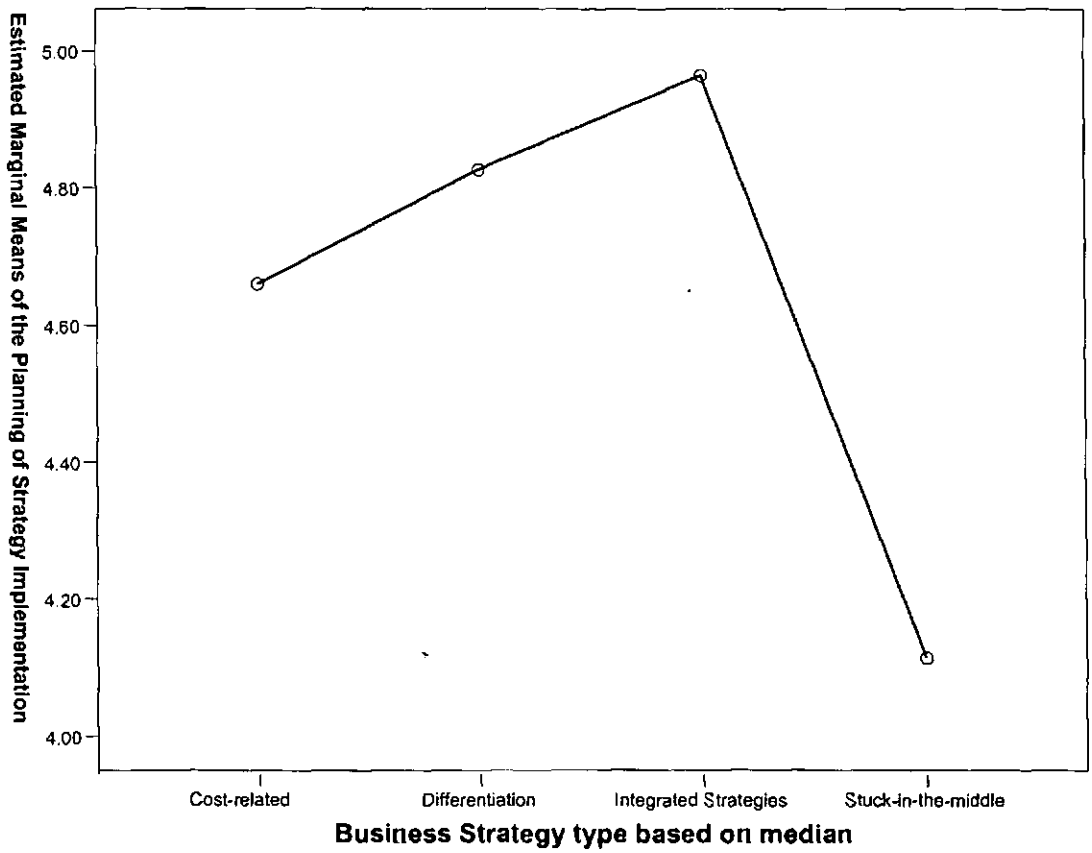

Fig 9.5: Relationship between Strategic Types and Strategy Implementation

9.4 Summary

The findings of the study provide confirmatory evidence to support the hypothesis that strategic planning leads to superior organisational performance and that the environment moderates this relationship to some extent. Organisations having a clear strategy perform better than stuck-in-the-middle companies. Environment moderates the relationship between business-level strategy and performance to some extent. Organisational structure does not moderate the relationship between business-level strategy and organisational performance. Strategic planning helps organisations to clearly define their business-level strategy. Planning of strategy implementation helps organisations to improve their performance to some extent. Organisations which give strong emphasis to strategic planning and the ones which have clearly defined their

business-level strategies, place a high degree of emphasis on planning of strategy implementation. A summary of the results after testing the hypotheses is presented in Table 9.47.

Table 9.47: Summary of the Results Obtained by Testing the Hypotheses

Hypotheses	Result
H1a: Rational-comprehensive strategic planning will lead to superior performance in organisations	Supported
H1b: Environmental dynamism and hostility moderate the relationship between strategic planning and organisational performance	Partially supported
H2a: Organisations having a clear business-level strategy by adopting one of the strategies namely cost-related, differentiation or integrated strategies will perform better than those organisations which are stuck-in-the-middle	Supported
H2b: Organisations following integrated strategies will perform better than those pursuing either a cost-related strategy or a differentiation strategy	Partially supported
H2c: Environmental dynamism and hostility moderate the relationship between business-level strategy and organisational performance	Partially supported
H2d: Organisational structure moderates the relationship between business-level strategy and organisational performance	Not supported
H3: Organisations placing a strong emphasis on strategic planning will develop a clear business-level strategy by adopting one of the strategies namely cost-related, differentiation or integrated strategies	Supported
H4: The degree of planning of strategy implementation has a significant positive impact on organisational performance	Partially supported
H5a: Organisations placing a strong emphasis on strategic planning will also place a strong emphasis on the planning of strategy implementation	Supported
H5b: Organisations having a clear strategy by adopting one of the business-level strategies namely cost-related, differentiation or integrated strategies will give more emphasis to the planning of strategy implementation than those organisations which are stuck-in-the-middle	Supported

Chapter 10: Model Fitting Using Partial Least Squares

10.1 Preamble

The analysis carried out using partial least squares, a structural equation modelling technique is explained in this chapter. In the first stage of the analysis the composite reliability and convergent validity of the measures are assessed. In the second stage of the analysis the structural model is tested by assessing the path coefficients and predictive ability of the model. Finally the discriminant validity of the fitted model is assessed.

10.2 Analysis Using Partial Least Squares

There are two approaches to Structural Equations Modelling (SEM) namely covariance based approach and predictive approach. Covariance based methods involve the use of software packages such as AMOS, LISREL and EQS. A large sample size is usually necessary to carry out such analysis and all the variables corresponding to the constructs have to be reflective[11]. The predictive approach is that of Partial Least Squares (PLS) which is a structural equation modelling technique developed by Wold (1985). PLS is flexible with respect to the distributional properties of the variables in the model. It can handle smaller sample sizes than the covariance based approaches and can handle both formative[12] and reflective constructs. SEM analysis consists of two phases. In phase 1

[11] *A reflective measurement theory is based on the idea that latent constructs cause the measured variables and that the error results in an inability to fully explain these measures and hence arrows are drawn from latent constructs to measured variables.*

[12] *Formative measurement theory is modelled based on the assumption that the measured variables cause the construct. Formative constructs are not considered latent and they are viewed as indices where each indicator is a cause of the construct.*

the constructs in the measurement model is assessed and in phase 2 fitting the path model is carried out.

The conceptual model used in this study was tested using partial least squares (PLS). Using PLS it is possible to test the measurement and structural components within the context of one structural equation model. Unlike other structural equations modelling techniques such as LISREL, AMOS and EQS, PLS does not need to satisfy assumptions like multivariate normality and independence of observations (Chin and Newsted, 1999). PLS combines regression, path analysis and principal components analysis and avoids the problems of factor indeterminacy and inadmissible solutions (Buchan, 2005; Fornell and Bookstein, 1982). Other structural equations modelling techniques like LISREL require a minimum sample size of 150 (Chin and Newsted, 1999; Gerbing and Anderson, 1988), whereas PLS requires only a minimum number of 30 cases. Because of the reasons cited above it was decided to use PLS for testing the model. PLS-Graph (Version 3.0), a Graphical User Interface software program developed by Wynne Chin and Tim Frye was used to implement the PLS technique. The two stage procedure followed by MacMillan, Money, Money and Downing (2005) was adopted to carry out the analysis. In the first stage the measurement model was tested by performing a validity and reliability analysis on each of the measures of the conceptual model. In the second stage the structural model was tested by estimating the paths (links) between the variables in the model, determining their significance as well as the predictive ability of the model. The procedure for carrying out the analyses is presented below.

10.2.1 Stage 1: Reliability and Validity of the Measures

The various items used to measure the constructs were assessed for reliability and validity. Reliability was assessed in two different ways. Firstly, the magnitudes of the

factor loadings corresponding to each construct were examined. Fornell and Larcker (1981) recommend a loading of 0.7 for each item on the constructed factor, but 0.5 is often used in factor analysis. The construct's *composite scale reliability* which is a measure of internal consistency similar to Cronbach's alpha is used as another measure of reliability. *Convergent validity* was assessed by examining the average variance extracted (AVE) for each of the constructs. The AVE is the average variance shared between a construct and its measures and Fornell and Larcker (1981) suggested a minimum of 0.5. In order to assess the *discriminant validity*, the AVE values are plotted on the diagonal and the squares of correlations as off-diagonal items. If the amounts shown in the off-diagonals are less than the diagonals the measures have discriminant validity. The measures have construct validity if they have both convergent validity and discriminant validity.

10.2.2 Stage 2: Testing the Structural Model – Path Coefficients and Predictive Ability

At this stage of the analysis, the R^2 values are examined to assess the predictive ability of the model. For assessing the R^2 values the guidelines provided by Hair et al (2006) were used. Subsequently the path coefficients are examined and their statistical significance was assessed. PLS being a distribution-free technique, uses the bootstrapping resampling technique to determine the significance of the paths (MacMillan et al, 2005). In this study 1000 resamples were taken in performing the bootstrap.

10.3 Analysis and Results

The model tested using PLS is shown in Figure 10.1.

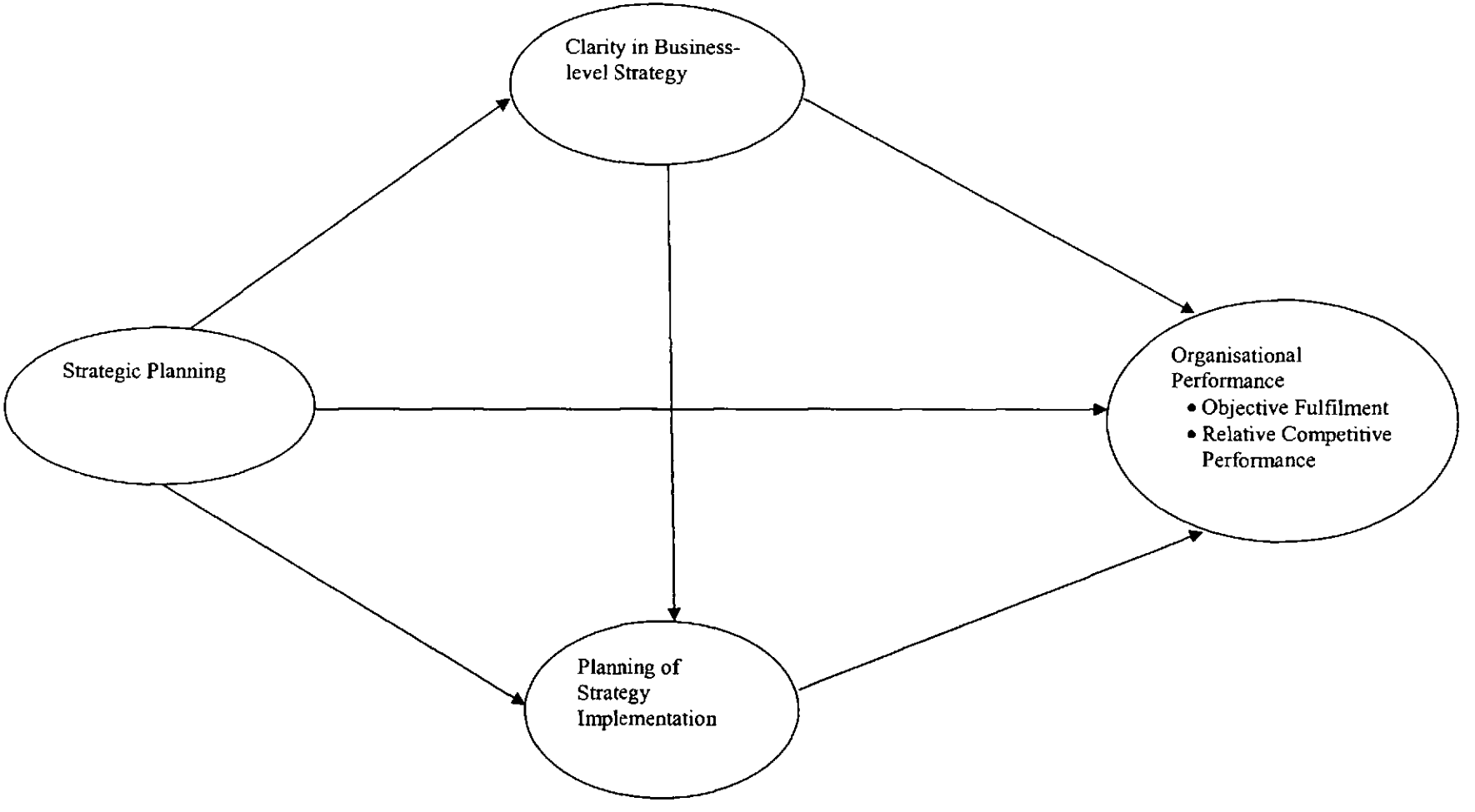

Fig 10.1 Tested Model of Strategy Formulation and Implementation

Using the two stage procedure adopted by MacMillan et al, (2005) the models were tested. The variables chosen to represent each construct as a result of confirmatory factor analysis explained in chapter 8 were used as indicators for the constructs. The continuous variables used to measure strategic planning, planning of strategy implementation and both the performance measures have been used in PLS to test the model. For testing hypothesis H3 a new surrogate variable was computed to represent clarity in business-level strategy (see section 9.3.3 in chapter 9) and this variable represents clarity in business-level strategy in the model[13]. The model with the path coefficients, their 't' values and R^2 values is shown in Figures 10.2.

[13] *The variable representing clarity in business-level strategy is defined as:*
If business strategy type = Cost-related OR Differentiation OR Integrated Strategy, then clarity in strategy = 1 (Clear strategy)
If business strategy type = Stuck-in-the-middle, then clarity in strategy = 0 (Unclear strategy)

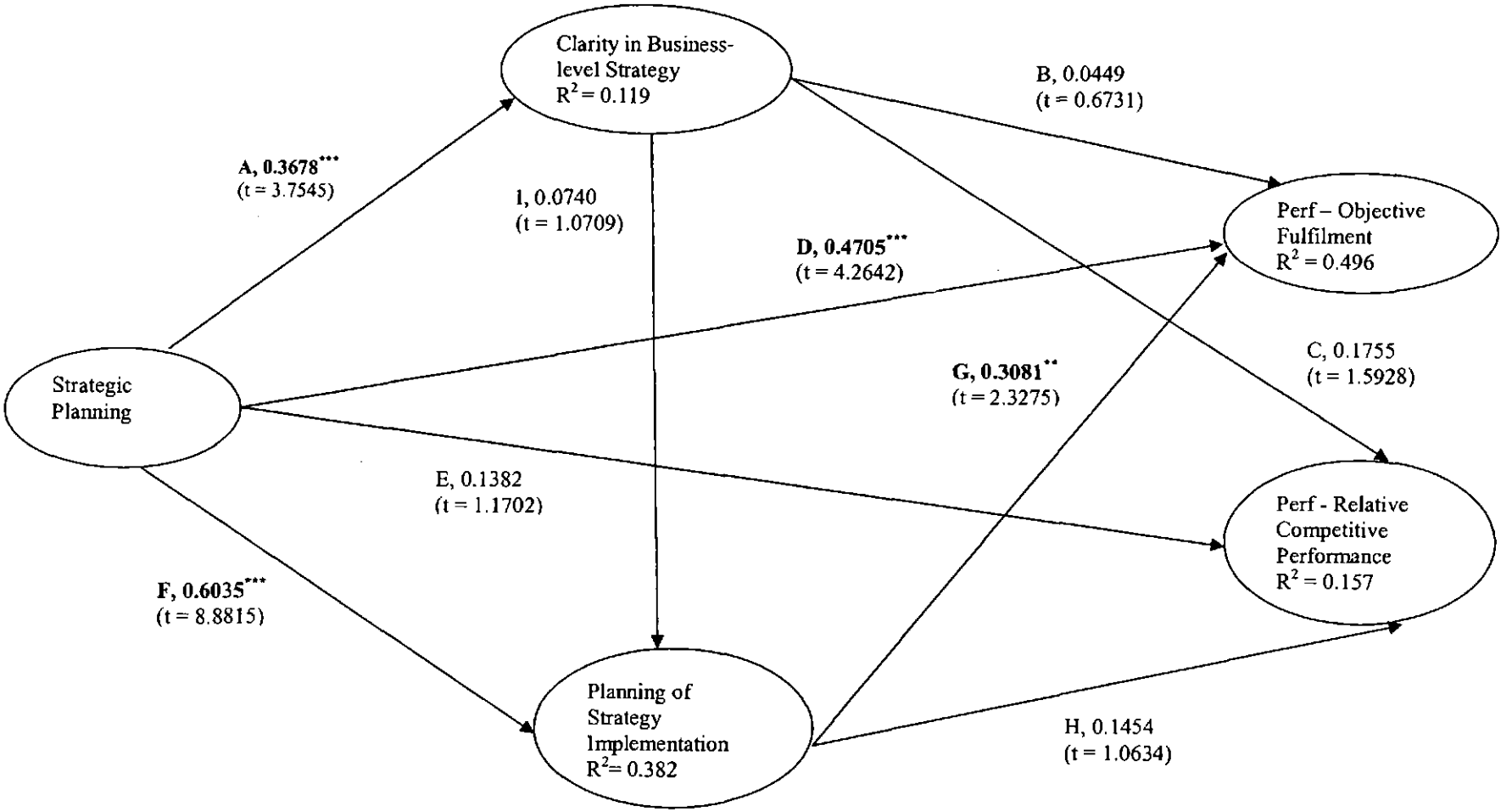

Fig 10.2 Model with Path Coefficients, 't' Values and R^2 Values[14]

[14] *The path names, path coefficients and 't' values are shown for each path. For significant paths, the path coefficients are shown in bold letters. The significance levels (one-tailed) are interpreted as: t ≥1.64, significant at p<0.05 level (*); t ≥1.96, significant at p<0.025 level (**); t ≥2.58, significant at p<0.005 level (***).*

The composite scale reliabilities and the AVE values of each construct and the factor loadings and the 't' values of the indicators representing each construct in model 1 are shown in Table 10.1.

Table 10.1: Factor Loadings, Composite Reliability and AVEs for the Model

	Original sample estimate	Mean of subsamples	Standard error	t-Statistic
Strategic Planning (Composite Reliability = 0.884, AVE = 0.524)				
sp1	0.7496	0.7513	0.0509	14.7340
sp3	0.8545	0.8633	0.0266	32.1457
sp4	0.5626	0.5910	0.0739	7.6118
sp5	0.6470	0.6588	0.0881	7.3425
sp6	0.7458	0.7528	0.0609	12.2408
sp7	0.7629	0.7798	0.0488	15.6367
sp8	0.7078	0.6335	0.1105	6.4056
Planning of Strategy Implementation (Composite Reliability = 0.925, AVE = 0.609)				
imp_fami	0.7341	0.6796	0.0804	9.1352
imp_asse	0.7995	0.7998	0.0402	19.8738
imp_spec	0.8390	0.8342	0.0296	28.3186
imp_reso	0.7939	0.8024	0.0467	17.0058
imp_acce	0.7330	0.7250	0.0641	11.4274
imp_rece	0.7533	0.7569	0.0558	13.5019
imp_s_fa	0.8215	0.8209	0.0412	19.9289
imp_prio	0.7605	0.7665	0.0450	16.9074
Performance – Objective Fulfilment (Composite Reliability = 0.813, AVE = 0.522)				
per_of4	0.7536	0.7538	0.0538	14.0079
per_of6	0.6774	0.6870	0.0826	8.1994
per_of7	0.7786	0.7874	0.0386	20.1815
per_of3	0.6757	0.7142	0.0820	8.2426
Performance – Relative Competitive Performance (Comp Reliability = 0.930, AVE = 0.600)				
per_rcp1	0.6052	0.6007	0.1198	5.0527
per_rcp2	0.8458	0.8312	0.0774	10.9292
per_rcp3	0.6674	0.6478	0.1162	5.7453
per_rcp4	0.8491	0.8390	0.0881	9.6347
per_rcp5	0.7980	0.7945	0.0867	9.2020
per_rcp6	0.8527	0.8439	0.0791	10.7799
per_rcp7	0.7867	0.7846	0.0782	10.0583
per_rcp8	0.8286	0.8185	0.0616	13.4445
per_rcp9	0.6935	0.6878	0.0998	6.9461
Clarity in Business-level Strategy (Composite Reliability = 1.000, AVE = 1.000)				
Clarity_	1.0000	1.0000	0.0000	0.0000

Factor loadings of all the items shown in Table 10.1 are above 0.5 and most of them are either above 0.7 or very close to 0.7. The 't' values of all the items are significant and the composite reliability values of all the constructs are above 0.7. The AVE values of all measures are above 0.5 and this indicates that the measures have convergent validity.

For assessing the discriminant validity of the model, the AVE values are plotted as diagonal items and squares of the correlations obtained from the PLS output are plotted as off-diagonal items as shown in Table 10.2. The following abbreviations are used to represent the variables:

Strategic Planning – SP

Clarity in Business-level Strategy – CLR

Planning of Strategy Implementation – IMP

Performance – Objective Fulfilment – OF

Performance – Relative Competitive Performance – RCP

Table 10.2: Discriminant Validity of the Model

	SP	IMP	OF	RCP	CLR
SP	0.524				
IMP	0.377	0.609			
OF	0.432	0.361	0.522		
RCP	0.112	0.089	0.130	0.600	
CLR	0.119	0.077	0.081	0.084	1.000

Discriminant validity is determined by looking down the columns and across the rows. It can be seen that all the diagonal elements are greater than the off-diagonal elements and hence all the measures have discriminant validity.

Stage 2 of the analysis for testing the structural model was carried out as follows. In the model shown in Fig 10.2, Objective Fulfilment, Relative Competitive Performance and Implementation have acceptable R^2 values at 5% level of significance according to the

guidelines provided by Hair et al (2006). The results obtained by testing the structural model were compared with the results obtained by testing the hypotheses in chapter 9 and this comparison is presented in table 10.3. The path names, the path links, the results of the significance tests, the hypotheses corresponding to each path tested in chapter 9, the results obtained by testing the hypotheses in chapter 9 and comparison of the two results are summarised in this table.

Table 10.3: Comparison of the Results Obtained by Testing the Structural Model with the Results Obtained by Testing the Hypotheses

Path name	Path links		Whether significant or not	Hypotheses corresponding to each path	Result obtained by testing the hypothesis	Do the two results match?
	From	To				
A	Strategic Planning	Clarity in Business-level strategy	Yes	*H3: Organisations placing a strong emphasis on strategic planning will develop a clear business-level strategy by adopting one of the strategies namely cost-related, differentiation or integrated strategies*	Supported	Yes
B	Clarity in Business-level Strategy	Performance – Objective Fulfilment	No	*H2a: Organisations having a clear business-level strategy by adopting one of the strategies namely cost-related, differentiation or integrated strategies will perform better than those organisations which are stuck-in-the-middle*	Supported	No
C	Clarity in Business-level Strategy	Performance – Relative Competitive Performance	No	The same as stated above	Supported	No
D	Strategic Planning	Performance – Objective Fulfilment	Yes	*H1a: Rational-comprehensive strategic planning will lead to superior performance in organisations*	Supported	Yes
E	Strategic Planning	Performance – Relative Competitive Performance	No	The same as stated above	Supported	No
F	Strategic Planning	Planning of Strategy Implementation	Yes	*H5a: Organisations placing a strong emphasis on strategic planning will also place a strong emphasis on the planning of strategy implementation*	Supported	Yes

G	Planning of Strategy Implement ation	Performance – Objective Fulfilment	Yes	*H4: The degree of planning of strategy implementation has a significant positive impact on organisational performance*	Fully Supported with objective fulfilment as the dependent variable	Yes
H	Planning of Strategy Implement ation	Performance – Relative Competitive Performance	No	The same as stated above	Partially supported with relative competitive performance as the dependent variable	No
I	Clarity in Business-level Strategy	Planning of Strategy Implementation	No	*H5b: Organisations having a clear strategy by adopting one of the business-level strategies namely cost-related, differentiation or integrated strategies will give more emphasis to the planning of strategy implementation than those organisations which are stuck-in-the-middle*	Supported	No

The results obtained by testing the structural model confirm the findings of the hypotheses H3 and H5a. For H1a and H4, the results match when Performance - Objective Fulfilment is the dependent variable and they do not match when Relative Competitive Performance is the dependent variable. However, the two results do not match for the hypotheses H2a and H5b. The model indicates that relative competitive performance cannot be effectively predicted by using the variables involved in this study. However objective fulfilment can be effectively predicted using strategic planning and planning of strategy implementation. The model also indicates that strategic planning has significant positive relationships with clarity in business-level strategy and planning of strategy implementation. However clarity in business-level strategy does not predict either of the performance indicators or the planning of strategy implementation.

When the bivariate relationships in the conceptual model shown in figure 1.4 in chapter 1 were tested in chapter 9, most of those relationships were found to be significant. However when the model as a whole was tested using structural equations modelling, it was found that some of those relationships were not significant. This shows the limited predictive ability of the model in the conditions of this study at least. There could be three possible reasons for the lack of fit of the model as a whole – problem with the sample, problem with the measures used or in reality the strategic variables (predictors) used in this study may be insufficient to predict organisational performance.

In order to examine whether inadequate model fit was due to any problems with the sample, the original sample consisting of 124 cases was split into two halves and analysis was conducted using PLS to fit the model in those two samples. The model did not fit properly in either of those two samples. Subsequently two sub-groups were

created by splitting the sample at the median on strategic planning and PLS analysis was conducted to fit the model for the above-median group representing high planning. This attempt also did not succeed and another attempt was made to fit the model using the group consisting of organisations having a clear strategy (see section 9.3.3 in chapter 9). The model did not fit well for this group either. Hence it is unlikely that the improper fit is due to the problems in the sample. However the model needs to be tested using another sample to ascertain this.

The measures used in this study have been validated through the process outlined in chapter 7. They had acceptable levels of Cronbach's alpha and Composite reliability values. The measures had convergent validity and discriminant validity and hence they satisfied the assumptions of construct validity. These measures have been used in previous studies published in leading academic journals. Hence the measures are unlikely to be the reason for the improper fit of the model.

This leads to the third possibility conceming the inadequacy of the predictor variables used in this study for predicting organisational performance. This study attempted to predict organisational performance using the key strategic elements namely strategic planning, business-level strategy and planning of strategy implementation. The findings of this study indicate that these variables have a significant impact on organisational performance. However collectively they are not able to predict organisational performance effectively. This opens up further avenues for future research. The organisational resources and capabilities may need to be studied along with these three variables in order to examine their impact on organisational performance. The business-level strategy of an organisation is directly dependent upon its resources and capabilities. According to the resource-based view (RBV) (Penrose, 1959; Wernefelt, 1984; Grant,

1991; Barney, 1992) of the firm, strategically relevant resources are the basis for organizational performance. RBV has been the most influential school of strategy to emerge over the last fifteen years and this view advocates the development of firm-specific strategic resources and the internal capabilities (Witcher & Chau, 2007). Recently Olavarrieta & Friedmann (2008) studied knowledge related resources along with market orientation of an organisation and found that both the market orientation and knowledge-related resources have a significant positive impact on organisational performance. Organisational resources may need to be studied along with other strategy formulation and implementation elements and this research model is likely to have a stronger predictive ability of organisational performance.

10.4 Summary

Partial Least Squares has been used to test the conceptual model used in this study. By testing the structural model, confirmatory evidence was obtained for hypotheses H3 and H5a. The results of the PLS analysis provided partial support for H1a and H4 and no support for H2a. The model indicates that relative competitive performance cannot be effectively predicted by using the strategic elements involved in this study. However objective fulfilment can be effectively predicted using strategic planning and planning of strategy implementation. The improper fit of the model is likely to be due to the inadequacy of the predictor variables used in this study for predicting organisational performance.

Part 4 - Conclusion

Chapter 11: Summary and Conclusion

11.1 Preamble

This chapter presents a summary of the discussions outlined in the thesis. The main gaps in the extant literature and the contribution of this study are highlighted. The main findings of the study and their implications are briefly discussed. The contribution of this study to the existing knowledge, the practical use of the research findings, the limitations of this study and the directions for future research are outlined in this chapter.

11.2 Summary of the Literature Review

The operationalisation of strategy process requires multidimensional models because of the complexities associated with the process. Rajagopalan, Rasheed & Datta (1993), Hart (1992) and Bailey, Johnson & Daniels (2000) have made significant contributions to the literature by developing integrative models of strategy making encompassing a multitude of factors which affect the strategy process. Huff & Reger (1987) had identified nine different streams of strategy process research. However, none of the strategy making models has taken into consideration the theoretical roots of strategy process while defining the strategy making modes. In this study various strategy process models were mapped on a two-dimensional plane consisting of the three strategy process perspectives and the four theoretical roots. This mapping has resulted in the identification of seven forms of strategy making namely Rational Choice, Sequential Choice, Equilibrium Choice, Evolutionary Choice, Social Equilibrium, Social Evolution and Adaptation. Rational Choice mode of strategy making was chosen to operationalise strategy formation in this study because the rational process advocates a systematic search of environmental opportunities and threats and carrying out strategic analysis using the tools and frameworks explained in Table 3.10 in chapter 3.

A review of the empirical studies examining the relationship between strategic planning and organisational performance found that previous studies have not produced conclusive evidence to prove that strategic planning results in superior performance. While a large number of studies concluded that strategic planning contributed to better performance, a sizable number of studies found no relationship between planning and performance. Furthermore, only very few studies have examined the planning-performance relationship in UK based manufacturing organisations. The results of the previous empirical studies are divided over the issue of whether operating environment acts as a moderator between strategic planning and performance. While some studies have found that planning results in better performance in stable environments and harmful performance in dynamic environments, some others have suggested that planning results in better performance in dynamic environments. The findings of the literature review indicated the need for examining the impact of strategic planning on organisational performance and for assessing the moderating effect of environment on this relationship.

Detailed examination of the literature suggested that only a few studies have examined the relationship between business-level strategy and performance in the UK. Another weakness of the previous studies was the inconsistencies in the measurement approach to business-level strategies (see section 5.4.5 in chapter 5). A sizable number of studies did not specify how they had assessed the reliability of the strategy measures. Confirmatory factor analysis was used only in a small number of studies to assess the validity of the measures (see section 5.4.6 in chapter 5). While a number of studies have suggested that a dominant strategic orientation leads to superior performance in organisations, only a few studies have examined the impact of integrated strategies on performance. The moderating effect of the environment on the relationship between

business-level strategy and performance and the role of organisational structure in this relationship were examined only by a relatively small number of studies.

A review of the strategy implementation literature identified a small number of studies devoted to examining the impact of strategy implementation on organisational performance. Mainly these studies focussed on identifying the problems in implementing strategies and the attributes of successful strategy implementation. Strategy implementation being the critical link between strategy formulation and performance needs to be given greater importance in empirical research. When studied along with strategic planning and business-level strategy, the nature of relationship between these elements can be examined.

The literature review was helpful in identifying prominent gaps in the literature. Some of the main research questions which emerged from the literature review were:

- Will strategic planning lead to superior organisational performance? Does environment moderate this relationship?
- Is there a significant difference in the performance between organisations having a clear strategy and the ones not having a clear strategy?
- In what way do integrated strategies affect organisational performance?
- Does environment moderate the relationship between business-level strategy and performance? How does organisational structure affect the relationship between business-level strategy and performance?
- What is the relationship between strategy implementation and performance?

In order to examine these issues in greater detail, a number of hypotheses were formulated, as discussed in section 1.5 in chapter 1.

11.3 Summary of the Findings by Testing the Hypotheses

The hypotheses presented in chapter 1 were tested using various statistical techniques as explained in chapter 9. To aid discussion of the results here, these hypotheses are grouped into three categories. Hypotheses concerning the relationship between strategic planning and performance belong to the first group (sub-section 11.3.1) and those examining the relationship between business-level strategy and other variables belong to the second group (sub-section 11.3.2). The third group (sub-section 11.3.3) includes hypotheses inquiring into the relationship between strategy implementation and other variables.

11.3.1 Strategic Planning and Performance

The following hypotheses examining the relationship between strategic planning and performance were tested:

H1a: Rational-comprehensive strategic planning will lead to superior performance in organisations.

H1b: Environmental dynamism and hostility moderate the relationship between strategic planning and performance.

As indicated section 7.3.1 in chapter 7, performance in this study was measured using two constructs namely objective fulfilment and relative competitive performance. It was found that strategic planning is significantly related to both the performance measures and hence hypothesis H1a is supported. This finding agrees with the findings of many previous studies discussed in chapter 4. While strategic planning is strongly related to objective fulfilment, its relationship with relative competitive performance is not very strong. This indicates that even though strategic planning helps organisations to achieve its set objectives, it does not make a huge contribution towards improving

organisational performance in comparison to its main competitors. This is an interesting finding and there are a number of explanations for this observation. It shows that strategic planning does not result in the establishment of market "sweet spots". There could be some other factors which make a sizable contribution towards improving relative competitive performance.

Hypothesis H1b tested using moderated regression analysis, indicated that environmental dynamism and hostility moderate the relationship between strategic planning and relative competitive performance. However, they do not moderate its relationship with objective fulfilment. Hence hypothesis H1b is partially supported. It was found that strategic planning helps organisations to improve its relative competitive performance in highly dynamic environments. This finding confirms the findings of some previous studies (e.g. Miller & Friesen, 1983; Eisenhardt, 1989; Judge & Miller, 1991; Goll & Rasheed, 1997) which suggested that strategic planning is helpful in dynamic environments. It contradicts the findings of other studies (e.g. Fredrickson, 1984; Fredrickson & Mitchell, 1984) which found that strategic planning is harmful in dynamic environments. The results of the analysis also indicated that strategic planning is strongly associated with relative competitive performance in highly hostile environments. Goll & Rasheed (1997) had found that strategic planning is helpful in highly munificent environments and harmful in environments with low munificence. Environments with low munificence are characterised as highly hostile environments and hence there is a disagreement between the findings of this study and that of Goll & Rasheed (1997).

The results taken together indicate that strategic planning helps organisations to improve their performance. Even though scholars like Mintzberg (1994) have argued

that strategic planning has lost its relevance, the findings of this study indicates a significant positive relationship between strategic planning and organisational performance. It was also found that strategic planning is helpful in dynamic as well as hostile environments and this provides further support for strategic planning. Dynamic environments emphasise growth through technology development and innovation. In such environments there is an overload of information and conflict between situations. Planning helps organisations to process information using analytical tools (see Table 3.10, chapter 3) and arrive at consensus through participative decision-making. In hostile environments, the surrounding factors are less favourable and the activities of competitors are belligerent. Planning helps firms to identify the threats arising out of these unfavourable factors through systematic analysis resulting in improved performance.

11.3.2 Business-level Strategy

Hypotheses H2a, H2b, H2c and H2d examining the relationship between business-level strategy and performance and hypothesis H3 examining the relationship between strategic planning and business-level strategy are discussed in this section.

11.3.2.1 Business-level Strategy and Performance

H2a: Organisations having a clear business-level strategy by adopting one of the strategies namely cost-related, differentiation or integrated strategies will perform better than those organisations which are stuck-in-the-middle.

H2b: Organisations following integrated strategies will perform better than those pursuing either a cost-related strategy or a differentiation strategy.

It was found that organisations having a clear business-level strategy (cost-related, differentiation or integrated strategies) performed better than stuck-in-the-middle

companies both in terms of objective fulfilment and relative competitive performance. As indicated earlier stuck-in-the-middle companies are defined as those firms which do not have a dominant strategic orientation. Hence hypothesis H2a is supported. This finding conforms to the findings of many other studies (e.g. Dess & Davis, 1984; O'Farrell, Hitchens & Moffat, 1992) which have examined this relationship in previous studies.

It was found that organisations adopting an integrated strategy performed better than those firms using only one type of strategy, both in terms of objective fulfilment and relative competitive performance. However, this difference was not statistically significant. Hence hypothesis H2b is partially supported. This finding conforms to the findings of some other studies (e.g. Wright et al, 1991; Chan & Wong, 1999) and contradicts with some others (e.g. Kumar, Subramanian & Yauger, 1997) which found that firms using integrated strategies performed poorly.

The findings of this study indicate the relevance of Porter's (1980) typologies for explaining performance heterogeneity among firms. Moreover, it highlights the importance of having a clear strategy for organisations. The effectiveness of combination strategies in enhancing organisational performance has been proved in this study. The findings remind the practicing managers about the dangers associated with a stuck-in-the-middle state. For achieving superior performance, organisations need to give emphasis to one of the following tasks while carrying out the activities in the value chain: (i) minimise the operational costs to achieve a low-cost position in their industry OR (ii) produce a product with differentiated features and give emphasis to innovation, marketing and customer service OR (iii) carry out the activities outlined in both (i) and (ii).

11.3.2.2 The Moderating Effect of Environment

H2c: Environmental dynamism and hostility moderate the relationship between business-level strategy and organisational performance.

The moderating effect of environmental dynamism and hostility on the relationship between business-level strategy and performance was assessed. It was found that there is a moderating effect to some extent. Environmental hostility acts as a moderator in the following relationships:

- Cost-related Strategy – Objective Fulfilment;
- Cost-related Strategy – Relative Competitive Performance; and
- Differentiation – Relative Competitive Performance.

It was found that in environments with low levels of hostility, cost-related strategy leads to better performance. However, a differentiation strategy can help organisations in improving their relative competitive performance in highly hostile environments. It was also found that environmental dynamism moderates the relationship between differentiation and relative competitive performance. In highly dynamic environments a differentiation strategy helps organisations to improve their relative competitive performance. The findings provide support for contingency theory, that is to say, superior performance is the result of aligning strategy with environmental conditions.

The results support the findings of some previous studies which have found the moderating effect of environment on the relationship between business-level strategy and performance (e.g. Prescott, 1986; Lee & Miller, 1996). This finding is important to practicing managers. It indicates the usefulness of a cost-related strategy in environments with low levels of hostility. However in highly hostile environments, this strategy may not be helpful and a differentiation strategy seems to be appropriate for

improving relative competitive performance. Similarly in highly dynamic environments a differentiation strategy is useful for improving relative competitive performance.

11.3.2.3 The Role of Organisational Structure

H2d: Organisational structure moderates the relationship between business-level strategy and organisational performance.

The evidence does not support the proposition that organisational structure moderates the relationship between business-level strategy and performance. However, the results indicated a significant role played by organic structure in this relationship. It was found that within the group of organisations adopting a clear strategy (cost-related, differentiation or integrated strategy); those having organic structure perform better than those firms which have a mechanistic structure. It was also found that firms employing integrated strategies and having an organic structure had the highest level of performance.

This finding is interesting and practicing managers will find it useful. Organisations adopting either a differentiation strategy or an integrated strategy will need to promote innovation to a great extent. Implementation of an integrated strategy demands facilitation of two key operational activities within the organisation: (i) striving for controlling the operational costs while carrying out the primary and supporting activities in the value chain and (ii) endeavouring to produce a high quality product with differentiated features and giving high emphasis to innovation, marketing and customer service. Focussing on these two activities simultaneously requires a tremendous amount of flexibility within the organisation. A mechanistic structure giving emphasis to formal rules and procedures may not be helpful for carrying out these two activities simultaneously. Similarly a mechanistic structure does not promote innovation. The

results of this study confirm that an organic structure is appropriate for implementing either a differentiation strategy or an integrated strategy.

11.3.2.4 Strategic Planning and Business-level Strategy

H3: Organisations placing a strong emphasis on strategic planning will develop a clear business-level strategy by adopting one of the strategies namely cost-related, differentiation or integrated strategies.

The relationship between strategic planning and business-level strategy was examined by testing hypothesis H3. The findings of the logistic regression analysis indicated that strategic planning significantly increased the probability of having a clear strategy for an organisation. This finding establishes the link between strategic planning and business-level strategy. This relationship has not been examined in the previous studies and hence this finding is important. The findings of H1a and H2a suggest that both strategic planning and clarity in business-level strategy help organisations to improve their performance. Since strategic planning helps organisations to clearly define their business-level strategy CEOs and senior managers need to give proper emphasis to strategic planning in their organisations.

11.3.3 Strategy Implementation

The results obtained by testing hypotheses H4, H5a and H5b are examined in this section. H4 examines the impact of planning of strategy implementation on performance, H5a looks into the relationship between strategic planning and strategy implementation and H5b assesses the relationship between clarity in business-level strategy and planning of strategy implementation.

11.3.3.1 Strategy Implementation and Performance

H4: The degree of planning of strategy implementation has a significant positive impact on organisational performance

The relationship between planning of strategy implementation and both the performance measures were statistically significant. However, the strength of this relationship is much higher in the case of objective fulfilment. Even though its relationship with relative competitive performance is statistically significant, the regression results indicate that the R^2 value is very low. Hence hypothesis H4 is partially supported indicating that emphasis on strategy implementation helps organisations to improve their performance. This finding is important because this relationship has not been examined by previous studies. Some of the previous studies have found that many strategic decisions failed because of ineffective implementation. They emphasised the need to properly plan and prioritise strategy implementation. The result obtained by testing this hypothesis reinforces the key role played by strategy implementation in enhancing organisational performance.

11.3.3.2 Strategic Planning and Strategy Implementation

H5a: Organisations placing a strong emphasis on strategic planning will also place a strong emphasis on the planning of strategy implementation

The results of the analysis supported this hypothesis suggesting that organisations which give emphasis to strategic planning also emphasise strategy implementation. The relationship between strategic planning and strategy implementation has not been examined by previous studies and hence this finding is important. The conceptual model shown in figure 1.4 in chapter 1 suggests that the competitive methods used by organisations are derived as a result of rational planning. The result highlights the need for carrying out strategic planning in organisations enabling them to properly implement their derived competitive strategies.

11.3.3.3 Clarity in Business-level Strategy and Strategy Implementation

H5b: Organisations having a clear strategy by adopting one of the strategies namely cost-related, differentiation or integrated strategies will give more emphasis to the planning of strategy implementation than those organisations which are stuck-in-the-middle

The results of the ANOVA indicated that organisations which have clearly defined their strategy by adopting a dominant strategic orientation (cost-related, differentiation or integrated strategy) give greater emphasis to the planning of strategy implementation than stuck-in-the-middle companies. It was also found that organisations adopting integrated strategies gave greater emphasis to the planning of strategy implementation than the ones following cost-related and differentiation strategies. However, the difference in the degree of emphasis was not statistically significant between the integrated strategy group and the other two groups (cost-related and differentiation). The findings of the ANOVA provide support for hypothesis H5b. This relationship has not been tested in previous studies and hence this finding is important. It shows the importance of clearly defining organisational strategies leading to its proper implementation.

The results obtained by examining the bivariate relationships in hypotheses H3, H5a and H5b establish the interrelationships between strategic planning, business-level strategy and strategy implementation. The results indicate that strategic planning helps organisations to clearly define their competitive strategies. It also helps them to plan the implementation of strategies. Clear definition of competitive strategies contributes significantly to effective implementation.

11.4 The Structural Model

The results obtained by testing the structural model fully confirm the findings of hypotheses H3 and H5a and partially support hypotheses H1a and H4. The model

indicated that it would not be possible to effectively predict relative competitive performance by using the variables involved in this study. However, it indicated that objective fulfilment can be predicted using strategic planning and planning of strategy implementation. The results obtained by testing the structural model points to the drawbacks of some of the previous studies which have examined bivariate relationships. When strategic planning is studied along with business-level strategy and strategy implementation, the relationship between strategic planning and relative competitive performance becomes insignificant. However, there is a strong positive relationship between strategic planning and objective fulfilment. While strategic planning helps organisations to fulfil their objectives, it does not help them to improve performance compared to their competitors. While planning of strategy implementation is strongly related to objective fulfilment, it does not have a significant relationship with relative competitive performance. Clarity in business-level strategy is not significantly related to either of the performance measures. However, strategic planning has strong positive relationships with clarity in business-level strategy and planning of strategy implementation. As indicated earlier, this finding highlights the importance of strategic planning. It helps organisations to clearly define their business-level strategies and to properly plan the strategy implementation.

The relatively poor fit of the structural model (in the context of relative competitive performance in particular) could be due to an insufficient number of the explanatory variables used in the study. A discussion about this was provided in chapter 10. The variables used in this study may not be enough to effectively predict relative competitive performance. Some other variables such as organisational resources may be necessary to properly explain relative competitive performance.

11.5 Contribution to the Existing Knowledge

This study makes an important contribution to the literature in the following ways:

- Development of theory by identifying seven forms of strategy making;
- Critical examination of existing knowledge through systematic literature review and identifying the gaps in the literature;
- Validating the findings of studies conducted earlier by testing the relationships between various elements of strategy formulation and implementation;
- Examining the relationships between some of the elements of strategy formulation and implementation which have not been examined by previous studies; and
- Developing a structural equation model including all key variables, using Partial Least Squares (PLS) which has not been widely used in Strategic Management Research.

As a result of the mapping process explained in chapter 3, it was possible to identify seven different forms of strategy making namely Rational choice, Sequential choice, Equilibrium choice, Evolutionary choice, Social equilibrium, Social evolution and Adaptation. These seven forms of strategy making encompass the whole strategy making process and they explain the different ways in which strategies are formed in organisations. Suitable measurement scales need to be developed for these seven forms of strategy making to operationalise them. Findings from such an operationalisation will be immensely beneficial to practicing managers since it will make it possible to ascertain the relative importance of these strategy making modes for enhancing organisational performance.

It was possible to identify some gaps in the literature by conducting a detailed examination of strategic planning and business-level literature and the findings are explained in chapters 4 and 5. Identification of these gaps was helpful in formulating the research questions and hypotheses.

This study makes an important contribution to the literature by validating the findings of some of the previous studies conducted in other geographical regions and industry sectors. Theory building in strategy is crucially dependent on examination of proposed concepts in repeated studies encompassing different subjects in terms of factors like organisational size, industry sector and geographical region. By examining these key concepts within the UK's manufacturing sector (SIC Section – D, subsections DJ, DK, DL and DM) this study is making a significant contribution because it is extending the industry and region borders. The findings relating to strategy implementation is extremely important because its relationship with organisational performance was examined only by a few studies. This study has examined the interrelationships between the key elements of strategy formulation and implementation (strategic planning, business-level strategy and strategy implementation) which has not been done in previous studies. Even though the bivariate relationships between these elements were statistically significant, the structural model indicated that some of the bivariate relationships become insignificant when all these key elements are studied simultaneously. The integrated approach taken in this study was helpful in ascertaining the nature of relationships between the key elements of strategy formulation and implementation.

Partial Least Squares (PLS) has not been used to a great extent in strategic management research (Hulland, 1999). Many researchers have preferred to use other structural

equation modelling (SEM) techniques like LISREL, AMOS and EQS. With a moderate sized sample, PLS has an advantage over other SEM techniques (see chapter 11). This study gives some evidence that PLS can be effectively used for assessing the relationships between variables in strategic management research.

The above discussion clearly indicates that this study has significantly contributed to the extant literature in different ways.

11.6 Practical use of the Research Findings

The findings of this study are immensely useful to the CEOs and senior managers. This study emphasises the need for carrying out formal strategic planning in organisations. This needs to be carried out by systematically searching the external environment for opportunities and threats, generating strategic options and by using the tools and techniques explained in table 3.10 in chapter 3. This study indicates that planning helps organisations in both dynamic and hostile environments. The results of this study clearly establish the importance of strategy implementation. Managers need to pay careful attention to properly plan and prioritise the implementation of strategies for enhancing the organisational performance.

The findings indicate the need for having a clear strategic orientation and managers must ensure that the organisation does not go to a stuck-in-the-middle condition. Integrated strategies are useful for enhancing organisational performance and hence CEOs and senior managers could assess the feasibility of implementing integrated strategies in their organisations. The implementation of integrated strategies necessitates careful planning and consideration of costs and benefits. Reconfiguration of the value chain may be necessary in such a situation. This study indicates that an organic structure

is favourable for implementing both integrated strategies and a differentiation strategy. The findings concerning the relationship between environment and strategy are immensely useful to managers. When an organisation operates in either a highly dynamic or hostile environment a differentiation strategy is more appropriate. Due to unfavourable environmental conditions and hostile activities of competitors it may be difficult to maintain a low-cost position in the industry. The firm needs to offer differentiated products and features to its customers for sustaining and improving its competitive position. However in a low-hostility environment an organisation can maintain its low-cost position and improve its performance. Overall, this study suggests that organisations need to give high emphasis to strategic planning and strategy implementation. It also needs to have a clearly defined strategy for improving performance.

11.7 Limitations of the Study

The study has a number of limitations. First, the study used a single respondent from each firm as justified in section 1.8 in chapter 1. Further research might consider the use of multiple respondents located in different positions in the firm. Second, common method variance as indicated in section1.8 can be an issue. However, measures were taken to minimise the impact of this problem as discussed in section 7.3.9 in chapter 7. Other limitations of this study are briefly discussed in this section. The Partial Least Squares analysis identified some of the weaknesses of this study. The model was not able to predict relative competitive performance effectively using the variables involved in this study and the possible reasons have been explained in chapter 10. In accordance with many previous studies (e.g. Robinson & Pearce, 1988; Geringer & Herbert, 1991; Hart & Banbury, 1994; Dess & Robinson, 1984; Pearce II, Robbins & Robinson, Jr.,

1987; Priem, Rasheed & Kotulic, 1995; Brews & Hunt, 1999) this study has used subjective performance measures. Objective financial data was not used to measure organisational performance. The respondents were limited to CEOs as the information they have provided about the organisational performance can be considered to be accurate. The study may be enhanced by in-depth case studies examining the strategy formulation and implementation process in organisations. If the findings from the case studies support the findings of this study, the results will be more robust.

This study has examined only the electrical and mechanical engineering sectors of the manufacturing industry. Generalisability or external validity refers to the extent to which results from data can be generalised to other situations. There are two aspects concerning the generalisability of findings (Lancaster, 2005). Firstly, the extent to which results obtained from a sample is applicable to the wider population from which the sample is drawn needs to be assessed. In this study some of the non-respondents were contacted and were requested to answer a few questions relating to strategic planning, business-level strategy and strategy implementation (see section 7.3.5, chapter 7). The difference between the means of the measures of the main sample and that of 35 respondents who answered the questions were statistically compared and it was found that the differences were not statistically significant. The means of the responses of early and late respondents were also statistically compared and it was found that no significant difference existed between the means of the responses of these two groups. These results suggest the findings obtained from the sample are applicable to the wider population from which the sample was drawn.

The second aspect is concerning the applicability of the findings of research focussed on an industry sector to other industry sectors. While carrying out survey based empirical

research the researcher needs to decide whether a broad multi-industry sample or a narrow sample comprising of a single or limited number of industry sectors has to be used. Both these approaches have advantages and disadvantages (e.g. Dess, Ireland & Hitt, 1990). Broad multi-industry samples allow the establishment of a general link between the key variables of interest in this study namely strategic planning, business-level strategy, strategy implementation and organisational performance. However, the presence of diverse SIC codes in a sample implies a variability due to the various external contexts which are not easly accounted for, making it difficult to interpret the overall results (Dess, 1987). Targeted studies, on the other hand, facilitate the testing of specific contingent propositions associated with the framework (Dess et al, 1990). Depending on the range of firms studied, industry effects will account for a non-negligible proportion (e.g. Wernerfelt & Montgomery, 1988) of the explained variance in performance as corporate effects and business segment effects (e.g. Hough, 2006) may do.

In this study a narrow sample was chosen because literature posits that industry conditions influence the strategy – performance linkage (Dess, 1987; Hrebiniak and Joyce, 1985) and sampling firms from a cross-section of industries may obscure the link between strategic planning and performance (Boyd, 1991). The sample was selected according to the first two alphabetic codes (DJ, DK, DL and DM) representing the subsections of the UK SIC (2003) code. One of the main reasons why these sectors were chosen was because they are economically and strategically important (see section 1.6 in chapter 1). The strategy adopted for selecting the sample for this study implies that the findings can be confidently applied to the sectors covered. However, the claim for generalisability is less strong. The contribution of this thesis lies in cumulative theory building. That is to say, the testing of Porter's positioning theory and the effectiveness

of the rational choice mode of strategy making is necessary to assess the applicability of these theories in different contexts in order to identify where they apply and what are the exceptions. Porter (1980) has contended that his strategies are generic in nature which can be applied to all industries. So if Porter is correct then the findings obtained in this study concerning the relationship between business-level strategy and performance should hold true for other industry sectors as well. However critics of Porter's generic strategies (e.g. Bowman, 2008) have argued that organisational strategies have to be context-specific and generic strategy prescriptions using a simple framework like Porter's would not be effective. If their views are true, the findings may not hold good for other industry sectors. However previous empirical studies focused on other industry sectors like the airline industry (e.g. James & Ken, 1995) and banking industry (Powers & Hahn, 2004) have reported similar results thereby providing support for Porter's views on business-level strategy and indicating the generalisability of the findings. In addition, the findings of this study indicate that rational planning leads to better performance and similar results have been reported in previous empirical studies conducted in other industry sectors like banks (e.g. Rogers, Miller & Judge, 1999) and food processing firms (e.g. Baker, 2003) providing support for the generalisability of findings relating to rational planning.

11.8 Directions for Future Research

This study has looked into various aspects concerning the formulation and implementation of strategies in UK based manufacturing organisations. According to the resource-based view (RBV) of the firm (Penrose, 1959; Wernefelt, 1984; Grant, 1991; Barney, 1992; Witcher et al, 2008) the organisational performance is dependent on the configuration of its resources. As a follow-on study the resources and capabilities

of the manufacturing organisations can be examined and their impact on competitive advantage and organisational performance can be studied. The purpose of such a study is to assess the types of resources which are instrumental in sustaining the competitive advantage and profitability of manufacturing organisations. The findings of such a study can complement the insights gained from this study.

The findings of this study indicate that environment moderates the relationships between strategic planning and performance and business-level strategy and performance to some extent. Perceived measures have been used to measure environment in this study. The moderating effect need to be assessed using objective measures of environment in future research to confirm the findings.

The study suggested that organisational structure has a significant role to play in the relationship between business-level strategy and performance. It was found that an organic structure is strongly associated with differentiation and integrated strategies for improving organisational performance. The role of structure needs to be examined in greater detail by using a different sample and a different measure.

A case study approach could be utilised to verify the findings of this study based on the firms that participated in this study. Data can be collected by interviewing CEOs and senior managers and through observations during the meetings of the senior managers. Document study can also be used to collect data.

There is a need for developing good measurement scales for strategic planning, business-level strategy and strategy implementation. While discussing the previous studies on strategic planning and business-level strategy (see chapters 4 & 5), the inconsistencies in operationalising them in empirical studies were discussed. In the

structural model presented in chapter 10, a surrogate variable was used to measure clarity in strategy. A revicw of the extant literature suggested that a measurement scale to measure clarity in strategy has not been developed in previous studies. Similarly there is a need for a measurement scale to measure integrated strategies. In chapter 3, seven modes of strategy making were identified as a result of the mapping process. A valid measurement scale needs to be developed for operationalising these seven modes in empirical studies. Development of valid and robust measurement scales which can consistently measure strategic planning, business-level strategy including clarity in strategy and integrated strategies, strategy implementation and the strategy making modes in empirical studies is another area for future research.

11.9 Summary

This study has made a significant contribution to the existing knowledge by identifying seven strategy-making modes and by determining gaps in the literature through systematic literature reviews. The results establish the relationships between strategic planning, clarity in business-level strategy and strategy implementation and highlight their importance in enhancing organisational performance. This study has also made a significant contribution to the literature by using PLS which has not been used by many authors in strategic management research. The findings of this study are immensely useful to practising managers mainly because it emphasises the need for conducting formal strategic planning by using various analytical tools and the importance of planning and prioritising strategy implementation.

Appendix A: Systematic Literature Review - Strategic Planning and Performance

Contents

Table A.1 – Details of the Sample

Author	Domain / Type of firm	Sample size (If small firms, definition used to classify firms as small)	Sampling Technique	Country of origin
Grinyer & Norburn (1975)	Commercial or industrial segments	71	No earlier study of this kind had been done and the basic assumptions to be tested were general. Hence it was decided that the sample frame should satisfy the following criteria: (i) companies of disparate size of turnover, (ii) a range of profitability among the companies and (iii) access to companies. 71 public companies were selected based on the above criteria and this sample was stratified in order to satisfy the first criteria. They were divided into three groups as follows: Companies with annual turnover of (a) less than £ 5 million (b) between £ 5 million and £ 25 million and (c) Over £ 25 million. An equal number of companies were randomly selected from each group and twenty-one of these companies agreed to participate in the study. These organisations represented 13 sub-segments of the Standard Industrial Classification (S.I.C.).	United Kingdom
Karger & Malik (1975)	Companies belonging to five generic grouping namely (i) clothing, (ii) chemicals, drugs and cosmetics, (iii) electronics, (iv) food and (v) machinery.	273	273 companies with sales between $50m and $500m, representing six categories of industries were selected from Moody's Industrial Manual and Value Line Investment Survey. Based on the responses, only the electronics and machinery groups had meaningful sample size. Chemicals were paired with drugs to produce a third measurable group of reasonable size.	United States
Burt (1978)	Australian retailing industry	20	Publicly listed firms located in the eastern capital cities of Australia and Canberra.	Australia
Kallman & Shapiro (1978)	Motor carrier firms	886	The carrier size, commodity handled and geographic area were determined from the Trincs Blue Book of the Trucking Industry. Class 1 common carriers whose revenue exceeded $ 3m and which engaged in interstate commerce were selected for the study. In 1975 there were 886 such firms in the United States.	United States

Klein (1979)	Commercial banks	144	All the commercial banks that are members of the 7th Federal Reserve district and participants in the Functional Cost Analysis Program	United States
Wood Jr. & LaForge (1979)	Large banks	50	50 largest banks located in the 10 states namely Alabama, Georgia, Pennsylvania, New York, North Carolina, Maryland, Illinois, Massachusetts, Virginia and Tennessee, were selected from Moody's Bank and Finance Manual (1975).	United States
Kudla (1980)	Firms belonging to a number of industries	557	Fortune's 500 largest companies and 57 other firms which were believed to be engaged in strategic planning were sent the questionnaire.	United States
Grinyer, Yasai-Ardekani & Al-Bazzaz (1980)	Large organisations belonging to 18 different industries.	48	All the selected organisations had head offices in the Southeast of England. 25% of them were in service industries, 43% in manufacturing and 32% in both. All the organisations were large with £200 million average sales. 77% were owned in the UK, 12% in the US, 4% in the EEC outside UK and 4% jointly by UK and non-UK residents.	United Kingdom
Leontiades & Tezel (1980)	Largest industrialised firms	300	The sample was selected from Fortune magazine's 1000 largest industrialised firms. A representative number of companies were selected within the industries to avoid dominance by a single industry category.	United States
Lenz (1980)	Savings and loan industry	80	A random sample of savings and loan firms from a single state and Federal Home Loan Bank district was selected in order to control for differences in regulatory practice.	United States
Beard & Dess (1981)	Single-industry manufacturing firms	40	Single-industry manufacturing firms included in Standard and Poors (1979). All firms included in the final sample were in one and the same industry for the years 1969 through 1974. A firm was considered to be a single-industry firm if and only if during the 1969-1974 period a substantial majority and in most cases all of its sales could be clearly classified within one three digit SIC as defined by the US Office of Management and Budget (1972)	United States
Klein (1981)	Commercial banks	144	The sample consisted of member banks of the Seventh Federal Reserve district.	United States

Kudla (1981)	Firms belonging to a number of industries	557	Fortune's 500 largest companies and 57 other firms which were believed to be engaged in strategic planning were sent the questionnaire.	United States
Robinson and Littlejohn (1981)	Small firms	67 (No definition of small firms was provided)	The sampling frame consisted of 127 small firms which have received in-depth consulting from University of Georgia Small Business Development Center (SBDC) since 1977 and evidencing a minimum of six months since completion of that consulting, and which have not engaged in systematic planning prior to their involvement with the SDBC. A random sample of 67 firms was selected for this study.	United States
Sapp & Seiler (1981)	Commercial Banks	500	Five hundred U.S. Commercial banks were randomly selected through use of a computerised random number generator from a population of all U. S. banks larger than $10 million in total assets. A total of 302 of the 500 banks supplied sufficient information to permit classification into one of the four groups namely non-planners, beginning planners, intermediate planners and sophisticated planners.	United States
Unni (1981)	Small businesses	80 minority and 80 non-minority small businesses. Only 62 minority and 58 non-minority small businesses responses were useable. The definition of small businesses was not provided.	The sample was selected from the Directory of Manufacturers published by the local Chamber of Commerce and from a list of minority small businesses published by an affiliate of the Office of Minority Business Enterprise and the U.S. Department of Commerce. Only those firms that were in existence for at least 2 years were selected, assuming these firms reasonably have had occasion to use strategic planning during that time.	United States
Kudla & Cesta (1982)	Firms belonging to a number of industries	557	Fortune's 500 largest companies and 57 other firms which were believed to be engaged in strategic planning were sent the questionnaire.	United States
Jones (1982)	Small firms	200 (The definition of small firms was not provided)	The firms were selected from Dun and Bradstreet's Million Dollar Survey (1980) – volumes II and III and the Survey of Virginia Industrial Firms. Seven different S.I.C. codes were represented in the sample and it included several different manufacturing and service industries. The final sample had 22 service and 47 manufacturing firms.	United States

Robinson, Jr. (1982)	Small firms	101 firms which had received SBDC consultation and two control groups with 101 and 61 firms respectively (A small firm was defined as the one having less than 50 employees, less than $ 3 million in annual sales and independently owned and operated)	The small firms that had received consultation from Small Business Development Center (SBDC) and two control groups not engaging in outsider-based planning were included in the sample. The first control group consisted of firms from RMA Annual Statement Studies (1978) which were matched with the SBDC sample by type of business (SIC code) and annual sales. The second control group was a random sample from the files of a northeast Georgia bookkeeping service and were similar to the SBDC sample by type of business (SIC code), annual sales and number of employees.	United States
Robinson Jr. and Pearce II (1983)	Small banks	85 (The definition of small banks was not provided)	All federal and state-chartered commercial banks in South Carolina were included in the sample.	United States
Fredrickson (1984)	Paint and coatings (SIC code 2851)	152 executives from 38 firms	The study focussed on an industry with a stable environment. The paint and coatings industry was selected for the study because the sales growth and technological change was very limited in this industry. 51 firms located in the Eastern and Central United States were selected from Dun and Bradstreet's (1981) Million Dollar Directory and 45 of them expressed interest in participating. The CEOs or Executive Vice Presidents of these 45 firms were interviewed in the first phase and finally 38 firms were identified for the second phase of the study.	United States
Fredrickson & Mitchell (1984)	Sawmills and planing (SIC code 2421)	109 executives from 27 firms	The study was focused on an industry with an unstable environment and all firms had to be from the same industry. In order to make personal contacts, all firms needed to be headquartered in the Pacific Northwest. Potential research sites were identified in a review of Dun and Bradstreet's Million Dollar Directory (1979) and Million Market Directory (1979) and contacted if their sole SIC number or one of the first two listed was 2421. 43 firms were contacted by letter and 34 of them agreed to participate. The CEOs of all the 34 firms were interviewed in the first phase and executives including CEOs from 27 firms were selected for the second phase of interviews.	United States

Robinson Jr., Pearce II, Vozikis & Mescon (1984)	Small firms	51 (A small firm was defined as the one having less than 50 employees, less than $ 3 million in annual sales and independently owned and operated)	A random sample of firms that had engaged in outsider-based strategic planning consultation through the university of Georgia Small Business Development Center (SBDC) program was selected.	United States
Welch (1984)	Organisations belonging to a number of industries	380	Organisations which were listed simultaneously in all the three locations namely the New York Stock Exchange, the Standard and Poor's 400 Industrial Index and Public Utility Index and the Compustat files.	United States
Woodburn (1984)	Public and private organisations	3775	Not specified	South Africa
Ackelsberg & Arlow (1985)	Small business firms	732. The definition of small business firms was not provided.	Firms listed in the Chambers of Commerce in a six-county area in the eastern part of the United States	United States
Orpen (1985)	Small firms	58 (The definition of small firms was not provided)	The sample consisted of small businesses of different types.	Not specified
Rhyne (1986)	Fortune 1000 companies	210	The sample was selected from Fortune 1000 companies	United States
Bracker & Pearson (1986)	Small mature firms in the dry cleaning industry	555 (The definition of small firms was not provided)	Members of the South-eastern Fabricare Association (SEFA).	United States
Robinson Jr., Logan & Salem (1986)	Small retail firms	800 (The definition of small retail firms was not provided)	Small independent food retailers that were members of the Food Retailers Association of South Carolina (FRASC) were included in the sample.	United States
Ramanujam, Venkatraman & Camillus (1986)	Fortune 500 and Inc 500 firms	600	A random sample was chosen from the Fortune 500 Manufacturing, Fortune 500 service and Inc 500 directories	United States

Shuman & Seeger (1986)	Fastest growing privately held small companies	500	Companies belonging to the INC. 500 Class of 1983, representing the 500 fastest-growing privately-held companies in the US ranked by INC. magazine according to percentage of sales increase from 1978 through 1982, were selected as the sample for this study.	United States
Miller (1987)	Small and medium sized firms	131	A random sample was selected from the lists published in *Commerce* and *Les Affaires*.	Canada
Ramanujam & Venkatraman (1987a)	Fortune 500 firms	600	A random sample was chosen from the Fortune 500 Manufacturing and Fortune 500 service directories	United States
Capon, Farley & Hulbert (1987)	Major manufacturing corporations	155	Random sample selected from 258 Fortune 500 manufacturing companies headquartered East of the Mississippi River	United States
Gable & Topol (1987)	Small-scale retailers	489 (The definition of small-scale retailers was not provided)	From the membership list of the state-wide retailer's association in the North east region of the United States, 489 small-scale retailers were identified and questionnaires were mailed to them.	United States
Pearce II, Robbins & Robinson Jr. (1987)	Manufacturing firms	609	609 manufacturing firms in a single eastern state were selected in order to introduce a measure of control over external, non-industry factors such as regulation, taxation and wage rates.	United States
Ramanujam & Venkatraman (1987b)	Large organisations	600	The sample was chosen from Fortune 1000 companies.	United States
Rhyne (1987)	Large public manufacturing companies found in the Fortune 1000 lists	210 companies for the survey and eleven executives participated in the interviews	A random sample stratified by sales level was selected from the 1980 Fortune 1000 lists.	United States
Ramanujam & Venkatraman (1988)	Fortune 1000 organisations	600	A random sample was chosen from Fortune 1000 companies including the ones which were designated excellent by Peters and Waterman.	United States

Odom & Boxx (1988)	Churches	253	The sample was selected from the Arkansas Baptist State Convention which met one of the two attendance criteria: (i) must have averaged 150 or more persons attending Sunday school during at least 1 reporting year in the 5-year period of the study (ii) had an average attendance of 100 or more persons during the entire 5-year period and sponsored a mission church.	United States
Bracker, Keats & Pearson (1988)	The study is focussed on small firms more than 5 years old operating in a dynamic growth environment. Electronics industry was chosen for the study because it could be considered to be in the growth stage of the life cycle according to the definition put forward by Zeithaml and Fry (1984)	217	The names and addresses of the companies were obtained from the membership guide of the American Electronics Association (AEA). The firms included in the sample were privately held, had been in business at least 5 years, were owner / managed and had no more than 100 employees.	United States
Cragg & King (1988)	Small metal goods manufacturers	Responses were received from 578 firms. (The definition of small metal goods manufacturers was not provided)	The sample included all the metal goods manufacturing firms located in the East Midlands region of England. All the firms selected for the study met the following criteria: (i) had no more than 50 employees, (ii) were independently owned and operated and (iii) were operating in early 1986. The names of the firms satisfying the above criteria were compiled from various sources such as training groups, trade directories and computerised Yellow Page records.	United Kingdom
Robinson Jr. & Pearce II (1988)	Manufacturing firms belonging to different industries	609	A regionally restricted field setting was selected because of the following three reasons (i) to introduce greater control over external, non-industry factors (ii) to be able to use a current industrial directory of North Carolina as the basis for drawing a random sample and (iii) because of resource limitations to support this research.	United States
Shrader, Mulford & Blackburn (1989)	Small firms	115 (Firms that employed at least ten but not more than 100 employees were considered as small firms)	A stratified random sample of small businesses located within a tri-county area in central Iowa was selected using information from the Dun and Bradstreet Market Identifiers File.	United States

Jenster & Overstreet Jr. (1990)	U. S. credit unions	283	Two questionnaires meant for the chairmen and managers respectively of the credit unions were developed under the sponsorship of the Virginia Credit Union. Tbey were submitted to the chairman and manager of 283 Virginia credit unions.	United States
Kukalis (1991)	Large manufacturing firms	200	The 200 largest manufacturing firms based on sales were selected from the 1985 Directory of the North American Socicty for Corporate Planning.	United States
Powell (1992)	Single-business firms in two U.S. four-digit SIC-code industries namely wooden upholstered furniture and women's dresses, which have significant differences in strategic planning factor markets.	The total number of firms to which the questionnaires were sent, was not specified. A total of 113 firms responded to the questionnairc.	Questionnaires were mailed using Dillman's Total Design Method to all the firms in SIC codes 2512 and 2335. Out of the 113 firms responded, 68 were in SIC 2512 and 45 in SIC 2335.	United States
Lyles, Baird, Orris & Kuratko (1993)	Small firms	188 (The firms which had been in business for at least four years, had fewer than 500 employees and had gross sales of $1 million or more, werc included in the sample)	All the small firms included in the sample were located in the Midwestern United States. Tbe owners of the firms were contacted over phone and an interview time was established. They were interviewed by students in a small business course.	United States
Orpen (1993)	Small firms	51 (The definition of small firms was not provided)	Only the local small firms employing less than 50 persons and those which were not subsidiaries of larger firms or corporations were selected.	United Kingdom
McKiernan & Morris (1994)	Small and medium-sized enterprises	3000 (Small manufacturing firms with up to 200 employees and medium-sized companies up to 500 employees were included in the sample)	From the Dun and Bradstreet database of over 200,000 companies, a random sample of 3000 SMEs covering 16 manufacturing sectors were selected.	United Kingdom

Matthews & Scott (1995)	Small and entrepreneurial firms	780 (Small and entrepreneurial firms with less than 500 employees were included in the sample. This was done according to the size standards established by the U.S. Small Business Administration)	The sample was randomly selected from a 1500 firm mailing list of the Chamber of Commerce of a large Midwestern city.	United States
Olson & Bokor (1995)	Fastest growing privately held small businesses	442	The sample was selected from the list of 500 fastest growing, privately held small businesses in the United States published by Inc.	United States
Kargar (1996)	Small community banks	69 (47 banks responded and out of these 41 banks were chosen for analysis) Commercial banks with fewer than $500 million in total deposits were treated as small banks.	69 U.S commercial banks in the state of North Carolina represented the entire population.	United States
Goll & Rasheed (1997)	Manufacturing firms	159	645 largest manufacturing firms in the United States as identified in Business Week (1985) were included in the sample.	United States
Hopkins & Hopkins (1997)	Banks	350	Not specified	United States
Rue & Ibrahim (1998)	Small firms	1153 (Firms with at least fifteen full-time employees were included in the sample)	Two lists of small businesses in Georgia were used for selecting the sample. One list was developed by the Small Business Development Center at Georgia State University and the second list was a commercially available mailing list purchased from Wholesale List Marketing. Random samples of 553 firms from the first list and 600 firms from the second list were selected.	United States
Glaister & Falsbaw (1999)	Pubic limited companies belonging to both manufacturing and service sectors	500	A stratified random sample was selected from the EXTEL database of U.K. listed companies.	United Kingdom

Rogers, Miller & Judge (1999)	Banks	924	A random sample of banks within the 1990 Rand McNally Bank Directory was selected.	United States
Andersen (2000)	To investigate the model relationships in different industrial settings and make comparisons to previous research results, the study was conducted on three distinct industry groups namely food and household products industries, computer products industries and banking industry	456	The industry environment is characterised by dynamism and complexity indices. Dynamism denotes the variance in the industry's net sales and operating income and complexity reflects the diversity of inputs and outputs in the particular industry. The dynamism and complexity indices in different four-digit SIC industries extracted from Compustat helped the selection of industry groups and those indices for the chosen industries are explained below: Food and household products: Low on dynamism and complexity Computer products: High level of dynamism and complexity Banking: A distinct services industry having levels of dynamism and complexity between food and household and computer products industries. Annual reports from nearly 84% of all the firms included in the Compustat database in the selected industries were subjected to thorough analysis to ensure that single business firms and divisions were appropriately identified. Out of the 456 firms identified, 188 were in food and household products industry, 172 were in computer products industry and 96 in retail banking.	United States
Baker & Leidecker (2001)	Agribusiness sector (Tomato processors in California)	25	All the companies in the state of California was obtained from California Tomato Growers Association, Inc and California League of Food Processors	United States
Gibson & Cassar (2002)	Small firms	3554 (Firms with less than 200 full-time equivalent employees in 1995 were treated as small firms)	Data collected in the first three years (1994-95, 1995-96 and 1996-97) of the Business Growth and Performance Survey developed by the Australian Bureau of Statistics (ABS) was used for this study. Firms from the full database meeting the following criteria were included in this study's analysis: (i) be active for all three years (ii) be a privately held company and (iii) have fewer than 200 full-time equivalent employees in 1995.	Australia

Baker (2003)	Food processing firms	943	The industries were chosen from among those with at least 200 companies listed in the industry category as reported by the Thomas Food Industry Register. Five industries namely baked goods; confectionery; dairy (fresh milk); jams, jellies and spreads; and canned and frozen vegetables were selected to reflect the diversity of the food processing sector. A random sample of 200 firms was chosen from the total in each industry. After deleting the firms with incorrect addresses and those no longer in businesses, the final sample consisted of 943 firms.	United States
Tegarden, Sarason & Banbury (2003)	Firms in a range of technology intensive, dynamic industries.	2000	The sample was drawn from the directory of U.S. firms published by the Corporate Technology Information Services (CorpTech).	United States
French, Kelly & Harrison (2004)	Small professional service firms	936 (The definition of small professional service firms was not provided)	Random sample selected from a commercial database consisting of 1700 firms.	Australia
Shrader, Chacko, Herrmann & Mulford (2004)	Manufacturing firms	597	All the manufacturing firms listed in the database of firms associated with a centre for industrial research and service at one of the premier land grant institutions in the USA.	United States
Hoque (2004)	Manufacturing companies	100 (Only those organisations with at least 100 employees were included in the sample)	A random sample was selected from the 1994 edition of New Zealand Business Who's Who.	New Zealand
O'Regan & Ghobadian (2004)	Small-and medium-sized manufacturing firms in the electronics and engineering sectors.	1000 (Firms having less than 250 employees were considered as SMEs according to the European Commission's definition of SMEs)	A random sample was selected from a directory published by a reputable commercial firm.	United Kingdom

Table A.2 – Aims of the study and method			
Author	**Focus / aim of the study**	**Methodology for collecting data**	**Respondent(s) who and how many**
Grinyer & Norburn (1975)	To determine the characteristics of the strategy planning process in a representative sample of U. K. companies and how these were related to performance.	Data was collected during interviews by using a structured questionnaire. Multiple interviews were used in each company for the following two reasons: (i) perceptions of a single interviewee could be biased and (ii) perceptions of a number of executives were necessary for the level of agreement between them to be established.	Two-thirds of the interviewees were chief executives or executive directors and the rest were senior managers reporting directly to a director. Ninety-one executives were interviewed in the 21 companies.
Karger & Malik (1975)	To measure the effects of formal integrated long range planning upon commonly accepted financial performance measures for industrial firms	Postal survey	Chief Executive Officers (90)
Burt (1978)	To test the following hypotheses: (i) there is a positive correlation between good planning and corporate performance (ii) firms with an acceptable quality of planning will out perform those with less acceptable planning.	Personal interviews and postal survey	Senior managers. 14 firms provided data. Data from 11 of them were collected through personal interviews and from the remaining 3 through postal survey.
Kallman & Shapiro (1978)	The overall aim of the study was to determine what effect planning has on profitability in the motor carrier industry. The study explored the following four basic research questions: (i) whether there was a relationship between the size of the firm, its commitment to long range planning and its economic performance (ii) whether geographic area of operation has any bearing on the economic performance of a carrier relative to its commitment to planning (iii) Does the amount of planning depend on the kind of freight handled? Do the different types of carriers plan the same way and do they perform the same economically (iv) the length of time a carrier has actually been using a planning function	Postal survey	Corporate Presidents or top level executives. 498 responses were received, 20 were unusable. Complete economic data for the full 10 year period could not be obtained for 93 respondents which resulted in 385 usable questionnaires. Of these, 87 started planning in the years between 1966 and 1975 and the remaining 298 started planning in 1965 or before. These 298 firms constituted a large homogeneous group and were selected for analysis.

Klein (1979)	To investigate (i) the relationship between bank size and long range planning efforts undertaken (ii) the relationship between bank size and trends for growth and profit (iii) whether there is a correlation between the extent of long range planning and growth trends, profit trends and bank size and trends for growth and profit and (iv) the extent to which long range planning is used as a management tool in commercial banks today	Postal Survey	Senior officials and executives (77)
Wood Jr. & LaForge (1979)	To test the hypothesis which states that large U.S. banks that had more comprehensive planning would financially outperform those that had less comprehensive planning.	Postal survey and interviews	Officers from 29 banks responded to the questionnaire and in depth interviews were conducted with executives or planning specialists of 17 out of those 29 banks.
Kudla (1980)	To examine whether (i) shareholders of firms engaged in strategic planning earned abnormal returns or not and (ii) strategic planning has enabled the firms to reduce overall riskiness or not.	Postal survey	Not specified (348 questionnaires were returned, out of which 328 were usable. The final sample used for risk analysis consisted of 78 planners and 78 non-planners)
Grinyer, Yasai-Ardekani & Al-Bazzaz (1980)	To test a number of hypotheses to ascertain the nature of relationship between (i) divisionalisation of organisational structure and the traditional measures of height and width of the hierarchy (ii) strategy and structure (iii) size and strategy and size and structure (iv) number of sites and structure and geographical dispersion and structure and (v) Strategy, structure and financial performance. Another two set of hypotheses were also formulated to test whether (i) a good fit of structure to strategy promotes better coping with the environment and (ii) good fit between structure and strategy might be expected to lead to good performance and vice versa.	Data was collected during interviews by using a structured questionnaire.	Senior managers (48)
Leontiades & Tezel (1980)	To test the association between the perceived importance of planning and actual performance.	Postal survey	CEOs and Chief Planning Officers (CPOs) (91 questionnaires were returned and out of these, 61 contained responses from CEOs and CPOs)

Lenz (1980)	To examine whether performance varies in accordance with a firm's overall combination of environment, strategy and organisation structure.	Field and telephone interviews and secondary data	Senior executives (80)
Beard & Dess (1981)	The aim of this study was to provide a balanced test of power of variation in firm corporate-level strategy and in firm business-level strategy in explaining variation in firm profitability. In order to accomplish this aim the following hypothesis specified in terms of an additive linear regression model was tested: $Y_i = b_0 + b_1X_{1i} - b_2X_{2i} - b_3X_{3i} + b_4X_{4i} + U$ Where Y_i = the before tax return on total investment or on equity of the *i*th firm X_{1i} = the before tax return on total investment or on equity of the industry in which the *i*th firm competes X_{2i} = the debt to equity ratio computed as the *i*th firm's ratio relative to the average ratio of the industry in which the *i*th firm competes X_{3i} = the assets to sales ratio computed as the *i*th firm's ratio relative to the average ratio of the industry in which the *i*th firm competes X_{4i} = the sales to size of the *i*th firm relative to the average firm's sales size in the industry in which the *i*th firm competes U = an error term accounting for unspecified variables i = 1 through n and n = the number of firms in the sample or population	Secondary data was used for the analysis. Firm-level data were obtained from Standard and Poors (1979) and industry-level data were obtained from US Internal Revenue Service (1974 through 1979)	Data concerning 40 firms were collected
Klein (1981)	To examine the following relationships: (i) bank size and extent of long-range planning efforts undertaken (ii) bank size and trends of growth and profit (iii) extent of long range planning and trends for growth and profit and (iv) extent of long-range planning, bank size and trends for growth and profit.	Postal survey	Senior officials and executives (76)
Kudla (1981)	To examine the relationship between strategic planning and risk of common stocks.	Postal survey	Not specified (348 questionnaires were returned, out of which 328 were usable. The final sample used for risk analysis consisted of 78 planners and 78 non-planners)

Robinson and Littlejohn (1981)	The following research questions were explored in this study: (i) What is planning in a small firm? (ii) Is planning of value in a small firm? And (iii) What are the critical dimensions of planning that are unique to the small firm?	Not specified	Not specified (Data was collected from 67 firms)
Sapp & Seiler (1981)	To examine the relationship between long-range planning and financial performance of U.S. Commercial Banks.	Postal survey	Not specified
Unni (1981)	To test the following hypotheses: (i) Among small business owners, the proportion who makes use of overall planning in their businesses is the same for both minority and non-minority (ii) All observed characteristics, such as the type of ownership, number of employees, average working hours per week, age of the firm, owner's experience, owner's age and educational background, were related to their planning efforts and (iii) Since sales and profit growth could be considered as indicators of business success, those small business owners with satisfactory profit (profit growth) were also satisfied with sales (sales growth)	Postal survey	Not specified (Only 62 minority and 58 non-minority small businesses responses were useable)
Kudla & Cesta (1982)	To examine whether planning of a firm affects its performance.	Postal survey	Not specified (348 questionnaires were returned, out of which 328 were usable. The final sample used for discriminant analysis consisted of 27 planners and 27 non-planners)
Jones (1982)	This study was intended to identify important characteristics which differentiate planners from non-planners and to determine the usefulness of planning in the small firm.	Postal survey	Top planners (69 questionnaires were returned)
Robinson, Jr. (1982)	To examine whether there is a relationship between outsider-based strategic planning (OBSP) and firm profitability or not.	Not specified	Not specified

Robinson Jr. and Pearce II (1983)	To examine the relationship between formality of planning procedures and financial performance.	Postal survey	Presidents (50)
Fredrickson (1984)	To test whether there is a positive relationship between comprehensiveness of strategic decisions and performance in an industry operating in a stable environment.	Interviews	Executives including Chief Executive Officers (152)
Fredrickson & Mitchell (1984)	To test the relationship between the comprehensiveness of strategic decision processes and performance in an industry whose environment is unstable.	Interviews	Executives including Chief Executive Officers (109)
Robinson Jr., Pearce II, Vozikis & Mescon (1984)	To determine whether the planning-performance relationship is a small-firm setting is contingent on the stage of development of the firm or not.	Postal survey	Not specified (Data from 51 firms were used for analysis)
Welch (1984)	To determine (i) if the company conducts strategic planning (ii) when strategic planning was formally initiated and (iii) at what level in the organisation strategic plans are developed, corporate and or division	Postal survey	Chief Executive Officers (123)
Woodburn (1984)	To explore the types of strategies, formulation methods and the influences of environmental and organisational characteristics on the planning process in organisations based in South Africa.	Postal survey	Not specified (Data from 518 firms were collected)
Ackelsberg and Arlow (1985)	To test the following hypotheses: (i) There is a positive and significant relationship between planning and economic performance (ii) The relationship between planning and economic performance will be significantly different among types of businesses	Postal Survey	Not specified. Only referred to as potential respondents (135 usable questionnaires were returned)

Orpen (1985)	To compare the performance of small businesses which engage in long-range planning with that of firms which do not.	Data was collected in two stages. (i) managers of the firms kept diaries over a six-week period and it was later examined by three independent judges (ii) the same managers completed a brief questionnaire	Senior managers, mostly owner-managers (58)
Rhyne (1986)	To examine whether long-term financial performance of a firm relative to its industry will be positively related to superior planning systems or not.	Postal survey	Not specified. (89 usable questionnaires were received)
Bracker and Pearson (1986)	To test the following hypotheses: (i) No significant difference exists between the level of planning sophistication employed in opportunistic entrepreneurs' firms and their financial performance data (ii) No significant difference exists in financial performance data between older, opportunistic entrepreneurs' firms (more than 9 years old) and the younger, opportunistic entrepreneurs' firms (iii) A significant difference exists in financial performance data between large, opportunistic entrepreneurs' firms (more than $ 400, 000 gross revenue) and the smaller, opportunistic entrepreneurs' firms (iv) No significant difference exists in financial performance data between opportunistic entrepreneurs' firms with long planning histories (more than 5 years) and opportunistic entrepreneurs' firms with short planning histories.	Postal Survey	Owners / Managers (265 returned the questionnaires, out of which 188 were usable)
Robinson Jr., Logan & Salem (1986)	To address the relationships between operational and strategic planning and the contribution of each to firm performance.	Postal survey	Not specified (Data from 81 firms were used for analysis)
Ramanujam, Venkatraman & Camillus (1986)	To examine what all dimensions of planning are associated with effectiveness as approached from multiple perspectives.	Postal survey	Executives (207 questionnaires were returned and out of these, 93 responses were used for analysis)

Shuman & Seeger (1986)	To explore the following research questions: (i) are definitional variations contributing to the finding that so many small firms do not plan? (ii) is the application of planning the main ingredient that separates the growing (entrepreneurial) business from the small, static (Mom and Pop) business? and (iii) what specific activities should comprise the planning process?	Postal survey	CEOs / Owners (220)
Miller (1987)	(i) To examine the relationship between strategy and structure (ii) to examine the nature of association of structure with rationality and interaction among good and poor performers and (iii) to examine whether the expected differences in the relationships between high and low performers will be more pronounced among innovative and large firms than among noninnovative and small firms.	Personal and telephonic interviews	Chief Executive Officers, Vice-Presidents and General Managers
Ramanujam & Venkatraman (1987)	To examine what all characteristics of a planning system are central for planning effectiveness.	Postal survey	Executives (207)
Capon, Farley and Hulbert (1987)	(i) To document planning practices and identify problems; (ii) To investigate relationships between planning systems and environment, strategy, organisation structure and organisational climate and (iii) To investigate relationship between planning and economic performance	Interviews at the offices of the organisations. Two questionnaires were used.	(i) Chief planning officer or equivalent position who answered questionnaire I (113) (ii) Knowledgeable assistants designated by the executive who responded to questionnaire I filled in the questionnaire II (113)
Gable & Topol (1987)	This study was intended to broaden the understanding of planning in the smaller retail sector and for achieving this overall aim the following objectives were established (i) To determine the degree of planning in smaller retail organisations (ii) to determine if the use of goals, objectives and forecasts of planners can be distinguished from non-planners (iii) to determine if planners' perceptions of problem areas differ from non-planners and (iv) to determine the effect of planning on performance as measured by sales and profits.	Postal survey	The covering letter accompanying the questionnaire was addressed to the President of the organisation. However the letter requested the recipients to forward the questionnaire to the person in charge of planning, if they were not responsible for planning in their organisation. The letter urged the individual receiving the questionnaire to respond if the retailer did not engage in planning. Altogether there were 209 responses and out of them 179 were usable.

Pearce II, Robbins & Robinson Jr. (1987)	The overall aim of the study was to investigate the formality / grand strategy / performance relationship. The following hypotheses were tested (i) the level of a firm's strategic planning formality is significantly and positively correlated with organisational performance (ii) there is no significant difference in the performance of firms across the stability, external growth and internal growth strategies. The performance of firms following a retrenchment strategy will be lower (iii) there are no significant differences in the levels of strategic planning formality across grand strategy types and (iv) the relationship between formality of planning and firm performance is consistent for all grand strategy types	Postal survey	CEOs (73)
Ramanujam & Venkatraman (1987)	To identify those aspects of planning which differ significantly across two groups of organisations classified as either high performers or low performers.	Postal survey	Senior planning executives (207)
Rhyne (1987)	To describe the overall pattern of relationships among the strategic planning system characteristics and to examine their impact on the financial performance of the organisation.	Structured interviews and postal survey	Executives (89 usable questionnaires were returned during the survey and interviews with eleven executives from eight companies representing seven industries were conducted)
Ramanujam & Venkatraman (1988)	To test three propositions linking excellence, planning and performance.	Postal survey in two stages.	Chief planning officers (210) in the first stage and chief executives (17) in the second stage of the survey.
Odom & Boxx (1988)	The overall aim of the study was to investigate the relationships of church size and church growth to perceptions of the environment and planning processes. The following research questions were investigated: (i) Is there a relationship between the location of churches and perceptions of the environment? (ii) Is there a relationship between the size of churches and perceptions of the environment? (iii) Is there a relationship between church leaders' perceptions of their environment and the sophistication of the planning process used? (iv) Is there a relationship between the size of churches and the sophistication of the planning process used? and (v) Is there a relationship between the growth (performance) of churches and the sophistication of the planning process used?	Postal survey	Pastors (179)

Bracker, Keats & Pearson (1988)	The objective of this study was to examine sophistication of strategic planning process and financial performance among firms more than 5 years old operating in a dynamic growth environment. To accomplish this objective the following hypotheses were formulated for testing: (i) Level of planning sophistication will be positively related to performance (ii) Entrepreneur type (opportunistic or craftsman) will affect firm performance (iii) Performance differences will be observed between large firms (more than $ 3 million gross revenue) and small firms and (iv) Performance differences will be observed between firms with long planning histories (more than 5 years) and firms with short planning histories	Postal survey	Owner / managers (97 firms responded to the questionnaire)
Cragg & King (1988)	The major hypothesis to be tested was that financial performance is related to planning activities, market oriented activities and the characteristics of the owner / manager.	Postal survey	Owner-mangers (179)
Robinson Jr. & Pearce II (1988)	To simultaneously examine the impact of intended strategies and planning processes on business-unit performance.	Postal survey	CEOs (97)
Shrader, Mulford & Blackburn (1989)	To examine (i) strategic planning / performance relationships of small firms in three major industry sectors and (ii) the degree to which environmental uncertainty affects both strategic and operational planning.	Self-completions questionnaires and interviews.	CEOs (97)
Jenster and Overstreet Jr. (1990)	To investigate the relationship between formal planning processes within credit unions and their immediate environment, organisational processes and structure, administrative systems, strategy and performance.	Survey	Both the chairmen and the managers of credit unions responded to the questionnaires submitted to them (74)
Kukalis (1991)	To investigate the relationship among four design parameters of planning systems and five different firm and environmental characteristics.	Postal survey	Top executives or senior corporate planning officers (115)

Powell (1992)	To test the following hypotheses: (i) In 'planning equilibrium' industries, the correlation between formal strategic planning and profitability does not differ significantly from zero (ii) In 'planning disequilibrium' industries, the correlation between formal strategic planning and profitability differs positively and significantly from zero and (iii) The correlation between strategic planning and profitability is significantly greater in 'planning disequilibrium' industries than in 'planning equilibrium' industries.	Postal survey	CEOs (113)
Lyles, Baird, Orris & Kuratko (1993)	To examine the relationship between planning formality and three other elements namely the process by which the strategic decisions are made, the content of small firm strategies and firm performance.	Structured interviews	Owners or managers (188)
Orpen (1993)	To examine the role of firm and environmental scanning activities on the planning-performance relationship.	Telephone survey	Owner or senior manager (51)
McKiernan & Morris (1994)	The overall objective of the study was to examine the relationship between the formality of strategic planning and financial performance among SMEs. The other objectives were to improve the sampling and methodologies and to incorporate the perceptions of CEOs.	Postal survey	CEOs (1380)
Matthews & Scott (1995)	To find out how the perception of environmental uncertainty influences the strategic and operational planning in small firms.	Postal survey	Owners / Managers and Entrepreneurs (130)
Olson & Bokor (1995)	To test the following hypothesis: "The sales growth rate (performance) of small, rapidly growing firms is influenced by the interaction (cross product) of planning formality (process) and product / service innovation (content)".	Postal survey	CEOs (91)
Kargar (1996)	This study sought to answer the following research questions: (i) Is planning effectiveness is small firms a multidimensional? (ii) What characteristics of planning systems are central for planning effectiveness in small firms?	Postal survey	President / CEO (47 banks responded and out of these 41 banks were chosen for analysis)

Goll & Rasheed (1997)	To examine the relationship between decision rationality and organisational performance and to investigate the moderating roles of environmental munificence and dynamism.	Postal survey	Human Resource Vice President / CEO
Hopkins & Hopkins (1997)	To test an integrative model of relationships among managerial, environmental and organisational factors, strategic planning intensity and financial performance.	Postal survey	CEOs (112)
Rue & Ibrahim (1998)	The objectives of the study were the following: To examine (i) whether small firms prepare written strategic plans and if so the extent to which their planning process attempts to identify external factors and includes quantified objectives and budgets; (ii) whether the plan contains procedures for anticipating or detecting differences between the plan and actual performance and for preventing or correcting these differences and (iii) the relationship between the sophistication of the planning and evaluation process and the firms' performance	Postal survey	Senior managers (253)
Glaister & Falshaw (1999)	To examine the extent to which companies use the tools and techniques of strategic development advocated by the classical model of strategy formulation and to examine views and attitudes towards the standard strategic planning approach.	Postal survey	CEOs, Finance executives, Planning executives and other Senior Executives (Total: 113)
Rogers, Miller & Judge (1999)	To test the hypothesis which states that the relationship between strategic planning processes and organisational performance will depend upon the content of strategy pursued.	Postal survey	CEOs (252 responded and 157 of them were included in the analysis)
Andersen (2000)	To test the model of strategic planning proposed by the authors. This model indicates that both strategic planning and autonomous actions influence organisational performance and might interact in ways that enhance performance.	Postal survey	Executives (230)
Baker & Leidecker (2001)	The primary purpose of this research was to examine the impact of strategic planning on firm performance in the agribusiness sector	Postal Survey	CEO or the manager responsible for the tomato processing division. (16)

Gibson & Cassar (2002)	To find out the influence of business structure variables namely business size (total employment), business volume (total sales) and business age on the incidence of business planning. Another objective of this study was to find out whether differences in the incidence of planning existed among industry groups. Also to find out the influence of management structure variables namely management training, intention to change operations, major decision makers' years of experience as a business proprietor and major decision-makers' education level on the incidence of business planning.	Secondary data was used for the study	Not specified
Baker (2003)	To examine the impact of formal strategic planning on firm financial performance.	Postal survey	CEOs (192 usable surveys were returned)
Tegarden, Sarason & Banbury (2003)	To investigate the impact of different strategy processes on different dimensions of firm performance and the role of the environment in these relationships.	Postal survey	CEOs (377 were returned, out of which 314 were used for the analysis)
French, Kelly & Harrison (2004)	To investigate relationships between firm performance and aspects of strategic planning	Postal survey	Managing partner or owner / manager (127)
Shrader, Chacko, Herrmann & Mulford (2004)	To test the following hypotheses: (i) The existence of both formal and informal strategic planning activity will be positively associated with firm financial performance (ii) The existence of formal and informal strategic planning in conjunction with technology policy and operational planning will be positively associated with firm financial performance and (iii) The degree of formal planning, planning time horizon, technology policy and operational planning will be positively associated with firm performance	Postal Survey	CEOs (64), Plant managers or Vice Presidents (53), Strategic Planners (17) and Managers holding important positions like CFO, Controller or Director of Research and Development (13). Three firms did not specify the position of the respondent.
Hoque (2004)	(i) To examine whether or not there is a significant relationship between business strategy and performance through management's choice and use of a performance measurement system and (ii) to examine whether or not there is a positive and significant association between the uncertainty due to organisational environment and performance through management's choice and use of a performance measurement system	Postal survey	CEOs (52)

O'Regan & Ghobadian (2004)	To investigate the association between the emphasis placed on various factors shaping the strategic plan together with their associated resources and their perceived impact on a range of tangible and intangible performance measures	Postal survey followed by personal interviews	The respondents of postal survey were not specified. 194 valid responses were received. 6 Managing Directors were interviewed.

Table A.3 – Construct Definition, Method of Analysis and Outcomes

Author	Strategy / planning construct	Performance constructs (Objective / subjective)	Method of analysis	Results / outcomes
Grinyer & Norburn (1975)	(i) Corporate objectives, (ii) role perception, (iii) formal planning systems, (iv) channels of information, (v) the number of items of information received and used, (vi) extent of common perception and (vii) Presence of change inducing strategic managers	Return on net assets = Profit before interest and tax / (Fixed assets + current assets – current liabilities)	Correlation analysis was used to analyse the relationship between financial performance and (i) perceptions of objectives (ii) role perception (iii) formal planning systems (iv) channels of information (v) number of items of information received and used (vi) extent of common perception and (vii) presence of change inducing strategic managers. Factor analysis of all the 29 variables was also undertaken to find out the underlying dimensions which were not revealed in the earlier analysis.	(i) No evidence to support the assumption that common perception of objectives and financial performance are associated (ii) Clarity of role perception is unrelated to financial performance (iii) Formality of planning is unrelated to performance (iv) There was negative correlation between desire for change and financial performance. But this may not mean that strategic managers do not contribute to improved financial performance (v) Use of more informal channels of communication or information processes are associated with higher financial performance (vi) The number of all information processes used is positively correlated with performance. Overall the results do not support the view that full corporate planning approach is associated with high financial performance.

Karger & Malik (1975)	Formal integrated long range planning (FILRAP) which refers to establishing a written plan for the overall organisation and for each division and each plant in each division for at least the oext 5 years and a more expanded 1-2 year plan for each.	Arithmetic means of the following measures were calculated for each firm over the 10-year period: (i) sales volume (ii) sales per share (iii) cash flow per share (iv) earnings per share (v) book value per share (vi) oet income (vii) rate earned on capital (viii) rate earned oo oet worth (ix) operating margin (x) per cent of dividends to iocome (xi) capital speoding per share (xii) stock price (average) and (xiii) price / earning ratio (average)	Student's 't' test and the Wilcoxon Rank-Sum test were used to compare the planners to the non-planners.	The planners outperformed the non-planners by a wide margin except in those measures involving capital spending, stock price and distribution of earniogs as dividends. The planners were more aggressive and better sellers of goods, controlled margins so as to reap greater profits and earned higher returns on capital. Better sales, earnings and / or operating performance have oo sure positive effect oo equity prices.
Burt (1978)	Quality of planning	(i) Changes in profitability (ii) return on invested capital (iii) changes in return on invested capital (iv) return on total funds employed and (v) changes in return on total funds employed	(i) Scatter plots and (ii) regression analysis Relevant weights were applied to the data and a raw score was computed. This score was converted to percent of the maximum possible score of 110 and became the computed indicator of the quality of a firm's planning.	(i) High quality planning was significantly associated with high level performance (ii) Moderate quality planning was associated with moderate performance (iii) The relatiooship betweeo the quality of planning and performaoce was found to be ambiguous for low quality planners
Kallman & Shapiro (1978)	Only the planning activities which covered more than 1 year ahead were treated as strategic planning or long range planning. (i) Definition of planning which would most closely describe the long range planning performed by the organisatioo (ii) No. of years the firm has beeo performing long range planning and (iii) Various aspects which would reflect the long range planning	The following five economic performance indicators over the 10-year period from 1965 to 1974: (i) gross operating revenue (ii) net earnings before taxes (iii) earnings to revenue ratio (iv) return oo shareholder's investment (net income divided by average shareholder's equity) and (v) return on total iovestment (operating profit divided by the sum of average equity capital and average fixed liabilities)	A composite score was developed from the responses and based on that score each company was placed in one of the five groups. Group one contained non-planners and those companies whose planning was for one year or less. Groups two through five contained organisations who have demonstrated increasiog commitments to planning, with group five containing firms with highest commitment. Tables containing (i) details of number of carriers in each	(i) There is no relatiooship between the size of the firm, its commitmeot to long range planning and its economic performance (ii) the geographic area of operation does not affect economic performance (iii) there is no difference in the economic performaoce of planners and oon-planners who handle general commodities and special commodities (iv) there is no relationship between the length of time a carrier planned and the productivity of the firm

			planning group and the year in which they started planning covering all respondents (ii) breakdown of planners by commodity handled covering all respondents (iii) summary of the basic sample according to the planning group and also according to their size, commodity handled and geographic territory (iv) the size of carriers as expressed by total gross revenues and (v) tbe ranges of performance for each of the economic variables as a percentage over the 10 years 1965 through 1974	
Klein (1979)	All planning activities that exceed a time horizon of one year. Planning guidelines like economic forecasts, forecasts of competitor action and policy statements were established after defining corporate objectives in terms of earnings growth, return on investment, share of market and desired loan and deposit growth rates	(i) Bank size was determined by total average deposits of each participating bank during the year 1970. (ii) Growth was measured by calculating the percentage changes of average total deposits of the banks, included in the sample for the years 1970-1974. (iii) Profit was taken as the Net Yield after Cost of Cash. The Net Yield was computed by combining the "Net Yield after Cost of Money" for all classes of loans; the "Net Yield after Cost of Money" for investments and the "Cash and Due from Banks" balance.	ANOVA	(i) There is no evidence which indicates that bank size is a determining factor of the extent of long range planning efforts undertaken by banks (ii) There is a significant relationship between the bank size and growth in commercial banks. Large banks bad growth rates that were substantially smaller than those of small banks but slightly higber than those experienced by medium banks (iii) There is no significant relationship between bank size and profit. No significant difference existed between profit trends for large and small banks (iv) There was no significaot correlation between long range planning effort on one side and growth or profit trends on the other side (v) When the relationship between bank size, extent of long range planning efforts undertaken and trends

				for growth and profit was analysed it was found that even though the extent of long range planning efforts undertaken influenced growth trends, this influence was not as strong as the impact of size. There was no empirical evidence to suggest that the long range planning and size influenced the profit. (vi) At the time of this study the use of long range planning in commercial banks as a management tool became more widespread when compared to the period of the mid 1960s.
Wood Jr. & LaForge (1979)	Comprehensiveness of planniog.	Growth in net income and return on owner's investment	t-tests	A group of large banks that engaged in comprehensive long range planning financially outperformed two other groups that were either randomly selected or were identified as not having formal planning systems.
Kudla (1980)	(i) Written long-range plan covering at least three years (ii) time period covered by the long-range plan (iii) year in which strategic planning was started (iv) quantified objectives concerning sales, return on investment, profit margin and market share covered in the strategic plan (v) inclusion of pro-forma financial statements for at least three years (vi) identification of factors relating to PESTEL and competitive environment (vii) inclusion of specific action programmes (viii)	Average residuals	Chi-square test, residuals plot and t-test.	(i) There were no significant differences in the returns earned by shareholders of planning firms and non-planning firms and (ii) strategic planning process led to a transitory decline in systematic risk for planning firms relative to the non-planning firms.

	schedules for completion of long-range plans and (ix) provision for detection of differences between the plan and actual performance			
Grinyer, Yasai-Ardekani & Al-Bazzaz (1980)	(i) Lateral and vertical spans of control (ii) Strategy, structure and size (iii) Charter, geographical dispersion and number of sites, number of employees, annual sales and capital employed (iv) Scales for environmental pressure or hostility perceived by interviewees	Average return on capital employed, growth in profits and ROI and growth in capital employed, sales and numbers employed.	Correlation analysis	Some of the important findings were (i) There is significant positive correlation between strategy and structure. This relationship is independent of other correlates of structure including number of sites, geographic dispersion of sites and size in terms of sales, capital employed and number of employees as well as a variety of environmental factors. (ii) The linkage between strategy and structure is as strong among service as among manufacturing companies, but was not significant among those combining manufacturing and service operations. (iii) Variables like charter, size, number of sites and their geographic dispersion variables which were not correlated with strategy, were strongly correlated with structure. (iv) There was a positive correlation between each of vertical and lateral spans of control and divisionalisation of organisation structure. (v) There was less perception of environmental hostility in companies where strategy and structure were matched. (vi) Variables on environmental hostility were correlated negatively with measures of performance (vii) Degree of diversification and growth especially in net profits were negatively correlated.

				Diversified companies displayed no better than average return on capital employed. Single product companies had significantly higher rates of growth in net profits.
Leontiades & Tezel (1980)	(i) CEO's rating of planning as performed by his planning staff and (ii) CPO's evaluation of the planning department's contribution to the success of his firm	The following financial performance measures for four time periods namely 1971 to 1977, 1972 to 1977, 1973 to 1977 and 1974 to 1977 were used: Return on equity (ROE), return on assets (ROA), price-earnings multiples (PE), earnings per share growth (EPSG) and sales growth (SALG).	Chi-square test	(i) There was no association between the perceived performance of planning and related performance results (ii) CEO's views of planning were directly correlated with the percentage of time they spend on planning. An emphasis on corporate-level planning is associated with high ratings for planning by both CEOs and CPOs, while low ratings are given by CPOs when a large percentage of their time spent on non-planning activities.
Lenz (1980)	(i) Environment (ii) strategy and (iii) organisation structure	Return on average assets	(i) Factor analysis and (ii) stepwise discriminant function analysis	(i) High performance firms operate in environments with lower levels of socioeconomic development, obtain higher prices for services sold and have flatter organisational hierarchies and (ii) low-performance firms operate in more developed environments, use media for advertising, charge lower prices and have more peaked organisational hierarchies.
Beard & Dess (1981)	Variation in corporate-level strategy has been measured in terms of the average profitability of the industry in which a firm does business. Variation in business-level strategy has been measured in terms of the firm's relative position within its particular industry on the three variables namely sales size,	Before tax return on total investment or on equity	Stepwise linear regression	(i) The variation in a firm's corporate-level as well as business-level strategies help to explain variation in firm profitability (ii) The relative importance of variation in corporate-level compared to business-level strategy in explaining firm profitability remains somewhat ambiguous on the basis of the results (iii) Relative firm size within a given

	capital intensiveness and debt leverage.			industry doe not hold up here as a powerful predictor of firm profitability (iv) The average level of the multiple correlation coefficients and the statistical significance of the regression equations suggest that the variables under study are important in understanding and predicting firm profitability (v) The variability of the results over time argues for more attention in future research to sources of temporal variation
Klein (1981)	Bank size and extent of long-range planning efforts undertaken	Trends in growth and profit.	t-test and ANOVA	(i) Bank size is an important variable affecting growth trends (ii) Extent of long-range planning effort undertaken influences growth trends, but this influence is not as strong as the influence of bank size and (iii) there is no evidence to suggest that long-range planning and size affect the profit.
Kudla (1981)	(i) Written long-range plan covering at least three years (ii) time period covered by the long-range plan (iii) year in which strategic planning was started (iv) quantified objectives concerning sales, return on investment, profit margin and market share covered in the strategic plan (v) inclusion of pro-forma financial statements for at least three years (vi) identification of factors relating to PESTEL and competitive environment (vii) inclusion of specific action programmes (viii) schedules for completion of long-	The measures of risk are computed from Sharpe's familiar market model. Total risk was partitioned into systematic risk and unsystematic risk. Systematic risk is that part of total risk that cannot be eliminated by diversification while unsystematic risk is diversifiable. Appropriate measures were used to measure these risks.	The firms were classified into three categories namely (i) Class 1 Non-planners – no formal long-range planning process (ii) Class 2 Incomplete planners – written long-range plans but not meeting all the requirements of Class 3 planners and (iii) Class 3 Complete planners – most comprehensive, systematic, future-oriented long-range planning process. All the 78 planners and 78 non-planners selected for risk analysis was widely held and actively traded in New York Stock Exchange. A chi-square test was performed to determine if the industry-by-industry	(i) A temporary, hut statistically insignificant, reduction in systematic risk was found in the period surrounding the month strategic planning was initiated. (ii) A significant reduction in unsystematic risk as measured by residual variance for the planning group was found approximately 5 and 10 years after the initiation of planning

	range plans and (ix) provision for detection of differences between the plan and actual performance		distributions of firms in the planning and non-planning groups were significantly different. Security returns were regressed on market returns using moving beta method. To detect significant differences in the systematic and unsystematic risk measures, paired t-test and plotting the average betas were used. The null hypothesis was tested by computing the difference between each security's beta. A standard F-test was used to detect significant differences in the variance of residuals which was a measure of unsystematic risk.	
Robinson and Littlejohn (1981)	Planning in small firms was defined as a rational decision-making process for predetermining an appropriate course of action to achieve specific objectives effectively and economically within a specified time.	(i) Sales (ii) Employment and (iii) Profitability measured as net profit before taxes as a percent of total sales	t-test	(i) Sales increased significantly (ii) No. of full time equivalent (FTE) employees increased significantly (iii) The mean profitability increased significantly
Sapp & Seiler (1981)	(i) Recognition of specific objectives (ii) duration of the existence of planning systems (iii) relating the resources to the objectives specified (iv) Existence of systems for formal plan review and revision process as well as for comparing plans to actual results and (v) consideration of environmental factors outside the immediate control of the bank.	(i) Deposit growth rate (ii) ratio of capital to risk assets (iii) loan yield and (iv) return on equity	Analysis of variance.	(i) Higher levels of planning efforts were directly correlated with higher deposit growth rates with the influence of size, location, scope and holding company affiliation removed (ii) greater planning efforts were correlated with lower ratios (iii) banks with greater planning efforts were able to realise higher yields on its loans and (iv) sophisticated planners had a significantly higher return on equity than non-planners.

Unni (1981)	Company characteristics such as nature of ownership, number of employees, owner's age, average working hours per week, age of the company, experience of the owner and educational background.	Profit growth and sales growth	Chi-square test and Correlation analysis	(i) The proportion who planned the business as a whole were more among non-minority firms than among minority firms (ii) Among the minority firms, type of ownership, number of employees, the average working hours per week, age of the firm and experience of the owner were not related to the extent to their planning efforts whereas the owner's age and educational background were related to their planning efforts. Among the non-minority firms, number of employees, owner's age and average working hours per week were not related to their planning efforts whereas the type of ownership of business, age of the firm, owner's experience and educational background were related to planning aspects. (iii) 54% of minority firms and 71% of non-minority firms were satisfied with their profit levels, but were those who were satisfied with their profit levels were not satisfied with sales growth.
Kudla & Cesta (1982	(i) Written long-range plan covering at least three years (ii) time period covered by the long-range plan (iii) year in which strategic planning was started (iv) quantified objectives concerning sales, return on investment, profit margin and market share covered in the strategic plan (v) inclusion of pro-forma financial statements for at least three years (vi)	Fourteen financial ratios including liquidity, debt, activity and profitability ratios.	The firms were classified into three categories namely (i) Class 1 Non-planners – no formal long-range planning process (ii) Class 2 Incomplete planners – written long-range plans but not meeting all the requirements of Class 3 planners and (iii) Class 3 Complete planners – most comprehensive, systematic, future-oriented long-range planning process. All the 27 planners and 27	Planning and financial performance were unrelated.

	identification of factors relating to PESTEL and competitive environment (vii) inclusion of specific action programmes (viii) schedules for completion of long-range plans and (ix) provision for detection of differences between the plan and actual performance		non-planners selected for discriminant analysis was widely held and actively traded in New York Stock Exchange. Since financial policy is multidimensional covering investment, financing and operating policies, stepwise linear discriminant analysis (LDA) was chosen as the statistical technique for conducting the analysis.	
Jones (1982)	(i) Type of environment (ii) planning methods (iii) management philosophy or style and (iv) style of decision making	Return on assets	Stepwise discriminant analysis was used to determine the type of environmental factors, management practices and demographic which would best describe planners and non-planners. Canonical correlation of the linear discriminant function was also calculated. The differences between the group means for planners and non-planners on each independent variable were tested using the t-test to further determine the characteristics which differentiate planners and non-planners.	(i) Planners had greater success than non-planners, when success was measured by return on assets (ii) The findings supported the perception that an informal organisational and management style characterised by easy adaptation to change, little emphasis on formal procedures and open communication among members of the management team existed in small businesses (iii) Planners viewed the environment as more restrictive than did non-planners. Also the planners regarded the environment as being less a threat to the firm's survival than did non-planners because of lower risk (iv) Planners made greater use than non-planners of all the planning activities (v) Planners were significantly more likely to engage in group consultation before reaching decisions than were non-planners. These group consultations were about decisions concerning the product, the budget and growth strategy (vi) Planners were older and had a higher level of formal education than non-planners

Robinson, Jr. (1982)	To bc treated as an outsider based strategic planning (OBSP) firm, the firm had to (i)address business level strategy issues (ii) include thorough analysis and decision making in two or more functional areas (iii) involve 10 or more contact hours between client and consultants and (iv) include three or more substantive contact periods	(i) Growth = percentage change in total sales (ii) profitability was calculated in two ways namely absolute increase in net profit before taxes / total sales and absolute increase in (net profit before taxes plus owner compensation) / total sales (iii) productivity = percentage increase in sales / employee and (iv) employment measured by percentage increase in the number of full-time equivalent employees	(i) Chi-square test (ii) correlated samples t-test and (iii) one-way multivariate analysis of variance (MANOVA) with Duncan's multiple range test	(i) There was a significant increase in the profitability of OBSP firms than that of the control group consisting of RMA firms during tbe post-OBSP period and (ii) small firms engaging in OBSP bad a significantly higher improvement in effectiveness than did control group consisting of a random sample of BKS firms.
Robinson Jr. and Pearce II (1983)	(i) Formality of planning process and (ii) degree of emphasis in strategic decision-making process	(i) Profit margin (ii) return on assets (iii) loan growth and (iv) return on equity	(i) Chi square test (ii) percentile rankings and (iii) t-tests	(i) There was no significant difference between the performance of small banks engaged in strategic planning and those whicb were not (ii) Regardless of formality, each set of banks placed equal emphasis on all aspects of strategic decision-making except formalised goals and objectives and (iii) mangers responsible for strategic planning do not benefit from a highly formalised planning process, extensive written documentation or the use of mission and goal identification as the beginning of a strategic planning process.
Fredrickson (1984)	Organisation comprehensiveness and size	(i) Average after tax return on assets during the most recent five years and (ii) percentage change in gross sales during the same period.	Correlation analysis and t-test	There was a positive relationship between comprehensiveness and performance in an industry operating in a stable environment.

Fredrickson & Mitchell (1984)	Organisation comprehensiveness and size	(i) Average after tax return on assets during the most recent five years and (ii) percentage change in gross sales during the same period.	Correlation analysis and t-test	There was a consistently negative relationship between comprehensiveness and performance.
Robinson Jr., Pearce II, Vozikis & Mescon (1984)	The firms' strategic planning activities had to (i)address business level strategy issues (ii) include thorough analysis and decision making in two or more functional areas (iii) involve 10 or more contact hours between client and consultants and (iv) include three or more substantive contact periods	(i) Growth in sales (ii) profitability (iii) sales per employee and (iv) number of full-time employees.	One-way multivariate analysis of variance (MANOVA) and t-test	(i) The improvement in effectiveness obtained by small firms that engage in strategic planning is not contingent on stage of development and (ii) stage of development may play a contingency role in terms of strategic planning intensity but not in terms of process
Welch (1984)	(i) Setting long-term financial objectives (ii) gathering and using strategic information that pertains to the social, economic, political and technological environments (iii) identifying and analysing alternative strategic options (iv) evaluating internal resource constraints and (v) planning courses of direction subject to the above factors.	The average P/E multiple over the 5-year study period from 1975 to 1979.	t-test was used to compare the performance of the two groups namely strategic planners and non-planners. t-test was again used to compare the P/E's of centralised and decentralised planners, among the strategic planners.	(i) Strategic planners achieved a much higher P/E during the study period (ii) P/Es of centralised strategic planners were significantly higher than that of decentralised planners. This suggests that strategic planning may be more effective if it is conducted at the corporate rather than solely at the division level.
Woodburn (1984)	(i) Methods of environmental scanning (ii) application of environmental scanning (iii) formulation of objectives goals and targets (iv) strategic planning (v) long range planning and (vi) operational planning	Profitability	Cross-tabulations, Chi-square test, F probabilities, t-test and Factor analysis	(i) In terms of individual influence, the CEO dominates formulation of all the three classes of objectives (ii) In the case of the participant objectives, the strongest group influence comprising the CEO, divisional and departmental managements and employees, was found to be in harmony with the definition of that type of objective (iii) For strategic objectives, the strongest group influence came from the key decision and policy-

				making group comprising the shareholders, directors and chief executive as could be expected for the formulation of this type of objective and (iv) for the performance type objective, the strongest of all influences was found in the key decision and policy-making group comprising the shareholders and CEOs.
Ackelsberg and Arlow (1985)	Goal setting, forecasting and execution of planning functions	Percentage change in sales and profits over the previous 3-year period	Chi square, Principal component analysis with Varimax rotation, Correlation analysis, t-test	(i) Most of the small businesses engaged in planning activities (ii) Planning firms tend to engage in more goal-setting activities, forecasting and traditional planning procedures than non-planners (iii) Planning in small business appears to be rational and logical rather than subjective and ad hoc (iv) Planning firms had greater increases in both sales and profits over a 3-year period than non-planners (v) The more a small firm used the more analytical aspects of planning the better its performance (vi) Formalising the plans did not affect the performance of small firms except for those in manufacturing whose sales performance deteriorated due to formalised planning
Orpen (1985)	(i) The structure of the planning function (ii) the aspects of the business considered in long-range planning (iii) the content of plans and the frequency of revision (iv) manager's attitudes toward planning and (v) percentage of time each manager spent on long-range planning	(i) Sales growth and (ii) return on assets	The firms were classified as high performers and low performers. Correlation analysis was used.	(i) Small firms which perform well conduct long-range planning process differently than small firms which perform poorly (ii) there is no significant difference between the amount of time spent on long-range planning and (iii) the results suggest that it is quality of planning which is important and not the time spent on it.

Rhyne (1986)	(i) Emphasis on new areas of operations (ii) attempt to match internal capabilities with external trends and (iii) emphasis on long-term variances from prior plans and on contingency plans.	Price appreciation and dividend yield to stockholders	Correlation analysis and t-tests	Firms having planning systems outlined in strategic management theory exhibited superior long-term financial performance both relative to their industry and in absolute terms.
Bracker and Pearson (1986)	(i) Size of the firm, (ii) age of firm, (iii) length of planning history and (iv) sophistication of planning measured by direct classification into one of four categories namely structured strategic planners, structured operational planners, intuitive planners and unstructured planners.	Revenue growth, entrepreneurial compensation growth and labour expense / revenue ratio growth. Revenue growth and entrepreneurial compensation growth were the absolute annual percentage growth rates during the time-frame examined. Entrepreneurial compensation was determined by summing the firm's net profit before taxes and owner / manager compensation. The labour expense / revenue ratio growth was calculated as the absolute annual labour expense as a percentage of sales during the time-frame examined.	For analysing Hypothesis 1, a one-way multivariate analysis of variance followed by Scheffe's multiple comparison technique was undertaken. Univariate tests (ANOVA) were also conducted for each dependent variable. For testing Hypotheses 2, 3 and 4, Multivariate T Test (Hotellings T) followed by a univariate (ANOVA) were used. MANOVA was also used because there were three dependent variables.	(i) Hypothesis 1 was rejected because a statistically significant difference existed between level of planning sophistication and financial performance in opportunistic entrepreneurs' firms. (ii) Hypothesis 2 was rejected because a statistically significant difference in financial performance existed between young and old opportunistic entrepreneurs' firms. (iii) Hypothesis 3 failed to produce evidence that size of firm was a determinant of successful financial performance. But univariate tests revealed a significant difference with regard to firm size when the dependent variable labour expense / revenue growth was examined. (iv) Hypothesis 4 was rejected because a statistically significant difference existed in financial performance of opportunistic entrepreneurs' firms with long planning histories, compared to opportunistic entrepreneurs' firms with short planning histories.
Robinson Jr., Logan & Salem (1986)	(i) Extent of involvement of store managers in short range, operational planning activities and (ii) The existence of a long range plan and the manager's commitment to that plan	The following were measured in 1981 and 1983 (i) percentage change in sales (ii) percentage change in return on sales (iii) productivity measured as sales per employee and (iv) manager's	Percentage comparisons and t-test.	(i) Firms involved in the above average use of operational planning activities performed better than their counterparts with below average commitment to the use of operational planning activities (ii) Engagement of firms in strategic

		perceptions of firm performance		planning was not directly linked to higher performance. However of managers of such firms perceived the performance of their firms to be significantly better than their counterparts at firms not engaging in strategic planning and (iii) Firms which placed a high emphasis on both operational and strategic planning had the strongest performance advantage.
Ramanujam, Venkatraman & Camillus (1986)	(i) Organisational context of planning: resources provided for planning and organisational resistance to planning (ii) design elements: system capability, use of techniques, attention to internal facets, attention to external facets and functional coverage	(i) Fulfilment of planning objectives (ii) performance relative to competition and (iii) satisfaction with planning systems	Discriminant analysis	(i) The determinants of the effectiveness of planning systems tend to vary depending on the specific criterion of effectiveness used. The overall key dimensions were system capability, resources provided for planning and functional coverage.
Shuman & Seeger (1986)	(i) Management's planning philosophy (ii) tbe planning process (iii) planning areas and (iv) the planning organisation	(i) Sales growth (ii) profitability levels and (iii) productivity increases	Chi-square test	The four categories of findings are summarised below: (i) Management's Planning Posture: Most CEOs felt that improved time efficiency, company growth and better understanding of the market will be achieved through planning. (ii) The Planning Process: About a half of the companies did not have a formal business plan at start-up, but the majority of them adopted some form of strategic planning once the company was in operation. As the companies have grown in sales, the planning processes used became more formal. (iii) Planning Areas: Approximately two-thirds of the companies focus their planning activities

				in the marketing area and about 20% concentrate on plans for operations. (iv) Planning Organisation: The majority of the CEOs prefer an active and strong personal involvement in their company's planning process. Their prime area of involvement is in the setting of company objectives.
Miller (1987)	(i) Variables for strategy making proposed by Khandwalla (1977) and Miller (1983) (ii) Structure variables namely controls, liaison devices and technocratisation proposed by Khandwalla (1977) and Miller (1983) and the other structure variables namely centralisation, formalisation, specialisation, administrative and clerical ratios, number of sites, mechanisation of production and vertical span originated from the Aston researchers – Inkson, Pugh & Hickson (1970) and (iii) innovation was measured using five year averages of research and development expenses as a percentage of sales.	(i) Average annual growth rates in net income and average rates of return on investment (ROI) for the previous five years and (ii) ratings of the CEOs about how their firms performed over the last five years.	(i) Correlation analysis (ii) Principal Components aoalysis and (iii) regression analysis	(i) Structural formalisation aod integration were related to the levels of interaction and proactiveness among decision makers and to four aspects of rationality in decision making namely analysis of decisions, planning, systematic scanning of environments and explicitness of strategies. (ii) Centralisation of authority was related to planning, risk taking and coosensus-building (iii) Structural complexity had few associations with strategy making and (iv) relationships between strategy making and structure were usually strongest among successful and innovative firms and seemed to contribute the most to performance in sizeable aod innovative firms.
Ramanujam & Venkatraman (1987)	(i) Contextual dimensions: resources provided for planning and organisational resistance to planning (ii) system design dimensions: the degree of external orientation of the system, the degree of internal orientation of the system, the level of functional coverage and	(i) Objective fulfilment (ii) system-specific capabilities to develop a 'generic view' of the system's capability and (iii) relative competitive performance	Canonical correlation analysis	(i) The most critical impact on planning effectiveness was a favourable organisational context which fully supports the planning philosophy and (ii) Among the design dimensions, use of techniques and external orientation play key roles in determining the effectiveness of planning. Internal orientation and functiooal coverage

	integration achieved and the extent of use of analytical tools and techniques.			emerged as much weaker influences.
Capon, Farley and Hulbert (1987)	Planning, environment, strategy, organisational structure and organisational climate	Return-on-capital = net profit + ½ (interest on long-term debt) / (long-term debt + net worth); Net profit = after tax income before extraordinary gains or losses Net worth = common + preferred stockholders equity, including intangibles	Chi-squares, correlations, ANOVA and t-tests. Analysis was performed on a number of levels namely (i) with individual measurements (ii) with scales developed as summary measures and (iii) with statistical groupings of similar firms. Correlations between values on the planning scales and values on each of the scales namely environment, strategy, organisation structure and organisational climate were analysed. Through cluster analysis, groups of similar firms for each of environment, strategy, organisation structure and organisational climate were developed inductively. The profiles of planning groups were compared with the planning category system and with each set of the other inductively formed groups and their performance are also assessed.	The major findings were: (i) There is no strong link between planning and the environment (ii) There is stronger relationship between planning and strategy (iii) Only scattered relationship between planning and organisational structure (iv) Organisational climate is more related to planning than organisation structure (v) the relationship between planning and performance are weak at best but that there seems to be a tendency for better planning practice to be related to better performance
Gable & Topol (1987)	(i) Extent to which goals are set for the entire firm and for each part of the business (ii) Consideration of the firm's strengths and weaknesses in the course of planning activities (iii) Whether plans are based upon forecasts (iv) Consideration of alternative strategies (v) Preparation of budgets and	Increases or decreases of sales and profits during the previous three years	(i) Comparison of the planning activities of planners and non-planners using means and t-test (ii) Chi-Square test was used to determine whether or not significant differences of demographic characteristics emerged between planners and non-planners (iii) The use of goals, objectives and forecasts	(i) The findings of this study do not suggest that planning has a favourable impact upon financial performance. (ii) Planners were engaging in planning activities to a greater extent than non-planners. Planners were more likely to put their plans in writing than non-planners (iii) Retailers utilising planning were more likely to be multi-unit

	contingency plans (vi) Usage of control systems to monitor plans and (vii) Updating the plans		was compared between planners and non-planners using means and t-test (iv) The extent of problems encountered by the planners and non-planners were compared using means and t-test (v) The percentage changes in sales and profits over the previous three year period for the planners and non-planners were compared and t-test was used to check the statistical significance of the differences in mean percentage changes of the planners and non-planners.	operations, be in larger cities, employ larger number of employees and have larger annual sales figures (iv) Planners were setting goals and objectives to a greater extent than non-planners (v) Planners perceived interest rates and unions as more serious problem areas than did non-planners
Pearce II, Robbins & Robinson Jr. (1987)	Type of grand strategy and level of planning formality. Respondents were asked to categorise their overall grand strategy in terms of four generic types namely stability, internal growth, external acquisition and retrenchment. The level of planning formality was measured using a Guttman scale developed for this purpose by Wood and LaForge (1979)	Firm sales, Return on Assets (ROA) and Return on Sales (ROS) for the beginning and ending years of the 5-year period under study. In addition to the above measures, the CEOs were asked to provide a subjective numerical evaluation of the firm's performance on the above three dimensions plus the firm's overall performance.	(i) Correlation analysis between planning formality and measures of performance (ii) ANOVA on grand strategy with dimensions of performance as the dependent variable (iii) ANOVA on grand strategy type with level of strategic planning formality as the dependent variable.	(i) The extent of formality in strategic planning was positively and significantly related to firm success as measured by economic indicators (ii) There was no significant difference between three of the four grand strategies namely stability, internal growth and external growth in terms of the performance measures. Firms following retrenchment strategy consistently displayed performance levels below that of the other three strategy types. (iii) The grand strategies were statistically not associated with levels of strategic planning formality (iv) There was no significant interaction between grand strategy and planning formality in terms of organisational performance. Planning formality was consistently linked to performance, whereas grand strategy was not.

Ramanujam & Venkatraman (1987)	(i) Fulfilment of planning objectives (ii) general trends in the use and perceived usefulness of planning (iii) key planning issues receiving emphasis and the degree of emphasis placed on different functions in planning (iv) use of planning techniques and (v) the organisational roles of the planning system	(i) Sales growth (ii) net income growth (iii) return on investment and (iv) market share changes.	Comparison of average scores	Six characteristics of good planning were identified.
Rhyne (1987)	(i) Adaptive aspect of planning (ii) integrative aspect of planning (iii) formality of planning process (iv) internal complexity (v) external complexity (vi) specific MIS for planning (vii) accounting system and (viii) supplemental sources of information	Total return to investors	Discriminant analysis	(i) The adaptive aspect of planning received greater emphasis from the high performance firms (ii) There was some evidence to suggest that firms with lower levels of financial performance would place greater emphasis on the integrative dimension of planning (iii) there was no relationship between the formality of the planning process and financial performance (iv) there was no relationship between financial performance and specific MIS for planning (v) both high and low performers identified the accounting system as an important source of information for planning decisions and (vi) supplemental sources of information were more important to high performers.
Ramanujam & Venkatraman (1988)	(i) Capability (ii) resources (iii) resistance (iv) internal (v) external (vi) functions and (vii) techniques	(i) Five-year sales growth (ii) five-year net income growth (iii) market share changes and (iv) current return on investment	t-test and ANOVA	(i) Excellent companies are not among the highest performing companies in America and the key characteristics of planning are not different from those of the two benchmark samples chosen from other American companies and (ii) Popular traits of excellence are not the exclusive preserve of the so-called

				excellent companies.
Odom & Boxx (1988)	The components of the internal environment were (i) church staff (ii) church membership (iii) church facilities (iv) church ministries and (v) church administration. The external components were (i) community (ii) competitive and association (denominational) and (iii) social, political and economic. In addition to the above, environment was scored using location codes furnished by the churches in their annual reports. Level of planning sophistication was determined using the following factors (i) preparation of written plans and budgets covering one year and long-range plan covering three years (ii) inclusion of specific goals in both the plans (iii) Inclusion of a plan of action for achieving the specified goals in both the plans	(i) Growth rate of average Sunday school attendance (ii) Growth rate of offerings (iii) Growth rate of total additions and (iv) Growth rate of baptisms	(i) To investigate the relationship between perceptions of the environment and location of the churches the data were cross-tabulated and the chi-square statistic was calculated (ii) Kendall's rank correlation was used to investigate the relationship between size of the churches, perceptions of the environment and location (iii) A series of cross-tabulations and chi-square tests were conducted to determine the relationship between perceptions of the environment and planning sophistication (iv) The impact of environment on planning processes was analysed by cross-tabulating location and planning sophistication. (v) ANOVA and Scheffe's test were used to investigate the relationship between (i) sizes of the churches and planning sophistication and (ii) growth rate and level of planning sophistication	(i) There was no consistent relationship between perceptions of the environment and location (ii) There was a significant relationship between the size variables and the location of the churches (iii) The relationship between perceptions of the environment and planning sophistication was statistically significant (iv) A significant relationship with planning sophistication was observed between the simple-complex dimension of the environment and not between the static-dynamic dimension (v) The relationship between location and planning sophistication was not significant (vi) The size of a church exerts a definite influence on its level of planning sophistication (vii) More widely varying levels of planning sophistication must be considered before differences in growth rates are evidenced.
Bracker, Keats & Pearson (1988)	(i) Sophistication of planning was measured by classification into structured strategic planners, structured operational planners and unstructured planners (ii) Size of the firm (large or small) was based on a discussion with an industry	(i) Growth in revenue (the average sales growth for the 5-year time frame) (ii) Net income growth (the average net income before taxes for the 5-year time frame) (iii) Present value growth of the firm (average book value of the firm,	(i) For analysing Hypothesis 1, a one-way multivariate analysis of variance followed by Scheffe's multiple comparison technique was undertaken (ii) Hypotheses 2, 3 and 4 were analysed using multivariate T-test (Hotelling's T) followed by	(i) There was a significant relationship between planning orientation and financial performance (ii) Statistical analysis did not produce evidence that type of entrepreneur was a determinant of successful financial performance. However univariate comparisons

	expert (iii) Planning histories (long or short) were a function of prior research by Bracker and Pearson (1986) and (iv) Entrepreneur orientation was determined using Smith's (1967) craftsman / opportunistic scale	patents and goodwill for the 5 year time frame) and (iv) CEO cash compensation growth over the 5 year time frame (average growth)	univariate ANOVA. MANOVA was also used because there were four dependent variables.	revealed that opportunistic entrepreneurs (OE) who employed structured strategic planning procedures significantly outperformed OE's firms who used other planning orientations on each of the four dependent variables. Planning orientations of craftsman entrepreneurs failed to produce any significant performance differences (iii) Even though multivariate tests with regard to firm size failed to produce any significant findings, univariate tests revealed that statistically significant differences existed between large and small firms. Large firms financially outperformed small firms with regard to net income growth and CEO cash compensation growth (iv) There was no evidence which indicated that prior planning history resulted in significant performance differences. However univariate tests revealed that firms employing structured strategic plans outperformed the other two planning orientations with regard to growth in revenue, present value growth of the firm and CEO cash compensating growth. There was no significant financial performance difference in firms with short planning histories.
Cragg & King (1988)	Organisational characteristics and owner / manager characteristics.	Sales revenue change from 1984 to 1985 and from 1980 to 1985; profit as a percentage of sales revenue for 1985 and change in net profit before tax from 1984 to 1985.	Kendall rank correlation, percentage comparison, two-way ANOVA, factor analysis and stepwise multiple regression analysis.	(i) The study supported the importance of the age of owner / manager, with younger owners performing better than older owners (ii) There was no evidence to support the importance of planning activities (iii) The variable number of

				marketing / sales staff had a negative correlation with both sales change 1985/84 and profit change 1985/84.
Robinson Jr. & Pearce II (1988)	(i) Strategy measured using a scale comprising 27 competitive methods and (ii) Process describing the firm's strategic planning activities and measured using a Guttman scale of planning sophistication.	(i) Sales (ii) return on assets and (iii) return on sales for the beginning and ending years of the 5-year period under study. A subjective, numerical evaluation of the firm's performance on four performance dimensions in comparison to its overall industry, provided by the CEO was also used.	(i) Correlation analysis (ii) factor analysis (iii) cluster analysis was used to group the firms according to their strategic orientation and as a result five groups emerged and (iv) ANOVA	(i) Significant differences in performance across selected groups were found establishing a baseline strategy-performance relationship (ii) strategic orientations emphasizing product innovation or those incorporating efficiency and differentiation patterns of strategic behaviour were associated with significantly higher performance levels than two other groups and (iii) level of planning sophistication was found to significantly moderate the previously established strategy-performance baseline.
Shrader, Mulford & Blackburn (1989)	Measures for (i) Strategic planning: degree of formality (ii) operational planning: budget planning, inventory planning, human resource planning and market planning (iii) environmental uncertainty: top managers' uncertainty with respect to suppliers, customers, competition, socio-political forces and technology.	(i) Sales (ii) number of full-time employees and (iii) after tax profits	Percentage comparisons and correlation analysis	(i) Operational planning is more common and useful than strategic planning to small firms. However there were some indications to suggest that strategic planning could boost the performance of small firms (ii) Both operational and strategic planning seem to help firms to cope with uncertainty and improve performance.

Jenster and Overstreet Jr. (1990)	(i) Environment, (ii) Organisational processes, (iii) structure, (iv) strategy and (v) administrative systems	(i) Market penetration (ii) Growth in membership (iii) Growth in deposits (iv) Growth in loans (v) Member satisfaction (vi) Employee satisfaction (vii) Employee compensation and benefits (viii) Service convenience (ix) Service offerings and (x) Capital adequacy (financial strength)	Cross-tabulations	The propensity to plan was related to management's perception of environmental predictability, key organisational processes, structural configurations and administrative procedures. Formal planning was related to multiple institutional performance measures.
Kukalis (1991)	(i) Planning extensiveness (ii) environmental complexity (iii) firm size (iv) market life-cycle (v) organisational structure (vi) capital intensity (vii) the role of corporate planning staff and (viii) planning horizon and plan revision	(i) Average return on equity for five years (from 1981 to 1985) and (ii) average growth in earnings per share for the same period	(i) Correlation analysis and (ii) multiple regression analysis	(i) Some relationships exist between design variables of strategic planning systems and a firm's internal and external characteristics (ii) planning extensiveness and other design variables seem to respond simultaneously to a set of contextual variables and these design responses were successful in enhancing firm performance (iii) in complex environments, plans are reviewed more frequently and strategic plans should have shorter time horizons (iv) there was an inverse relationship between level of environmental complexity and the role of the corporate planning staff in the planning process and (v) increasing environmental complexity seems to increase planning effectiveness
Powell (1992)	(i) Strategic planning scales to measure: goal setting, scanning and analysis (ii) locus of control as a measure of CEO personality (iii) firm size defined as the natural logarithm of the number of full-time employees and (iv) firm age defined as the number of years since incorporation	Profitability	Means and standard deviations for all variables for each industry were calculated and a correlation analysis was also carried out. Partial correlations controlling for firm size, age and CEO locus of control were used to test the hypotheses.	(i) Even though strategic planning was more widely practiced in the 'planning equilibrium' industry, the planning-performance correlation was significantly lower (ii) The planning-performance correlation was near zero in the furniture industry and (iii) The planning-performance correlation was positive and significant in the apparel industry

Lyles, Baird, Orris & Kuratko (1993)	(i) Planning formality (ii) strategy options and (iii) strategic decision processes / environmental scanning	(i) Return on equity (ii) return on assets and (iii) growth rate of sales	(i) t-test and (ii) correlation n analysis	(i) There are significant differences between formal planners and non-formal planners in their emphasis on dimensions of strategic decision-making as well as in the range of strategic choices made (ii) There is evidence to suggest that firms which adopt a more formal planning process will place greater emphasis on improving the quality of the strategic decision making process (iii) a wider range of strategies was viewed as important to formal planners' success (iv) even though there was no significant difference between formal and non-formal planners in terms of return on equity and return on assets, there was a significant difference between the two groups on growth rate of sales.
Orpen (1993)	(i) Cost and expenses in running a firm, (ii) availability of materials and supplies, (iii) capital requirements, (iv) economic conditions in the market place, (v) competition, (vi) sales, (vii) sources and cost of capital, (viii) target market and (ix) advertising opportunities and costs	(i) Amount of sales (ii) cash flow (iii) net profit and (iv) return on investment	Percentage comparisons, t-test, discriminant analysis, correlation analysis and regression analysis	(i) Small firms can improve their financial performance through strategic planning if it is based on their own strengths and weaknesses and an understanding of the opportunities and threats in the environment (ii) Small firms will suffer financially it they are ignorant of their own strengths and weaknesses and are unaware of likely future changes in their environment and (iii) Small firms should be shown how to engage in strategic planning.
McKiernan & Morris (1994)	(i) Setting of specific objectives (ii) calculation of targets and the conception of detailed strategies to achieve them and (iii) management control system	The following performance measures for five years were used (i) year-on-year sales growth calculated as (current year's sales / previous year's sales) x 100 (ii)	(i) Cross-tabulations (ii) Chi-square tests and (iii) Fisher's exact test	(i) The formality of planning systems was not associated with superior performance in the three sectors under review and (ii) there was no differential impact of planning system types on the

		profit margin = (profit before tax / sales) x 100 (iii) ROCE = (profit before tax / fixed assets + current assets – current liabilities) x 100 (iv) ROSE = (profit after tax / shareholders' funds) x 100 and (v) Employee productivity = sales / no. of employees		financial measure of performance chosen.
Matthews & Scott (1995)	(i) Sophistication of strategic and operational planning (ii) perception of environmental uncertainty (iii) business type and (iv) firm size.	None	Correlation and regression analyses.	In small and entrepreneurial firms as perception of environmental uncertainty increases, strategic planning and operational planning decreases.
Olson & Bokor (1995)	Degree of planning formality (strategy process) and degree of innovation (strategy content).	Sales growth rate.	Regression analysis	(i) Performance of small, rapidly growing firms is influenced by the interaction of planning formality and product / service innovation and (ii) certain contextual factors such as CEO characteristics may impact the nature of such interaction.
Kargar (1996)	(i) Internal orientation (ii) external orientation (iii) functional coverage (iv) involvement of key personnel and (v) use of planning techniques	Planning system capability, goal attainment and financial performance. Financial performance was measured in terms of profitability which was calculated as net revenues minus direct operating costs and administrative overhead, before taxes over the most recent three fiscal years.	Factor analysis, correlation analysis and canonical correlation analysis.	(i) Few financial benefits, but significant process benefits may be expected from employing a formal planning process (ii) External orientation, contributing about 29 % to the explained variance, was the most important contributor to planning effectiveness in small firms (iii) The remaining four planning system characteristics namely key personnel involvement, functional integration, internal orientation and use of analytical techniques (in the order of importance) contributed to planning effectiveness.

Goll & Rasheed (1997)	Rationality in Planning	(i) Return on Assets and (ii) Return on Sales	Moderated regression analysis	Environmental munificence and dynamism moderate the relationship between rationality and performance. There was a strong positive relationship between rationality and performance in environments high in munificence and dynamism.
Hopkins & Hopkins (1997)	(i) Managerial factors measured using variables namely beliefs about planning-performance relationships and strategic planning expertise (ii) environmental factors measured using variables namely perceived environmental complexity and environmental change (iii) organisational factors were measured using two variables namely structural complexity and bank size and (iv) strategic planning intensity was measured using twelve variables namely mission, objectives, internal and external analyses, strategic alternatives, strategy implementation and strategic control.	(i) Net income (ii) return on equity calculated as net income divided by shareholders' equity and (iii) deposit growth measured as the percent change in consumer demand deposits for each bank between 1993 and 1994.	LISREL analyses	(i) Intensity with which banks engage in the strategic planning process has a direct, positive effect on banks' financial performance and mediates the effects of managerial and organisational factors on banks' performance and (ii) there was a reciprocal relationship between strategic planning intensity and performance.
Rue & Ibrahim (1998)	(i) Whether there is a written strategic plan or not and if so whether it contains quantified objectives in any of the following areas: sales earnings, return on investment, capital growth, share of the market, sales / earning ratio, and international expansion (ii) whether their plan includes plans and budgets for the following:	(i) The answers provided by the respondents for the question whether the performance of the company for the three year period between 1991 to 1993 was below industry average, approximately equal to industry average or better than industry average (ii) the approximate growth rate in sales over the past fiscal year and (iii)	Chi-square test and ANOVA	(i) 60.1% of the companies in the sample prepared some type of a written plan, had plans which included quantified objectives for at least one area, and had developed plans and budgets for at least one area. (ii) greater planning sophistication was associated with growth in sales. (iii) there was a moderately significant relationship between planning and perceived

	hiring and training of key management personnel, plant expansion, new product development succession plans, corporate acquisitions, equipment acquisition, research and development, advertising and plans for entering or expanding international markets (iii) whether the plan tries to identify factors concerning external environment and (iv) whether the plan contains procedures for anticipating or detecting differences between the plan and actual performance and for preventing or correcting these differences.	approximate return on investment for the past fiscal year.		performance relative to the industry and (iv) there was no significant relationship between planning and return on investment.
Glaister & Falshaw (1999)	(i) Company characteristics (ii) time periods of planning (iii) planning procedures (iv) commitment to strategic activities (v) emphasis on areas of strategic planning (vi) tools and techniques of strategic analysis and (vii) views on strategic planning processes	None	Percentage comparisons, rankings according to mean responses.	(i) Firms have a relatively short time horizon across most dimensions of planning (ii) firms appear to have a greater commitment to formulation aspects of strategy and relatively less commitment to the implementation and evaluation of strategy (iii) the most regularly used set of tools and techniques of strategic analysis is surprising in the context of the prescriptive view of strategic management and may be associated with the ease with which the analysis may be undertaken and (iv) the perception among the sample of firms is that strategy formulation is more of a deliberate process than an emergent process.

Rogers, Miller & Judge (1999)	(i) Strategy operationalised as a binary categorical variable (Defender = 0, Prospector = 1) (ii) planning process dimensions (accounting control, integration and coordination, flexibility, goals and plans, scanning and broad analysis)	Averages of return on assets, return on equity and loan growth for the time span of 1991 through 1993.	Correlation analysis, regression analysis and factor analysis.	(i) Planning and performance may not be clearly understood without considering firms strategy (ii) strategy is an important moderator of the planning and performance relationship and (iii) banks pursuing different strategies use significantly different planning processes.
Andersen (2000)	(i) Strategic planning construct was measured using tested item scales for mission statements, long-term goals, strategic action plans and ongoing control (ii) The autonomous actions construct was measured using decision authority scales of conventional centralisation measures adapted to consider decisions affecting the firm's strategic development such as new market activities, product and service developments, changes in practices and policies and the like	Organisational performance was expressed as economic performance and organisational innovation. Economic performance was measured as the sum of two economic indicators namely return on assets and sales growth and this measure indicated both efficiency and market position effects. Organisational innovation indicates the extent to which the organisation is a first user of new useful ideas, devices, systems, policies, programmes, processes, products and services.	The validity of the model constructs was assessed was assessed by exposing the item responses from the questionnaire to factor analysis. Multiple regression analyses were used to determine the relationships between the strategy constructs (strategic planning and autonomous actions) and organisational performance measures (economic performance and organisational innovation). In the first regression analysis, economic performance was used as the dependent variable and in the second, organisational innovation was used as the dependent variable. Both the regressions had strategic planning, autonomous actions and the interaction terms between strategic planning, industry dummies and autonomous actions as independent variables. The regressions were tested for multi-collinearity, outliers, heteroscedasticity and normality.	(i) There is evidence that strategic planning is associated with higher performance in all the industrial environments studied and this association does not vary significantly between the different industry groups. (ii) Autonomous actions do not show significant effects in the food and household products and banking industries, but have positive performance effects in the dynamic and complex computer products industry. (iii) Autonomous actions exert little or no influence on the performance effects of strategic planning activities. Hence the two approaches coexist but do not significantly enhance each other
Baker & Leidecker (2001)	Mission statement, trend analysis, competitor analysis, long-term goals, annual goals, short-term	Average annual pre-tax return on assets (ROA) over the last 3 years for the respondent's business unit	Questions regarding the use of specific strategic management tools were similar to the ones in Boyd and	The most heavily emphasised strategic planning tool were annual goals and long-term goals (ii) There was a strong

	action plans and ongoing evaluation		Reuning-Elliott study involving bospital executives (i) Ranking of tbe degree of emphasis placed on the seven planning tools between the groups in both the studies was compared by calculating Spearman's correlation coefficient. (ii) the relationship between the use of strategic planning tools and firm performance was analysed by classifying firms as high and low performers according to their ROA and using t-statistic to compare their planning scores (iii) the relationship between tbe use of eacb of the individual strategic planning tools and their relationship to firm performance was analysed by calculating the mean degree of emphasis placed on each planning tool for high and low performers and by calculating the t statistic (iv) the relationship between firm's strategic planning processes and firm performance was analysed by calculating the mean scores for eacb of the six descriptors for both high and low performing firms and comparing the t-statistic.	relationship between tbe use of strategic planning tools and firms' ROA (iii) Three stratcgic planning tools namely mission statement, long-term goals and ongoing evaluation exhibited strong correlation with superior financial performance (iv) There was no significant difference in bow high and low performing firms describe their strategic planning processes with respect to any of the six descriptors.
Gibson & Cassar (2002)	(i) Planning incidence (ii) Business structure variables: business size measured in terms of number of employees, business volume measured in terms of total sales and business age. (iii) Management structure variables: management	None	Percentage comparisons, descriptive statistics, Logistic Regression and Chi-Square test.	There is a positive impact on the incidence of business planning by tbe variables namely business size and business volume. Industry influences also exist. There is a statistically weaker negative association between business age and planning. Undertaking

	training, intention to change operations, major decision makers' years of experience as a business proprietor and major decision-makers' education level.			management training, intention to change operations and the major decision maker's education and experience were positively associated with planning.
Baker (2003)	(i) Mission statement, (ii) trend analysis, (iii) competitor analysis, (iv) long-term goals, (v) annual goals, (vi) short-term action plans and (vii) ongoing evaluation	Financial performance was measured as the average pre-tax return on assets (ROA) for the previous 3-year period for the business unit to which the survey was addressed	Confirmatory factor analysis was used to assess whether the measurement model is consistent with the data collected in the study. Multiple regression analysis was used to test the hypothesis that firm financial performance was related to the use of formal strategic planning tools.	(i) Strategic planning construct which is not directly observable, can be adequately measured by seven indicator variables namely mission statement, trend analysis, competitor analysis, long-term goals, short-term action plans and ongoing evaluation (ii) Formal strategic planning is a tool that may be used to enhance financial performance for a broad range of food processors
Tegarden, Sarason & Banbury (2003)	(i)Strategy processes: Command, Symbolic, Rational, Transactive and Generative (ii) environmental dynamism and (iii) firm size	(i) Financial performance was measured using profitability and sales growth (ii) operational performance measured in terms of product development, diversification and anticipated new products and (iii) organisational performance operationalised as organisational quality and organisational adaptability	(i) Correlation analysis and (ii) regression analysis	(i) Symbolic and rational processes are more strongly related to operational performance. Transactive and generative processes were positively related to organisational performance. None of the processes had a positive relationship with financial performance (ii) environmental dynamism moderates the relationship between process and performance (iii) there was partial but minimal support that environmental dynamism negatively moderates the relationships with processes that involve organisation members and performance and (iv) none of the processes had a significant positive relationship with financial performance.

French, Kelly & Harrison (2004)	Vision, mission, latent abilities, competitor orientation and market orientation	(i) Growth data for four years for sales and net profit after tax (ii) Forecasts for five years. Variables used: mean actual sales growth, mean actual net profit growth, mean forecast sales growth and mean forecast net profit growth.	Standard multiple regression to analyse relationships between strategic planning factors and each performance variable. Based on the responses, respondents were classified into one of the four strategic planning categories namely non-planners, informal planners, formal planners and sophisticated planners. ANOVA was used to determine if the four strategic planning groups differed in terms of performance.	There is a link between planning and performance, but it is not strong. The value of elements of the classical strategic planning process namely vision and mission and associated constructs namely latent abilities, competitor orientation and market orientation which have been suggested to underpin the strategic planning process, is in question. The authors conclude that it is the process of planning and not the plan itself that is important.
Shrader, Chacko, Herrmann & Mulford (2004)	**Formal planning**: (i) quantified objectives for earnings, return on investment, capital growth, share of the market, sales / earnings ratio (ii) pro forma financial statements including balance sheets, cash flow analysis and income statements (iii) plans and budgets for human resources, hiring and personnel development, plant expansion, equipment acquisition, R&D, advertising, technology acquisition and utilisation (iv) identification of external factors including political developments, social issues, technological breakthroughs, labour / personnel issues, economic trends and international competition (v) procedures for detecting differences between planned and actual performance and having in place mechanisms for correcting or preventing differences. **Informal**	Comparison of the firm's performance to their competitors for the past year in terms of sales growth, net income growth, return on investment and market share growth.	Correlation matrix, ANOVA, ANCOVA and Regression analysis	(i) Formal and informal strategic planning, along with technology policy are associated with firm financial performance (ii) Informal planning is as important as formal planning in explaining the performance of firms (iii) Aligning operational activities through operational planning and technology policy enhances the financial performance of firms. Firms with greater deployment of multiple technologies to achieve objectives perform better than those firms with less developed technology policies. (iv) Firms engaging in a variety of short-range forecasting techniques tend to perform well.

	planning: Non-written planning **Operational planning**: A 21 – item instrument dealing with the extent to which firms engaged in certain activities on a regular basis was used to measure operational planning. **Technology policy**: A 15-item scale centring on the extent to which firms internally implemented various aspects of technology policy **Environmental uncertainty**: This scale included 12 items			
Hoque (2004)	(i) Business strategy (ii) environmental uncertainty (iii) management's choice and use of non-financial performance measures	Organisational performance over the previous 3 years was measured using a scale comprising 12 dimensions.	Correlation analysis and path analysis	(i) There was no direct relationship between business unit strategy and organisational performance (ii) There was a significant positive association between strategy and management's use of non-financial measures for performance evaluation and (iii) There was no positive relationship between environmental uncertainty and organisational performance through use of non-financial performance measures.
O'Regan & Ghobadian (2004)	(i) External environment orientation (ii) internal environment orientation (iii) functional integration (iv) the use of analytical techniques (v) resources for the strategic planning process (vi) systems capability and creativity (vii) control processes (viii) internal orientation and (ix) resources for strategy	(i) Customer orientation (ii) organisational effectiveness (iii) learning and growth (iv) organisational capability and (v) financial performance	(i) Factor analysis and (ii) canonical correlation analysis	The characteristics of strategic planning namely internal orientation, external orientation, departmental operation, resources for strategy, systems capability and creativity and control processes were associated with performance dimensions namely learning / growth, meeting customer demands and providing quality goods on time.

Appendix B: Systematic Literature Review - Operationalisations of Business-level Generic Strategies

Contents

Table B.1a: Sample and Data Collection Method – Porter's Typology						
Author(s)	**Aim(s) of the Study**	**Type of Organisations**	**Sample Size**	**Who are the respondents?**	**Data Collection Method**	**Primary Location of Data Collection**
Dess & Davis (1984)	To demonstrate the viability and usefulness of categorising firms within an industry into strategic groups on the basis of their intended strategies.	Paints and allied products industry	99 (78 respondents from 22 firms responded)	Top management team members	Mail survey	United States
Prescott (1986)	To examine whether environments are (i) independently related to performance (ii) moderators of the relationship between strategy and performance or (iii) some combination of the two.	Various industries	1638	No respondents	Secondary data was collected from PIMS database	United States
Miller (1987)	To relate some of the most common dimensions of strategy content to organisational structure. Structure is broadly defined to include elements of decision-making process and to environment.	Steel manufacture, banking, pulp and paper, farm equipment, telephone and telecommunications, electronics, engineering, railway, shipping, chemical, meat packing, mining, brewing, hotels, food, public utility, finance and retailing.	110 responses were received	CEOs, Presidents, Chairmen, Senior vice-presidents, vice-presidents	Mail survey	Canada and Australia
Lawless & Finch (1989)	To test the propositions of Hrebiniak and Joyce (1985) about strategy-environment fit and performance.	Single industry firms	146	No respondents	Secondary data from COMPUSTAT database was used	United States

Miller (1989)	To investigate tbe relationships between Porter's gcneric strategies and the process of strategy making. Also to examine the performance implications of the match.	Many industries including electronics, lumber, construction, retailing and mining	131 firms were contacted out of which 98 participated	CEOs, and Senior Vice Presidents or General Managers	Interviews	Canada
Jennings & Lumpkin (1992)	To determine the relationship between environmental scanning activitics and the type of business-level generic strategies used by certain organisations.	Savings and loan	56(49 responses were received)	CEOs	Telepbone interviews based on mailed questionnaires	United States
Roth & Morrison (1992)	To examine whether the business-level strategy of domestic businesses differs from that of businesses competing in both domestic and international settings.	Pulp and paper industry	363	CEO or President	Secondary data was obtained from a database developed by the Center for Industry Policy and Strategy at the University of South Carolina. It consists of responses to a mail survey.	United States
Miller & Dcss (1993)	To evaluate Porter's generic strategies in terms of simplicity, accuracy and generalisability.	Strategic Business Units which are analogous to single-industry firms	715	No respondents	Data was collected from PIMS database	Unitcd States
Marlin, Lamont & Hoffman (1994)	To examine strategy and performance relationships between and within situations of varying strategic choice and environmental determinism.	Hospitals	147	No respondents	Archival data were collected from two sources	United States
Kotha & Nair (1995)	To examine the impact of environment and realised strategies on firm-level performance	Organisations belonging to machine tool industry	25	No respondents	Secondary data from NEEDS financial data base was used	Japan

Lee & Miller (1996)	To test the hypothesis that the strategy-environment relationships advocated by the strategic contingency theorists will be far more important to performance in firms using emergent technologies than in firms employing established technologies.	Manufacturing firms from textiles, chemicals, machinery, fabricated metal and electronics industries	870 (193 responses were received, final sample: 151)	General Manager or Director General	Mail survey	Korea
Chan & Wong (1999)	To examine the relationship between competitive strategies and performance.	Commercial Banks	182 (71 useful questionnaires were returned)	CEOs	Mail survey	Hong Kong
Homburg, Krohmer & Workman, Jr. (1999)	(i) To investigate the performance implications of strategic consensus at the SBU level. (ii) To examine whether consensus has differential effects based on the type of strategy being pursued and (iii) To empirically test whether market dynamism which is a key aspect of environmental uncertainty is a moderator of the consensus-performance relationship.	Consumer packaged goods, electrical equipment and components and mechanical machinery	505 (101 usable responses were received. 53 were from the US and 48 from Germany)	R&D managers	Mail survey	United States and Germany
Chang, Yang, Cheng and Sheu (2003)	To examine the practice of manufacturing flexibility in organisations and analyse the alignment of various manufacturing flexibility dimensions with business strategies.	Small and medium sized firms	283 (83 usable responses were received)	Plant managers	Mail survey	Taiwan
Frambach, Prabhu and Verhallen (2003)	To test the proposition that business strategy influences new product activity both directly and indirectly via its influence on market orientation.	Manufacturing firms having more than 10 employees	1500 (187 responses were received of which 175 were used for analysis)	General manager or any other manager knowledgeable about the firm's business strategy, market orientation and new product activity.	Mail survey	Netherlands

Chan, Shaffer & Snape (2004)	To test the direct and interactive effects of high-performance human resource practices (HPHRP) and organisational culture on firm performance. Also to consider the contingent relationship between strategy and HPHRP by evaluating the moderating effects of competitive differentiation strategy.	Companies from various industries having 100 or more employees.	Two sets of questionnaires were mailed to 1422 companies. Responses (both matched and unpaired together) from 82 companies were received.	Senior executives and human resource managers.	Mail survey	Hong Kong
Jermias & Gani (2004)	To examine the nature of relationship between business strategy, organisational configurations, management accounting systems and business unit effectiveness.	Publicly held companies belonging to the consumer goods industry	115 business units from 26 companies (106 usable responses were received)	General managers, controllers or management accountants	Mail survey and interviews	Indonesia
Kim, Nam & Stimpert (2004)	To find out (i) whether the strategy types found among e-business firms resemble Porter's generic strategies (ii) whether there are performance differences among e-business firms pursuing different types of strategies and (iii) whether there will be differences in strategy-performance relationships of pure online firms and firms with both online and offline operations.	B2C online firms listed in either Cyber Shopping Mall Directory or Yahoo's Korean site.	1009 (75 usable responses were received)	CEOs	Mail survey	Korea
Auzair & Langfield-Smith (2005)	To investigate the influence of contingent variables namely service process type, business strategy and stage in the organisational life cycle influence the choice of management control system in service organisations.	Service organisations	1000 (155 responses were received of which 149 were usable)	Financial Controller	Mail survey	Australia
Ge & Ding (2005)	To examine the mediating effects of a firm's competitive strategy in the market orientation-performance relationship.	Manufacturing organisations	3000 (371 usable responses were received)	General Managers or Marketing Directors	Mail survey	China

Allen, Helms, Takeda, White and White (2006)	To examine the implementation of the generic strategies in Japanese firms compared with U.S. firms.	Service, manufacturing, public sector and non-profit organisations	226 American executives and 101 Japanese executives	Japanese and American business managers and professional attending evening MBA courses conducted in Japan and the U. S.	Survey administered by researchers	United States and Japan

Table B.1b: Constructs used for Operationalisation – Porter's Typology		
Author(s)	**Basic Approach for Measurement of Strategy**	**Constructs used to operationalise Porter's typology**
Dess & Davis (1984)	Self-typing complemented by investigator-specified decision rules and external assessment	The senior managers of the firms were asked to indicate the importance of 21 competitive methods like customer service, brand identification etc to their firm's overall strategy on a 5-point Likert type scale. This data was factor-analysed and competitive dimensions associated with each of Porter's generic strategies were developed. A panel of academic experts provided recommendations about the content of each of Porter's generic strategies. The firms were classified into different strategic types based on the responses of the CEOs of the firms.
Prescott (1986)	Objective indicators	The following variables were used to measure strategy: (i) Investment intensity, (ii) Capacity utilisation, (iii) Employee productivity, (iv) Relative direct costs, (v) Manufacturing expenses/revenues, (vi) Total R&D expenses/revenues, (vii) Marketing expenses/revenues, (viii) Relative product quality and (ix) Relative market share. The strategies were classified into **Asset parsimony, Cost efficiency, Differentiation and Scale/Scope**.
Miller (1987)	Self-typing complemented by investigator-specified decision rules and objective indicators	**Complex innovation:** (i) Rate of new product/service introduction, (ii) Market opportunities and key triggers for strategic decisions, (iii) Tracking of market opportunities (consumer tastes, competitor strategies), (iv) Extent and frequency of product/service innovations, (v) Level of product market innovation relative to competitors **Marketing differentiation:** (i) Market segmentation, (ii) Intensity of advertising and (iii) Prestige pricing **Breadth:** (i) Number of major products/services offered, (ii) Number of profit centres, (iii) Diversification by acquisition, (iv) Diversification by establishing own departments or units, (v) Absence of niche strategy **Conservative cost control:** (i) Use of formal cost and financial controls, (ii) Rate of new product/service introduction, (iii) Use of formalised procedures, precedents and traditions (bureaucracy) that limit managerial discretion, (iv) Use of formal cost and financial controls, (v) Absence of major or frequent product/service innovations, (vi) Absence of advertising, (vii) Low prices and discounting.

Lawless & Finch (1989)	Objective indicators	**Innovative differentiation:** The ratio of product research and development expenses to sales; **Marketing differentiation:** Advertising expenditures to sales ratio; **Cost leadership:** Direct costs to sales; **Asset parsimony:** Inventory to sales and receivable to sales ratios.
Miller (1989)	Self-typing complemented by investigator-specified decision rules and external assessment	**Innovative differentiation:** It was measured using items relating to expenditures toward the development and implementation of new products and the number and degree of novelty of new products; **Cost leadership:** It was assessed using items measuring cost control, price cutting and minimisation of marketing and product development costs; **Focus:** It was measured by the number of product lines as well as the similarities in their technologies and markets.
Jennings & Lumpkin (1992)	External assessment and self-typing	**Overall cost leadership, differentiation and focus**. Each strategy was described in sentences – e.g. differentiation was described as "our association attempts to be unique through superior image, quality, or service. We attempt to maximise profits by our uniqueness"
Roth & Morrison (1992)	Self-typing complemented by investigator-specified decisioo rules	**Complex innovation:** (i) Developing new products, (ii) Innovation in manufacturing processes, (iii) Manufacturing speciality products, (iv) Ownership of patents or other proprietary knowledge; **Marketing differentiation:** (i) Effective control of channels of distribution, (ii) More advertising and promotion than competitors, (iii) Developing brand identification, (iv) Quick delivery and immediate response to customer orders, (v) Innovation in marketing techniques; **Product/Market Scope:** (i) Serving limited or specific geographic markets, (ii) Offering a narrow line of products; **Conservative cost control:** (i) Maintaining low levels of inventory, (ii) Tight control of selling /general administrative expenses, (iii) Higher production efficiency than competitors, (iv) Pricing below competitors, (v) Attracting and retaining highly skilled labour.
Miller & Dess (1993)	Objective indicators	The variables used were: Market share, Relative market share, Capacity/total market's sales, Investment/revenue, Receivables/revenue, Inventories/revenue, Purchases/revenue, Marketing expenses/revenue, Product R&D/revenue, % Sales new products, Capacity utilisation, % Orders backlogged, Relative compensation. The following seven strategic types were identified: **Differentiation + Cost + Broad; Differentiation + Cost + Narrow; Differentiation + Broad; Cost + Broad; Differentiation + Narrow; Cost + Narrow and Stuck-in-the-Middle**
Marlin, Lamont & Hoffman (1994)	External assessment and objective indicators	**Differentiation**: Technological sophistication of service offerings, breadth of service offerings and number of rare service offerings; **Cost leadership**: Total expenses divided by the average number of occupied beds for each hospital, cost adjusted per patient day and salary adjusted per patient day. The remaining hospitals were classified as **muddlers.**
Kotha & Nair (1995)	Objective indicators	**Cost Efficieney:** The ratio of cost of goods sold to total sales; **Asset parsimony:** Operationalised using capital expenditures and capital intensity measures. Capital expenditures are assessed as net expenditures for plant and equipment and capital intensity is assessed as the ratio of assets to the number of employees; **Differentiation strategy:** Operationalised by examining the advertising expenditures for each year. Advertising intensity is estimated as the ratio of advertising expenses to total sales; **Scale/Scope:** Operationalised using export sales and market share. Exports are assessed as the percentage of foreign sales to total sales and market share is calculated as the ratio of a firm's sales to total industry sales.

Lee & Miller (1996)	Self-typing complemented by investigator-specified decision rules	The constructs proposed by Miller (1986) namely marketing differentiation, innovative differentiation and cost leadership based on Porter's generic strategies were used to measure strategy. The variables used to measure those constructs are shown below: **Cost leadership**: manufacturing costs and prices; **Marketing differentiation**: brand image, advertising investment and marketing channels and service; **Innovative differentiation**: R & D expenses / sales and number of new products.
Chan & Wong (1999)	External assessment and self-typing complemented by investigator-specified decision rules	**Broadly-targeted differentiation**: (i) Professional banking services, (ii) International network, (iii) International image and reputation, (iv) Ability in product innovation and (v) High calibre staff. **Narrowly-targeted differentiation**: (i) Long establishment in Hong Kong, (ii) Operating flexibility, (iii) Cultural proximity and (iv) Ability in niche marketing. **Cost leadership**: (i) Availability of a large amount of surplus funding, (ii) Back-up by a resourceful parent/holding company and (iii) Low financing costs
Homburg, Krohmer & Workman, Jr. (1999)	Self-typing complemented by investigator-specified decision rules	Two types of strategic consensus namely consensus on differentiation strategy and consensus on low cost strategy were measured. Respondents were asked to indicate the degree to which the SBU emphasised those two strategies. The items used to measure these two strategies are shown below: **Differentiation strategy:** (i) Creating superior customer value through services accompanying the products, (ii) Building up a premium product or brand image, (iii) Obtaining high prices from the market and (iv) Advertising. **Low cost strategy:** (i) Pursuing operating efficiencies, (ii) Pursuing cost advantages in raw material procurement and (iii) Pursuing economies of scale.
Chang, Yang, Cheng and Sheu (2003)	Self-typing complemented by investigator-specified decision rules	Business strategy was measured using the following variables (i) Frequency of product innovation, (ii) High priced market segment, (iii) Identification of company brand names, (iv) Offering low price products, (v) Offering high quality products, (vi) Image of superior products, (vii) Use of low cost component parts, (viii) Use of common component parts, (ix) Increase in worker productivity, (x) Efficiency of sales/distribution channels, (xi) Implementation of low cost production, (xii) Control of sales/distribution channels, (xiii) Timing of adopting new production technology and (xiv) Timing of introducing new products to the market. The firms were classified into one of three business strategy categories namely: **Pre-emptive/First Mover, Low cost/Follower and Differentiation/Follower.**
Frambach, Prabhu and Verhallen (2003)	Self-typing complemented by investigator-specified decision rules	**Differentiation**: (i) Our firm is always the first to market a new product, (ii) Relative to competition, our firm is always ahead in technological innovations, (iii) Research and development of new products is very important within our firm and (iv) Our organisation distinguishes itself from competition by the quality of its products. **Cost leadership**: (i) Our organisation emphasises cost reduction in all its business activities, (ii) In our organisation, the production process changes all the time with the goal of constantly reducing production costs, (iii) Our organisation invests mainly in large projects to realise economies of scale, (iv) In our organisation, cost is the most important consideration in the choice of distribution system and (v) Our organisation tries to force competitors out of the market by good cost control. **Focus**: (i) Our firm produces one single, unique product, (ii) Our firm attempts to specialise by concentrating on producing a limited number of products, (iii) Our firm is active in a broad domain of products (Reversed scale) and (iv) Our firm targets a specific, limited part of the markets with her products.

Chan, Shaffer & Snape (2004)	Self-typing complemented by investigator-specified decision rules	**Differentiation:** It was measured using twelve items proposed by Nayyar (1993) and using factor analysis two factors namely product innovation and marketing innovation were identified.
Jermias & Gani (2004)	Self-typing complemented by investigator-specified decision rules	Product selling price, percent of sales spent on research and development, product quality, product features, brand image, introduction of new products, changes in design, fast delivery and post sales support. The respondents were asked to position their products relative to leading competitors on a 7-point Likert-type scale where 1 = significantly lower and 7 = significantly higher. Higher scores indicated **product differentiation** and lower scores **low cost strategies**.
Kim, Nam & Stimpert (2004)	Self-typing complemented by investigator-specified decision rules	The items used to measure strategy were: (i) Broad product range, (ii) New product development, (iii) Extensive customer service capabilities, (iv) Expenditure on R&D, (v) Response to market, (vi) Early catch on customer needs, (vii) Breadth of customer type, (viii) Continuing concern for lowest S&A expenses, (ix) Emphasis on niche market, (x) Image building of firm and product, (xi) Emphasis on intangible asset including patent, (xii) Average age of major products, (xiii) Serving special geographic markets, (xiv) Emphasis on specialised market, (xv) Economy of Scale, (xvi) Efficient procurement, (xvii) Lower price, (xviii) Online security, (xix) Easy to pay and (xx) Delivery speed. The strategies of organisations were classified as **market leadership, internet specific differentiation, focus, cost leadership and product proliferation.**
Auzair & Langfield-Smith (2005)	Self-typing complemented by investigator-specified decision rules	The variables used to measure cost leadership and differeotiation are shown below: **Cost leadership**: (i) Achieving lower cost of services than competitors, (ii) making services/procedures more cost efficient, (iii) improving the cost required for coordination of various services and (iv) improving the utilisation of available equipment, services and facilities. **Product differentiation**: (i) Introducing new services/procedures quickly, (ii) providing services that are distinct from that of competitors, (iii) offering a broader range of services than the competitors, (iv) improving the time it takes to provide services to customers, (v) providing high quality services, (vi) customising services to customers need and (vii) providing after-sale service and support.
Ge & Ding (2005)	Self-typing complemented by investigator-specified decision rules	**fnnovation, Quality enhancement** and **Cost leadership**
Allen, Helms, Takeda, White and White (2006)	self-typing approach complemented by investigator-specified decision rules	The respondents were asked to indicate their responses on a 7 point Likert scale to 25 strategic practice items. After the principal components analysis with varimax rotation, four factors indicating the four strategic types namely **product differentiation strategy, focus-cost leadership strategy, cost-leadership strategy** and **focus-product differentiation strategy** were identified.

Table B.1c: Analysis and Results – Porter's Typology				
Author(s)	**Validity and Reliability**	**Dependent Variable(s)**	**Type of Analysis**	**Results**
Dess & Davis (1984)	The inductively derived instrument to measure generic strategies was validated through a series of steps. The content validity was improved by incorporating the items used by previous researchers. The face validity was ensured by pre-testing it through 4 CEOs of manufacturing firms and conducting semi-structured interviews with the CEOs of all the firms in the selected sample. In the second phase of the study, a panel of academics provided recommendations regarding the appropriate content of each of Porter's generic strategies. No mention about reliability.	Performance	ANOVA	The main findings of the study were (i) Three sets of internally consistent competitive methods were identified that conformed to Porter's three generic strategies (ii) Organisations pursuing at least one of the three generic strategies perform better than firms which fail to develop a generic strategy
Prescott (1986)	The constructs proposed by Hambrick (1983) were used to ensure validity. Significance of predictive validity across environmental subgroups was tested. No indication of assessing reliability.	Performance	Regression analysis	Environments moderate the strength but not the form of relationships between strategy variables and performance.
Miller (1987)	The constructs proposed by Miller (1986) were adapted for this study to ensure validity. The reliability of the responses was assessed by correlating the scores of both the CEOs and the general managers of the 15 firms for which there were multiple respondents.	Structure, environment	Correlation analysis	Strategies of complex product innovation, marketing differentiation, market breadth and conservative cost control each have significant by very different relationships with bureaucratic and organic structural devices of uncertainty reduction, differentiation and integration and with environmental dynamism, heterogeneity and hostility.
Lawless & Finch (1989)	The constructs proposed by Miller (1986) were used to ensure validity. No indication of assessing reliability.	Performance	ANOVA, Scheffe's tests, Factor analysis, Cluster analysis	(i) There is partial support for Hrebiniak and Joyce's (1985) environment typology and for their contingent strategies; (ii) Strategy-environment fit may not be as critical as market-selection in the competitive success of firms; (iii) The relationships between returns and particular strategy types vary by environment.

Miller (1989)	The constructs proposed by Miller (1988), Hambrick (1983) and Dess & Davis (1984) were used to measure strategy in order to ensure validity. Further two Quebec policy professors with PhDs in management read a randomly selected 15 of the most detailed case studies that were written about the firms and characterised the firm strategies as either high or low in innovative differentiation, cost leadership and focus. They did the scoring alone and subsequently met to resolve any disagreements. There was a good match between the responses of the raters and executive respondents. Cronbach's alphas were computed to assess reliability.	Performance	Principal components analysis, Multiple regression analysis, Partial correlation analysis	(i) Innovation is associated with much information processing and an interactive and assertive mode of strategy making, especially in successful firms; (ii) Cost leadership have only few implications for strategy making; (iii) Focus related inversely to information processing.
Jennings & Lumpkin (1992)	**Face validity** was established by pilot testing involving four CEOs. No mention about **reliability**.	Environmental scanning activities	Correlation analysis, MANOVA / MANCOVA	(i) Organisations pursuing a differentiation strategy give very strong emphasis on scanning for opportunities and organisations with a cost leadership strategy give importance to scanning for threats.
Roth & Morrison (1992)	The constructs proposed by Miller (1987) were used to ensure validity. No indication of reliability.	Strategy content	Discriminant analysis, ANOVA, MANOVA	The strategic orientation of organisations competing domestically are different from that of organisations competing both domestically and internationally
Miller & Dess (1993)	PIMS based studies by Anderson and Paine (1978), MacMillan and Hambrick (1980) and Prescott (1986) have provided guidance regarding the constructs of strategy. Classifications of variables and conclusion about modelling strategies in these studies are similar. This shows validity and reliability of these constructs. Variables for this study were selected using these three studies as guidelines.	Performance	ANOVA	(i) Porter's typology, even though simple captures most of the complexities associated with generic strategies; (ii) This framework could be improved by viewing it as providing three important dimensions of strategic positioning rather than distinct strategies; (iii) Performance vary significantly across strategic types, though Porter's predictions of performance are not entirely accurate; (iv) Porter's generic strategies are possibly more contingent than generic, thus limiting their generalisability

Marlin, Lamont & Hoffman (1994)	**Validity**: To assess the adequacy of the strategy operationalisations, a principal components analysis with varimax rotation was performed. **Reliability**: Cronbach alphas were also computed.	Performance	Correlation analysis, MANOVA and Tukey pair-wise mean comparisons	(i) Performance in maximum and differentiated choice situations was greater than performance in minimum and incremental choice situations, but there was no average performance difference either between the maximum and differentiated choice situations or between the incremental and minimum choice situations on any measure. (ii) In the minimum choice situation, differentiators and cost leaders out-performed muddlers. Differentiators out-performed cost leaders in all choice situations except in incremental choice situation.
Kotha & Nair (1995)	The constructs proposed by Hambrick (1983) were used to ensure validity. No indication of assessing reliability.	Performance	Correlation and regression analyses	(i) Strategy and the environment significantly influence firm profitability; (ii) Only environment influences firm growth; (iii) Capital expenditures and technological change are not negatively associated with profitability. Technological change has a positive impact on firm growth.
Lee & Miller (1996)	The scales used by Kim (1986) and Lee (1989) were used for this study. These scales were adapted from Dess & Davis (1984) and Miller & Friesen (1986) to make them suitable for Korean manufacturers.	Performance	Correlation and Regression analyses	(i) The environment – strategy match is positively associated with organisational performance (ii) The relationship between strategy-environment match and performance will be stronger in industries with emergent technologies than in industries with traditional technologies.
Chan & Wong (1999)	The CEOs of sixteen commercial banks were interviewed and the transcripts were content analysed by three strategy researchers and three senior commercial bankers. They identified 12 competitive methods used by banks. The content validity was further enhanced by subjecting it to scrutiny by a	Performance	Cluster analysis, ANOVA, Scheffe's test and multiple discriminant analysis	(i) There was evidence to support the external validity of Porter's strategy typology (ii) Banks adopting a multi-strategic approach outperformed others following only one strategy.

	senior banker and bank researcher. The data collected using this scale was subjected to exploratory factor analysis to identify any underlying constructs (factors) and subsequently three factors were derived. In order to ensure convergent and discriminant validities, confirmatory factor analysis was conducted. The reliability of the scale was ensured by computing Cronbach's alpha.			
Homburg, Krohmer & Workman, Jr. (1999)	Scales used by Kim & Lim (1988) and Dess & Davis (1984) were used to ensure validity. Cronbach's alpha was computed to check reliability. Further composite reliability which is a measure based on confirmatory factor analysis was also calculated.	Performance	Regression analysis	(i) Strategic consensus increases the performance of the SBU in the case of differentiation strategy but not in the case of a low-cost strategy (ii) The relationship between strategic consensus on a differentiation strategy and performance is negatively influenced by dynamism of the market.
Chang, Yang, Cheng and Sheu (2003)	To ensure validity, the framework developed by Chang et al (2002) was used to measure business-level strategies. Cronbach's alpha was computed to ensure reliability.	Performance	Factor analysis, cluster analysis, Scheffe's pair-wise comparison test, Regression analysis	Compatibility of manufacturing flexibility and business strategy is necessary for a firm to achieve better performance
Frambach, Prabhu and Verhallen (2003)	Scales used in the previous studies were used and to ensure face validity opinions of academic experts and business-to-business market research agencies were sought. General managers and other functional managers of 12 large and medium-sized organisations were interviewed and it was found that the responses of all the managers from each firm were similar. Unidimensionality of the constructs reflected by the extent to which a single construct underlies a set of items was explored by means of confirmatory factor analysis.	(i) Market orientation and (ii) new product activity	Three-stage least squares (3SLS) analysis	The main findings are (i) A greater emphasis on a focus strategy results in a decreased emphasis on customer orientation (ii) Competitor orientation has a negative direct influence on new product activity and an indirect positive effect via customer orientation. (iii) Cost leadership strategy has a positive effect on customer orientation.

	Discriminant validity was assessed by estimating a series of confirmatory factor analyses in which the correlation between pairs of constructs was restricted to 1. Reliability of the scales was assessed using Cronbach's alpha.			
Chan, Shaffer & Snape (2004)	In order to ensure validity, the scale proposed by Nayyar (1993) was used to measure differentiation strategy. In order to enhance validity an exploratory factor analysis was also conducted. Reliability of the scale was ensured using Cronbach's alpha.	Performance	Correlation and regression analyses	High-performance human resource practices have no significant influence on performance. There is some indication that organisational culture influences performance. There is no evidence to support the contingent relationship between a firm's strategy and its HR practices.
Jermias & Gani (2004)	The scales used by Jermias & Armitage (2000); Chenhall & Langfield-Smith (1988) and Innes & Mitchell (1995) were used to ensure validity. To ensure face validity, the questionnaire was piloted twice. Cronbach's alpha was computed to ensure reliability.	Business unit effectiveness	Descriptive statistics, Correlation analysis and t-test	The main results are (i) The degree of contingent fit, defined as the weighted sum of independent fitness contributions of each contextual variable, have a positive association with business unit effectiveness. (ii) Strategic priorities affect the types of controls and management accounting systems used by the business units.
Kim, Nam & Stimpert (2004)	Seventeen of 20 items to measure strategy were derived from the following studies of brick and mortar businesses: Carter et al (1994); Dess & Davis (1984); Kim & Lim (1988); Kim & McIntosh (1999); McDougall & Robinson (1990) and Miller (1986). The remaining three items were derived from Smith et al.'s (1999) study of digital businesses. This ensures content validity. Cronbach's alpha was computed to ensure reliability.	Performance	Correlation analysis, Factor analysis, Cluster analysis, Duncan Grouping test, Lambda value, Chi-square test	(i) Porter's generic strategies are applicable to e-business and they explain performance differences across firms; (ii) The types of strategies found in e-business firms are similar to the ones found in traditional firms; (iii) A new strategy type specific to online firms, namely Internet-focussed strategy emphasising factors such as security of transactions, convenience of payment and speed of delivery was observed; (iv) Cost leadership strategy exhibited the lowest performance; (v) Firms following a hybrid strategy by combining cost leadership and differentiation exhibited the highest levels of performance and (vi) Exclusively online firms pursuing hybrid strategy outperformed all others.

Auzair & Langfield-Smith (2005)	The scale to measure strategy was adapted from Chenhall & Langfield-Smith (1998) and Kumar & Subramaniam (1997) to ensure validity. Further face validity of the questionnaire was ensured by pre-testing it with 20 service managers and 10 academics. Reliability of the scale was ensured by computing Cronbach's alpha.	Management Control Systems (MCS)	Correlation analysis and multiple regression analyses.	The main findings are (i) mass service firms place a greater emphasis on a more bureaucratic MCS than professional service firms; (ii) firms pursuing a cost leadership strategy place greater emphasis on a more bureaucratic MCS than firms pursuing a differentiation strategy and (iii) firms in the mature stage of their life cycle place a greater emphasis on a more bureaucratic MCS than firms in the growth stage.
Ge & Ding (2005)	The scale to measure competitive strategy was based on Ding & Syed (2001) and Schuler & Jackson (1999). The questionnaire in English was translated to Chinese and it was back-translated to English by two native speakers of Chinese. Subsequently necessary modifications were made. Confirmatory factor analysis was conducted to test the convergent and discriminant validity. Reliability of the scales was also assessed.	Performance	Correlation analysis, Chi-square test	(i) Customer orientation, one of the three dimensions of market orientation, has the strongest association with competitive strategy and market performance; (ii) The mediating effect of competitive strategy is mainly revealed in innovation strategy and (iii) Interfunctional coordination has no significant impact either on competitive strategy or performance.
Allen, Helms, Takeda, White and White (2006)	A scale developed and tested by Allen and Helms (2001) was used to ensure validity. The questionnaire was translated to Japanese, pilot-tested it and subsequently modified. Cronbach's Alphas were computed for scale reliability.	No dependent variable. It was a comparison of strategies in the U. S. and Japan.	Principal component analysis with a varimax rotation and Kaiser normalisation; Proportions test (z-statistic)	(i) Both Japanese and American companies use cost leadership strategy and there is no significant difference between them; (ii) Japanese companies use product differentiation strategy much lesser than American companies and (iii) Focus strategies are rarely used in Japanese companies.

Table B.2a: Sample and Data Collection Method – Miles & Snow Typology						
Author(s)	**Aim of the Study**	**Type of Organisations**	**Sample Size**	**Who are the respondents?**	**Data Collection Method**	**Primary Location of Data Collection**
Hambrick (1982)	To examine the relationships between the environmental scanning activities of upper-level executives and their business-level strategies in three industries namely private liberal arts colleges, voluntary general hospitals and life insurance firms.	Private liberal arts colleges, voluntary general hospitals and life insurance firms executives and	6 colleges, 5 hospitals and 6 insurance firms. Questionnaires were mailed to 170 executives of the above firms and 165 of them responded.	CEOs and second and third level executives	Mail survey and interviews	United States
Hambrick (1983)	To test and extend Miles and Snow typology	Businesses in the growth and maturity stages of the life cycle (based on PIMS data)	1452	Secondary data was used	Data from PIMS database	United States
Conant, Mokwa & Varadarajan (1990)	To field-test a multi-item scale for operationalising Miles and Snow typology and examine the relationship between strategic types, distinctive marketing competencies and organisational performance.	Health Maintenance Organisations	406 (150 usable responses were received)	Marketing Directors	Mail survey	United States
Beekun & Ginn (1993)	To investigate the relationship between an organisation's business strategy and its interorganisational linkages under conditions of both normal and turbulent environments.	Acute care hospitals	371 (86 usable responses were received)	CEOs	Mail survey	United States
Parnell & Wright (1993)	To empirically test the Miles & Snow typology with a dynamic, volatile and growing service industry and examine the strategy – performance relationship.	Catalogue and mail-order houses	171 (104 responses were received)	CEOs	Mail survey	United States
James & Hatten (1994)	To test the robustness of the Miles and Snow theory and to determine whether strategic archetype has a large or small performance effect.	Banks	1000 (408 usable responses were received)	CEOs	Mail survey	United States

Jennings & Seaman (1994)	To identify organisations with both high and low levels of adaptation and determine how their strategy-structure match affects performance.	Savings and loan	115(99 responses were received)	CEOs and Executive Vice-Presidents	Telepbone interviews based on mailed questionnaires	United States
Ramaswamy, Thomas & Litscbert (1994)	To study the influence of governmental regulation on organisational strategies and performance.	Domestic airline industry	20	No respondents	Secondary data was obtained from the Handbook of Airline Statistics	United States
Parnell (1997)	To examine thc relationship between strategy and performance	Organisations manufacturing computer-related equipment	812 (219 usable responses were received)	Five individuals from each organisation responded: CEO, one additional member of the top management team, one middle manager, one lower-level manager and one customer	Mail survey	United States
Borch, Huse & Senneseth (1999)	To examine the relationship between firm resources and their strategic orientations.	Small firms	Survey was conducted among two samples, one of which was a control group (1128 + 1000). 440 + 220 = 660 responses were received.	Not indicated	Mail survey	Sweden
Hoque (2004)	To investigate the role of the choice of performance measures on the relationship between (i) strategic priorities and performance and (ii) environmental uncertainty and performance.	Manufacturing companies	100 (52 responses were received)	CEOs	Mail survey	New Zealand

Desarbo, Di Benedetto, Song and Sinha (2005)	To examine the interrelationships between strategic types, capabilities, environmental uncertainty and firm performance.	Chemicals and related products, electronics and electrical equipment, pharmaceuticals, drugs and medicines, industrial machinery and equipment, telecommunications equipment; semiconductors and computer-related products; instruments and related products and other industries like air conditioning, transportation equipment etc.	2400 firms were initially contacted and finally data was obtained from 709 firms	SBU managers	Mail survey	United States, Japan and China
Moore (2005)	To examine the applicability of Miles & Snow typology to domestic retail organisations	The following retail sectors participated in the study: apparel, general merchandising, footwear and consumer electronics	525 (101 usable responses were received)	Marketing directors, Company presidents and CEOs	Mail survey	United States

Andrews, Boyne & Walker (2006)	To test the proposition that strategy content influences organisational performance in public sector organisations.	Local authorities	386 (314 local authorities responded and 119 were included in the final sample)	Multiple informants in each organisation (The questionnaire was sent to 4184 informants, 2355 of them responded and 1245 responses were included in the final sample)	Survey	United Kingdom

Table B.2b: Constructs used for Operationalisation – Miles & Snow Typology		
Author(s)	**Basic Approach for Measurement of Strategy**	**Constructs used to operationalise Miles & Snow typology**
Hambrick (1982)	Objective indicators, external assessment and normal self-typing	**Prospectors** and **Defenders.** Published measures of programme additions were used to assess prospecting behaviour of Colleges. An expert panel also classified the colleges according to the typology.
Hambrick (1983)	Objective indicators	Strategic types were operationalised according to actions relative to the competition. The classifying variable was the percent of sales derived from new products for this business minus the percent of sales derived from new products for the three largest competitors. Defenders and prospectors were classified as follows: (i) **Defender:** A business whose relative new product activity is -5 or less (except in an industry in which industry innovation is 0, in which case a business with a relatively new product activity of 0 – the lowest possible, is classified as a defender. (ii) **Prospector:** A business whose relative new product activity is +5 or more. Another classification scheme was used to examine the differences in functional attributes of defenders and prospectors. (iii) A defender was defined as a business whose new product sales were below 1 percent for all four years. (iv) A prospector was defined as a business whose new product sales were above 10 percent for all four years.
Conant, Mokwa & Varadarajan (1990)	Self-typing using paragraphs and self-typing complemented by investigator-specified decision rules	(i) Entrepreneurial – product market domain, (ii) Entrepreneurial – success posture, (iii) Entrepreneurial – surveillance, (iv) Entrepreneurial – growth, (v) Engineering – technological goal, (vi) Engineering – technological breadth, (vii) Engineering – technological buffers, (viii) Administrative – dominant coalition, (ix) Administrative - planning, (x) Administrative – structure, (xi) Administrative - control

Beekun & Ginn (1993)	Self-typing using paragraphs and self-typing complemented by investigator-specified decision rules	Paragraph descriptions: **Defender:** A Defender hospital maintains a secure "niche" within its market by offering a relatively stable set of services and programs. Generally, a defender is not at the forefront of new programs or services in health care. It ignores changes that have no direct impact on current areas of operation and concentrates instead on doing the best job possible in its existing arena. **Prospector:** A Prospector hospital periodically reshapes its services and programs. It strives to be the first hospital in the arena to offer new programs or services. A prospector hospital is always looking for opportunities to more effectively meet the health care needs of the community. **Analyser:** An Analyser hospital maintains a stable base of services and programs but at the same time watches for promising new program/service opportunities. Unlike a Prospector, an Analyser prefers to offer fewer new programs, but programs, but programs which are well-conceived. An Analyser hospital often prefers to wait to see the experience of other local hospitals with new programs before offering those programs. **Reactor:** A Reactor hospital is difficult to characterise. It doesn't place a continuous emphasis on offering a stable core of services as a Defender hospital does. Nor is it as aggressive as a Prospector or an Analyser in offering new programs and services. A Reactor hospital waits for considerable evidence that a new program or service is needed. Items in the strategy scale: 1. During this period our hospital was the first hospital in the area to offer new programs or services 2. During this period the range of programs and medical services offered was (Very narrow --------- Very broad) 3. Compared to other hospitals in this area, our hospital offered new programs or services 4. In deciding whether to offer a new program or service, this hospital waited to see the experience of others 5. During this period (1981 to 1985) our hospital tried hard to be the lowest cost provider in this area 6. This hospital's training program could best be described as (Informal -------- Formal) 7. This hospital usually tried to meet its personnel skill requirements by (Training people ---------- Acquiring people) 8. Performance appraisal for the administration staff was usually based on (Production targets ---------- Profitability) 9. In determining the appropriate salary for executives, the most important consideration was (internal consistency --------- External competitiveness) 10. For this period, the organisation of this hospital was best described as (Centralised ---------- State of the art) 11. During this period, compared to other hospitals in this area, our non-medical equipment (computers, communication systems, etc.) tended to be (Older, but reliable --------- State of the art) 12. During this period, compared to other hospitals in this area, our medical equipment tended to be (Older, but reliable ------ State of the art)

Parnell & Wright (1993)	Self-typing complemented by investigator-specified decision rules	The adapted scale from Conant, Mokwa & Varadarajan (1990) is shown below: 1. In comparison to our competitors, our products and services can be characterised as: (i) Products and services which are more innovative, continually changing and broader in nature throughout the organisation and marketplace. (ii) Products and services which are fairly stable in certain units / departments and markets while innovative in other units / departments and markets. (iii) Products and services which are well focused, relatively stable and consistently defined throughout the organisation and marketplace. (iv) Services which are in a state of transition, and largely based on responding to opportunities or threats from the marketplace or environment. 2. In contrast to our competitors, we have an image in the marketplace as a firm which: (i) Offers fewer, selective services which are high in quality. (ii) Adopts new ideas and innovations, but only after careful analysis. (iii) Reacts to opportunities or threats in the marketplace to maintain or enhance our position. (iv) Has a reputation for being innovative and creative. 3. The amount of time our company spends on monitoring changes and trends in the market-place can best be described as: (i) *Lengthy*: We are continually monitoring the marketplace. (ii) *Minimal*: We really do not spend much time monitoring the marketplace. (iii) *Average*: We spend a reasonable amount of time monitoring the marketplace. (iv) *Sporadic*: We sometimes spend a great deal of time and at other times spend little time monitoring the marketplace. 4. In comparison to our competitors, the increases or losses in demand which we have experienced are due most probably to: (i) Our practice of concentrating on more fully developing those markets which we currently serve. (ii) Our practice of responding to the pressures of the marketplace by taking few risks. (iii) Our practice of aggressively entering into new markets with new types of service offerings and programmes. (iv) Our practice of assertively penetrating more deeply into markets we currently serve, while adopting new services only after careful review of their potential. 5. In comparison to other firms in our industry, one of our most important goals is our dedication and commitment to: (i) Keep costs under control. (ii) Analyse our costs and revenues carefully, to keep costs under control and to selectively generate new products and services or enter new markets. (iii) Insure that the people, resources and equipment required to develop new products and services and new markets are available and accessible.

		(iv) Make sure that we guard against critical threats by taking whatever action is necessary. 6. In contrast to others in our industry, the skills which our managers possess can best be characterised as: (i) *Analytical*: their skills enable them to both identify trends and then develop new offerings or markets. (ii) *Specialised*: their skills are concentrated into one or a few specific areas. (iii) *Broad and Entrepreneurial*: their skills are diverse, flexible, and enable change to be created. (iv) *Fluid*: their skills are related to near-term demands of the marketplace. 7. The one thing that differentiates products from our company from others in the industry is that we: (i) Are able to carefully analyse emerging trends and adopt only those which have proven potential. (ii) Are able to do a limited number of things exceptionally well. (iii) Are able to respond to trends even though they may possess only moderate potential as they arise. (iv) Are able to develop consistently new products, services, and markets. 8. More than many other firms in our industry, our management staff tends to concentrate on: (i) Maintaining a secure financial position through cost and quality control measures. (ii) Analysing opportunities in the marketplace and selecting only those opportunities with proven potential, while protecting a secure financial position. (iii) Activities or business functions which most need attention given the opportunities or problems we currently confront. (iv) Developing new products and services and expanding into new markets or market segments. 9. In contrast to many other firms in our industry, our organisation prepares for the future by: (i) Identifying the best possible solutions to those problems or challenges which require immediate attention. (ii) Identifying trends and opportunities in the marketplace which can result in the creation of products or services which are new to the industry or which reach new markets. (iii) Identifying those problems which, if solved, will maintain and then improve our current service offerings and market position. (iv) Identifying those trends in the industry which other firms have proven possess long-term potential while also solving problems related to our current offerings and our current customers' needs. 10. In comparison to others in the industry, the structure of my organisation is: (i) Functional in nature: organised by department-marketing, accounting, personnel, etc. (ii) Product, service or market-oriented: organised by product or service offered or by market served. (iii) Primarily functional in nature; however, a product, service or market-oriented structure does exist in newer or larger areas.

		(iv) Continually changing to enable us to meet opportunities and solve problems as they arise. 11. Unlike many of our competitors, the procedures used in our organisation to evaluate our performance are best described as: (i) Decentralised and participatory, encouraging many organisational members to be involved. (ii) Heavily oriented toward those reporting requirements which demand immediate attention. (iii) Highly centralised and primarily the responsibility of senior management. (iv) Centralised in more established areas and more participatory in newer areas.
James & Hatten (1994)	Self-typing	The paragraph descriptions of the strategic types are given below: **Prospectors:** Organisations which almost continually search for market opportunities, and they regularly experiment with potential responses to emerging environmental trends. Thus, these organisations often are the creators of change and uncertainty to which their competitors must respond; however, because of their strong concern for product and market innovation, these organisations usually are not completely efficient. **Analysers:** Organisations which operate in two types of product-market domains, one relatively stable, the other changing. In their stable areas, these organisations operate routinely and efficiently through use of formalised structures and processes. In their more turbulent areas, top managers watch their competitors closely for new ideas and then rapidly adopt those which appear to be the most promising. **Defenders:** Organisations which have narrow product-market domains. Top managers in this type of organisation are highly expert in their organisation's limited area of operation but do not tend to search outside of their domains for new opportunities. As a result of this narrow focus, these organisations seldom need to make major adjustments in their technology, structure, or methods of operation. Instead, they devote primary attention to improving the efficiency of their existing operations. **Reactors:** Organisations in which top managers frequently perceive change and uncertainty occurring in their organisational environments but are unable to respond effectively. Because this type of organisation lacks a consistent strategy-structure relationship, it seldom makes adjustment of any sort until forced to do so by environmental pressure.
Jennings & Seaman (1994)	Self-typing	**Prospectors** and **Defenders**. The definitions of four strategic types used by Snow & Hrebiniak (1980) to measure strategy were used for this study.
Ramaswamy, Thomas & Litschert (1994)	Objective indicators and external assessment	**Defender:** (i) Direct maintenance expenditure, (ii) Aircraft service expenditure, (iii) Schedule completion rate, (iv) Total revenue load factor, (v) flight operation expenditure, (vi) Capital expenditures – fleet equipment. **Prospector:** (i) Passenger service expenditure, (ii) First class service, (iii) Service emphasis, (iv) Promotion expenditures
Parnell (1997)	Self-typing complemented by investigator-specified decision rules	The scale consisted of 12 items. The strategy domains and contexts of those twelve items are shown below in the following order (Item number) Strategy domain – Context: (1) Product/Service - Present focus, (2) Competitive – Future intentions, (3) Organisation – Consumer perceptions, (4) Change – Present focus, (5) Product/Service – Consumer perceptions, (6) Competitive – Present focus, (7) Organisation – Future intentions, (8) Change – Consumer perceptions, (9) Product/Service – Future intentions, (10) Competitive – Consumer perceptions, (11) Organisation – Present focus, (12) Change – Future intentions

Borch, Huse & Senneseth (1999)	Self-typing complimented by investigator-specified decision rules	The items in the strategy scale: (i) Technological development (ii) Stable product portfolio (iii) Niche-adapted products (iv) Development of new products (v) First with new products (vi) Continually improving existing products (vii) Explore market opportunities (viii) Develop business ideas (ix) Adapt successful ideas of competition (x) Aggressive marketing (xi) Broad scope of products (xii) Low-priced products (xiii) Lower price than competing products (xiv) Fast-growth policy and (xv) Acceptance of high risks. After factor analysis four types of strategies namely product strategy, market strategy, price strategy and growth strategy were derived. They were compared with Miles & Snow typology as follows: **Product strategy – Prospector, Market Strategy – Analyser and Price strategy – Defender.**
Hoque (2004)	Self-typing	CEOs were given descriptions of prospector and defender strategic types and were asked to indicate the degree of emphasis their firms had given to them on a five point Likert-type scale where 1 = **defender strategy** and 5 = **prospector strategy**. The descriptions of the strategic types are not available.
Desarbo, Di Benedetto, Song and Sinha (2005)	Self-typing complemented by investigator-specified decision rules	The scale was adapted from Conant, Mokwa & Varadarajan (1990).
Moore (2005)	Self-typing complemented by investigator-specified decision rules	The respondents were asked to indicate the ways in which they operate on a seven-point scale with the extremes "does not describe my chain at all" and "describes my chain very well". The items used to measure the strategic types are shown below: **Prospector:** (i) Is an innovation leader in the retail industry (ii) Frequently moves into new markets (iii) Is known for being "first in" the industry for developing new ways to retail (iv) Does not mind risking profits for developing new stores/formats (v) Is a leader in developing new ways to retail (vi) Continuously adopts new technology. **Defender:** (i) Maintains a safe niche using a traditional store format (ii) Sticks with using current store type (format) (iii) Concentrates on improving current ways of retailing rather than developing new methods (iv) Researches only trends that impact our business directly. **Analyser:** (i) Adopts industry innovations only after lengthy consideration (ii) Focuses first on serving current customers and second on capturing new customers. **Reactor:** (i) Always takes advantage of industry trends (ii) Is known for frequeotly taking risks.
Andrews, Boyne & Walker (2006)	Self-typing complemented by investigator-specified decision rules	Strategy content was operationalised using two dimensions namely strategic stance and strategic actions. Strategic stance was measured using the following constructs: **Prospector:** The service or authority is at the forefront of innovative approaches **Defender:** Focusing on core business areas is a major part of our approach **Reactor:** Pressures from auditors and inspectors are important in driving performance improvement Strategic actions were measured using the following constructs: Changes in markets: Providing existing services to new users is a major part of our approach Changes in services: Providing new services to existing users is a major part of our approach Seeking revenues: Developing new ways of raising income is a major part of our strategy External organisation: The service or authority welcomes private-sector involvement and partnership with others Internal organisation: New approaches to improvement (e.g., EFQM, reengineering, charter marks) are a major part of our approach

Table B.2c: Measurement and Analysis – Miles and Snow Typology				
Author(s)	**Validity and Reliability of Strategy Measures**	**Dependant Variable**	**Type of Analysis**	**Results**
Hambrick (1982)	Validity: There was significant convergence between the strategy measures based on published data and the expert panel's ratings. Reliability: The coefficient of concordance of the six panel members was 0.69.	Environmental scanning	Mann –Whitney test	(i) The main strategic differences between Prospectors and Defenders occur mainly due to internal analysis and political processes and not because of unequal possession of information. (ii) There is no attempt by the executives to strengthen their organisational strategies through their scanning behaviours (iii) The differences in the strategy-scanning link among the three industries may be due to the environmental requirements existing in each industry.
Hambrick (1983)	There is indication of establishing validity and reliability apart from maintaining consistency with the conceptual definition of the strategic types.	Performance	Univariate t-test, multiple regression, nonparametric sign test	(i) Defenders and prospectors differed in their performance tendencies, depending on the nature of the environment and the performance measure used. (ii) Prospectors demonstrated entrepreneurial orientation. (iii) Defenders demonstrated efficiency orientation.
Conant, Mokwa & Varadarajan (1990)	The content validity of the scale was assessed by a panel of organisation theory and strategy researchers. A test-retest procedure was used to assess the reliability	Performance	Chi-square test, ANOVA, Turkey-Kramer pairwise comparisnns	(i) The newly developed strategic types scale was found to be very effective (ii) While the marketing competencies of prospector organisations are superior to those of analyser, defender and reactor organisations, all three stable archetypes perform equally well in terms of profitability and outperform reactors.
Beekun & Ginn (1993)	One indication of validity of measures is the use of dimensions extracted from Ginn (1990) and Miles and Snow (1984). To ensure reliability strategy was measured using three methods.	Interorganisational linkages	ANOVA, Network analysis, MANOVA, Chi-square test	Organisational strategy reflects specific intra-organisational and inter-organisational coupling relationships

Parnell & Wright (1993)	To ensure validity, the scale developed by Conant, Mokwa and Varadarajan (1990) was adapted for this study.	Performance	ANOVA	(i) Reactors did not perform as well as businesses adopting other generic strategies, (ii) Prospectors experienced significantly higher levels of revenue growth than other businesses, (iii) Analysers were significantly more profitable than organisations adopting other strategies, (iv) Combination strategies are a viable means for sustaining competitive advantage.
James & Hatten (1994)	The definitions of the strategic types proposed by Miles & Snow (1978) were used in the self-typing approach. This is the only indication of establishing some form of content validity. There is no indication of establishing reliability.	Performance	ANOVA, ANCOVA	The main findings are (i) This study indicates that strategy type affects performance, but its effects are small rather than large (ii) Miles and Snow archetypes can be a fruitful platform for continued research on strategic effectiveness
Jennings & Seaman (1994)	Adopted the procedure used by Snow & Hrebiniak (1980) to measure strategy to ensure validity. Inter-rater reliabilities for the responses to strategy items by CEOs and Executive VPs were also established.	The following relationships were examined: adaptation -structure; adaptation - strategy; performance – strategy, structure and adaptation;	Factor analysis with an orthogonal varimax rotation, ANOVA	The main findings are (i) Among the Savings and loans, those firms with an optimum strategy-structure match tend to have a higher performance than those firms without an optimum strategy-structure alignment. (ii) Firms with a high-level of adaptation having the best prospector strategy-organic structure fit and firms with a low-level of adaptation having the best defender strategy-mechanistic structure fit have equal performance.
Ramaswamy, Thomas & Litschert (1994)	Two strategic management researchers classified the firms in the sample as different strategic types through content analysis. The results obtained through the clustering procedure and the content analysis, were correlated and there was a high	Performance	Regression analysis, Cluster analysis	(i) Firms were able to implement coherent strategies for achieving superior profitability; (ii) Efficiency oriented Defender organisation perform better than those pursuing Prospector strategies

	degree of convergence. This ensures validity of the measures. There is no indication of establishing reliability.			
Parnell (1997)	The classification scheme proposed by Conant, Mokwa and Varadarajan (1990) was used to ensure validity. The following steps were also taken to enhance validity and reliability: five respondents from each organisation responded and the strategy classification was done on the basis of the degree of agreement or disagreement.	Performance	ANOVA	(i) ROA for reactor businesses was significantly lower than for all other strategic types and higher for balancers than all for all other strategic types; (ii) Balancers experienced superior profitability while maintaining competitive growth rates
Borch, Huse & Senneseth (1999)	No indication of establishing validity. The reliability was established by repeating the survey after one year.	Strategic orientation	ANOVA, Factor analysis, Correlation analysis, Regression analysis and Cluster analysis.	(i) "Managerial firms" were analysers and used market strategies (ii) "Technological firms" were prospectors and used product and growth strategies (iii) "Traditional firms" avoided growth or risk-taking strategies. Firms having few resources lacked strategic orientation and were struck in the middle.
Hoque (2004)	Followed the procedure used by Chenhall & Langfield-Smith (1998) and Ittner et al. (1997)	Performance	Correlation and multiple regression analyses	(i) There was a significant and positive association between management's strategic choice and performance acting through management's high use of non-financial measures of performance evaluation. (ii) There was no evidence of a significant relationship between environmental uncertainty and performance through management's use of non-financial performance measures.

Desarbo, Di Benedetto, Song and Sinha (2005)	Adapted the scale developed by Conant, Mokwa and Varadarajan (1990) to ensure validity. Double-translation method was used to translate the questionnaire into Japanese and Chinese. Field research was conducted in six Japanese firms and two Chinese firms to establish content validity. Reliability of the scale was assessed.	Strategic capabilities, environmental uncertainty and performance.	A series of analyses employing the constrained, multi-objective classification methodology (NORMCLUS)	Strategic capabilities and environmental factors interrelate with strategic type and this type of interactions has a significant impact on SBU performance.
Moore (2005)	Adapted the scale developed by Segev (1987) to ensure validity. The measures were pre-tested and modified to enhance face validity. Cronbach's alphas were computed to assess reliability.	Performance	Structural equation modelling, exploratory factor analysis, confirmatory factor analysis	(i) The Miles & Snow strategic types are operating within the retail industry; (ii) Prospectors, defenders and analysers perform consistently while the reactor type performs inconsistently and (iii) Prospectors have a stronger positive relationship with performance.
Andrews, Boyne & Walker (2006)	The survey instrument was piloted and modified to establish face validity. No indication of reliability.	Performance	Regression analysis	The main findings are (i) Organisational performance is positively associated with a prospector stance and negatively with a reactor stance. (ii) Local authorities which seek new markets for their services are more likely to perform well.

Appendix C: Comments Received from Strategy Scholars about this Study

Emails received from the following strategy scholars are presented in this section

John Parnell

Thomas Powell

Gregory G. Dess

Donald C. Hambrick

K. Mathew Gilley

Jeffrey G. Covin

Jeffrey S. Conant

Stanley F. Slater

The following strategy scholars have also provided valuable suggestions and advice for this study

V. K. Narayanan

Robert M. Grant

Christoph Lechner

Danny Miller

Charles Bradley Shrader

Cliff Bowman

Abdul A. Rasheed

Veronique Ambrosini

Praveen Nayyar

David C. Wilson

Paul Olk

From: John Parnell [john.parnell@uncp.edu]
Sent: 01 May 2006 12:51
To: Nandakumar Veettil
Subject: Re: My PhD questionnaire

Nandakumar,

I have read your proposal and examined your survey instrument. You have an interesting study and are using good scales to measure your variables. I have a few suggestions.

On 1(e) and 1(f), I am not sure how you will convert the responses into data points. Ostensibly, the respondent will place a mark between 0 and 100. However, I am not sure if the mark will be precise enough for you to interpret properly. Miller might have done the same thing in his study, but the layout can create a problem with interpretation.

Perhaps a greater problem here is that the respondent is being asked to perform a calculation (e.g., R&D / Sales). While we expect the respondent to know the R&D and Sales figures, requiring a calculation increases the prospects for error. In a similar vein, 1(f), "The percentage of sales spent on costs of initiating and implementing product-market innovations each year," is cumbersome because it requires the respondent to consider a factor which may not have utilised in the past, namely expenditures associated with initiating and implementing product-market innovations.

One alternative to solving these problems would be to replace 1(e) and 1(f) with items asking for Sales, R&D, and expenditures associated with initiating and implementing product-market innovations. You could do the computations for the strategy measures yourself.

Under the "Relative Competitive Performance" section, I would place the variable definitions in the chart instead of requiring respondents to turn to the previous page to find them.

If you have any questions about these suggestions please let me know. I wish you the best with your study.

John Parnell

>John A. Parnell, Ph.D.
>Belk Chair of Management
>School of Business
>UNC-Pembroke
>Pembroke, NC 28372
>(910) 521-6465
>----------

From: Thomas Powell [thomas.powell@said-business-school.oxford.ac.uk]
Sent: 15 May 2006 13:06
To: Nandakumar Veettil
Subject: Validating my questionnaire

Dear Nandakumar -

I have had a look at your proposal. On the whole, it looks like a good study. As you may know, I did a similar study some years ago, but did not look at strategy implementation (Strategic Planning as Competitive Advantage, Strategic Management Journal, 1992). The scales I used are in an appendix.

A couple of comments on the survey:

1. I prefer not to tell respondents the names of my constructs (innovative differentiation, etc.), or to explain them. Explanations bias the answers. It is better just to say that the questions deal with strategy, and then ask the questions.

2. Question 1a - I would label the endpoints "We develop major and frequent product-service innovations" and "We seldom develop product-service innovations"

3. Question 1e and 1f - Most firms spend a very small percentage of sales on R&D: 1% to 3%. Your scale seems out of proportion. I would either have them write in a percentage, or give them appropriate ranges: 0-2%, 2-5%, 5-10%, 10-20%, etc. You should check this out in the industries you are studying.

4. Question 2 - I don't know what you mean by "advertising strategy." Are you trying to determine how much advertising they do? This could be clearer. In 2c, market segmentation is a tool, not a strategy.

5. Quetion 4 - Again, too much explaining about what "focus" means. I would rewrite 4d and 4e with proper labels on the endpoints.

6. Section 2 - Again, too much explaining. The respondents do not need to know anything about "dynamism" etc., and the explanations will slow them down.

7. Section 2.3 - I would try to keep the words simple: not "proliferated greatly" but "increased"

8. Section 3 - Too much explaining. You definitely don't want to tell managers you are about to ask them how rational they are. Everyone wants to seem rational. You are gong to bias their answers. In all of section 3, I would just let them circle the best answers, without steering them at all.

9. Section 4 - Same comment. They don't need to know, and most of them don't care, what you think strategy implementation depends on. I would have a heading that says "Strategy Implementation", I would say "This section asks questions about strategy implementation in your company", and then I would ask the questions.

10. Section 6 - In 6.1, items d and e are too vague; in 6.2 there are too many definitions. I would leave out the definitions or put them in a footnote for reference.

I hope this helps. In my experience respondents don't want to spend much time on surveys, and they don't want a lot of verbiage - the shorter and faster the better. I think you can tighten up the survey a lot if you consider the above.

Best regards -

Thomas Powell

Thomas Powell
Professor of Strategy, Oxford University Tutorial Fellow in Economics & Management St Hugh's College, Oxford

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From: Dess, Gregory G [gdess@utdallas.edu]
Sent: 30 August 2006 23:30
To: Nandakumar Veettil
Subject: RE: My questionnaire

Dear Nandakumar,

The questionnaire looks very well done. I just have some very minor comments:

Page 3, first item on environment. Could this be "industry" instead of "environment"?

Page 4, Item 5 "The explanation of..." I am not sure what you are trying to measure--unfortunately I don't have any specific suggestions.

Page 7, items 6.1. I guess you are trying go get at goals and aspiration levels. But, I am not sure I would agree with the scale you have. Maybe ask: To what extent have you been successful in achieving each of these objectives? Then, have the scale anchored by "Very Successful" and "Not at All Successful"

As a general comment on the propositions, you might want to look at contingency relationships instead of direct relationships. For example, you might want to look at my 1996 article in AMR with Tom Lumpkin.

Hope these ideas help. Best wishes!

Greg

From: dch14@smeal.psu.edu
Sent: 27 April 2006 23:56
To: Nandakumar Veettil
Subject: Re: My PhD questionnaire

Importance: High

Hi--

I've had a quick look at your survey, and it looks perfectly reasonable.
I'm traveling intensively over the next couple weeks, so I can't provide more detailed feedback. Good luck.

DCH

From: Gilley, Matt [matt.gilley@okstate.edu]
Sent: 17 May 2006 15:57
To: Nandakumar Veettil
Subject: RE: My PhD questionnaire

The survey looks very professionally done! I hope your response rate is ok. That's a pretty long survey,
though I'm uncertain as to how you'd shorten it.

Good luck with your research.

Matt Gilley

K. Matthew Gilley, Ph.D.
Department of Management
William S. Spears School of Business
Oklahoma State University
Stillwater, OK 74078
Telephone: 405-744-7530
Fax: 405-744-5180
E-mail: Matt.Gilley@Okstate.edu

From: Covin, Jeffrey G [covin@indiana.edu]
Sent: 05 August 2006 04:01
To: Nandakumar Veettil
Subject: RE: Scale to measure Business-level strategy

Dear Nandakumar:
I've looked at your scales. They have content and face validity. The scales do seem to be appropriate for measuring the business-level strategy of manufacturing firms.

Regarding Porter's expressed concerns about being "stuck-in-the-middle," I wouldn't worry about this. In fact, more recent theorizing suggests that it can be advantageous to "layer" bases of competitive advantage - that is, combine cost leadership and differentiation. I published a paper in SMJ in 1997 ("Dess, Lumpkin, and Covin" is the cite) that you might want to track down inasmuch as it talks (in the discussion section) about the concept of layering bases of advantage. If I remember correctly, Hamel and Prahalad were the first to propose the possibility that layering bases of competitive advantage can be very productive for a firm. In a practical sense, this means that being "high" on the two main bases for competitive advantage (cost leadership and differentiation - i.e., being "stuck-in-the-middle" - is not necessarily a bad thing.

I hope this helps.

Good luck with your research.
Best regards,
Jeff

From: Conant, Jeff [J-Conant@mays.tamu.edu]
Sent: 07 August 2006 17:07
To: Nandakumar Veettil
Subject: [SPAM: 6.100] RE: Query Re Strategy Scale

I believe it has content and face validity. Just be sure to randomize your items and you might also consider some reverse-coded versions of the items. This will help ensure the respondents really study the scales and do not simply move through them quickly.

Jeff Conant

Jeffrey S. Conant, Ph.D.
Professor of Marketing, Presidential Professor for Teaching Excellence,
Eppright University Professor in Undergraduate Teaching Excellence,
and Head -- Department of Marketing
Mays Business School
Texas A&M University
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E-Mail: J-Conant@Mays.tamu.edu
Voice: 979-845-0824
FAX: 979-862-2811
Department of Marketing Web Site: http://mays.tamu.edu/mktg/

From: Slater,Stan F [stan.slater@business.colostate.edu]
Sent: 09 August 2006 15:30
To: Nandakumar Veettil
Subject: RE: Query Re strategy scale

Hi Nandakumar,

I think your scale items adequately capture the domains of the constructs.

Stan

Stanley F. Slater
Charles and Gwen Lillis Professor of Business Administration Department of Management College of Business Colorado State University Fort Collins, CO 80523-1275

970-491-2994

From: Nandakumar Veettil [mailto:N.Veettil@mdx.ac.uk]
Sent: Wed 8/9/2006 7:40 AM
To: Slater,Stan F

Subject: RE: Query Re strategy scale

Dear Prof. Slater:

Many thanks for your comments. Based on your suggestions I have modified my questionnaire. Attached please find a copy of it. Please let me know whether it is OK now.

Re "uniqueness of your products" item in Focus - I have noticed that some other authors have also used this to measure focus (e.g Frambach, Prabhu and Verhallen, 2003).

Re your observation that the item "offering products suitable for a high price segment" will pick up emphasis on only one segment - The item "targeting a clearly identified segment" asks the respondants to indicate whether they are focussing on one particular segment or not. Another option is to add one more item "Offering products suitable for a low price segment" - Please clarify.

Re "Emphasis on using new methods and ....." in Differentiation - I have replaced "new" with "innovative".

Based on your advice I have added two more items in Differentiation focusing on quality of the products and speed of delivery. I have also added one more item to Cost leadership "Emphasis on tight control of selling/general/administrative expenses".

Please let me know whether focus needs to be divided into cost focus and differentiation focus and if yes, please specify how to do that.

Regards,

Nandakumar

> -----Original Message-----
> From: Slater,Stan F [mailto:stan.slater@business.colostate.edu]
> Sent: Monday, August 07, 2006 4:08 PM
> To: Nandakumar Veettil
> Subject: RE: Query Re strategy scale
>
> See my comments below. Good luck with your research.
>
> Stan

Stanley F. Slater, Ph.D.

Charles and Gwen Lillis Professor of Business Administration

College of Business

Colorado State University

Fort Collins, CO 80523-1275

Phone (970) 491-2994

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http://www.biz.colostate.edu/faculty/stans/

First, Likert scales (strongly disagree to strongly agree) have been found to be more reliable.

Cost Leadership

1. Emphasis on efficiency of securing raw materials or components (e.g. bargaining down the purchase price)

2. Emphasis on finding ways to reduce costs (e.g. standardising the product or increasing the economy of scale)

3. Level of operating efficiency (e.g. productivity in production or efficiency in outbound logistics)

4. Level of production capacity utilisation

5. Emphasis on price competition (i.e. offering

competitive prices)

Focus

6. Uniqueness of your products (e.g. unique function or design) Seems more like differentiation than focus

7. Targeting a clearly identified segment (e.g. emphasising a geographical region or a specific group of consumers)

8. Offering products suitable for a high price segment This will pick up emphasis on only one segment

9. Offering specialty products tailored to a particular group of customers or users

Differentiation

10. Emphasis on using new methods and technologies to create superior products Not sure why this is differentiation. Could be cost leadership

11. Emphasis on new product development or existing product adaptation to better serve customers

12. Rate of new product introduction to market

13. Emphasis on the number of new products offered

to the market

14. Intensity of your advertising and marketing

15. Emphasis on developing and utilising sales force

16. Emphasis on building strong brand identification

Items that concern quality, service, and speed in the order-to-delivery cycle might be appropriate.

Appendix D: Feedback form sent with the pilot Questionnaire

Feedback Form

Please answer the following questions. Your comments will be extremely useful for modifying the questionnaire further. If you prefer to give a verbal feedback instead of writing down your comments, please write your contact telephone number below and I will call you.
Tel. No. _____

1. How much time did you spend to fill in the questionnaire? _____

2. Do you think that the contents of the questionnaire are relevant to your organisation and to your principal industry? Yes ☐ No ☐

   If your answer to the above question is 'No', please explain which items are not relevant:

   _____

   _____

   _____

   _____

3. Did you have any difficulty in understanding the meaning of the questions? Yes ☐ No ☐

   If your answer to the above question is 'Yes', please indicate which questions were difficult to understand:

   _____

   _____

   _____

   _____

4. Were you able to read the questions effortlessly from beginning to end? Yes ☐ No ☐

   If your answer to the above question is 'No', please explain the difficulty you had while going through the questions:

   _____

   _____

   _____

   _____

5. If you have any suggestions for improving the questionnaire please write them in the space provided below:

   _____

   _____

   _____

   _____

Appendix E: Covering letter sent with the Survey Instrument

Mr. Andrew White,
Managing Director,
Aircelle Limited,
Bancroft Road, Burnley,
Lancashire BB10 2TQ

19 October 2006

Dear Mr. White:

Strategy Formulation and Implementation

Manufacturing firms are facing rapidly increasing competition. To date, management initiatives have been largely efficiency orientated and have failed to lead to the performance levels that firms expect. With so much at stake for manufacturing firms, we have initiated a major study to examine the impact of strategy formulation and implementation as well as their drivers on overall performance.

I am pleased to invite you to participate in this important study and would be grateful if you would take the time to complete and return the enclosed questionnaire in the reply paid envelope provided, before 30th of November 2006. It will take only 15 minutes to fill in this questionnaire.

All replies will be treated in the strictest confidence and no names or identities of individual firms will be revealed or disclosed to third parities. If you have any questions please feel free to contact me. I will of course forward an executive summary of our findings to you in due course.

Yours Sincerely,

Nicholas O'Regan BA MSc MBA PhD FRSA
Professor of Strategic Management

Tel: 020 8411 6162
Email: N.O'Regan@mdx.ac.uk

Appendix F: Survey Instrument

Appendix G: Coding of the Variables and Data Examination

G.1 Coding of the Variables

The variables used to measure the constructs were coded before inputting them to SPSS. The questionnaire consists of seven sections namely Business Strategy, External Environment, Strategic Planning, Strategy Implementation, Structure, Organisational Performance and Background Information. The data analysis was primarily carried out using the data in the first six sections. The variable names and their labels corresponding to each item measuring the constructs in those six sections are presented in the following sections.

G.1.1 Section 1: Business Strategy

The business-level strategy of an organisation is measured using three constructs namely cost-related strategy, differentiation and focus. The variables used to measure these three constructs and their labels and variable names used in SPSS are shown in Tables G.1, G.2 and G.3.

Table G.1: Construct - Cost-related Strategy

Item	Label	Variable Name
Emphasis on efficiency of securing raw materials or components (e.g. bargaining down the purchase price)	Cost-related1	cr1
Emphasis on finding ways to reduce costs (e.g. standardising the product or increasing the economy of scale)	Cost-related2	cr2
Emphasis on operating efficiency (e.g. productivity in production or efficiency in outbound logistics)	Cost-related3	cr3
Emphasis on production capacity utilisation	Cost-related4	cr4
Emphasis on price competition (i.e. offering competitive prices)	Cost-related5	cr5
Emphasis on tight control of selling/general/ administrative expenses	Cost-related6	cr6

Table G.2: Construct – Differentiation

Item	Label	Variable Name
Emphasis on using innovative methods and technologies to create superior products	Differentiation1	diff1
Emphasis on new product development or existing product adaptation to better serve customers	Differentiation2	diff2
Rate of new product introduction to market	Differentiation3	diff3
Emphasis on the number of new products offered to the market	Differentiation4	diff4
Intensity of your advertising and marketing	Differentiation5	diff5
Emphasis on developing and utilising sales force	Differentiation6	diff6
Emphasis on building strong brand identification	Differentiation7	diff7
Emphasis on producing high quality products	Differentiation8	diff8
Quick delivery and immediate response to customer orders	Differentiation9	diff9

Table G.3: Construct – Focus

Item	Label	Variable Name
Uniqueness of your products (e.g. unique function or design)	Focus1	foc1
Targeting a clearly identified segment (e.g. emphasising a geographical region or a specific group of consumers)	Focus2	foc2
Offering products suitable for a high price segment	Focus3	foc3
Offering specialty products tailored to a particular group of customers or users	Focus4	foc4

G.1.2 Section 2: External Environment

The extemal environment was measured using three constructs namely dynamism, hostility and heterogeneity. The labels and variable names used in SPSS for the variables used to measure these three constructs are shown in tables G.4, G.5 and G.6.

Table G.4: Construct – Dynamism

Item	Label	Variable Name
Growth opportunities in the overall business environment have	Env. Dynamism1	dyn1
Production technology in your principal industry has	Env. Dynamism2	dyn2
The rate of innovation of new operating processes and new products or services in your principal industry has	Env. Dynamism3	dyn3
Research and development (R&D) activity in your principal industry has	Env. Dynamism4	dyn4

Table G.5: Construct – Hostility

Item	Label	Variable Name
Market activities of our key competitors have become far more predictable (Reverse coded)	Env. Hostility1 Reversed	hos1r
Market activities of our key competitors have become far more hostile	Env. Hostility2	hos2
Market activities of our key competitors now affect our firm in many more areas (e.g. pricing, marketing, delivery, service, production, quality) than before	Env. Hostility3	hos3
Legal, political and economic constraints (e.g. Government regulations) have	Env. Hostility4	hos4

Table G.6: Construct – Heterogeneity

Item	Label	Variable Name
Required variety in your marketing tactics to cater to your different customers has	Env. Heterogeneity1	het1
Required variety in your production methods to cater to your different customers has	Env. Heterogeneity2	het2

G.1.3 Section 3: Strategic Planning

Strategic planning was assessed using the extant of rationality construct and it was measured using eight variables. The labels and variable names used in SPSS for these eight variables are shown in Table G.7.

Table G.7: Construct – Rationality in Strategic Planning

Item	Label	Variable Name
A systematic search for opportunities and problems when planning	Strategic Planning1	sp1
A systematic consideration of costs and benefits when planning	Strategic Planning2	sp2
The strategic and long-term importance of participative decision-making at management levels	Strategic Planning3	sp3
The application of operations research techniques	Strategic Planning4	sp4
The explanation of proposed organisational changes to those affected by them	Strategic Planning5	sp5
Participative consensus-seeking decision-making with feedback	Strategic Planning6	sp6
Open channels of communication	Strategic Planning7	sp7
Written strategic plan(s)	Strategic Planning8	sp8

G.1.4 Section 4: Strategy Implementation

Three constructs namely planned option, prioritised option and achievement are used to measure strategy implementation. The variables used to measure each construct, their labels and variable names used in SPSS are shown in Tables G.8, G.9 and G.10.

Table G.8: Construct – Planned Option

Item	Label	Variable Name
Relevant experience was available (either in-house, outsourced, or bought-in) to implement strategies in your organisation	Imp. Familiarity	imp_fami
The criteria for success of strategy implementation were clear	Imp. - Assessability	imp_asse
The tasks to be performed were specified beforehand to ensure effective strategy implementation	Imp. - Specificity	imp_spec
Resources (including people, money and time) were available during the strategy implementation process	Imp. - Resourcing	imp_reso
What was done during the implementation process was acceptable to those involved	Imp. - Acceptability	imp_acce

Table G.9: Construct – Prioritised Option

Item	Label	Variable Name
Strategy implementation had a receptive context at the outset due to the conditions within and/or external to your organisation	Imp. - Receptivity	imp_rece
Organisational structure facilitated the strategy implementation process through appropriate allocation of responsibilities and roles	Imp. - Structural Facilitation	imp_s_fa
Strategy implementation was given priority over other commitments	Imp. - Priority	imp_prio

Table G.10: Construct – Achievement

Item	Label	Variable Name
The success of strategy implementation is defined as the extent to which the performance over time of what was done was as intended or better. Please indicate your assessment of this performance	Imp. - Achievement	imp_achi

G.1.5 Section 5: Structure

Organisational structure was measured using the constructs organic structure and mechanistic structure. Responses on the 7 point Likert type scale towards right indicated an organic structure and the responses towards the left indicated mechanistic structure. The variables used to measure the construct, their labels and variable names used in SPSS are shown in Table G.11.

Table G.11: Constructs – Organic and Mechanistic Structures

Item	Label	Variable Name
Departmentalisation was done according to formal grouping or informal grouping	Structure1	str1
Coordination was done according to work standards or mutual adjustment	Structure2	str2
Decision-making process was centralised or decentralised	Structure3	str3
Organisational control systems were enforced according to the rules or shared norms	Structure4	str4
Line-staff responsibilities in the organisation were distinct or blurred	Structure5	str5
Organisational hierarchy had many levels or minimal levels	Structure6	str6
Interdepartmental communication was a formal process or informal process	Structure7	str7
Seniority or expertise was used as the main criteria for rewards	Structure8	str8
Task forces	Structure9	str9
Interdepartmental committees for new product decisions	Structure10	str10
Management information systems	Structure11	str11

G.1.6 Organisational Performance

Organisational performance was measured using the constructs namely objective fulfilment and relative competitive performance. The variables used to measure those two constructs, their labels and variable names used in SPSS are presented in Tables G.12 and G.13.

Table G.12: Objective Fulfilment

Item	Label	Variable Name
Improvement in short-term performance	Perf. Obj. Fulfilment1	per_of1
Improvement in long-term performance	Perf. Obj. Fulfilment2	per_of2
Predicting future trends	Perf. Obj. Fulfilment3	per_of3
Evaluating alternatives based on relevant information	Perf. Obj. Fulfilment4	per_of4
Avoiding problem areas	Perf. Obj. Fulfilment5	per_of5
Resolving Problems	Perf. Obj. Fulfilment6	per_of6
Enhancing management development	Perf. Obj. Fulfilment7	per_of7

Table G.13: Relative Competitive Performance

Item	Label	Variable Name
Sales growth	Perf. - Rel. Comp. Perf.1	per_rcp1
Growth in profit after tax	Perf. - Rel. Comp. Perf.2	per_rcp2
Market share change	Perf. - Rel. Comp. Perf.3	per_rcp3
Return on Assets (ROA)	Perf. - Rel. Comp. Perf.4	per_rcp4
Return on Equity (ROE)	Perf. - Rel. Comp. Perf.5	per_rcp5
Return on Sales (ROS)	Perf. - Rel. Comp. Perf.6	per_rcp6
Current Ratio	Perf. - Rel. Comp. Perf.7	per_rcp7
Overall firm performance and success	Perf. - Rel. Comp. Perf.8	per_rcp8
Our competitive position	Perf. - Rel. Comp. Perf.9	per_rcp9

G.2 Summary Statistics

The means, standard deviations, skewness and kurtosis values of the final set of variables representing each construct, obtained after the data reduction process and these values of the overall constructs are presented in the following sections. The variable representing the overall construct shown in the last row of the table is the variable obtained by computing the means of the summated scales of the variables representing the construct.

G.2.1 Cost-related Strategy

The skewness and kurtosis values of all the six variables and the overall construct shown in Table G.14 are within the range between - 1 and + 1 which is considered very good.

Table G.14: Cost-related Strategy

	N	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Cost-related1	124	4.7016	1.27502	-.449	.217	.274	.431
Cost-related2	124	5.1048	1.28670	-.711	.217	-.071	.431
Cost-related3	124	5.0161	1.36139	-.619	.217	-.033	.431
Cost-related4	124	4.6048	1.56079	-.504	.217	-.289	.431
Cost-related5	124	4.7581	1.25828	-.477	.217	.188	.431
Cost-related6	124	4.7661	1.40330	-.381	.217	-.614	.431
Overall Construct	124	4.825269	.9915758	-.405	.217	.121	.431
Valid N (listwise)	124						

G.2.2 Differentiation

The skewness and kurtosis values of all the variables except Differentiation2 and the overall construct shown in Table G.15 are within the range of +/- 1.

Table G.15: Differentiation

	N	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Differentiation2	124	5.2661	1.10512	-.730	.217	1.146	.431
Differentiation3	124	4.5806	1.56224	-.380	.217	-.450	.431
Differentiation4	124	4.2984	1.47599	-.376	.217	-.360	.431
Differentiation6	124	4.5806	1.42622	-.422	.217	-.409	.431
Differentiation7	124	5.0968	1.45624	-.861	.217	.570	.431
Overall Construct	124	4.7645161	1.00342451	-.656	.217	1.278	.431
Valid N (listwise)	124						

G.2.3 Environmental Dynamism

The skewness and kurtosis values are with +/- 1 range for all variables except for Env. – Dynamism4.

Table G.16: Environmental Dynamism

	N	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Env. - Dynamism2	124	4.1129	1.54188	-.544	.217	-.470	.431
Env. - Dynamism3	124	4.6452	1.07593	.193	.217	-.209	.431
Env. - Dynamism4	124	4.3629	1.17102	-.435	.217	1.194	.431
Env. - Heterogeneity2	124	4.6048	1.00259	.026	.217	.113	.431
Overall Construct	124	4.4314516	.89960397	-.108	.217	.050	.431
Valid N (listwise)	124						

G.2.4 Environmental Hostility

The skewness and kurtosis values for the two variables are within the range of +/- 1.

Table G.17: Environmental Hostility

	N	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Env. - Hostility2	124	4.8790	1.14475	-.453	.217	.271	.431
Env. - Hostility3	124	4.7581	1.21890	-.071	.217	.136	.431
Overall Construct	124	4.8185	1.06751	-.294	.217	.535	.431
Valid N (listwise)	124						

G.2.5 Strategic Planning

The skewness and kurtosis values for all variables shown in Table G.18 are within the range +/- 1.

Table G.18: Rationality in Strategic Planning

	N	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Strategic Planning1	124	4.7500	1.37116	-.710	.217	.148	.431
Strategic Planning3	124	5.0161	1.22961	-.805	.217	.575	.431
Strategic Planning4	124	3.7016	1.47599	-.210	.217	-.547	.431
Strategic Planning5	124	5.0484	1.33041	-.679	.217	.294	.431
Strategic Planning6	124	4.6855	1.38145	-.526	.217	-.197	.431
Strategic Planning7	124	5.3226	1.26586	-.778	.217	.742	.431
Strategic Planning8	124	4.9032	1.69370	-.632	.217	-.524	.431
Overall Construct	124	4.7753456	.99878363	-.724	.217	.815	.431
Valid N (listwise)	124						

G.2.6 Strategy Implementation

The variable namely Imp. – Achievement measures the overall success of implementation. The variable representing the overall construct was formed by computing the mean of the summated scale consisting of the first eight variables shown in Table G.19.

Table G.19: Planning of Strategy Implementation

	N	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Imp. - Familiarity	124	4.7581	1.29647	-.403	.217	.159	.431
Imp. - Assessability	124	4.8065	1.28580	-.820	.217	.707	.431
Imp. - Specificity	124	4.7742	1.38422	-.726	.217	.430	.431
Imp. - Resourcing	124	4.5161	1.38801	-.266	.217	-.425	.431
Imp. - Acceptability	124	4.7581	1.11436	-.259	.217	.003	.431
Imp. - Receptivity	124	4.6210	1.27255	-.432	.217	-.225	.431
Imp. - Structural Facilitation	124	4.6129	1.44103	-.420	.217	-.561	.431
Imp. - Priority	124	4.3952	1.40162	-.267	.217	-.464	.431
Imp. - Achievement	124	4.7258	1.15004	-.487	.217	.672	.431
Overall Construct	124	4.6552	1.03402	-.655	.217	1.020	.431
Valid N (listwise)	124						

G.2.7 Organisational Structure

All the variables in Table G.20 except structure9 have their skewness and kurtosis values within the range of +/- 1.

Table G.20: Organic and Mechanistic Structures

	N	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Structure1	124	3.6129	1.54451	.134	.217	-.851	.431
Structure2	124	4.1613	1.17831	-.774	.217	.194	.431
Structure3	124	3.6532	1.59289	.169	.217	-.817	.431
Structure4	124	3.7016	1.31890	.115	.217	-.457	.431
Structure6	124	5.4113	1.47065	-.961	.217	.426	.431
Structure8	124	4.7500	1.44056	-.679	.217	.337	.431
Structure9	124	3.6694	2.00293	-.022	.217	-1.332	.431
Structure10	124	4.4677	1.95658	-.547	.217	-.917	.431
Structure11	124	5.1452	1.34765	-.593	.217	-.125	.431
Overall Construct	124	4.285842	.8097287	-.760	.217	.756	.431
Valid N (listwise)	124						

G.2.8 Objective Fulfilment

The skewness and kurtosis values for the variable namely Perf. Obj. Fulfilment6 and for the overall construct are slightly outside the range of +/- 2.

Table G.21: Objective Fulfilment

	N	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Perf. - Obj. Fulfilment3	124	4.7258	1.16409	-.327	.217	.085	.431
Perf. - Obj. Fulfilment4	124	4.7742	1.01884	-.188	.217	-.025	.431
Perf. - Obj. Fulfilment6	124	5.3710	1.03960	-1.061	.217	2.099	.431
Perf. - Obj. Fulfilment7	124	4.7984	1.28771	-.405	.217	.063	.431
Overall Construct	124	4.9173387	.81756739	-.540	.217	2.465	.431
Valid N (listwise)	124						

G.2.9 Relative Competitive Performance

The skewness and kurtosis values of all the variables shown in Table G.22 except two of them are within the range of +/- 1. However the values for both of them are within the range of +/- 2.

Table G.22: Relative Competitive Performance

	N	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Perf. - Rel. Comp. Perf.1	124	5.1210	1.07138	-.164	.217	-.597	.431
Perf. - Rel. Comp. Perf.2	124	5.0403	1.38751	-.834	.217	.634	.431
Perf. - Rel. Comp. Perf.3	124	4.7903	.94803	-.381	.217	1.550	.431
Perf. - Rel. Comp. Perf.4	124	4.9274	1.18372	-.455	.217	.460	.431
Perf. - Rel. Comp. Perf.5	124	4.9194	1.21372	-.481	.217	.644	.431
Perf. - Rel. Comp. Perf.6	124	4.8145	1.25825	-.539	.217	.652	.431
Perf. - Rel. Comp. Perf.7	124	4.6774	1.14443	-.529	.217	1.326	.431
Perf. - Rel. Comp. Perf.8	124	5.2581	1.08103	-.768	.217	.521	.431
Perf. - Rel. Comp. Perf.9	124	5.2258	.96978	-.361	.217	.190	.431
Overall Construct	124	4.9749	.88729	-.489	.217	.874	.431
Valid N (listwise)	124						

G.3 Assessing the Homogeneity of the Sample

Table G.23 Comparing the Means of Cost-related Strategy

Dependent Variable: Cost-related Strategy
Bonferroni

(I) Industry sectors classified into four groups	(J) Industry sectors classified into four groups	Mean Difference (I-J)	Std. Error	Sig.
		Lower Bound	Upper Bound	
Group1	Group2	.412162	.2335924	.481
	Group3	.506944	.2621433	.333
	Group4	.158046	.2485430	1.000
Group2	Group1	-.412162	.2335924	.481
	Group3	.094782	.2577082	1.000
	Group4	-.254116	.2438607	1.000
Group3	Group1	-.506944	.2621433	.333
	Group2	-.094782	.2577082	1.000
	Group4	-.348898	.2713333	1.000
Group4	Group1	-.158046	.2485430	1.000
	Group2	.254116	.2438607	1.000
	Group3	.348898	.2713333	1.000

Based on observed means.

Table G.24 Comparing the Means of Differentiation

Dependent Variable: Differentiation
Bonferroni

(I) Industry sectors classified into four groups	(J) Industry sectors classified into four groups	Mean Difference (I-J)	Std. Error	Sig.
		Lower Bound	Upper Bound	
Group1	Group2	-.3201908	.23700971	1.000
	Group3	-.5406863	.26597829	.266
	Group4	-.1995943	.25217910	1.000
Group2	Group1	.3201908	.23700971	1.000
	Group3	-.2204955	.26147834	1.000
	Group4	.1205965	.24742831	1.000
Group3	Group1	.5406863	.26597829	.266
	Group2	.2204955	.26147834	1.000
	Group4	.3410920	.27530278	1.000
Group4	Group1	.1995943	.25217910	1.000
	Group2	-.1205965	.24742831	1.000
	Group3	-.3410920	.27530278	1.000

Based on observed means.

Table G.25 Comparing the Means of Environmental Dynamism

Dependent Variable: Environmental Dynamism
Bonferroni

(I) Industry sectors classified into four groups	(J) Industry sectors classified into four groups	Mean Difference (I-J)	Std. Error	Sig.
		Lower Bound	Upper Bound	
Group1	Group2	-.2847774	.21023492	1.000
	Group3	-.6268382	.23593095	.054
	Group4	-.3024848	.22369064	1.000
Group2	Group1	.2847774	.21023492	1.000
	Group3	-.3420608	.23193935	.857
	Group4	-.0177074	.21947654	1.000
Group3	Group1	.6268382	.23593095	.054
	Group2	.3420608	.23193935	.857
	Group4	.3243534	.24420206	1.000
Group4	Group1	.3024848	.22369064	1.000
	Group2	.0177074	.21947654	1.000
	Group3	-.3243534	.24420206	1.000

Based on observed means.

Table G.26 Comparing the Means of Environmental Hostility

Dependent Variable: Environmental Hostility
Bonferroni

(I) Industry sectors classified into four groups	(J) Industry sectors classified into four groups	Mean Difference (I-J)	Std. Error	Sig.
		Lower Bound	Upper Bound	
Group1	Group2	-.3394	.25486	1.000
	Group3	-.1863	.28601	1.000
	Group4	-.1460	.27117	1.000
Group2	Group1	.3394	.25486	1.000
	Group3	.1532	.28117	1.000
	Group4	.1934	.26606	1.000
Group3	Group1	.1863	.28601	1.000
	Group2	-.1532	.28117	1.000
	Group4	.0402	.29603	1.000
Group4	Group1	.1460	.27117	1.000
	Group2	-.1934	.26606	1.000
	Group3	-.0402	.29603	1.000

Based on observed means.

Table G.27 Comparing the Means of Strategic Planning

Dependent Variable: Strategic Planning
Bonferroni

(I) Industry sectors classified into four groups	(J) Industry sectors classified into four groups	Mean Difference (I-J)	Std. Error	Sig.
		Lower Bound	Upper Bound	
Group1	Group2	.0233931	.23928353	1.000
	Group3	-.1817227	.26853004	1.000
	Group4	.0750507	.25459846	1.000
Group2	Group1	-.0233931	.23928353	1.000
	Group3	-.2051158	.26398691	1.000
	Group4	.0516576	.24980209	1.000
Group3	Group1	.1817227	.26853004	1.000
	Group2	.2051158	.26398691	1.000
	Group4	.2567734	.27794398	1.000
Group4	Group1	-.0750507	.25459846	1.000
	Group2	-.0516576	.24980209	1.000
	Group3	-.2567734	.27794398	1.000

Based on observed means.

Table G.28 Comparing the Means of Strategy Implementation

Dependent Variable: Planning of Strategy Implementation
Bonferroni

(I) Industry sectors classified into four groups	(J) Industry sectors classified into four groups	Mean Difference (I-J)	Std. Error	Sig.
		Lower Bound	Upper Bound	
Group1	Group2	.0451	.24703	1.000
	Group3	-.2509	.27723	1.000
	Group4	.0837	.26284	1.000
Group2	Group1	-.0451	.24703	1.000
	Group3	-.2960	.27254	1.000
	Group4	.0386	.25789	1.000
Group3	Group1	.2509	.27723	1.000
	Group2	.2960	.27254	1.000
	Group4	.3346	.28695	1.000
Group4	Group1	-.0837	.26284	1.000
	Group2	-.0386	.25789	1.000
	Group3	-.3346	.28695	1.000

Based on observed means.

Table G.29 Comparing the Mean of Structure

Dependent Variable: Structure
Bonferroni

(I) Industry sectors classified into four groups	(J) Industry sectors classified into four groups	Mean Difference (I-J)	Std. Error	Sig.
		Lower Bound	Upper Bound	
Group1	Group2	-.184243	.1893468	1.000
	Group3	-.545479	.2124898	.069
	Group4	-.116520	.2014656	1.000
Group2	Group1	.184243	.1893468	1.000
	Group3	-.361236	.2088948	.518
	Group4	.067723	.1976702	1.000
Group3	Group1	.545479	.2124898	.069
	Group2	.361236	.2088948	.518
	Group4	.428959	.2199391	.321
Group4	Group1	.116520	.2014656	1.000
	Group2	-.067723	.1976702	1.000
	Group3	-.428959	.2199391	.321

Based on observed means.

Table G.30 Comparing the Means of Performance – Objective Fulfilment

Dependent Variable: Performance Objective Fulfilment
Bonferroni

(I) Industry sectors classified into four groups	(J) Industry sectors classified into four groups	Mean Difference (I-J)	Std. Error	Sig.
		Lower Bound	Upper Bound	
Group1	Group2	.0437202	.19634873	1.000
	Group3	-.0024510	.22034752	1.000
	Group4	.1110548	.20891569	1.000
Group2	Group1	-.0437202	.19634873	1.000
	Group3	-.0461712	.21661957	1.000
	Group4	.0673346	.20497994	1.000
Group3	Group1	.0024510	.22034752	1.000
	Group2	.0461712	.21661957	1.000
	Group4	.1135057	.22807231	1.000
Group4	Group1	-.1110548	.20891569	1.000
	Group2	-.0673346	.20497994	1.000
	Group3	-.1135057	.22807231	1.000

Based on observed means.

Table G.31 Comparing the Means of Relative Competitive Performance

Dependent Variable: Relative Competitive Performance
Bonferroni

(I) Industry sectors classified into four groups	(J) Industry sectors classified into four groups	Mean Difference (I-J)	Std. Error	Sig.
		Lower Bound	Upper Bound	
Group1	Group2	-.4669	.20870	.163
	Group3	-.3739	.23421	.678
	Group4	-.3291	.22205	.846
Group2	Group1	.4669	.20870	.163
	Group3	.0930	.23024	1.000
	Group4	.1378	.21787	1.000
Group3	Group1	.3739	.23421	.678
	Group2	-.0930	.23024	1.000
	Group4	.0449	.24242	1.000
Group4	Group1	.3291	.22205	.846
	Group2	-.1378	.21787	1.000
	Group3	-.0449	.24242	1.000

Based on observed means.

Appendix H: Factor Analysis

H.1 Business-level Strategy

Table H.1: Cost-related Strategy

Variable	1	2	3	4	5	6
cr1	1.000					
cr2	.535**	1.000				
cr3	.462**	.575**	1.000			
cr4	.512**	.527**	.554**	1.000		
cr5	.284**	.347**	.377**	.452**	1.000	
cr6	.292**	.374**	.423**	.433**	.391**	1.000

** Correlation is significant at the 0.01 level (2-tailed).

Table H.2: Differentiation

Variable	1	2	3	4	5	6	7	8	9
diff1	1.000								
diff2	.219*	1.000							
diff3	.180*	.616**	1.000						
diff4	.142	.489**	.636**	1.000					
diff5	.153	.225*	.216*	.448**	1.000				
diff6	.197*	.355**	.256**	.272**	.257**	1.000			
diff7	.115	.383**	.250**	.285**	.441**	.364**	1.000		
diff8	.261**	.182*	.083	-.046	-.021	.134	.191*	1.000	
diff9	.094	.142	.131	.067	.042	.130	.150	.255**	1

* Correlation is significant at the 0.05 level (2-tailed).
** Correlation is significant at the 0.01 level (2-tailed).

Table H.3: Focus

	1	2	3	4
Focus1	1.000			
Focus2	.053	1.000		
Focus3	.337**	.187*	1.000	
Focus4	.122	.292**	.344**	1.000

* Correlation is significant at the 0.05 level (2-tailed).
** Correlation is significant at the 0.01 level (2-tailed).

Table H.4: Communalities

	Initial	Extraction
Differentiation8	1.000	.669
Differentiation3	1.000	.829
Differentiation4	1.000	.749
Differentiation2	1.000	.687
Differentiation6	1.000	.431
Differentiation9	1.000	.373
Differentiation7	1.000	.672
Differentiation1	1.000	.315
Differentiation5	1.000	.706

Extraction Method: Principal Component Analysis.

Table H.5: Total Variance Explained

Component	Initial Eigenvalues		
	Total	% of Variance	Cumulative %
1	3.032	33.689	33.689
2	1.359	15.104	48.794
3	1.041	11.563	60.357
4	.913	10.142	70.498
5	.772	8.574	79.072
6	.704	7.823	86.896
7	.518	5.753	92.648
8	.374	4.153	96.802
9	.288	3.198	100.000

Extraction Method: Principal Component Analysis.

H.2 External Business Environment

Table H.6: Communalities

	Initial	Extraction
Env. - Dynamism1	1.000	.721
Env. - Dynamism2	1.000	.467
Env. - Dynamism3	1.000	.664
Env. - Dynamism4	1.000	.592
Env. - Heterogeneity1	1.000	.336
Env. - Heterogeneity2	1.000	.501
Env. - Hostility1	1.000	.615
Env. - Hostility2	1.000	.764
Env. - Hostility3	1.000	.800
Env. - Hostility4	1.000	.382

Extraction Method: Principal Component Analysis.

Table H.7: Total Variance Explained

	Initial Eigenvalues		
Factor	Total	% of Variance	Cumulative %
1	2.718	27.180	27.180
2	1.780	17.796	44.977
3	1.346	13.457	58.434
4	.913	9.134	67.568
5	.849	8.487	76.054
6	.656	6.562	82.617
7	.628	6.279	88.895
8	.442	4.418	93.314
9	.348	3.484	96.797
10	.320	3.203	100.000

H.3 Strategic Planning

Table H.8: Correlation Matrix

Variable	1	2	3	4	5	6	7	8
sp1	1							
sp2	.534**	1						
sp3	.615**	.267**	1					
sp4	.469**	.300**	.428**	1				
sp5	.345**	.217*	.422**	.194*	1			
sp6	.349**	.099	.644**	.304**	.468**	1		
sp7	.365**	.141	.597**	.200*	.589**	.644**	1	
sp8	.490**	.256**	.481**	.271**	.410**	.456**	.474**	1

* Correlation is significant at the 0.05 level (2-tailed).
** Correlation is significant at the 0.01 level (2-tailed).

Table H.9: Communalities

	Initial	Extraction
Strategic Planning1	1.000	.761
Strategic Planning2	1.000	.658
Strategic Planning3	1.000	.698
Strategic Planning4	1.000	.490
Strategic Planning5	1.000	.538
Strategic Planning6	1.000	.711
Strategic Planning7	1.000	.764
Strategic Planning8	1.000	.500

Extraction Method: Principal Component Analysis.

Table H.10: Total Variance Explained

Component	Initial Eigenvalues		
	Total	% of Variance	Cumulative %
1	3.843	48.038	48.038
2	1.278	15.973	64.011
3	.787	9.832	73.843
4	.600	7.502	81.345
5	.530	6.627	87.972
6	.403	5.034	93.006
7	.316	3.950	96.956
8	.244	3.044	100.000

H.4 Strategy Implementation

Table H.11: Correlation Matrix

	1	2	3	4	5	6	7	8
Imp_fami	1.000							
Imp_asse	.596**	1.000						
Imp_spec	.613**	.670**	1.000					
Imp_reso	.499**	.512**	.611**	1.000				
Imp_acce	.471**	.534**	.581**	.596**	1.000			
Imp_rece	.437**	.566**	.459**	.549**	.606**	1.000		
Imp_s_fa	.498**	.569**	.608**	.605**	.503**	.722**	1.000	
Imp_ Prio	.514**	.498**	.604**	.584**	.395**	.454**	.620**	1.000

** Correlation is significant at the 0.01 level (2-tailed).

Table H.12: Communalities

	Initial	Extraction
Imp. - Familiarity	1.000	.544
Imp. - Assessability	1.000	.630
Imp. - Specificity	1.000	.685
Imp. - Resourcing	1.000	.632
Imp. - Acceptability	1.000	.560
Imp. - Receptivity	1.000	.589
Imp. - Structural Facilitation	1.000	.680
Imp. - Priority	1.000	.557

Extraction Method: Principal Component Analysis.

Table H.13: Total Variance Explained

Component	Initial Eigenvalues		
	Total	% of Variance	Cumulative %
1	4.876	60.953	60.953
2	.732	9.150	70.102
3	.635	7.933	78.035
4	.533	6.657	84.693
5	.405	5.061	89.753
6	.328	4.096	93.849
7	.302	3.780	97.630
8	.190	2.370	100.000

Extraction Method: Principal Component Analysis.

H.5 Organisational Structure

Table H.14: Correlation Matrix

	1	2	3	4	5	6	7	8	9	10	11
Structure1	1.000										
Structure2	.450**	1.000									
Structure3	.305**	.156	1.000								
Structure4	.110	.084	.248**	1.000							
Structure5	.258**	.081	.023	.109	1.000						
Structure6	.217*	.055	.270**	.122	-.195*	1.000					
Structure7	.180*	.166	.116	.161	.151	.210*	1.000				
Structure8	.278**	-.038	.281**	.286**	.004	.367**	-.045	1.000			
Structure9	.050	.119	.025	.073	-.133	.036	-.164	.244**	1.000		
Structure10	.052	.129	.139	.158	.260**	.085	-.197*	.189*	.405**	1.000	
Structure11	.004	-.040	.240**	.125	-.118	.244**	.317**	.345**	.202*	.495**	1.000

* Correlation is significant at the 0.05 level (2-tailed).
** Correlation is significant at the 0.01 level (2-tailed).

Table H.15: Communalities

	Initial	Extraction
Structure1	1.000	.660
Structure2	1.000	.777
Structure3	1.000	.445
Structure4	1.000	.409
Structure5	1.000	.784
Structure6	1.000	.744
Structure7	1.000	.595
Structure8	1.000	.607
Structure9	1.000	.497
Structure10	1.000	.663
Structure11	1.000	.631

Extraction Method: Principal Component Analysis.

Table H.16: Total Variance Explained

Component	Initial Eigenvalues		
	Total	% of Variance	Cumulative %
1	2.518	22.890	22.890
2	1.962	17.833	40.723
3	1.251	11.370	52.093
4	1.081	9.830	61.923
5	.927	8.423	70.346
6	.835	7.587	77.933
7	.641	5.828	83.761
8	.598	5.437	89.198
9	.477	4.339	93.537
10	.400	3.637	97.174
11	.311	2.826	100.000

Extraction Method: Principal Component Analysis.

H.6 Organisational Performance

Table H.17: Correlation Matrix – Objective Fulfilment

Variable	1	2	3	4	5	6	7
per_of1	1						
per_of2	.414**	1					
per_of3	.090	.319**	1				
per_of4	.117	.294**	.599**	1			
per_of5	.145	.235**	.297**	.286**	1		
per_of6	.221*	.320**	.172	.302**	.380**	1	
per_of7	.234**	.414**	.332**	.368**	.380**	.421**	1

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

Table H.18: Communalities

	Initial	Extraction
Perf. - Obj. Fulfilment1	1.000	.646
Perf. - Obj. Fulfilment2	1.000	.571
Perf. - Obj. Fulfilment3	1.000	.705
Perf. - Obj. Fulfilment4	1.000	.704
Perf. - Obj. Fulfilment5	1.000	.378
Perf. - Obj. Fulfilment6	1.000	.445
Perf. - Obj. Fulfilment7	1.000	.538

Extraction Method: Principal Component Analysis.

Table H.19: Total Variance Explained

Component	Initial Eigenvalues		
	Total	% of Variance	Cumulative %
1	2.848	40.690	40.690
2	1.140	16.282	56.972
3	.919	13.127	70.099
4	.636	9.082	79.181
5	.583	8.329	87.510
6	.506	7.227	94.737
7	.368	5.263	100.000

Table H.20: Correlations

Variable	1	2	3	4	5	6	7	8	9
per_rcp1	1.000								
per_rcp2	0.478**	1.000							
per_rcp3	0.601**	0.476**	1.000						
per_rcp4	0.372**	0.779**	0.363**	1.000					
per_rcp5	0.264**	0.659**	0.317**	0.867**	1.000				
per_rcp6	0.361**	0.768**	0.451**	0.788**	0.703**	1.000			
per_rcp7	0.317**	0.587**	0.364**	0.691**	0.713**	0.743**	1.000		
per_rcp8	0.485**	0.703**	0.505**	0.625**	0.592**	0.663**	0.567**	1.000	
per_rcp9	0.506**	0.464**	0.609**	0.383**	0.368**	0.414**	0.374**	0.619**	1.000

** Correlation is significant at the 0.01 level (2-tailed).

Table H.21: Communalities

	Initial	Extraction
Perf. - Rel. Comp. Perf.1	1.000	.681
Perf. - Rel. Comp. Perf.2	1.000	.754
Perf. - Rel. Comp. Perf.3	1.000	.740
Perf. - Rel. Comp. Perf.4	1.000	.869
Perf. - Rel. Comp. Perf.5	1.000	.822
Perf. - Rel. Comp. Perf.6	1.000	.810
Perf. - Rel. Comp. Perf.7	1.000	.705
Perf. - Rel. Comp. Perf.8	1.000	.704
Perf. - Rel. Comp. Perf.9	1.000	.686

Extraction Method: Principal Component Analysis.

Table H.22: Table Total Variance Explained

Component	Initial Eigenvalues		
	Total	% of Variance	Cumulative %
1	5.416	60.176	60.176
2	1.356	15.064	75.240
3	.531	5.901	81.142
4	.448	4.980	86.122
5	.376	4.178	90.300
6	.350	3.892	94.191
7	.254	2.818	97.010
8	.173	1.918	98.928
9	.096	1.072	100.000

Extraction Method: Principal Component Analysis.

Appendix I: Hypotheses Testing

Table I.1 Post Hoc Tests Dependent Variable: Mean of Performance – Objective Fulfilment

	(I) Business Strategy type	(J) Business Strategy type	Mean Difference (I-J)	Std. Error	Sig.
Tukey HSD	Cost-related	Differentiation	.0192308	.19989987	1.000
		Integrated Strategies	-.1911058	.18832011	.741
		Stuck-in-the-middle	.4992877	.19766628	.061
	Differentiation	Cost-related	-.0192308	.19989987	1.000
		Integrated Strategies	-.2103365	.20846212	.744
		Stuck-in-the-middle	.4800570	.21694228	.126
	Integrated Strategies	Cost-related	.1911058	.18832011	.741
		Differentiation	.2103365	.20846212	.744
		Stuck-in-the-middle	.6903935(*)	.20632125	.006
	Stuck-in-the-middle	Cost-related	-.4992877	.19766628	.061
		Differentiation	-.4800570	.21694228	.126
		Integrated Strategies	-.6903935(*)	.20632125	.006
Scheffe	Cost-related	Differentiation	.0192308	.19989987	1.000
		Integrated Strategies	-.1911058	.18832011	.794
		Stuck-in-the-middle	.4992877	.19766628	.100
	Differentiation	Cost-related	-.0192308	.19989987	1.000
		Integrated Strategies	-.2103365	.20846212	.797
		Stuck-in-the-middle	.4800570	.21694228	.186
	Integrated Strategies	Cost-related	.1911058	.18832011	.794
		Differentiation	.2103365	.20846212	.797
		Stuck-in-the-middle	.6903935(*)	.20632125	.013
	Stuck-in-the-middle	Cost-related	-.4992877	.19766628	.100
		Differentiation	-.4800570	.21694228	.186
		Integrated Strategies	-.6903935(*)	.20632125	.013
LSD	Cost-related	Differentiation	.0192308	.19989987	.924
		Integrated Strategies	-.1911058	.18832011	.312
		Stuck-in-the-middle	.4992877(*)	.19766628	.013
	Differentiation	Cost-related	-.0192308	.19989987	.924
		Integrated Strategies	-.2103365	.20846212	.315
		Stuck-in-the-middle	.4800570(*)	.21694228	.029
	Integrated Strategies	Cost-related	.1911058	.18832011	.312
		Differentiation	.2103365	.20846212	.315
		Stuck-in-the-middle	.6903935(*)	.20632125	.001
	Stuck-in-the-middle	Cost-related	-.4992877(*)	.19766628	.013
		Differentiation	-.4800570(*)	.21694228	.029
		Integrated Strategies	-.6903935(*)	.20632125	.001

* The mean difference is significant at the .05 level.

Table I.2: Post Hoc Tests Dependent Variable: Mean of Perf. - Relative Comp. Performance

	(I) Business Strategy type	(J) Business Strategy type	Mean Difference (I-J)	Std. Error	Sig.
Tukey HSD	Cost-related	Differentiation	-.2650	.21527	.609
		Integrated Strategies	-.3218	.20280	.390
		Stuck-in-the-middle	.4378	.21287	.173
	Differentiation	Cost-related	.2650	.21527	.609
		Integrated Strategies	-.0569	.22449	.994
		Stuck-in-the-middle	.7028(*)	.23363	.017
	Integrated Strategies	Cost-related	.3218	.20280	.390
		Differentiation	.0569	.22449	.994
		Stuck-in-the-middle	.7596(*)	.22219	.005
	Stuck-in-the-middle	Cost-related	-.4378	.21287	.173
		Differentiation	-.7028(*)	.23363	.017
		Integrated Strategies	-.7596(*)	.22219	.005
Scheffe	Cost-related	Differentiation	-.2650	.21527	.680
		Integrated Strategies	-.3218	.20280	.475
		Stuck-in-the-middle	.4378	.21287	.243
	Differentiation	Cost-related	.2650	.21527	.680
		Integrated Strategies	-.0569	.22449	.996
		Stuck-in-the-middle	.7028(*)	.23363	.033
	Integrated Strategies	Cost-related	.3218	.20280	.475
		Differentiation	.0569	.22449	.996
		Stuck-in-the-middle	.7596(*)	.22219	.011
	Stuck-in-the-middle	Cost-related	-.4378	.21287	.243
		Differentiation	-.7028(*)	.23363	.033
		Integrated Strategies	-.7596(*)	.22219	.011
LSD	Cost-related	Differentiation	-.2650	.21527	.221
		Integrated Strategies	-.3218	.20280	.115
		Stuck-in-the-middle	.4378(*)	.21287	.042
	Differentiation	Cost-related	.2650	.21527	.221
		Integrated Strategies	-.0569	.22449	.800
		Stuck-in-the-middle	.7028(*)	.23363	.003
	Integrated Strategies	Cost-related	.3218	.20280	.115
		Differentiation	.0569	.22449	.800
		Stuck-in-the-middle	.7596(*)	.22219	.001
	Stuck-in-the-middle	Cost-related	-.4378(*)	.21287	.042
		Differentiation	-.7028(*)	.23363	.003
		Integrated Strategies	-.7596(*)	.22219	.001

* The mean difference is significant at the .05 level.

Table I.3: Post Hoc Tests Dependent Variable: Mean of Performance – Objective Fulfilment

	(I) Type of business strategy	(J) Type of business strategy	Mean Difference (I-J)	Std. Error	Sig.
Tukey HSD	Cost-related	Differentiation	.0232143	.20044498	.999
		Integrated Strategies	-.2446429	.18766438	.562
		Stuck-in-the-middle	.4528571	.20701868	.133
	Differentiation	Cost-related	-.0232143	.20044498	.999
		Integrated Strategies	-.2678571	.19920382	.537
		Stuck-in-the-middle	.4296429	.21753385	.203
	Integrated Strategies	Cost-related	.2446429	.18766438	.562
		Differentiation	.2678571	.19920382	.537
		Stuck-in-the-middle	.6975000(*)	.20581717	.005
	Stuck-in-the-middle	Cost-related	-.4528571	.20701868	.133
		Differentiation	-.4296429	.21753385	.203
		Integrated Strategies	-.6975000(*)	.20581717	.005
Scheffe	Cost-related	Differentiation	.0232143	.20044498	1.000
		Integrated Strategies	-.2446429	.18766438	.638
		Stuck-in-the-middle	.4528571	.20701868	.194
	Differentiation	Cost-related	-.0232143	.20044498	1.000
		Integrated Strategies	-.2678571	.19920382	.614
		Stuck-in-the-middle	.4296429	.21753385	.278
	Integrated Strategies	Cost-related	.2446429	.18766438	.638
		Differentiation	.2678571	.19920382	.614
		Stuck-in-the-middle	.6975000(*)	.20581717	.012
	Stuck-in-the-middle	Cost-related	-.4528571	.20701868	.194
		Differentiation	-.4296429	.21753385	.278
		Integrated Strategies	-.6975000(*)	.20581717	.012
LSD	Cost-related	Differentiation	.0232143	.20044498	.908
		Integrated Strategies	-.2446429	.18766438	.195
		Stuck-in-the-middle	.4528571(*)	.20701868	.031
	Differentiation	Cost-related	-.0232143	.20044498	.908
		Integrated Strategies	-.2678571	.19920382	.181
		Stuck-in-the-middle	.4296429	.21753385	.051
	Integrated Strategies	Cost-related	.2446429	.18766438	.195
		Differentiation	.2678571	.19920382	.181
		Stuck-in-the-middle	.6975000(*)	.20581717	.001
	Stuck-in-the-middle	Cost-related	-.4528571(*)	.20701868	.031
		Differentiation	-.4296429	.21753385	.051
		Integrated Strategies	-.6975000(*)	.20581717	.001
Bonferroni	Cost-related	Differentiation	.0232143	.20044498	1.000
		Integrated Strategies	-.2446429	.18766438	1.000
		Stuck-in-the-middle	.4528571	.20701868	.184
	Differentiation	Cost-related	-.0232143	.20044498	1.000
		Integrated Strategies	-.2678571	.19920382	1.000
		Stuck-in-the-middle	.4296429	.21753385	.303
	Integrated Strategies	Cost-related	.2446429	.18766438	1.000
		Differentiation	.2678571	.19920382	1.000
		Stuck-in-the-middle	.6975000(*)	.20581717	.006
	Stuck-in-the-middle	Cost-related	-.4528571	.20701868	.184
		Differentiation	-.4296429	.21753385	.303
		Integrated Strategies	-.6975000(*)	.20581717	.006

* The mean difference is significant at the .05 level.

Table I.4: Post Hoc Tests Dependent Variable: Mean of Perf. - Relative Comp. Performance

	(I) Type of business strategy	(J) Type of business strategy	Mean Difference (I-J)	Std. Error	Sig.
Tukey HSD	Cost-related	Differentiation	-.1778	.21648	.844
		Integrated Strategies	-.1262	.20268	.925
		Stuck-in-the-middle	.5683	.22358	.059
	Differentiation	Cost-related	.1778	.21648	.844
		Integrated Strategies	.0516	.21514	.995
		Stuck-in-the-middle	.7460(*)	.23494	.010
	Integrated Strategies	Cost-related	.1262	.20268	.925
		Differentiation	-.0516	.21514	.995
		Stuck-in-the-middle	.6944(*)	.22229	.012
	Stuck-in-the-middle	Cost-related	-.5683	.22358	.059
		Differentiation	-.7460(*)	.23494	.010
		Integrated Strategies	-.6944(*)	.22229	.012
Scheffe	Cost-related	Differentiation	-.1778	.21648	.879
		Integrated Strategies	-.1262	.20268	.943
		Stuck-in-the-middle	.5683	.22358	.097
	Differentiation	Cost-related	.1778	.21648	.879
		Integrated Strategies	.0516	.21514	.996
		Stuck-in-the-middle	.7460(*)	.23494	.021
	Integrated Strategies	Cost-related	.1262	.20268	.943
		Differentiation	-.0516	.21514	.996
		Stuck-in-the-middle	.6944(*)	.22229	.024
	Stuck-in-the-middle	Cost-related	-.5683	.22358	.097
		Differentiation	-.7460(*)	.23494	.021
		Integrated Strategies	-.6944(*)	.22229	.024
LSD	Cost-related	Differentiation	-.1778	.21648	.413
		Integrated Strategies	-.1262	.20268	.535
		Stuck-in-the-middle	.5683(*)	.22358	.012
	Differentiation	Cost-related	.1778	.21648	.413
		Integrated Strategies	.0516	.21514	.811
		Stuck-in-the-middle	.7460(*)	.23494	.002
	Integrated Strategies	Cost-related	.1262	.20268	.535
		Differentiation	-.0516	.21514	.811
		Stuck-in-the-middle	.6944(*)	.22229	.002
	Stuck-in-the-middle	Cost-related	-.5683(*)	.22358	.012
		Differentiation	-.7460(*)	.23494	.002
		Integrated Strategies	-.6944(*)	.22229	.002
Bonferroni	Cost-related	Differentiation	-.1778	.21648	1.000
		Integrated Strategies	-.1262	.20268	1.000
		Stuck-in-the-middle	.5683	.22358	.074
	Differentiation	Cost-related	.1778	.21648	1.000
		Integrated Strategies	.0516	.21514	1.000
		Stuck-in-the-middle	.7460(*)	.23494	.011
	Integrated Strategies	Cost-related	.1262	.20268	1.000
		Differentiation	-.0516	.21514	1.000
		Stuck-in-the-middle	.6944(*)	.22229	.013
	Stuck-in-the-middle	Cost-related	-.5683	.22358	.074
		Differentiation	-.7460(*)	.23494	.011
		Integrated Strategies	-.6944(*)	.22229	.013

* The mean difference is significant at the .05 level.

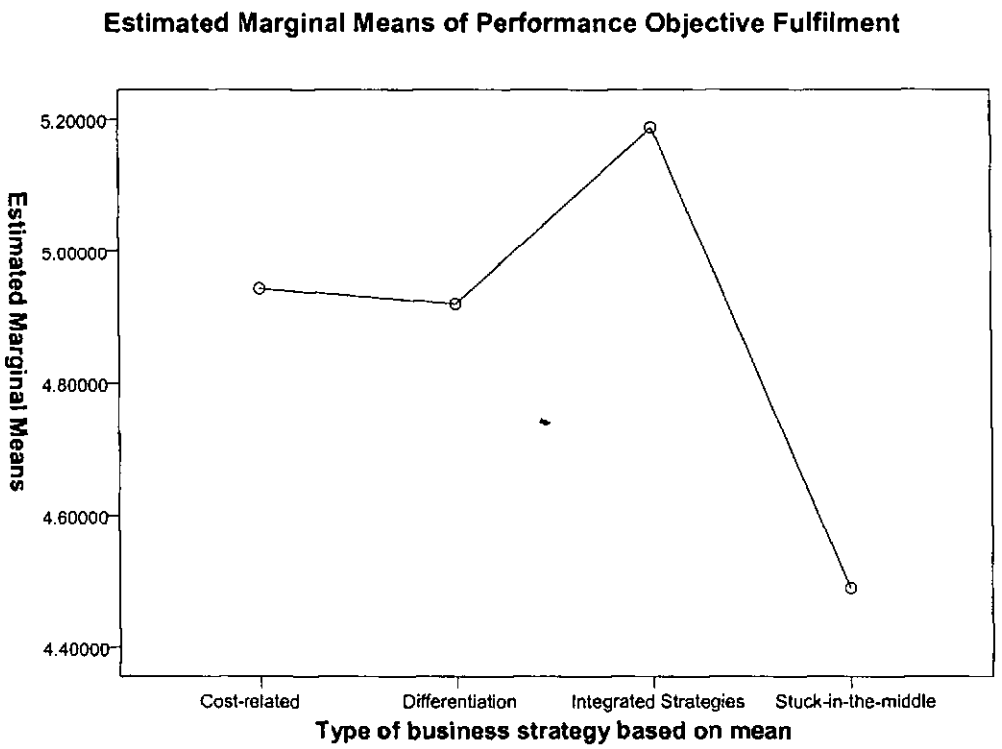

Fig I.1: Performance - Objective Fulfilment of Strategic Types based on mean

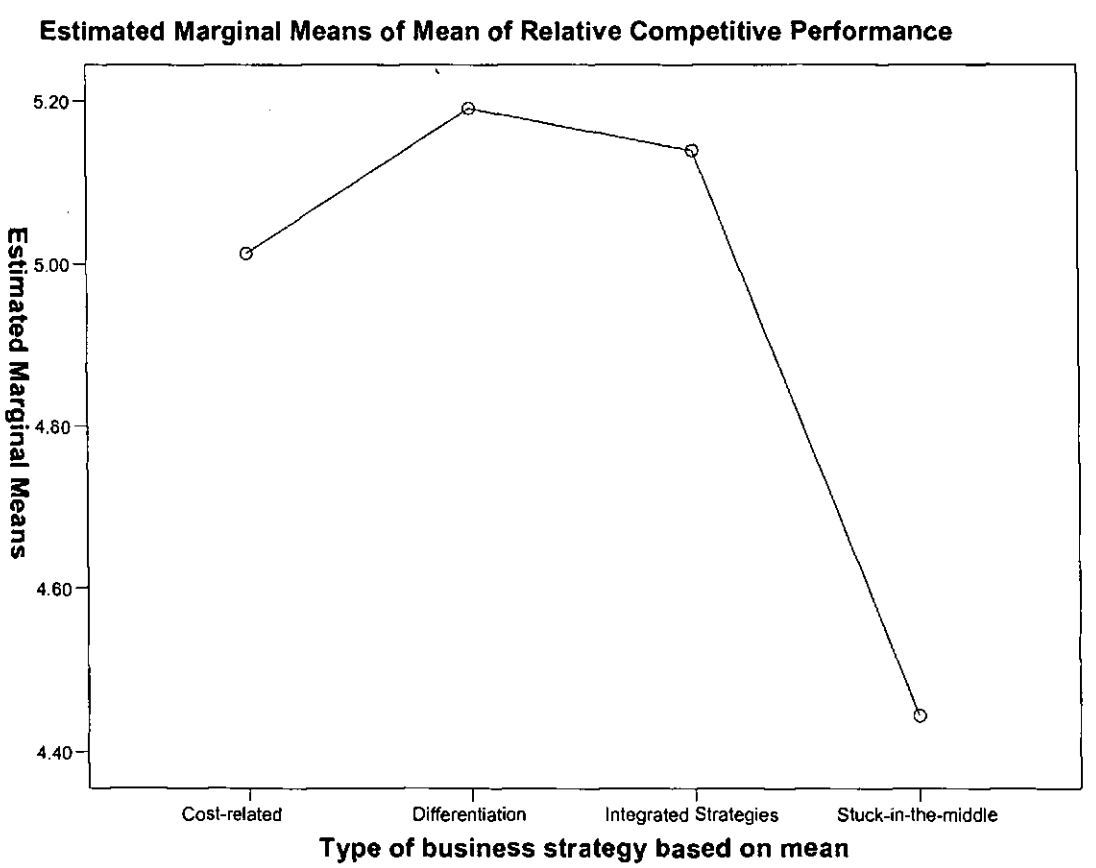

Fig I.2: Relative Competitive Performance of Strategic Types based on mean

Table I.5: Post Hoc Tests

Dependent Variable: Planning of Strategy Implementation

	(I) Business Strategy type based on median	(J) Business Strategy type based on median	Mean Difference (I-J)	Std. Error	Sig.
Tukey HSD	Cost-related	Differentiation	-.1667	.25299	.912
		Integrated Strategies	-.3046	.23834	.579
		Stuck-in-the-middle	.5445	.25017	.136
	Differentiation	Cost-related	.1667	.25299	.912
		Integrated Strategies	-.1379	.26383	.953
		Stuck-in-the-middle	.7112	.27456	.052
	Integrated Strategies	Cost-related	.3046	.23834	.579
		Differentiation	.1379	.26383	.953
		Stuck-in-the-middle	.8491(*)	.26112	.008
	Stuck-in-the-middle	Cost-related	-.5445	.25017	.136
		Differentiation	-.7112	.27456	.052
		Integrated Strategies	-.8491(*)	.26112	.008
Scheffe	Cost-related	Differentiation	-.1667	.25299	.933
		Integrated Strategies	-.3046	.23834	.653
		Stuck-in-the-middle	.5445	.25017	.198
	Differentiation	Cost-related	.1667	.25299	.933
		Integrated Strategies	-.1379	.26383	.965
		Stuck-in-the-middle	.7112	.27456	.087
	Integrated Strategies	Cost-related	.3046	.23834	.653
		Differentiation	.1379	.26383	.965
		Stuck-in-the-middle	.8491(*)	.26112	.017
	Stuck-in-the-middle	Cost-related	-.5445	.25017	.198
		Differentiation	-.7112	.27456	.087
		Integrated Strategies	-.8491(*)	.26112	.017
LSD	Cost-related	Differentiation	-.1667	.25299	.511
		Integrated Strategies	-.3046	.23834	.204
		Stuck-in-the-middle	.5445(*)	.25017	.031
	Differentiation	Cost-related	.1667	.25299	.511
		Integrated Strategies	-.1379	.26383	.602
		Stuck-in-the-middle	.7112(*)	.27456	.011
	Integrated Strategies	Cost-related	.3046	.23834	.204
		Differentiation	.1379	.26383	.602
		Stuck-in-the-middle	.8491(*)	.26112	.001
	Stuck-in-the-middle	Cost-related	-.5445(*)	.25017	.031
		Differentiation	-.7112(*)	.27456	.011
		Integrated Strategies	-.8491(*)	.26112	.001

The mean difference is significant at the .05 level.

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