Effects of Environment, Structure and Past Performance
on Strategic Decision Processes:
An Empirical Investigation

By

Ali Ender Altunoglu

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Dedicated
to my brothers
for whose continuous support and
moral courage
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ABSTRACT

This research examines the nature and impact of environmental and organisational variables on strategy processes and firm performance in Fortune 500 firms. For several decades, research on decision processes has developed conflicting findings about the superiority of the different types of decision process. This study maintains that environmental and organisational conditions of the firm ought to be examined by the strategist.

This thesis has three main objectives:
(i) to provide a detailed review of the synoptic and incremental schools,
(ii) to investigate how environmental and intraorganisational variables affect the decision processes,
(iii) to investigate the interaction effects of environmental and organisational factors with decision processes on firm performance.

To attain such objectives, multiple regression analysis is applied.

The first main finding is that environmental munificence should be taken into consideration in the strategic decision process. Secondly, organisational variables, centralisation, formalisation and size have considerable impact on the variations in the strategy process. This thesis maintains that as organisational structure becomes more centralised and formalised and firms grow in size, top executives tend to employ more rational and comprehensive decision processes. Another main finding is that organisations which use the synoptic process in less uncertain environments are likely to perform better than firms which implement incremental processes.

The findings imply that environmental and organisational factors are crucial in the synoptic-incremental dimension. In line with contingency theory, this thesis suggests that the strategic decision process is affected by the external environment and organisational variables.
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CHAPTER ONE
INTRODUCTION

1.1 Context of the Topic

Some management theories, for instance contingency theory, resource dependency, state that an organisation's survival depends on its ability to adapt successfully to a changing environment. The literature suggests that the strategy making process is one tool to manage environmental turbulence. Therefore, strategic decision making has become one of the most analysed areas of current management research.

Before analysing strategy process it is appropriate to state the meaning of “strategy”. The word strategy derives from the Greek language. The emergence of the term paralleled the increasing complexity of military decision-making. Also, the increasing significance of naval forces during this period multiplied the variables a commander had to consider in planning action. Consequently, questions of coordination and synergy among the various emergent units of their organisations become imperative considerations for successful commanders.
The Oxford Dictionary (1989) defines strategy as "in (theoretical) circumstances of competition or conflict, as in the theory games, decision theory, business administration etc., a plan for successful action based on the rationality and interdependence of the moves of the opposing participants." As the definition states, the planning theme remains an important component of most management definitions of strategy.

Countless authors have suggested definitions of strategy in the field of strategic management but the definition provided by Andrews (1994) is among the most frequently cited. He marked out corporate strategy as "the pattern of decisions in a company that determines and reveals its objectives, purposes, or goals, procedures the principal policies and plans for achieving those goals, and defines the range of business the company is to pursue, the kind of economic and human organisation it is or intends to be, and the nature of the economic and noneconomic contribution it intends to make to its shareholders, employees, customers and communities." (p: 40).

There are those who believe that managers and consultants confuse "strategy" and "operational effectiveness". In order to distinguish between these concepts, Porter (1996, p:68-75) noted that strategy is the creation of a unique and valuable position, involving a different set of activities, making trade-offs in competing and creating fit among a company’s activities. He argues that if there were only one ideal position, there would be no need for strategy. The essence of strategic positioning is to choose activities that are different from those of the rivals. If the same set of activities were best to produce all varieties, meet all needs, and access all customers, companies could easily shift among them and operational effectiveness would
determine performance. Moreover, the essence of strategy is choosing what not to do. Without trade-offs, any good idea could and would be quickly imitated. Performance would once again depend entirely on operational effectiveness. In addition, if there is no fit among activities, there is no distinctive strategy and little sustainability.

Some researchers define strategy “as a pattern in a stream of decisions” (Mintzberg and Waters, 1985). They argue that strategy is not only what is intended but also what is realised. While most theorists focus almost exclusively on intended strategy, this line of thinking stresses that a shift focus toward realised strategy offers a different perspective on the strategy process.

Two different approaches to the strategic decision making process exist in the strategic management literature; namely, the synoptic process and the incremental process. This research emphasises these two approaches. Even though some authors discuss other schools of thought, they seem, in a broad sense, to be consistent with these two approaches. For instance, Fredrickson’s (1983) detailed study points out two schools which are consistent with this research. Mintzberg (1990b:171) identified ten different schools of thought. Table 1.1. illustrates the ten schools and their views of process. There are those which are prescriptive in orientation, treating strategy formation as a process of conceptual design, formal planning, and analytical positioning. Six other schools deal with specific aspects of the process in a descriptive way, and are labelled the entrepreneurial school (concerned with strategy formation as a visionary process), the cognitive school (a mental process), the learning school (an emergent process), the political school (a power process), the cultural school (an ideological process), and the environmental school (a passive
process). The final school, which is also descriptive but integrative and is labelled configurational, since it seeks to delineate the stages and sequences of the process, helps to place the findings of these other schools in context. It seems that the first three schools in the Mintzberg study; design, planning, positioning, are in the same line with the synoptic model in our study. The other seven schools; entrepreneurial, cognitive, learning, political, cultural, environmental and configurational schools are consistent with the incremental model. Therefore, this thesis divides the ten schools into two approaches. The term synoptic will be used to define prescriptive schools, whereas incrementalism will refer to descriptive views.

<table>
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<th>School</th>
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<td>Design</td>
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<td>Cultural</td>
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It appears that two alternative views recognise different methods of decision making. While the synoptic approach is the oldest and still the most influential, relying on the rational and analytical planning methods, the incremental approach seems to be developed in reaction to the synoptic process and involves a number of
theories with variations such as logical incrementalism, (Quinn, 1980), and emergent strategy (Mintzberg, 1994).

Each approach has a different answer to the question “what is strategy?” The synoptic model defines strategy as a rational process of deliberate calculation and analysis, designed to maximise long-term advantage (Ansoff, 1987). Strategy matters in that rational analysis and objective decisions make the difference between success and failure in the long run. On the other hand, the proponents of the incremental mode argue that people are different in their interests, limited in their understanding, wandering in their attention, and careless in their actions to unite around and then carry through a perfectly calculated plan (Cyert and March, 1963). They imply that strategy emerges from a pragmatic process of learning and compromise rather than from a rational series of grand leaps forward (Mintzberg, 1994). They suggest that organisational strategy cannot be predetermined, that it evolves as internal decisions and external events interact. On the other hand, Chaffee (1985) argued that these theories agree in some areas. For instance, they both recognise that strategy process involves conceptual as well as analytical exercises. Chaffe observed that some authors emphasise the analytical tools more than others, but most agree that the main work is completed by the leaders of the organisation.

1.2. Research Aims and Methodology

Previous research suggests that strategy process characteristics might depend on the environment in which firms compete and their structural situation. This research focuses on the two alternative strategic decision processes and their
relationships with environmental and organisational factors, and has three main objectives:

1. to provide a detailed review of the two alternative schools,
2. to investigate how environmental and intraorganisational variables affect the decision making processes,
3. to investigate the interaction effects of environmental and organisational factors with decision processes on firm performance,

A brief account of the research method of this study is as follows. Greater detail will be given in Chapter Four. The Fortune 500 list is chosen as the sample for this research. The methodology of the work involves four steps:

1. operationalisation of variables; variables are identified and the operationalisation of the variables is accomplished through a review of the relevant literature and an assessment of the data available from the sample to be used.
2. data collection; the necessary data is gathered by using a mail survey.
3. investigation of the data; the data is tested to determine if any of its characteristics may invalidate the use of regression analysis. To do so, reliability testing and factor analysis are employed.
4. data analysis; the hypotheses are tested by utilising multiple regression analysis on cross-sectional data. The justification for employing these techniques is explained in greater detail in the respective chapters.

1.3. Research Model and Hypotheses

The match between environment and the organisation has been studied under contingency theory (Downey et. al., 1975). Contingency theory makes two
assumptions: (1) there is no one best way to organise and (2) any way of organising is not equally effective under all conditions (Galbright, 1973). Consequently, it could be maintained that the environmental and organisational conditions of the firm ought to be examined by the strategist. However, there are those who criticise contingency theory. For instance, Schoonhoven (1981) has objected on the grounds that: (1) contingency theory is not a theory at all, it is rather more of an “orienting strategy” (2) contingency theorist rarely, if ever, acknowledge the interactions inherent in contingency relationship, (3) the functional form of the interactions inherent in contingency are rarely stated, and (4) the use of the general linear model and correlations tends to impose linearity on the contingency relationships which may have a non-linear form.

In line with contingency theory, it would seem reasonable to suggest that the strategic decision process is affected by the external environment. Strategic planning literature recognises the need for organisations to establish formal linkages between external elements of the firm and internal decision-making. The previous literature on organisational environments observes two main perspectives; perceived uncertainty and munificence are considered as the environmental contingencies. This thesis argues that environmental uncertainty has an impact on the strategic decision process. The previous research provides some empirical support for this assertion. In addition to environmental uncertainty, munificence might influence the strategy process. As the environment becomes less munificent or more hostile, firms are subjected to greater uncertainty. Management’s ability to cope with these conditions by reducing the firm’s dependence on, or increasing its control over, these resources will affect organisational performance (March and Simon, 1958).
Figure 1.1: Conceptual Model

- Strategic Process
- Environmental Uncertainty
- Munificence
- Centralisation
- Formalisation
- Size
- Performance
In addition to environmental factors, this research posits that organisational contingencies might have a noticeable effect on strategic decision making. The previous research argued that organisational structure, size and firm performance might effect the level of the decision making process. The characteristics of strategic decision processes are subject to a variety of organisational influences. The first factor recognised in this work is organisational structure. It is expected that the degree of the organisational structure may play a crucial role in determining the degree of use of the synoptic process. In addition to this, organisation size can also affect the process. Finally, as Fredrickson (1985) argued, it is expected that there is a relationship between past performance of the firm and its strategic decision type. Under the light of these discussions, a model (see figure 1.1.) has developed. This model is adopted from Hyun (1992). The following hypotheses are used as a framework to guide the research. The hypotheses are directly related to the model discussed. The model and related hypotheses will be discussed at length in chapter three.

The research hypotheses are:

**HYPOTHESIS 1A:** As the managerial perceptions of environmental uncertainty increase, firms are most likely to use the incremental strategy. In contrast, firms that perceive a low level of environmental uncertainty are most likely to use the synoptic strategy.

**HYPOTHESIS 1B:** Firms that perceive high environmental uncertainty and use the incremental strategy are more likely to perform better than those using synoptic strategies. In contrast, firms that perceive low environmental uncertainty and use the synoptic strategy are likely to perform better than those using incremental strategies.

**HYPOTHESIS 2A:** The higher the environmental munificence, the greater the level of using synoptic strategies. In contrast, the lower the environmental munificence, the greater the level of using incremental strategies.
HYPOTHESIS 2B: Organisations using an incremental strategy are more likely to perform better than those using a synoptic strategy under low environmental munificence. In contrast, organisations using a synoptic strategy are more likely to perform better than those using an incremental strategy under high environmental munificence.

HYPOTHESIS 3A: Firms with centralised structure are most likely to use a synoptic process. In contrast firms with decentralised structure are most likely to use an incremental process.

HYPOTHESIS 3B: Firms with centralised structure, using synoptic strategies are more likely to perform better than those using incremental strategies. In contrast, firms with decentralised structure, using incremental strategies are more likely to perform better than those using synoptic strategies.

HYPOTHESIS 3C: Firms with formalised structure are most likely to use synoptic strategies. In contrast, firms with less formalised structure are most likely to use incremental strategies.

HYPOTHESIS 3D: Firms with formalised structure and using synoptic strategies are more likely to perform better than those using incremental strategies. In contrast, firms with less formalised structure and using incremental strategies are more likely to perform better than those using synoptic strategies.

HYPOTHESIS 4A: Larger firms are more likely to have a synoptic strategy, whereas smaller firms are more likely to have an incremental strategy.

HYPOTHESIS 4B: Firms with larger size and using a synoptic strategy are more likely to perform better than other large firms using an incremental strategy. On the contrary, firms with smaller size and using an incremental strategy are more likely to perform better than other small firms using a synoptic strategy.

HYPOTHESIS 5. More performanced firms are most likely to have an incremental strategy, whereas less performanced firms are most likely to use a synoptic strategy.

1.4. Organisation of the thesis

This thesis consists of the following chapters:

Chapter Two reviews the two alternative strategy processes. Their characteristics and assumptions will be identified. Moreover, the criticisms of the
processes will be addressed in the same chapter. The research model and related hypotheses will be discussed. A survey of empirical studies will be presented in Chapter Three.

Chapter Four outlines and describes the methodology of this thesis. The research method and the issues related to data, i.e., sampling method, data sources, will also be presented in this chapter. Chapter Five examines the relations in the model, firstly, reliability and validity tests will be applied, then the relations between strategy process and environmental and organisational factors will be tested. The interactions of strategy processes and factors will be measured in the following subsection. Chapter Six will present the conclusions and contributions of this thesis. This chapter also suggests directions for future research.
CHAPTER TWO

THE STRATEGIC PLANNING PROCESS:

Two Alternative Views

2.1. INTRODUCTION

Studies in the strategic management field have moved away from substantive issues, with a bias towards the question of ‘what is the best strategy?’, towards the question of ‘how effective strategies are made?’. As briefly discussed in the previous chapter, the literature, in a broad sense, provides two alternative approaches to the latter question. While some researchers argue that strategy would be better developed through a formalised planning system (Ansoff 1987), the critics of this school claim that strategy would be more effective through incremental, disjointed steps (Quinn, 1980). Many of the models discussed in the strategic decision making literature are based on the rational process. They are presented as ideals and generally addressed by such names as “rational comprehensive”, “planning mode” or “synoptic process”. On the other hand, other models are revealed as alternatives. These models are referred to by different labels such as “incremental process”, “adaptive model” or “emergent strategy”. Some of the names which appear in the literature are illustrated in Table 2.1. (p:16-17). While the ‘synoptic’ concept will be used to describe the first
model, the term 'incremental' will be used to describe the other school of thought. The reason for choosing these terms is that they are widely applied in the literature.

Early strategic management literature advanced a synoptic model of strategic choice (Andrews 1987, Ansoff 1987). As a result, this planning model remains dominant in the teaching and practice of strategic management. Even though the planning models vary somewhat, there is a dominant theme in this classical approach. These models suggest that managers must analyse both their external environment and internal operations (Andrews, 1994). From these evaluations the key external opportunities and threats together with internal strengths and weaknesses are highlighted. A strategy is formulated in the context of these opportunities and threats as well as the strengths and weaknesses of the firm.

Some studies in the field argued that strategy would more effectively emerge through ad-hoc processes in which choices arise in response to changing conditions (Mintzberg, 1994). Lindblom’s (1959) article “The Science of Muddling Through” initiated this kind of thinking. In the same way, Cyert and March’s (1963) behavioural theory challenged the key assumptions of the synoptic school. Following this line of thinking, an increasing number of writers have advocated the importance of top management vision and the development of corporate values in the strategy process. Consequently, rather than be comprehensive and rational, top managers should work to create a general sense of purpose and direction that will guide the actions taken by members of the organisation.

The main objective of this chapter is to review and compare previous research concerning synoptic and incremental decision processes. It would seem reasonable to suggest that the review of processes may provide a theoretical basis for understanding
the factors affecting the use of models. It is expected that this investigation will enable us to develop a framework in the following chapter.

The next section of this chapter defines the strategy concept according to the two schools. A number of descriptions used in the literature will be highlighted. It is believed that knowledge of the definition will contribute to understanding of the approaches. The synoptic model, consisting of the formulation and implementation processes, and the incremental model, will be briefly explained in the same section. A comparison of the alternative approaches will also be provided in the same section. The third section of the chapter will consider the characteristics of the processes derived from the previous section and will also include comparisons of the schools under these characteristics. The following section will address the assumptions of the schools. The last part of the chapter will review criticisms of the school in light of the discussions in the fourth and fifth sections.

2.2. STRATEGY DEFINITIONS OF THE TWO ALTERNATIVE APPROACHES

Langley (1989) argues that formal analysis (i.e. synoptic) definition is hard to develop. She highlights that while some writers (Mintzberg 1973) freely note the role of synoptic analysis in the abstract as a kind of systematic approach to decision making, most empirical researchers have limited their research either to a specific type of formal technique or more commonly to work done by specialists of a particular kind. This research will follow the former kind of research.

One of the most cited strategy definitions has been stated by Chandler, a proponent of the synoptic approach. Chandler defined synoptic strategy as;
"the determination of the basic long-term goals of an enterprise, and the adaptation of courses of action and the allocation of resources necessary for carrying out these goals" (1962, p:13).

According to Lyles and Thomas (1988), the synoptic model corresponds to the classical economic view of decision making. It is grounded in rationality, optimality, and consistency. There are several implicit assumptions in such definitions. These assumptions will be analysed in the following sections of the chapter.

Detailed analysis of the literature reveals the synoptic process as a series of sequential steps. For example, Mintzberg (1994) noted that in the synoptic model, strategy is formed at the intersection of an external appraisal of the threats and opportunities facing an organisation in its environment, considered in terms of key factors for success, and an internal appraisal of the strengths and weaknesses of the organisation itself. While opportunities are exploited by inside strengths, threats are avoided and weaknesses circumvented according to strategic goals and objectives set by chief executives. In addition to the analytical process, the synoptic perspective also involves generation and evaluation of strategic options capable of attaining the goals (Bailey and Johnson, 1992). It is obvious that such an analytical process requires information. According to Greenwood and Thomas (1981), the required information can be obtained by analysing the external environment, the industry and the firm itself. As seen from the different definitions, the synoptic process underlines rationality, the analytical process, the importance of information gathering and the specification of goals. These characteristics are also mentioned by Langley (1989) noting that synoptic analysis "generates information, it is a vehicle for communicating ideas, it focuses attention on problems, it symbolises rationality and it
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<th>Planning Mode</th>
<th>Adaptive Mode</th>
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<td>Mintzberg 1973</td>
<td>“a model in which formal analysis is used to plan explicit, integrated strategies for the future.”</td>
<td>“a process in which organisation adapts in small, disjointed steps to a difficult environment”</td>
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<tr>
<td>Fredrickson 1983</td>
<td>“a process in which a systematic method to solve an entire problem is used.”</td>
<td>“a process in which the problem is divided into subproblems that are solved sequentially”</td>
</tr>
<tr>
<td>Bailey and Johnson 1992</td>
<td>“a distinctively intentional process involving a logical, rational, planned approach to the organisation and its environment”</td>
<td>“the strategic subsystems, each of which is concerned with different strategic issues, which raise the awareness of potential problems.”</td>
</tr>
<tr>
<td>Lyles and Thomas 1988</td>
<td>“a model is grounded in rationality, optimality and consistency.”</td>
<td>“a process in which changes is introduced slowly and incrementally”</td>
</tr>
<tr>
<td>Chaffee 1985</td>
<td>“strategy consists of integrated decisions, actions, or plans that will set and achieve viable organisational goals.”</td>
<td>“a process in which organisation develop a match between opportunities and organisation’ capabilities.”</td>
</tr>
<tr>
<td>Author</td>
<td><strong>Rational Planning</strong></td>
<td><strong>Emergent Strategy</strong></td>
</tr>
<tr>
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<tr>
<td>Idenburg 1993</td>
<td>“a form of strategy development is concerned with the development of attainable objectives”</td>
<td>a strategy that reacts in a flexible, opportunistic manner to new, unpredictable developments.</td>
</tr>
<tr>
<td>Bourgeois 1980</td>
<td><strong>Rational Comprehensive Approach</strong></td>
<td>“a process of search of alternatives is attempted and their expected outcomes calculated.”</td>
</tr>
<tr>
<td></td>
<td><strong>Political-Incremental Approach</strong></td>
<td>“a search for alternatives only until an ‘acceptable’ solution is found”</td>
</tr>
<tr>
<td>Mintzberg 1994</td>
<td><strong>Strategic Planning</strong></td>
<td>“a deliberate and cerebral process in which strategies are articulated and implemented formally”</td>
</tr>
<tr>
<td></td>
<td><strong>Emergent Strategy</strong></td>
<td>“a formalised procedure to produce an articulated result, in the form of an integrated system of decisions.”</td>
</tr>
<tr>
<td>Dean and Sharfman 1993b</td>
<td><strong>Procedural Rationality</strong></td>
<td>“a sensible or logical process in which a systematic method is used to pursue one’s goals.”</td>
</tr>
<tr>
<td></td>
<td><strong>Political Behaviour</strong></td>
<td>“activities leading to the acquisition and use of power for one’s own ends”</td>
</tr>
<tr>
<td>Camillus 1982</td>
<td><strong>Synoptic Formalism</strong></td>
<td>“a rational way to approach problem solving.”</td>
</tr>
<tr>
<td></td>
<td><strong>Logical Incrementalism</strong></td>
<td>“a process which recognises the existence of power, politics and social factors”</td>
</tr>
</tbody>
</table>
consumes time and energy.”(p:603).

As mentioned above, it is argued that the synoptic approach consists of sub-analyses. For example, Andrews (1994) divided the model into two aspects; that is the formulation and implementation processes. He noted that these are interrelated in real life but separable for the purposes of analysis (see Figure 2.1). The first step, strategy formulation, is defined by Wheelen and Hunger (1994, p:48) as “the development of long-range plans for the effective management of environmental opportunities and threats, in the light of corporate strengths and weaknesses.” As Andrews (1994) stated, strategy formulation involves mainly four activities: (1) identifying opportunities and threats in the environment, (2) defining the company’s potential capacity, (3) personal qualities of the chief executives, (4) analysing social values. These stages can be seen in Ansoff’s text (1987): first, goals are established, after which (using a series of analytical techniques) alternatives are evolved and (still using analytical techniques) a choice is made between them, possibly after some adjustments in the original goals.

Wheelen and Hunger (1994, p:50) described strategy implementation, the second aspect, as “the process by which strategies and policies are put into action through the development of programs, budgets and procedures”. They further claimed that implementation may involve changes within the overall culture, structure, and management system of the organisation. Andrews (1994) adds another subactivity to the implementation process, namely a control system which is required to direct the company toward the kind of behaviour underlined by the organisational goal.
Langley (1989) argued that synoptic analysis is carried out for specific purposes. Firstly, it is applied to obtain information to gain a better understanding of the issues. Secondly, it is simply used to communicate and is initiated by people who desire to bring other people over to their point of view. And finally, it is initiated for direction and control, to focus subordinates’ attention on issues and to ensure that actions are taken.

Another group of researchers criticised the synoptic process and provided a different approach, incrementalism, to the strategic decision making process. The approach is illustrated in Figure 2.2. This model can be characterised by Hofer’s (1973) definition. According to him incremental strategy

"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" (p:3).

As Table 2.1. (p:16-17) illustrates, there are different explanations of the incrementalism concept in the literature. Johnson (1988) mentioned that the key theme in various definitions is that the strategy development of an organisation needs
to be seen as building on current practice and managerial beliefs about organisational competencies within a political and historical context.

Braybrooke and Lindblom (1970), proponents of the incremental approach, described policy making as a serial, remedial and fragmented process in which decisions are made at the margin. These decisions are developed to solve problems rather than to exploit opportunities, and with little regard for ultimate goals or even for connections between various decisions. They mentioned that many actors are involved in the strategic decision process. This line of thinking is also supported by Mintzberg (1994), who questions the fundamental logic of strategic planning and develops an exhaustive case for why strategic planning, as classically conceived, cannot succeed. The essence of his argument is that planning, as a decompositional, analytic activity, is processually and structurally incompatible with effective strategy formulation, an act that largely requires creative synthesis. In summarising the “planning school’s grand fallacy”, Mintzberg states:

“Because analysis is not synthesis, strategic planning is not strategy formulation. Analysis may precede and support synthesis, by defining the parts that can be combined into wholes. Analysis may follow and elaborate synthesis, by decomposing and formalising its consequences. But analysis cannot substitute for synthesis. No amount of elaboration will ever enable formal procedures to forecast discontinuities, to inform managers who are detached from their operations, to create novel strategies. Ultimately, the term “strategic planning” has proved to be an oxymoron. (1994, p:321).”

Mintzberg (1994) has sought to limit the theoretical space occupied by the concept of strategic planning (i.e. synoptic) by suggesting that it is based on certain fallacies. Firstly the fallacy of prediction, the belief that planners can predict what will happen in the market place. Secondly, the fallacy of detachment, the premise
that effective strategies can be produced through formalised processes by planners who are detached from the business operations and the market context. Lastly, the fallacy of formalisation, the questionable idea that formalised procedures can in fact produce strategies, whereas their proper function is to operationalise already existing strategies.

Another proponent of the school, Quinn (1980), suggested that organisational strategy is based on naturalistic interaction and learning rather than formal execution of a predetermined plan. Quinn further noted that the strategies of “major enterprises tend to emerge from an iterative process in which an organisation probes the future, experiments and learns from a series of partial commitments” (1980, p:58).

**Figure 2.2. Typical View of the Incremental Approach**
(adopted from Bourgeois 1980, p:229)

Bourgeois (1980) noted that the incremental approach is generally typified by a certain degree of political behaviour among the dominant coalitions, in which both goals and means are mutually adjusted while the alternative means generation proceeds through comparative analysis of marginal or incremental differences from the status quo. Bourgeois further mentioned that in this view, effective policy is
formulated when the involved parties negotiate at the margin and goals are not necessarily either stabilised or agreed upon prior to the consideration of alternatives; rather, goals and means interact and adjust in the light of what is currently feasible and acceptable.

Mintzberg’s research of the process of strategy formation is based on the definition of strategy as “a pattern in a stream of decisions” (Mintzberg and Waters, 1985, p:257). He considered strategy as a consistency in behavior, whether or not intended. Mintzberg and Waters (1985:257) argue that this definition was developed to operationalise the concept of strategy, namely to provide a tangible basis on which to conduct research into how it forms in organisations, and consequently created the concepts, namely intended and realised. They argued that deliberate strategies can be distinguished from emergent strategies by comparing intended strategy with realised strategy. Mintzberg (1994:24) observes that while the planning literature recognises deliberate and unrealised strategies, it does not pay attention to the third case, which is emergent strategy -where a realised pattern was not expressly intended. In another study, Mintzberg (1990b, p:151) argues that emergent (i.e. incremental) strategy opens the door to learning, since it acknowledges the organisation’s capacity to experiment. He further noted that a single action can be taken, feedback can be perceived and the process can continue until the organisation converges on the pattern that becomes its strategy.

In the light of discussions above, it seems reasonable to note that the synoptic perspective favors setting the goal and objectives, the analytical process, and rationality. On the other hand, incrementalism suggests that organisational strategy cannot be predetermined, that it evolves as internal decisions and external events
interact. Management chooses and guides strategic development through steps which are logical extensions of historically successful steps. It is based on naturalistic interaction and learning rather than formal execution of a predetermined plan.

2.3. PREMISES OF THE APPROACHES

Fredrickson (1983) noted that the comparison of the two types of models - synoptic and incremental - that appear most often in the strategic decision process literature, identified several conceptually distinct though related characteristics on which they differ. Table 2.2. illustrates a detailed comparison of characteristics embodying the approaches. This work argues that they differ on seven key issues. This section of the chapter will address these premises.

2.3.1. Motive for Initiation

An important characteristic of the synoptic approach is the motive for initiation. According to Fredrickson (1983), the synoptic description of strategic process states that decision “should begin as a result of a continuous, proactive search to identify problems and opportunities” (p:567). In the same way, Bailey and Johnson (1992) mentioned that strategic goals may be a reflection of shareholder values or potential threats and opportunities which the organisation becomes aware of through its constant monitoring of the business environment, implying that decisions are derived from a continuos search of the company’s environment. Moreover, Mintzberg (1973) stated that the planning (i.e. synoptic) mode is formed to equip an organisation to be proactive in seeking opportunities and identifying problems.
<table>
<thead>
<tr>
<th><strong>Premises</strong></th>
<th><strong>Synoptic Perspective</strong></th>
<th><strong>Incremental Perspective</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Motive for initiation</td>
<td>Strategy process initiates with the identification of problems and opportunities that disclose throughout continuous search.</td>
<td>a problem from environment initiates the process.</td>
</tr>
<tr>
<td>2. Goals and Objectives</td>
<td>Firms are expected to have a purpose which is a distinct guide of action.</td>
<td>Organization is expected to have broad goals and objectives.</td>
</tr>
<tr>
<td>3. Ends-Means Relationship</td>
<td>The aims are specified before and independently of analysis of alternatives and their consequences.</td>
<td>Incremental mode indicates that ends (selection of goals) and means (alternative evaluation) processes are intertwined and interrelated.</td>
</tr>
<tr>
<td>4. Concept of Choice</td>
<td>The selection of optimal alternative which maximises the achievement of the goal.</td>
<td>incremental mode of strategy suggests satisfying of goals rather than maximising.</td>
</tr>
<tr>
<td>5. Separation of Formulation-Implementation</td>
<td>The view implies that formulation and implementation functions in decision making are sequential or separated from each other.</td>
<td>the process is considered as highly interrelated and intertwined</td>
</tr>
<tr>
<td>6. Comprehensiveness</td>
<td>Indicates the extensive process of identification and selection of the goals and the evaluation of alternatives. This characteristic also considers integration of the decisions that compose the overall strategy to make sure that they are in harmony.</td>
<td>decision makers evaluate a restricted range of alternative decisions and their consequences and therefore make intuitive decisions.</td>
</tr>
<tr>
<td>7. Quantitative Analysis</td>
<td>Mathematical analysis is used extensively in the process. Moreover, quantification of values is used in the process.</td>
<td>since the necessary information is not available, quantitative analysis can hardly achieve its aims.</td>
</tr>
</tbody>
</table>
On the other hand, proponents of the incremental approach argue that the process is initiated in response to a problem or dissatisfaction with the current state (Cyert and March, 1963). In the same way, Hambrick and Snow (1977) argued that the motive may arise not only from a formal planning process but also from the environmental opportunities and pressures.

2.3.2. Goals and Objectives

The issue of goal and objectives in the strategic decision making process distinguishes the approaches discussed. In general, while the synoptic approach emphasises stating the goals and objectives, the incremental model seems to avoid specifying them.

As far as the synoptic process is concerned, a major characteristic of strategic planning is the specification of goals and objectives. According to the approach, firms are expected to have aims which are distinct guides of action. Bailey and Johnson (1992) claimed that in the synoptic model, clear and well defined strategic goals and objectives are specified by the top managers of an organisation. These goals may be a reflection of shareholder values or potential threats and opportunities which the organisation becomes aware of through its constant monitoring of the business environment. In the same way, Armstrong (1982) mentioned that the objectives should be written clearly, starting with the ultimate objectives for the organisation, then they should be translated into specific measurable objectives. He also added that the objectives should be challenging. In addition to Armstrong’s remarks, Hayes (1985) noted that companies tend to select short term goals. He further claimed that the goals are not only short term but also highly quantitative,
focusing on rates of growth in profitability, return on investment and market share. This characteristic is also identified by Ansoff (1987) in mentioning that the word ‘business’ means that the company is an economically or money motivated purposive social organisation. Ansoff seems to imply that a set of objectives or goals can be identified in most firms, either in explicit form as a part of the firm’s business plan, or implicitly through past history and individual motivations of the key personnel.

Mazzolini (1981) made an attempt to specify the logical reasons for this characteristic. According to him, the first reason is that when the objectives are known, there is a need for action which is assumed to reflect a purpose or intention and which is a calculated solution to a problem. The point of an explanation of a company’s behaviour is to show how it could have been logically chosen in view of the company’s objectives. In addition to this, predictions about what a company will do are developed by calculating the rational thing to do in a certain situation given the company’s aims. As can be inferred from these points, the synoptic model favors the stating of specific, clear goals and objectives.

Another group of researchers holds different opinions concerning this issue. Mintzberg (1973) noted that clear goals do not exist in the adaptive (i.e. incremental) model. He further claimed that the goal system of the organisation is characterised by bargaining among different groups, with each winning some issues and losing others. Consequently, the organisation attends to a whole array of goals sequentially, ignoring the inconsistencies among them. As well as these discussions, Chaffee (1985) mentioned that unlike the synoptic model, the adaptive (i.e. incremental) approach does not pay sufficient attention to goals. It emphasises means rather than goals. Hart (1992) observed that in the transactive (i.e. incremental) mode, strategy is
crafted on ongoing dialogue among employees, suppliers, customers and so on. In the same way, Bailey and Johnson (1992, p:154) noted that “there is a reluctance to specify precise objectives too early as this might stifle ideas and prevent the sort of experimentation is desired. Objectives are fairly to be general in nature.” Quinn (1977) argued that successful top executives do not tend to state clear goals because (1) it may create undesired centralisation. Therefore, subordinates’ alternative actions are closed by such statements, (2) it may provide focal points against which an otherwise fragmented opposition will organise, (3) once the goals are established, it may become very difficult to change, (4) such a statement may provide specific information to competitors about their future moves.

Cyert and March (1963) suggested that instead of future desired states, goals actually serve as a series of independent constraints imposed by coalition members during bargaining. Mazzolini (1981, p:91) observed that “such constraints are elaborated over time and represent quasi-resolution of conflict: given the form of the goals and the way they are developed, conflict is never totally solved. Rather, organisations strive with considerable goal conflict within them.” In the light of the discussion above, it can be maintained that incremental strategy recognises that organisations have different interest groups that have various concerns which may be in conflict. To define goals clearly may result in conflict among them. Therefore, incremental strategy argues that goals should be defined through the continuous processes of bargaining and negotiation.
2.3.3. Ends-Means Relationship

Another characteristic which differentiates the processes is the relationship between ends and means. According to Fredrickson (1984), the relationship implies that the goal is identified before and independent of the analysis of alternatives and their consequences. Fahey (1981) made an attempt to explain the ends-means relationship. As can be seen in his study, a company, firstly, defines corporate goals either specifically or generally. Next, possible alternative goals are examined in the light of the corporate goals. This stage also involves comparison of corporate capabilities and resources with internal and external forces. The final step is the selection of the alternative which maximises corporate goals. It seems that the synoptic mode of strategic decision making favors the separation of ends and means. Figure 2.1. (see p: 19) clearly illustrates the separation of these steps. Hayes (1985) noted that there are two arguments for an ends-means relationship. The first argument is that ends should precede means since top managers must know what their objectives are before deciding how to go about attaining them. The other argument is that in order to maximise efficiency, the choice of strategy should precede the assembling of the resources for carrying it out. He also stated that since different strategies require different mixes of resources, developing these resources before choosing them will be risky for the company. This risk seemed to lead some academics to consider the ends-means relationship in another way, in which the separation of the two activities does not jeopardise the company's future.

Unlike the synoptic process, the incremental mode indicates that ends (selection of goals) and means (alternative evaluation) processes are intertwined and interrelated. Lindblom (1959), a proponent of this school, suggested that the
consideration of means and ends cannot be separated because most decisions have multiple components, and various alternatives may impact the components differently. This character was also noted by Bourgeois (1980) mentioning that there is “a certain degree of political behaviour among the dominant coalition, in which both goals and means are mutually adjusted while the alternative means generation proceeds through comparative analysis of marginal or incremental differences from the status quo.” (p:229)

It seems fair to argue that since in unstable environments managers cannot clearly predict potential future means (alternatives) in advance, to define organisational goals is a difficult process. Therefore as Braybrooke and Lindblom (1970) argued, means agreement can come about with minimum discussion of goals:

“... in its preoccupation with increments, the strategy makes it logically possible for analysts to agree on evaluation of alternative policies (means), regardless of their disagreements on ultimate values (ends) ... quite different sets of ultimate values are logically consistent with the same policy.” (p:134)

As mentioned in the previous premise, organisational goals are under a continuous redefinition process in the incremental mode. In this sense, it can be concluded that, the incremental mode emphasises that the selection of goals and the evaluation of alternatives ought to be completed at the same time.

2.3.4. Concept of Choice

Another key characteristic distinguishing the models discussed in the literature is the concept of choice. It seems that while the synoptic approach emphasises
choosing the best alternative which maximises a company's interests, the incremental model favors selecting that which will satisfy the goals.

By way of illustration, Ansoff (1987), a leading proponent of the synoptic school, noted that,

"Regardless of how large or small the firm, strategic decisions deal with a choice of resource commitments among alternatives; emphasis on current business will preclude diversification, over-emphasis on diversification will lead to neglect of present products. The object is to produce a resource allocation pattern which will offer the best potential for meeting the firm's objectives." (p:24)

Moreover, Andrews (1994) mentioned that before a choice can be made, the company's strengths and weaknesses should be appraised. In addition to this, its actual and potential capacity should be estimated objectively. He defines the alternative which matches opportunity and corporate capability at a certain level of risk as 'economic strategy'. This characteristic was also highlighted by Bailey and Johnson (1992). They pointed out that the option which, simultaneously is perceived to maximise the value of outcomes, best fits the selection criteria and presents competitive advantage, is chosen. Mintzberg (1973) argued that the synoptic mode emphasises systematic analysis, particularly in the assessment of the costs and benefits of competing proposals. Formal planning focuses on the search for new opportunities and the solution of existing problems and is always systematic and structured.

The implication of this characteristic was noted by Allison (1971). In his work, the 'rational actor' model explains government action as a result of goal-oriented choice. He concluded that:
"If an organisation performed a particular action, the organisation must have ends toward which the action constituted a maximising means. The puzzle is solved by finding the purposive pattern within which the occurrence can be located as a value maximising means". (p:33)

In the light of discussions above, it seems reasonable to maintain that the concept of choice is derived from the economic rationality concept that assumes people behave rationally. Lindblom (1959) revealed that rationality seeks approximations of what economists call Pareto-efficient solutions, solutions which, compared to the existing state of affairs, benefit all or benefit some parties without injuring any others.

As far as the incremental school is concerned, this key premise was firstly mentioned by Simon (1957). According to him, unlike the synoptic model, the incremental mode of strategy suggests the satisfaction rather than the maximising of goals. His argument was that since individuals are boundedly rational, they cannot optimise the selected goals. Simon (1957) states that, with respect to managers' capacity and capability, the top executive uses the simplifying of alternatives. In his words:

"... the key to simplification of the choice process ... is the replacement of the goal of maximising with the goal of satisfying, of finding a course of action that is 'good enough'." (p:204)

This characteristic was also highlighted by Cyert an March (1963) using the 'aspiration level' concept. It is argued that aspiration level is the key determinant of accepting or refusing a decision. If one of many different solutions meets his aspiration level, he/she will choose it. These arguments have been supported by empirical results. They indicated that because of the existence of cognitive limits to
the synoptic model, decision makers satisfy instead of optimise. For example, Anderson (1983), in his case study, found that during the Cuban Missile Crises, few alternatives were considered simultaneously. Instead, participants raised objections to a current alternative. Similarly, Mintzberg (1973) suggested that an organisation cannot make decisions to maximise any one goal, rather it must seek solutions to its problems that are good enough and satisfy the constraints. These discussions lead us to note that minimum performance standards are set and once achieved, the problem is considered to be solved. Therefore, in the incremental model, a company does not continuously search for the maximising, ideal solution.

2.3.5. Separation of Formulation-Implementation

The formulation/implementation dichotomy denotes the idea that formulation and implementation functions in strategy decision making are sequential or separated from each other. As can be seen in Figure 2.1 (see p:19) the separation of formulation and implementation processes is essential to the synoptic perspective. However these processes are interwined in the incremental approach (see Figure 2.2., p:21). Mintzberg (1990a) claimed that this separation emphasises the distinction between the few people on top who are allowed to think and the many below who are supposed to act. He (1994) considered this characteristic of the synoptic school as a fallacy. Mintzberg et. al. (1998) mentioned that effective strategy making connects acting to thinking, which in turn connects implementation to formulation. They further argued that such strategy making breaks down the classic dichotomy by allowing implementation to inform formulation. They argued that either the formulator must implement or else the implementers must formulate. Either way, the
process of strategy making becomes more richly interactive. In addition to these arguments, Quinn (1980), a proponent of the incremental perspective, stated that

"successful managers who operate with logical incrementalism build the seeds of understanding, identity and commitment into the very processes that create their strategies. By the time the strategy begins to crystallise in focus, pieces of it are already being implemented. Through their strategic formulation processes, they have built a momentum and psychological commitment to the strategy, which causes it to flow toward flexible implementation. Constantly integrating the simultaneous incremental processes of strategy formulation and implementation is the central art of effective strategic management" (p:145).

However, Chaffee (1985) indicated that if a sequential planning process is to succeed, the organisation needs to be tightly coupled, so that all decisions made at the top can be implemented throughout the organisation, implying that separation of the formulation and implementation processes can be successful through control mechanisms. Moreover, it can be argued that separating formulation from implementation may lead to better divisions of labour and specialisation: senior managers devote their attention and energy to strategy formulation while field staff are focused on implementation.

As far as the separation of formulation-implementation processes is concerned, the two approaches have different points of view. While the synoptic approach emphasises the separation, the incremental model argues that the integration of processes is essential for effective strategies.
2.3.6. Comprehensiveness.

One of the most fundamental features of the synoptic model is the emphasis on being 'comprehensive' in making individual strategic decisions and integrating those decisions into an overall strategy. (Fredrickson 1984, Fredrickson and Mitchell, 1984). Fredrickson (1984, p:447) defined comprehensiveness as "the extent to which an organisation attempts to be exhaustive or inclusive in making and integrating strategic decisions." Fredrickson and Mitchell (1984) argued that comprehensiveness is one measure of the extent to which an organisation's strategic process approximates a rational model. However, its multifaceted nature makes it particularly valuable in understanding strategic decision making. Fredrickson (1983) further argued that comprehensiveness consists of two elements. Analytical comprehensiveness refers to the identification and selection of goals and the generation and evaluation of alternatives, whereas integrative comprehensiveness is regarded as the integration process of the decisions that compose the overall strategy, to insure that they reinforce one another. The analysis process was also considered as a characteristic of the synoptic mode by Miller (1987). As far as integrative comprehensiveness is concerned, Mintzberg (1973) argued that,

"An organisation plans in the belief that decisions made together in one systematic process will be less likely to conflict and more likely to complement each other....Thus, strategic planning is a process whereby an organisation's strategy is designed essentially at one point in time in a comprehensive process." (p:48)

In the same way, Chaffee (1985) noted that the linear view (i.e. synoptic view) argues that strategy consists of integrated decisions that will set and achieve viable organisational goals. This element is also underlined by Taylor (1977), noting that
the planning process is concerned with the development of integrated plans for the
total enterprise, not simply planning for a particular department or division.

While the synoptic view emphasises the importance of comprehensiveness,
the incremental mode focuses on intuitive synthesis. According to Pritelua and
Simon (1989), it is accumulated via experience in handling problems that continually
come up in a specific job or environment and serves as a quick and ready
apprehension, allowing an individual, without formal analysis, to understand a
complex problem quickly and respond to it in an efficient manner. This characteristic
seems to be the other dimension of being comprehensive. Unlike the synoptic model,
the incremental model indicates that decision makers evaluate a restricted range of
alternative decisions and their consequences (Quinn, 1980). Incremental strategy
proponents (for example, Mintzberg, 1994) argue that an unstable environment poses
three challenges to fact-oriented information processing or data analysis:

1. a time constraint on collecting information,
2. a need to collect a large amount of data to deal with environmental complexity,
3. a lack of reliability of the information gathered.

Consequently, hard information tends to be limited and unreliable. As far as
these limitations are concerned, the incremental strategy is concerned that decision
makers in such situations may benefit from intuitive synthesis, which may play a key
role in developing an understanding of the situation by drawing upon previously
learned information associated with that situation, in order to arrive at a decision
(Quinn, 1980). In the same way, Lindblom (1959) mentioned that managing
strategies through a logical, sequential planning model were unrealistic. He
suggested that given the complexity of organisations and the environments in which
they operate, managers cannot consider all possible options in terms of all possible
futures and evaluate these objectives. This point clearly implies that, in the
incremental model, organisations cannot simply consider all available information.
This view is also supported by Bailey and Johnson (1992) arguing that managers
accept the uncertainty of their environment. They noted that instead of predicting
how it will be, companies become highly sensitive to environmental signals through
constant environmental scanning. Consequently, as Mintzberg (1973) noted, in the
adaptive (i.e. incremental) mode companies tend to make their decisions in disjointed
steps. Since the incremental mode of strategic planning assumes that the environment
is unstable, the company cannot make long term plans. Therefore, the company
makes small, incremental steps towards the unknown. The incremental view
considers strategic management in terms of a cyclical model that includes feedback
loops to previous steps where the problem and solution may be redefined or
reformulated.

2.3.7. Quantitative Analysis

The final characteristic which distinguishes the approaches is calculative
analysis. According to Bailey and Johnson (1992), in order to make the right decision
executives and analysts go through the application of appropriate analytical and
systematic techniques. Similarly, Lorange and Vancil (1976) mentioned that;

"Conceptually, the process is simple: managers at every level of a hierarchy must
ultimately agree on a detailed, integrated plan of action for the coming year; they
(start) with delineation of corporate objectives and (conclude) with the preparation of
a one or two-year profit plan." (p:75)

Allison (1971) argued that rational decisions are seen as choices based on
calculations, not as random choices. Calculative analysis may make decisions more
persuasive and discernible to the interest groups inside and outside the organisation. It is clear that to practice the synoptic mode of strategic planning, an organisation must be able to predict the course of its environment, to control it, or to assume its stability. Therefore, it can be suggested that forecasting is an important activity for many types of organisations, both large and small. As argued earlier, an organisation establishes goals and objectives, seeks to predict environmental factors, then selects actions that it hopes will result in attainment of the goals and objectives. Forecasting covers the prediction of environmental factors in this process. In other words, strategic planning expresses the belief that the strategically relevant environment is inherently predictable if a sufficient effort is made to understand and control it. With enough of the right kind of data and a judicious application of the appropriate analytical tools, the strategic environment can be adequately grasped and strategic planning can be used to give a sense of direction to corporate endeavours.

On the other hand, as Bailey and Johnson (1992) discussed, managers accept the uncertainty of their environment in the incremental model. They argued that instead of predicting how it will be, companies become highly sensitive to environmental signals through constant environmental scanning. As a result, as Mintzberg (1973) noted, in the adaptive (i.e. incremental) mode companies tend to make their decisions in disjointed steps. Since the incremental mode of strategic planning assumes that the environment is unstable, the company cannot make long term plans. Therefore, the company makes small, incremental steps towards the unknown. In this disjointed process, the importance of quantitative methods appears to be reduced. Companies are expected to pay more attention to environmental signals than to mathematical calculations.
2.4. KEY ASSUMPTIONS

There are several assumptions that underlie the models. This section of the chapter covers the assumptions and discusses them in detail. As can be seen from Table 2.3, there are six assumptions.

2.4.1. Availability of Information

The synoptic model assumes that organisations can predict the future events in advance. It is worthwhile pointing out that the assumption of predictability is concerned with the availability of the necessary information. In order to forecast the future events, the necessary information is required. Information usage refers to the amount of available data that organisations process in strategic decisions. Therefore, as Fredrickson and Mitchell (1984) argued, information usage represents a key aspect of comprehensiveness in strategy making. Hart (1992) noted that in order to carry out formal analysis, such as portfolio analysis, industry and competitive analysis, and SWOT (Strength, Weaknesses, Opportunities, Threats) analysis, the company needs a high level of information processing. Mintzberg et al. (1976) argued that such information processing efforts may be critical when managers deal with complex issues. Therefore, it could be maintained that the synoptic model assumes that top executives have easy access to all the information required.
<table>
<thead>
<tr>
<th>Assumptions</th>
<th>Synoptic Perspective</th>
<th>Incremental Perspective</th>
</tr>
</thead>
<tbody>
<tr>
<td>Availability of Information</td>
<td>It is assumed the information needed is available and can be obtained by top executives.</td>
<td>The information processing and computational powers of decision makers are limited relative to the complexities of the environment.</td>
</tr>
<tr>
<td>Consensus on Ends</td>
<td>According to the synoptic school, there should be some level of agreement by policy-level managers on the goal priorities.</td>
<td>The incremental strategy assumes that an organisation consists of coalitions, and each coalition pursues its own interests and, therefore, may create conflicts among the groups.</td>
</tr>
<tr>
<td>Rationality</td>
<td>The synoptic approach assumes that top executives are fully informed economically rational maximisers, and strategic decision making is presumed to proceed through a series of fully informed analytic steps.</td>
<td>It is assumed that people are unable to consider more than a few factors, are reluctant to embark on unlimited searches for relevant information, are biased in their interpretation of data.</td>
</tr>
<tr>
<td>Predictability</td>
<td>It is assumed that the environment is relatively predictable or that the organisation is well-insulated from the environment.</td>
<td>The incremental approach assumes that it is not possible to predict the future with confidence.</td>
</tr>
<tr>
<td>Availability of time and financial resources</td>
<td>Time, human and financial resources are assumed to be available to executives.</td>
<td>The incremental view assumes that necessary resources are not readily available at all times.</td>
</tr>
<tr>
<td>The capacity of the chief executive</td>
<td>It is assumed that a manager has a high level of intellectual capacity.</td>
<td>The incremental perspective assumes that intellectual capacity is bounded by managers' cognitive capabilities.</td>
</tr>
</tbody>
</table>
The information is a vital element in the synoptic process since strengths and weaknesses of the firm or opportunities and threats of the market can be obtained from available information. By analysing such information, managers will formulate an opinion about probability of future events, knowledge of means to achieve goals, and principles for assessing consequences of alternatives. Lyles and Thomas (1988) noted that the synoptic model assumes that full information is available and the formulation of the problem will be determined after an examination of the environment and the firm. They further claim that the top executive provides the resources and personnel necessary to gather information about the environment and the firm and to analyse them.

On the other hand, the incremental model assumes that the information processing and computational powers of decision makers are limited relative to the complexities of the environment (Simon 1957). Unlike the synoptic model, the incremental view argues that especially in a complex and unstable environment, it is difficult to obtain the necessary information (Fredrickson and Mitchell, 1984). Consequently, the incremental model accepts the uncertainty of the environment (Bailey and Johnson, 1992). Since there is no full information about the environment, managers do not have a clear set of goals and full awareness of environmental pressures. Therefore, decision makers consider a restricted range of alternative decisions and their consequences (Quinn, 1980). There is much research evidence suggesting that a high level of strategic rationality, based on the assumption that the future can be predicted, might be dysfunctional. Fredrickson and Mitchell (1984) argued that in an unstable environment, because conditions change continually and rapidly, it may be extremely difficult for managers to comprehend a wide range of
decision issues. According to Quinn (1980), a weakness of a very rational, formalised strategy is that it introduces inflexibility into strategic thinking. Furthermore, it is argued that an overemphasis on strategic rationality may lead to an over-focus on measurable quantitative factors. The key qualitative factors which affect strategic success may then be underemphasised (Van Cauwenbergh and Martens, 1986). Given the absence of necessary information, the incremental strategy assumes that managers are limited to predicting future events and therefore are unable to make rational moves.

2.4.2. Consensus on Ends

Bourgeois (1980) noted that the synoptic model implicitly suggests that there should be some level of agreement by policy-level managers on the goal priorities. Therefore, it is assumed that the crystallisation of corporate goals in the minds of top management is important to effective performance. Amoson (1998) argued that without consensus, high quality decisions may be improperly implemented, producing negative consequences. There is considerable evidence to suggest that conflict between groups can have significant and lasting effects on the decision process and performance of the firm (Mintzberg et. al., 1976). Consequently, planning literature seems to suggest that following some form of analysis, the negotiation of goal structures should take place before an elaboration of strategies to attain them is undertaken. This assumption is also highlighted by Narayan and Fahey (1982). They claimed that decision makers are assumed not only to recognise organisational ends and their priorities, but also to pursue the same objectives. Cohen and Cyert (1973) argued that the first step in the strategy decision process:
"can be viewed as the development of the arguments in the corporate utility function. This specification is made by the coalition responsible for the top-level management of the corporation...The final set of arguments in the utility function for the corporation must be accepted by the individuals who are responsible for...the policy of the corporation." (p:350).

The incremental decision process implies that an organisation consists of coalitions (Cyert and March, 1963). According to them, each coalition pursues its own interests and, therefore, may create conflicts among the groups. In the incremental perspective, decisions are arenas where individuals or groups compete to satisfy their interests. Because preferences are based on subunit and individual goals, rather than organisational goals, conflicts of interest seem to be inevitable. As Amoson (1998) indicated, there are two kinds of conflict. The first one is cognitive conflict, which arises from differences in judgment. Amoson further argued that this type of conflict is inevitable since different individuals see different environments. The second type of conflict is affective conflict, which involves personalised disagreement or individual disaffection. Amoson implied that it can create avoidance and bitterness among managers, limiting decision quality and undermining consensus and team member affect.

This assumption has been mentioned by a number of researchers. In their review of the strategic decision making process, Eisenhardt and Zbaracki (1992) mentioned that the conflict among the decision makers often influences the shape of the decision path. Quinn's (1980) study of strategic decision making processes within nine large, international companies describes these firms as political systems. As Quinn noted, the organisations were comprised of constantly changing groups of people with diverse talents and interests. In the same way, Eisenhardt and Bourgeois
(1988) mentioned that conflict among managers regarding appropriate action was common. Another study supporting this assumption was carried out by Allison (1971), in his study of the Cuban missile crisis. Allison observes that deep divisions existed among President Kennedy’s advisors regarding an appropriate reaction to the deployment of Russian missiles in Cuba, based on different assumptions and the advisor’s place in the hierarchy.

Cyert and March (1963) argued that the combination of political bargaining and bounded rationality strongly favors strategic conservatism. The need for change will only be imperfectly recognised. In addition to this, the change is suspected because it is likely to set off a period of political activities until a new ‘dominant coalition’ is established. Therefore, rather than perfectly rational strategies, organisations opt simply for incremental strategy.

2.4.3. Rationality

Butler (1998) noted that “rationality is a central behavioural concept in decision making theory, premised upon the assumption that decision makers can identify their preferred outcomes and find ways of achieving those outcomes” (p:36). Moreover, the concept of rationality has implications for organisation theory, as the idea of organisations as rational instruments of management is key to several central debates in the field. In particular, theories of organisational adaptation to environmental change are deeply grounded in rational assumptions (Chandler, 1962). Therefore, it could be argued that rationality refers to a formal, systematic, and analytical approach to decision making. According to the doctrine of rationality, senior managers identify techno-economic opportunities and problems, then
systematically search for and weigh alternatives, and finally make choices that maximise organisational performance (Hambrick, 1990).

Since the synoptic mode requires managers to seek a value-maximising alternative by examining the possible consequences of each alternative, it seems fair to suggest that this perspective assumes that managers act in a structured and rational manner. This means that the approach is rather mechanical in character (Idenburg, 1993). The synoptic approach assumes that top executives are fully informed economically rational maximisers, and strategic decision making is presumed to proceed through a series of fully informed analytic steps. Rationality emphasises the use of planners, involves quantitative analysis, and assumes determinate conditions of action and the feasibility of technically optimum solutions (Hunt, 1988).

This assumption has been criticised by proponents of the incremental perspective. They claim that people are boundedly rational (Cyert and March 1963). The term 'bounded rationality' represents decision processes recognising that the conditions of economic rationality cannot be made and that satisfactory choices are made with incomplete but sufficient search for solutions, and in the face of conflicting goals. According to the research carried out in the Carnegie School, neither the choices organisations make nor the ways they make them generally meet the stringent assumptions of the synoptic model. Simon (1957) is well known for his exploration of the ways in which rationality-as-maximisation is descriptively inaccurate. He developed the bounded rationality model, featuring such concepts as sequential attention of goals, quasi-resolution of conflict, and satisfying. The logic behind this critique was that people are unable to consider more than a few factors, reluctant to embark on unlimited searches for relevant information, biased in their
interpretation of data, and prone to accept the first satisfactory option that presents itself, rather than insisting on the best. Another reason for this line of thinking is that data cannot be transmitted up a hierarchy without significant loss (Mintzberg, 1990a). Therefore, managers are boundedly rational since they are not fully aware of the company's strengths and weaknesses as well as environment's threats and opportunities. According to this school, hard data, "documented unambiguously and quantified" (Mintzberg, 1994, p:258), is limited in scope, and consequently, there is a need for using "soft data". Mintzberg (1994) argues that in unstable and uncertain environments, using hard data fails because changes are quick and there is a time constraint for data processing. As argued in the previous part, this assumption seems to affect the separation of the formulation-implementation process. It is argued that senior managers do not have as much detailed information about products and customer needs in their field as their mid-level line managers have. Thus, top executives can benefit greatly from the knowledge and the genuine participation and commitment of field staff (Quinn, 1980). Effective strategy making under difficult circumstances requires "the power over the process must rest with people who have an intimate sense of context in which strategies have to work" (Mintzberg, 1994, p:274). Either the senior managers involved in strategic decision making must know the business very well and always be aware of the field conditions or else people involved in field operations of the organisation must be able to influence the strategies that are formed. "People removed from the daily details of running and organisation can never gain the requisite knowledge" needed for effective strategic decision making (Mintzberg, 1994, p:269).
While the synoptic approach implies the necessity of certain steps in decision making by forming a sequential pattern in which participants first become aware of, and formulate a problem, then generate and analyse solutions, and finally choose and implement a solution in order to optimise outcomes, the incremental school suggests starting from the position that the order in which these steps occur and the relative weight given to them in an overall process may vary from decision to decision according to the ambiguities encountered.

2.4.4. Predictability

Another assumption relating to the synoptic view is predictability. Advocates of the synoptic approach, (Ansoff 1987), claim that an organisation can improve its effectiveness if it can forecast its environment, anticipate problems, monitor its competitors and develop strategies to respond to those problems. According to Chaffe (1985), this assumption arises from the time-consuming and forward looking nature of the planning model. She extends her discussion by adding that although decisions made at the present time are based on beliefs about future conditions, they may not be implemented until months or even years ahead. Consequently, one must assume that the environment is relatively predictable or the organisation is well-insulated from it. In the light of the discussion above, it would seem fair to maintain that the credibility of future strategies entirely depends upon the accuracy of forecasting techniques.

In the same way, Hayes (1985, p:117) observed that planners assume that the world of competition is predictable and that clear paths can be charted across it much like a highway system across a road map. The managerial logic of ends-means also
attributes a certain stability to the company itself. It is expected that the company’s values and needs will not change over the planning horizon and that the objectives it sets will seem as desirable up close as they do from afar. Managers can, therefore, concern themselves with “static optimization” - which implies making a few key decisions and then holding onto them. Because of the lack of control over the environment, the synoptic model depends heavily on the ability to predict where the environment will be during the execution of the plans. As long as there is no or little change in the environment and executives react accordingly then there will be no problem. When the environment changes, the changes must be predicted. As can be seen from the discussion, the synoptic approach is based on the assumption that since the context for strategy making is stable, or at least predictable, the process itself, as well as its consequences (strategies), can be predetermined.

Unlike the synoptic model, the incremental approach assumes that it is not possible to predict the future with confidence. This approach argues that leakages occur between intention and realisation. Therefore, the strategic level of the organisation cannot act like an all-seeing central planner and in the course of a plan’s implementation, unanticipated opportunities and threats will emerge which have to be dealt with incrementally in ways not originally foreseen by the strategy (Mintzberg 1994). Ansoff (1991, p:453) argues that the emergent (i.e. incremental) model assumes that it is not possible to forecast the future and, therefore, formulate strategy with complete confidence, especially in unpredictable environments. In the same way, Mintzberg (1996, p:551) states that companies do not necessarily have to foresee the future; they only need to respond to events faster than their rivals. Moreover, he argues that following the synoptic approach eventually leads companies to be
inflexible to environmental changes, since they try to carry out their existing strategies.

2.4.5. Availability of time and financial resources

As discussed above, the synoptic view requires a high level of formal analysis. Such analysis results in a high level of information processing. This requires a deep involvement by top management in the formulation of strategies and action plans (Idenburg, 1993, Langley, 1989). In order to compare all alternative decisions and their consequences, top executives demand sufficient time and resources. Lyles and Thomas (1988) argued that the manager provides the resources and personnel necessary to gather information about the environment.

Fredrickson and Mitchell (1984) suggested that a deep analysis of alternatives may slow the decision making process. Also Langley (1989) argued that the synoptic process may delay “the moment of truth when a decision must be taken or may divert attention until problems resolve themselves” (p:609). However, Eisenhardt (1989) opposed this finding by implying that executives make fast decisions while they use extensive information. In the light of these suggestions, it could be argued that the involvement of executives and using extensive resources can be applied as long as decisions are reached quickly by those executives. Otherwise, companies will find it difficult to adapt themselves to their environments.

2.4.6. The capacity of the chief executive

Selznick (1957, p:37) noted that

“it is the function of the leaderstatesman -whether of a nation or a private association- to define the ends of group existence, to design an enterprise
distinctively adapted to these ends, and to see that that design becomes a living reality”.

Similarly, Mintzberg (1973) mentioned that in the planning (i.e. synoptic) approach, the analyst plays a major role in strategy-making. The analyst works alongside the manager, and assumes major responsibility for a great part of the strategic decision process. These statements seem to assume that in order to achieve such an aim, a manager is expected to have a high level of intellectual capacity. The logic behind this is that all possible decision alternatives and their results must be analysed and compared in order to choose the most useful alternative.

Miller and Friesen (1982) noted that given that the organisation gathers the necessary information about the company’s environment and the organisation’s strength and weaknesses through its scanning and control mechanisms, and given that this information is communicated to appropriate decision makers, it is still necessary for this information to be used and evaluated by executives. In this stage, the synoptic mode suggests that the top executives will list the alternative strategies, determine all of the consequences and compare these results. To meet all these expectations, a manager would have to have a certain degree of intellectual capacity.

On the other hand, the incremental perspective assumes that intellectual capacity is bounded by managers’ cognitive capabilities (Schwenk, 1995). Large amounts of information cannot effectively be processed and evaluated by the managers. According to Schwenk (1995), the inaccuracy of decisions seems to arise from a series of cognitive biases in the way that human decision makers process information and reach decisions. For example, Butler (1998) argued that top managers tend to pay more attention to information that is readily available in the
closer environment rather than to searching for information that is less easily available.

2.5. CRITICISMS OF THE PERSPECTIVES

There are many questions about the alternative views in the literature. It is believed that investigating these will enable us to evaluate the processes. Therefore, this section of the chapter is devoted to these criticisms obtained from previous literature. While the first part will reveal the criticisms of the synoptic mode, the second part will focus on the incremental model.

2.5.1. CRITICISMS OF THE SYNOPTIC PERSPECTIVE

Today there is a pronounced skepticism over strategic planning’s ability to generate useful strategies (Mintzberg and Waters, 1982, Quinn, 1980) or positively affect organisational performance (Fredrickson and Mitchell, 1984). In particular, Mintzberg (1994) questioned the fundamental logic of the synoptic perspective and has developed an exhaustive case for why strategic planning, as classically conceived, cannot succeed. Table 2.4 summarises the criticisms of the school, which fall into seven categories.

2.5.1.1. Criticism of predictability

As discussed in the previous section of the chapter, the synoptic approach assumes that the environment is predictable (Chaffee, 1985). According to Porter (1980), firms operate in uncertain, complex environments, which increase the
### Table 2.4: Criticisms of the Synoptic Model

<table>
<thead>
<tr>
<th>Criticism</th>
<th>Description</th>
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<tbody>
<tr>
<td>1. Criticism of predictability</td>
<td>It is argued that managers cannot foresee the future accurately enough. Therefore, the assumption of predictability fails.</td>
</tr>
<tr>
<td>2. Ends-Means Relationship</td>
<td>It is suggested that goals and means are not separated, they are interrelated.</td>
</tr>
<tr>
<td>3. Intellectual capacity of decision makers</td>
<td>According to the critics, managers do not have the ability to rationally process all the information available.</td>
</tr>
<tr>
<td>4. Separation of Formulation-Implementation</td>
<td>Because the data obtained from the lower level can misguide managers, the planning model may not produce better results.</td>
</tr>
<tr>
<td>5. Criticism of Rationality</td>
<td>It is suggested that a high level of rationality may be dysfunctional.</td>
</tr>
<tr>
<td>6. Availability of Information</td>
<td>Perfect information is not possible.</td>
</tr>
<tr>
<td>7. Goal optimisation</td>
<td>Groups, from inside and outside the organisation, indulge in political activities rather than goal maximisation.</td>
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</table>

difficulty of strategic planning. Levels of competition, technological change, government regulation, size of business units, geographical dispersion, volatility in customer preferences and prices, product innovations, market structure, and bargaining power of suppliers and customers are but a few of the factors that affect uncertainty facing the organisation and the complexity of strategic decision making. In order to foresee changes in these factors, organisations apply quantitative methods in the synoptic model. Hence, the accuracy of forecasting activities becomes crucial for companies when they prepare their future strategies. Makridakis (1990) suggested that

"The ability to forecast accurately is central to effective planning strategies. If the forecasts turn out to be wrong, the real costs and opportunity costs...can be considerable. On the other hand, if they are correct they can provide a great deal of benefit -if the competitors have not followed similar planning strategies." (170)
Because of the lack of control over the environment, the synoptic process heavily depends on the ability to predict where the environment will be during the execution of the plans.

Makridakis and Hibon (1979) argued that certain repetitive patterns may be predictable. However, when it comes to one time events, discontinuities, such as technological innovations, price increases, government legislation and so on, forecasting becomes practically impossible. In his opinion, very little or nothing can be done, “other than to be prepared, in a general way, to... react quickly once a discontinuity has occurred” (p:115). Gordon (1989) proposed that there are two kinds of unknown futures. One is the unknown but discoverable future, available for analysis through appropriate research. The other is the intrinsically unknowable future which is not accessible by any means. Mintzberg (1994) argues that since there are discontinuous developments in the environment and the future can be predicted only by extrapolating from the past, corporations cannot predict the future with confidence. Therefore, a fallacy occurs in one of the synoptic model assumptions.

On the other hand, some researchers still emphasise the importance of forecasting techniques. For example Makridakis (1996) pointed out:

“Strategy or at least a good part of it, must be based on foresight, or anticipation, which must in turn be based on some form of forecasting and a realistic assessment of the uncertainty involved in all types of future predictions.” (517)

As can be seen in the arguments above, there is strong evidence about the fallacy of the predictability assumption. It should also be noted that some academics
recommend that even though there are some difficulties in predicting the future, for strategic purposes, firms must forecast their environment as accurately as possible.

2.5.1.2. Ends-Means Relationship

As discussed in the previous section of the chapter, the synoptic approach implies the separation of the ends-means relationship. Hayes (1985) mentioned that the relationship is based on two assumptions: (1) the predictability of the environment, (2) the stability of the company. The first assumption was discussed above. The latter assumption considers the expectation that the company’s values and needs will not change over the planning horizon and the goals will seem as desirable then as they are now. Braybrooke and Lindblom (1970) argued that since a decision is followed by feedback—a new flow of information about values—executives will pay attention to adjusting previous objectives. Therefore, according to them, the values and goals are frequently changed because executives change their views. This change occurs due to the feedback. According to the critics of the school, since the latter assumption seems to fail, the ends-means relationship cannot be managed.

There is another argument in the literature, which states that it is unrealistic to separate the consideration of means and ends because all decisions have interdependent fact and value elements. For example, Lindblom (1959) has suggested that the consideration of means and ends cannot be separated because most decisions have multiple components, and various alternatives may impact the components differently.
2.5.1.3. Intellectual capacity of decision makers

Considerable controversy remains over the intellectual ability of decision makers. It is argued that intellectual capacity is bounded by managers' cognitive capabilities (Schwenk, 1995). It is difficult for mankind to absorb and process large amounts of information effectively. According to Schwenk (1995), the inadequacy of decisions seems to arise from a series of cognitive biases in the way that human decision makers process information and reach decisions. Because of cognitive biases, many managers end up making poor strategic decisions. For example, Butler (1998) argued that managers may underestimate "the occurrence of rare events; extremely unlikely events tend to be dismissed as never likely to occur whereas likely events are given undue weight with experimental learning in organisations fostering this" (p:42). Schwenk (1984, 1995) reveals five types of cognitive bias:

1. Prior Hypothesis Bias; a simplification process which may lead decision-makers to ignore or misinterpret information,
2. Recollection, ability to learn from past activities,
3. Illusion Of Control, the illusion that management is in control of outcomes for the firm,
4. Reasoning By Analogy, involves the application of simple analogies and images to guide problem definition. This process helps to reduce the uncertainty perceived in the environment,
5. Escalating Commitment; is a tendency to increase commitment to a failing course of action.

It would seem reasonable to suggest that one way to overcome the inadequacies of intellectual capacity would be to develop simplified forms of planning process. March and Simon (1958) state:

"Because of the limits of human intellective capacities in comparison with the complexities of the problems that individuals and organisations face, rational
behaviour calls for simplified models that capture the main features of a problem without capturing all its complexities." (p:169)

On the other hand, Braybrooke and Lindblom (1970) mentioned that rational behaviour cannot be simplified for three reasons: (1) failure of providing simplifying tactics, (2) not having a method for selecting which aspects of the problem to analyse when cognitive strain requires that some lines be abandoned, (3) failure of specifying just how a solution is to be qualified or limited in practice to allow for the inevitable omissions of analysis. As can be seen from the past literature, there is some evidence suggesting limitations of human intellectual capacity.

2.5.1.4. Separation of Formulation-Implementation

As discussed above, the synoptic mode of strategy making assumes that formulation is performed by top managers through formal analysis, and that implementation is done by lower level employees through action (Mintzberg, 1994). Thus, the formulation-implementation separation is essentially the same idea as "top-down management" and assumes that thinking and execution can and will be performed by different actors. For example, Christensen et al (1982) have stated that organisational goals and strategies should be developed by general managers or by the president. It seems that formulation-implementation separation assumes that data can be aggregated and transmitted up the hierarchy without significant loss or distortion. Mintzberg (1994) argues that this assumption fails because the data quantified (i.e. hard data) can seriously bias and so distort any strategy making process that relies on
it excessively. His main reasons are: (1) lacking richness, (2) being too aggregated, (3) presented late to top executives, (4) some of the data is unreliable.

In order to overcome such difficulties, Hamel (1996) claimed that when strategic decisions are made, middle manager’s ideas should be invited to the strategy-making process. The logic behind this assertion is that strategic planning is the job of line managers who are responsible for implementing a strategy. If the line managers are not involved in the process of strategic planning, top management certainly cannot claim a high level of strategic management competence. He (1996, p: 76) went further and implied that in order to improve strategic management capability, three constituencies should be represented in the strategy-making process; people with a youthful perspective, people at an organisation’s geographic periphery, people who have not yet been co-opted by an industry’s dogma, new comers. Of course, the participation of middle managers and new voices will make the strategy making process more democratic and intertwine the formulation-implementation processes.

2.5.1.5. Criticism of Rationality

As discussed in the previous section, according to the synoptic model, managers enter decision situations with known objectives. These objectives determine the value of the possible consequences of an action. The executives gather appropriate information and develop a set of alternative actions. As Mintzberg (1973) argues, the synoptic model focuses on systematic analysis and is always structured. There is a great deal of research evidence suggesting that a high level of rationality may be dysfunctional (Fredrickson and Mitchell, 1984, Quinn, 1980, Mintzberg,
organisational strategy needs to be revised to take these changes into account. One weakness of a very rational, formalised strategy is that it introduces inflexibility into strategic thinking (Quinn, 1980, Mintzberg, 1990b).

As discussed previously, the synoptic approach involves: (1) generation of all possible alternatives, (2) assessment of the probabilities of all consequences of each, and (3) evaluation of each set of consequences for all relevant goals. Mazzolini (1981) argues that since in reality all alternatives are unknown, and neither are all the possible consequences attached to each alternative nor the probabilities of possible outcomes, people and organisations cannot behave rationally. Moreover, Simon (1957) argued that rationality-as-maximisation is unattainable. Instead, he argued that people are boundedly rational, featuring such concepts as sequential attention of goals, quasi-resolution of conflict, and satisficing. The logic behind this criticism is that people are unable to consider more than a few factors, reluctant to embark on unlimited searches for relevant information, biased in their interpretation of data, and prone to accept the first satisfactory option that presents itself, rather than insisting on the best.

However, Eisenhart and Zbaracki (1992) stated that rationality is multidimensional and so strategic decision makers are rational in some ways, but not others. Moreover, they argued that such behaviours are effective, especially in uncertain environments. Eisenhardt’s (1989) findings showed that effective decision makers developed many alternatives, but analysed some of them. They also gathered information from many sources, but evaluated only a few. It seems that, as Eisenhardt and her colleagues indicate, top managers behave rationally in some ways
even though their companies operate in uncertain environments. As the previous
literature indicates, there is controversy over rational behaviour of top managers,
especially in highly unstable environments.

2.5.1.6. Availability of Information

Mazzolini (1981) pointed out that all necessary data is not available to the
manager and in view of the limits of his/her analytic abilities, the top executive
cannot select the best of all possible alternatives. He further argues that the manager
"seeks to 'satisfice': he does not seek to deploy all his effort to try and achieve the
best possible results, but he is willing to settle for solutions which are 'good enough'"
(p:87). Similarly, Allison (1971) mentioned that it is not practical to assume that
organisations have the appropriate information as they are not likely to gather and
analyse full information. It seems fair to argue that lack of information creates a
situation in which the manager cannot predict what consequences an alternative may
have. Another problem is that when there is too much information, because of the
cognitive limitations, managers cannot process the data to reach meaningful results.
Mintzberg (1994) argued that a complex and dynamic environment poses three
challenges: (1) a time constraint on collecting information, (2) a need to collect a
large amount of data to deal with environmental complexity, and (3) a lack of
readability of the data or information. Thus, given that hard information tends to be
limited or unreliable, the mental process using soft information may be more
appropriate.
2.5.1.7. Consensus

The synoptic model assumes that executives select the alternative which maximises the company’s interests, and other groups and regulatory agencies approve the decision. However, Shrivastava (1986) indicates that work in organisations is riddled with conflicts of class, gender, race, and special interest groups. In the same way Eisenhardt and Zbaracki (1992) mentioned that while these individuals may share some goals such as the welfare of the firm, they also have conflicts. These conflicts are generally apparent in the organisational politics that pervade most organisations. The synoptic approach argues that conflicting interests must be controlled in order to get on with the task of strategic management. It can be seen in Christensen et. al. (1982) that:

“Like the system of incentives, the system of restraints and controls should be designed with the requirements of strategy in mind, rather than niceties of complex techniques and procedures. It is the function of penalties and controls to enforce rather than to encourage -to inhibit strategically undesirable behavior rather than create new patterns. Motivation, as we have said, is a complex of both positive and negative influences. Working in conjunction, these induce desired performance and inhibit undesirable behavior. (p:646)”

However, Porter (1985) revealed that people with conflicting preferences engage in politics in order to gain a favorable decision. Decision makers easily move from one group to another as positions and decisions shift, and therefore, they vary their political tactics. Quinn (1980) noted that politics is essential to organisations. Instead of maximisation, negotiation and bargaining are used during the strategy making process.
There are a number of researchers criticizing consensus on end concept. By way of illustration, Cyert and March (1963) established a micro-political view of organisation by recognition of the individual interests represented in any enterprise. While these individuals may share the same goals, for instance, profit maximisation, they may also conflict with the common goals and objectives. Allison (1971) noted that these conflicting preferences arise from different bets on the shape of the future, biases induced by position within the organisation, and clashes in personal ambitions and interests. Therefore, individuals are politically motivated to support one view of a problem over other views since the way the nature of the problem is resolved will have an impact on the way future resources will be allocated. In order to influence the future direction of a company, Eisenhardt and Zbaracki (1992) maintained that top executives occasionally attempt to change the power structure by engaging in political tactics such as coalition formation, strategic use of information and the employment of outside experts. In addition to this, Mintzberg et. al. (1976) observed that bargaining was used when decision makers were unable to act without the support of organisational power centers. Nutt's (1998) recent study revealed that when decision makers lacked power, or when key stakeholders demanded a role in the selection process, bargaining was used to find an alternative that key players would support. In summary, it can be noted that organisations are comprised of people with partially conflicting preferences and these individuals use political tactics. They bargain and negotiate to maximise their own ultimate goals. On the other hand, the synoptic mode argues that these interests should be controlled to achieve common objectives.
2.5.2. CRITICISMS OF THE INCREMENTAL APPROACH

As noted by Eisenhardt and Zbaracki (1992), there is no single theory of bounded rationality (i.e. incrementalism), but there are many variations. The following part of the chapter discusses the main criticisms of these models. Table 2.5 demonstrates those criticisms raised in the previous literature.

2.5.2.1. Criticism of Negotiating and Bargaining

It is argued that involvement in political activities may create negative effects in organisations. As discussed above, in the incremental model, goals are defined through political activities among subdivisions. Therefore, organisational goals tend to be formulated as constraints imposed by suborganisations. Allison (1971) argued that “incompatible constraints are attended to sequentially, the organisation satisfying one while simply neglecting another” (p:92). There is therefore almost an explicit struggle among units for acceptance of their own constraints. Mazzolini (1981) argued that since an organisation’s goals seem to develop from constraints laid down

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<th>Table 2.5. Criticisms of the Incremental Approach</th>
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<td>1. Criticism of Negotiating and Bargaining. Political nature and bargaining of decision making represent the policy of powerful coalition, not a good policy.</td>
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<td>2. Criticism of Disjointedness. Organisational innovations can be easily ignored in disjointed decision making</td>
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<td>3. Criticism of Reactiveness. Reactive decision making ignores long-term planning and moves away from the pressing problem instead of actively challenging and solving the problem.</td>
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<td>4. Criticism of Incrementalism. Incrementalism is the major weakness in decision making when a radical decision is needed.</td>
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by component organisational units, the organisation's goal generally only covers the demands of that specific subdivision.

Proponents of incremental strategy seem to accept the shortcomings of political activities. For example, Mintzberg (1990b) implied that since political activities take time to solve the problems, an organisation in crisis may not have the time to learn in a decentralised, incremental way. Therefore, he concluded that it may be better off with a forceful leader who already has a strategic vision. Another discussion highlighted by Mintzberg (1990b) is that during the conflict among subdivisions with different perspectives, one of the solutions may be accepted not because it is superior to the others but because its proponents have power to influence other groups. To conclude, the negotiating and bargaining processes may create obstacles to the firm and, consequently, produce negative effects in performance by delaying the strategic decision process.

2.5.2.2. Criticism of Disjointedness.

There are some questions in the previous literature over the issue of disjointedness. As mentioned earlier, Lindblom (1959) mentioned that managing strategies through the logical, sequential planning model were unrealistic. Braybrooke and Lindblom (1970), proponents of the incremental approach, described policy making as a serial, remedial and fragmented process in which decisions are made at the margin. It is argued that in an incremental, disjointed process, social or organisational innovations can be easily ignored since the process emphasises the short term and seeks no more than limited variations from past policies (Etzioni, 1968). Dror (1969) joined the critics and implied that the incremental process is
insufficient to alter its main impact as an ideological reinforcement of the pro-inertia and anti-innovation forces prevalent in all human organisations, administrative and policy making." (p:169) Dror further argued that because of its inertia-reinforcing implications, incrementalism has limited validity, which constitutes a very serious weakness.

In addition, Andrews (1980) referred to Lindblom’s ideas as “purposeless”. Mintzberg et. al. (1998) argues that under incrementalism, central direction can dissolve into tactical manoeuvering. A series of rational moves can belie the rationality of the whole activity. They further argued that there are some cases under which incrementalism cannot succeed, for example, throughout a crisis period. In such a case, the firm may need a leader. Even under more stable conditions, some organisations need the strong goals and objectives that are created by top managers.

2.5.2.3. Criticism of Reactiveness

Mintzberg (1973) noted that in the incremental mode, the strategy process is typified by the reactive solution to existing problems rather than the proactive search for new opportunities - as occurs in the synoptic mode. There are those who maintain that reacting to problems without specific long term goals may undermine the incremental strategy either “never do anything unless you have to do” or “if you have to do anything do as little as possible” (Boulding, 1964, p:931). Boulding further mentioned that “just because we cannot see the whole way before us does not mean that we should never invest in a better lamp; it is surely better to see two steps ahead than one, if the effort is not too costly” (p:931). Some of the incremental model adherents seem to accept this criticism. For instance, Mintzberg (1990b) noted that
"an organisation that proceeds through incrementalisation of any kind ... runs the risk of not being able to converge on a clear strategy" (p:155). In addition to this, Bendor (1995) argued that

"a satisficing target or aspiration level serves as a stopping role in a search for alternatives: the decision maker ends the search once he or she encounters an option that exceeds the aspiration level, instead of trying to optimise by balancing the marginal costs and benefits of further search." (p:820).

Reactiveness is criticised as being the process of moving away from the pressing problem instead of actively challenging and solving it (Braybrooke and Lindblom, 1970). In this process, organisational goals may be defined largely in terms of reducing the impact of problems, instead of proactively pursuing objectives rationally determined by the organisation.

### 2.5.2.4. Criticism of Incrementalism.

Another criticism centers on the use of incremental values. In the incremental process, decision makers make incremental changes by considering previous decisions. However, this is the case only when organisations face recurring, similar decision problems. When new problems evolve so that past decisions are undesirable, or when no similar past decisions exist, an organisation may have to consider a radical departure from the present policy (Dror, 1969). In the case of newly-established, but fast growing organisations, for instance, it may be extremely difficult to find past decision problems similar to the present one, because of their short history and fast-changing variables. This kind of organisation may have to search for new solutions, ones which may differ significantly from the previous solutions, by a using synoptic approach. Some other researchers argued that even
though organisations face similar decision problems, managers have difficulty in learning from the past. For instance, Golden (1992) found that executives’ recollections of their past strategies are often biased. Managers recall past events as being more rational and consistent with current strategies than they really were. Therefore, according to his findings, it can be noted that executives are unable to learn the appropriate lessons from past mistakes and will be destined to repeat them.

2.6. CONCLUSION

This chapter has been devoted to identifying assumptions, characteristics, and criticisms of the two alternative approaches to strategic planning. Firstly, strategy definition was stated according to the schools. As noted earlier, perspectives have different understanding of the strategy process. In the next section, strategic processes, synoptic and incremental, were described. In addition to the explanation of the different schools, their premises were discussed and compared in detail. Such an analysis enabled us to highlight the key assumptions of models. Finally, an extensive critique of both views was noted in the light of discussions made in the previous sections.

Our synthesis of the past literature confirms that organisations are political systems and various departments have different opinions about an organisation’s future. Moreover, strategic decision making is boundedly rational in that top executives are cognitively limited and engage in a cycling among rational decision making steps. In this context, using the incremental approach is worthwhile. However, it should be borne in mind that using the incremental approach may lead the company to undesired situations. For example, indulging too much in political
activities may undermine the strengths of the company by spending its valuable time
and resources at critical moments. It could be maintained that the degree of rationality
seems to depend on environmental and organisational factors. The reason behind this
suggestion is, as Eisenhardt and Zbaracki (1992) noted, rationality is
multidimensional, and so strategic decision makers are rational in some ways, but not
others. This view is also shared by Dean and Sharfman (1993b). They argued that
rationality is variable rather than absolute. It might be concluded from the literature
review of models that the degree of comprehensiveness or rationality may change
according to organisational and environmental factors. It seems that uncertainty of
the environment, availability of information, financial resources and structure of the
company play a crucial role in the degree of rationality. As was discussed in the first
chapter, one of the objectives of this thesis is to state in which circumstances using a
synoptic or incremental approach may provide competitive advantage for the
company. Therefore, there is a need to suggest a contingency perspective. This work
postulates that using synoptic and incremental approaches in strategy decision making
seems to depend on environmental and organisational factors. In the next chapter, a
contingency view will be suggested.
CHAPTER THREE
THE CONCEPTUAL MODEL AND HYPOTHESIS

3.1. Introduction

The previous chapter was devoted to the strategic decision making processes and their assumptions. This chapter will focus on the model relating the relationship between environmental, organisational contingencies and strategic decision processes. As discussed in the first chapter, one of the main objectives of this research is to indicate the relationship between environment-structure-process-performance. In order to identify the relationship, literature from various fields is reviewed.

The argument of this chapter is inferred from the contingency perspective of organisation theory and from the design school of strategic management. The popularity of contingency theory in recent organisation theory based research can be attributed partly to a fundamental assumption that “there is no one way to organize”, and that any one way of organizing is not equally effective under all conditions (Galbraith, 1973, p:2). Extending this assumption to the strategy field, a major reason for its acceptance is that the field of business policy exemplified by the initial strategy paradigm is rooted in the concept of matching organisational
resources with the corresponding environment (Andrews, 1994). As can be seen in Mintzberg (1994), in order to select the optimal strategy, the synoptic school emphasises comparisons of internal strengths and weaknesses with external threats and opportunities. Accordingly, this research claims that the usage of synoptic and incremental decision processes might depend on environmental and organisational factors.

This chapter begins with the presentation of the model. The following section is devoted to the environmental factors of perceived environmental uncertainty and environmental munificence. The relationships between these factors and the strategic decision process are considered in depth in this section. The following section looks at organisational factors, namely structure, size and firm performance. The hypotheses examined are also stated in this chapter.

3.2 The Conceptual Model

This section reveals a model that will be tested in this thesis. The relationship between environment-structure-strategy performance will be briefly explained in this section. The model is adopted from Hyun (1992). In his work, Hyun used perceived environment uncertainty and resource scarcity as environmental variables. Instead of using the resource scarcity concept, in order to be consistent with the previous studies, the present study will use munificence as an environmental variable. Hyun also considered organisational structure and size as intraorganisational factors. This research considers another factor, firm performance, as an organisation variable, as well as structure and size, and tests the
Figure 3.1: Conceptual Model Associated with All the Hypotheses
effects of firm performance on strategic decision processes. Figure 3.1 clearly demonstrates the relationships between the highlighted factors.

The review of the synoptic and incremental approaches reveals that the use of the models depends on the environment-structure-process-performance relationship. In addition, examining decision processes in their relationships with environmental contingencies and organisational properties may provide a clear understanding of those processes. As stated earlier, the main objective of this research is to test the conceptual model. The model indicates a relationship between environmental contingencies and decision processes and the relationships's effects on firm profitability. Organisation theorists mentioned that perceived environmental uncertainty and environmental munificence are two indispensable components of the external environment. This thesis will, therefore, test the effects of perceived environmental uncertainty and munificence on the synoptic and incremental decision processes. These environmental contingencies are expected to have direct effects on the decision processes which, in turn, affect firm profitability.

As far as the organisational variables are concerned, the proposed research suggests that they have direct effects on decision processes and firm profitability. Structural formalisation and centralisation and size may directly influence changes in decision processes. Although theoretically possible, this thesis does not test the relationship between environmental and organisational factors, because it is beyond the scope. These tests will be left to future research.
3.3. The Environmental Determinism Perspective

Some organisation theory and strategic management researchers have focused on the linkage between the strategic planning process and the environment (Hart 1987, Hrebiniak & Snow 1982, Miller & Friesen 1983), assuming that a match between the two is necessary for the strategy to be optimal (Miller & Friesen, 1983). This assumption implies that whether the strategic decision-making process is more formal or not, it is affected by the degree of environmental uncertainty and munificence. The core of the discussion is that firms may be more successful if they perform different decision-making processes in a varying environment. Thompson (1967), for instance, argued that increasing environmental complexity seems to increase the need for strategic planning.

There is a great deal of empirical study concerning the relationship between environment and the strategic decision-making process. For instance, Bantel (1993) found that as top managers perceive high environmental complexity they become vigilant in their attempts to gather internal information and to establish goals to guide organisational actions. Jemison (1981) concluded that environmentally-related activities had more power than the organisationally related activities, in illustrating the variance of strategic decision-making processes. In addition to this, Kukalis (1991) empirically reported that as environmental complexity increases, the strategic planning process becomes more profound. Another study by Leblebici and Salancik (1981) stated that loan officers tend to use more profitability estimations to seek additional information in volatile environments.
As far as the above findings are concerned, it would seem reasonable to maintain that the strategic decision process is affected by the external environment. Strategic planning literature recognises the need for organisations to establish formal linkages between external elements of the organisation and internal decision-making. The previous literature on organisational environments observes two main perspectives; perceived uncertainty and munificence are considered as the environmental contingencies. The first perspective is that because information may have strategic value, may be relevant to tactical managerial decisions, or concern technical developments that may affect an organisation’s technical core, lack of information may increase the amount of uncertainty perceived by organisations. From an information processing point of view the environment is crucial because it creates uncertainty for managers, especially top managers. Environmental uncertainty increases information processing within organisations because managers must identify opportunities, detect and interpret problem areas, and implement strategic or structural adaptations (Hambrick, 1982). A key focus of research based on this perspective is the emphasis on perceived uncertainty and the subjective rather than objective data generated by participants in organisations. Resource dependence, the second perspective, posits that the environment is a source of scarce resources which are sought after by competing organisations (March and Simon, 1958; Pfeffer and Salancik, 1978). As the environment becomes less munificent or more hostile, firms are subjected to greater uncertainty. Management’s ability to cope with these conditions by reducing the firm’s dependence on or increasing its control over these resources will affect organisational performance (March and Simon,
1958). In addition to this, the scarcity of valuable resources contained in external environments may induce distinctive strategic behaviours.

To conclude, this research claims that decision processes may differ based on the organisational ability to obtain information or other valuable scarce resources. This research considers perceived uncertainty and munificence as the main factors of the external environment and argues that these contingencies may affect decision processes.

3.3.1. Perceived Environmental Uncertainty

It seems that, in today's industrial climate, the level of uncertainty is increasing. This can be seen particularly in relation to external factors as one considers the constant change of environment in which the company operates, change being influenced by politicians (national and international), competitors, the latest scientific discovery or new technology. Therefore, uncertainty in this connection is being influenced not only by change itself but by the accelerating rate at which it occurs. In addition, today's manager has to cope with uncertainty in a wider sphere. This arises because of new scientific discoveries, new technology, increasing intensity of competition or simply because, in a world of improving communications, managers have a greater awareness of what is available in a particular industry both nationality and internationally.

Whilst it is true that there are more sophisticated appraisal techniques available to aid selection, the manager still has a choice to make so as to ensure that the use of the company's limited resources is optimal. As a consequence, it
can be concluded that with increased choice there is a greater degree of risk in making the correct decision.

3.3.1.1. Perceived Environmental Uncertainty Research from Management Literature

Before discussing the concept of environmental uncertainty, it seems worthwhile to state the meaning of "environment". The environment is defined by Duncan (1972) as the relevant physical and social factors outside the boundary of an organisation that are taken into consideration during organisational decision making. The environment can be conceptualised as having several factors that exist in two layers. The first or closest to the organisation layer is the task environment which directly affects strategy. It involves environmental elements with which the organisation has direct contacts. These elements are commonly defined to include competitors, suppliers, customers. The outer layer is the general environment. It refers to the sectors that impact organisations indirectly. The general environment often includes economic, political and social sectors. It is taken for granted that the environment is a major source of uncertainty for managers, responsible for identifying external opportunities and threats, implementing strategic changes, and achieving the organisation/environment alignment. Lawrence and Lorsch (1967) have argued that organisational success requires the maintenance of differentiation and integration consistent with the demands of the environment. In order to specify the environment's effects on the organisation's strategy making process, several studies used environmental uncertainty (Downey & Slocum 1975, Duncan 1972) and stressed that firms must
adapt their strategies to different uncertainty levels (Miles and Snow 1978, Lee and Miller 1996). On the other hand, some studies concluded that environmental uncertainty does not have a great impact on the strategic planning process. For example, Lindsay and Rue (1980) conducted a study involving 198 firms divided into three groups; companies that had no formal planning processes, companies with written long-range plans with specific objectives, and finally, firms that had formal environmental scanning and review processes. They measured environmental complexity and stability and found a positive relationship between environmental uncertainty and extensive planning in large firms. However, the findings for small companies were not significant. They also failed to find support for the hypothesis that increased environmental uncertainty leads to a shorter planning time span. Boulton et al (1982) concluded that uncertainty does not have a consistent impact on all aspects of strategic planning. Javidan (1984) further argued that the effect of environmental uncertainty may be moderated by two variables; the perceived need for internal change, and the perceived value of long-range planning in formulation and implementation of such a change. Even though there are several empirical results maintaining no relationship, this study relies on the concept of environmental uncertainty as representation of organisations' environments, like the majority of the earlier empirical studies of planning process design.

Environmental uncertainty has been defined as the absence of information about environmental trends and events (Galbraith, 1973) and is operationalised through constructs that tap the extent of environmental complexity and turbulence (Daft et al., 1988). Consequently, the environment can increase or decrease
uncertainty by providing or withholding needed information. “Uncertainty will affect organisation structure, because as task uncertainty increases, more information must be processed among decision makers to achieve a given level of performance” (Galbraith, 1973, p:4). Leblebici and Salancik (1981) defined uncertainty as

“a state which characterises a given decision situation within a given environment. In terms of the cause effect inferences of organisational decision-making, uncertainty is the state arising from predicting outcomes from the actions taken to achieve them; the more one is able to predict outcomes, the less the uncertainty” (p:580).

They further argued that because the outcomes are the results of conditions beyond the actions taken to produce them, uncertainty is a function of both one’s knowledge of cause-effect relationships and the probabilistic conditions of the environment within which outcomes take place. Duncan (1972) defined it “in terms of the perception of organisation members”(p:314). In the light of the above definitions, information existing in environments is a major source of uncertainty to organisations, and therefore, dealing with environmental uncertainty is a crucial issue in the contingency perspective (Giffort, Bobbitt & Slocum 1979).

3.3.1.2. Literature Pertaining to Measuring Perceived Environmental Uncertainty

There is an unresolved issue in environment uncertainty research, which focuses on whether organisations reacted to the environmental uncertainty which is external and independent of themselves (Aldrich, 1979) or to the uncertainty that is perceived by the organisational members (Duncan, 1972). While the first
approach is recognised as objective uncertainty, the latter is classified as perceived uncertainty. Boyd and Fulk (1996) revealed that objective measures are generally based on industry-level data, and are practical for quantifying structural differences between industries. Data can be obtained from archival sources, which in turn facilitate replication and comparative studies. Perceptual measures, in comparison, entail the subjective judgments of the environment by organisation members or key managers. Bourgeois (1980) noted that the matter is not whether measures should be objective or perceptual; rather, both objective and perceptual environments are real and relevant from a management point of view. He claimed that objective environments are relevant to primary strategy making, whereas perceived environments are input to secondary strategy making. In the same way, Boyd, Dess and Rasheed (1993) reported that objective measures are applicable to understanding external constraints imposed on a firm, while perceptual measures are more appropriate for studying managerial behaviour and decision-making. They further suggested that those studies of firms' actions, such as executive information search or decision-making, would benefit most from the use of perceptual measures.

The proponents of objective uncertainty claim that it lessens both the problems associated with biases inherent in managerial responses (Huber, Power 1985) and nonrespondent bias. Boyd et al. (1993) argued that the availability of data to all researchers and the potential for replication and comparison across studies makes the use of secondary data sources attractive. As all firms did not perceive objective environmental uncertainty similarly, using perceived uncertainty may provide inconsistent or even trivial results (Yasai-Ardekani,
Objective measures are also appropriate for describing constraints that are faced by every firm in an industry (Bourgeois, 1980). In their comprehensive study, Boyd et al. (1993) pointed out the shortcomings of objective measures. They argued that to create an industry-level index by collecting data from several companies may be misleading due to basic issues of industry definition or when combining heterogeneous firms. The second problem is the use of a time series of five or ten annual data points. They noted (1993, p:208) that such indices implicitly weigh all data points equally, but the more recent events will have a greater impact on managerial perceptions of uncertainty than events that occurred a decade or more ago. According to Boyd et al. (1993) the final problem is the lack of correspondence between the conceptual development of environmental constructs and their subsequent measurement.

In contrast, the advocates of perceived uncertainty suggest that the managers' perception about environment is more important to organisational strategy, structure, and process than objective measures (Duncan 1972, Milliken 1987). Boyd et al. (1993) argued that perceptual measures allow the analyst to outline a firm's environment from the perspective of organisational members. They further claimed that perceptual measures are more likely to be influenced by the present circumstances of the environment than objective measures, which reflect long-term trends. Perceived measures are often criticised because of their reliability and validity problems. Tosi, Aldag and Storey (1973) compared managers' responses on Lawrence and Lorsch's (1967) perceived uncertainty scale to actual variability in respondents' industries and found no significant correlation. They failed to replicate Lawrence and Lorsch's findings, challenging the
methodological adequacy of their research instrument. One possible explanation for the contradiction is that Lawrence and Lorsch attempted to measure the level of uncertainty within the system, as reflected in management evaluation, whereas the volatility measure of Tosi et al. related to a direct assessment of the external environment. The argument between the two perspectives occurs if one accepts the theory that the degree of internal uncertainty is a function of external uncertainty. Child (1972) noted that:

“...has frequently blurred the distinction between characteristics of the environment as such and their perception and evaluation by those within an organisation: the distinction between variability and an experience of uncertainty, between complexity and an experience of cognitive profusion, between illiberability and an experience of stress ... it is important not to overlook these fine distinctions between “reality” and its evaluation because they can explain why organisational decision makers in practice may not react to observable environmental changes” (p:5)

Lawrence and Lorsch’s and Duncan’s (1972) studies were analysed by Downey et al. (1975). They found that the studies were neither correlated with each other nor highly correlated with criterion measures such as perceived detrended volatilities in prices and sales.

This research recognises that perceived environmental measures may be more appropriate for the objectives of the work. The first reason for this proposition is that, as Snow (1976) pointed out, firms act upon and respond to an environment that their top managers have perceived and interpreted: “...management responds only to what it perceives; those environment conditions that are not noticed do not affect management’s decisions and actions. This ... means that the same ‘objective’ environment may appear differently to different
organisations,” possibly resulting in different strategies (p:249). His comments imply that the same objective environment can be perceived differently by different top executive teams. This explains why firms facing similar conditions carry out different strategies and achieve different performance levels. In addition to this, Hambrick and Mason (1984) argued that in information analysis, value differences in the upper echelon may determine different priorities of information. Thus, firms may assess dissimilar information with diverse value judgments which increase the differences in perceiving environmental uncertainty.

Second, Tosi et al. (1973) criticised the validity of the perceived measures by stressing a lack of association between environmental volatility and perceived uncertainty. However, as Milliken (1987) argued, the use of environmental volatility may not be an appropriate measure of uncertainty, since environmental uncertainty is affected by unpredictable change in the environment, not change per se. Therefore, it seems fair to suggest that to use perceived measures is more suitable than to use objective ones for the purposes of this research.

3.3.1.3. Literature Pertaining to Conceptualizing Perceived Environmental Uncertainty

Having discussed the measure debate, this research will attempt to shed some light on the components and dimensions of uncertainty. According to Litschert and Bonham (1978) uncertainty seems to be related to such factors as the number of nonroutine decisions, frequency of exceptional cases, nature of the search process, and the amount of information available. A variety of studies has focused on the components of uncertainty in the analysis of the strategic decision
process. Lawrence and Lorsch (1967) investigated (1) the internal functioning of organisations in relation to the demands of the external environment and (2) the ability of the organisation to cope effectively with the demands of the external environment. Their research probed six organisations operating in the chemical processing industry. They stated that "uncertainty consists of three components: (1) lack of clear information, (2) the long time span required for definitive feedback and, (3) the general uncertainty of causal relationships" (p:27). They concluded that while firms tend to rely on direct supervision and standardisation in simple stable environments, those in dynamic, complex environments favoured mutual adjustment.

Duncan (1972) presents a study designed to identify the characteristics of the environment which lead to uncertainty in decision making. His study concerned two dimensions of environmental uncertainty; simple-complex and static-dynamic dimensions. The first part of the simple-complex dimension refers to (1) the number of factors in the decision unit's environment and (2) the degree to which the factors are located in few components. In other words, this dimension focuses on the degree to which the factors in the decision unit's environment are few in number and are similar to one another in that they are located in a few components. The complex part presents the indication of the degree to which the factors within a decision unit's external environment either remain the same over time, or are in a continual process of change (Duncan, 1972). He further proposed that the two dimensions should be combined to form a global or composite measure; the greatest perceived uncertainty was seen to arise when
environments were both complex and dynamic. In the same study, he noted three components:

1. the lack of information regarding the environmental factors associated with a given decision-making situation,
2. not knowing the outcome of a specific decision in terms of how much the organisation would lose if the decision were incorrect, and
3. inability to assign probabilities with any degree of confidence with regard to how environmental factors are going to affect the success or failure of the decision unit in performing its function. (p:318).

While the first two components focus on the general lack of information that is involved in decision-making, the last component focuses on assigned probabilities. Duncan (1972) concluded that individuals in decision units experiencing dynamic-complex environments face the greatest amount of uncertainty in decision-making. In dynamic environments, decision units face significantly more uncertainty in decision-making regardless of whether their environment is simple or complex.

Duncan’s (1972) uncertainty components and dimensions were examined by Downey, Hellriegel and Slocum (1975) in terms of their conceptual and methodological adequacy. According to Nunnaly (1978), a scale should have a coefficient alpha score of at least .50 in order to be considered reliable. Only one of Duncan’s dimensions, lack of effect knowledge scale, had a reliability coefficient less than .50. Their other finding was that Lawrence and Lorsch’s (1967) uncertainty subscales did not meet Nunnally’s criterion for research instruments. Another criticism concerning Duncan’s study was that the complexity part of the simple-complex dimension was not a significant factor and was negatively related to perceived uncertainty. Furthermore, unlike Duncan’s
finding, dynamism was less significant than the complexity dimension. The last finding was that the communality between Lawrence and Lorsch’s and Duncan’s subscales, that were designed to measure the same concept, was not proved in their study. It seems fair to note that even though those two studies’ subscales intended to measure the same concept, they seem to focus on different components of environments. The Lawrence and Lorsch study measures time span necessary for feedback on job performance, clarification of job requirements, and degree of difficulty involved in job performance. On the other hand, Duncan’s scale measures lack of information about future environmental events, inability to assign probabilities and lack of knowledge of the organisational consequences if a decision is incorrect.

Tung (1979) suggested the routineness of the problem-opportunity dimension of environmental uncertainty in addition to the complex and dynamic dimensions. According to Tung, this dimension indicates the variability of and analysability of the stimuli confronting the organisational unit. In his study, he implied that where variability was low and stimuli analysable, the perceived uncertainty was expected to be low. Tung proved that the routineness dimension was a significant factor. Like Duncan’s study, he stated that the dynamism dimension was the most influential factor on perceived environmental uncertainty.

Boulton et. al. (1982) reconsider Duncan’s five component model of the environment. Their work studied 103 firms from various industries. Their findings show that the environment should be conceptualised in terms of four factors rather than the five components mentioned by Duncan (1972). The four
factors were customer, supplier, sociopolitical, and technological. The fifth factor, competitor factor, was considered in customer and supplier dimensions.

Milliken (1987) defined uncertainty as “an individual’s perceived inability to predict something accurately” (p:136). She recognised three types of environmental uncertainty. The state uncertainty considers manager’s inability to understand environmental changes. In other words, managers may exhibit a state uncertainty if uncertainty exists concerning what actions are relevant to organisations or if managers are uncertain about the nature or probability of changes in the relevant environment. The second type of uncertainty, effect uncertainty, is defined as “inability to predict what the nature of the impact of a future state of the environment or environmental change will be on the organisation” (p:137). The last type of uncertainty, response uncertainty, referred to the lack of knowledge of response option and/or an inability to predict the likely consequences of a response choice. She further claimed that when managers are not clear about the effects of an environmental change, they may spend a lot of time in the environmental threat and opportunity phase of strategic planning. Milliken’s work suggests modifying the treatment of uncertainty as a undimensional construct. It seems that Duncan’s (1972) and Milliken’s (1987) uncertainty dimensions are similar to each other. Table 3.1. illustrates this comparison.

In their empirical work, Achrol and Stern (1988) recognised that there are seven different environmental dimensions. (1) *environmental diversity* refers to the degree of similarity of the elements of the population dealt with. (2) *environmental*
**Table 3.1. The Comparison of Duncan and Milliken’s Uncertainty Dimensions**

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<tr>
<th><strong>Duncan (1972)</strong></th>
<th><strong>Milliken (1987)</strong></th>
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<td><strong>Dimension 1:</strong> Lack of information regarding the environmental factors associated with a given decision-making situation.</td>
<td><strong>State Uncertainty:</strong> Means that one does not understand how components of the environment might be changing.</td>
</tr>
<tr>
<td><strong>Dimension 2:</strong> Not knowing the outcome of a specified decision in terms of how much the organisation would lose if the decision were incorrect.</td>
<td><strong>Effect Uncertainty:</strong> Ability to predict what the impact of environmental events or changes will be.</td>
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<td><strong>Dimension 3:</strong> The ability or inability to assign probabilities as to the effect of a given factor on the success or failure of a decision unit.</td>
<td><strong>Response Uncertainty:</strong> Lack of knowledge of response options and/or an inability to predict the likely consequences of a response choice.</td>
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*dynamism* concerns the degree to which environmental factors are changing rapidly, (3) *environmental concentration* indicates the level of competition in the market, (4) *environmental capacity* implies the richness of resources provided by the environment, (5) *environmental interconnectedness* refers to the number of connections among organisations, (6) *environmental conflict* indicates the perceived level of abnormal competitive stress, (7) *environmental interdependence* considers the mutual reactivity to one another’s acts perceived to be present among companies competing with each other. Their findings supported the first four dimensions which seem to be consistent with past research.
3.3.1.4. Effects of Perceived Environment

Environmental factors exert a significant influence on the strategic decision process. Several studies have attempted to capture these environmental influences. Table 3.2. (see p:91-93) summarises the results of some key studies. Research on the relationship between environmental uncertainty and its effects on the strategic decision process has yielded conflicting results. These can be categorised into two main groups of studies. Studies by Fredrickson and his colleagues claim that rational-synoptic strategic decision processes are associated with superior economic performance in stable environments (Fredrickson, 1984; Fredrickson & Iaquinto, 1989; Fredrickson & Mitchell, 1984). On the other hand, Miller and Friesen (1983) found that increases in environmental dynamism are accompanied by greater levels of rationality in the planning process at high performing firms. Similar reports have been reported by Eisenhardt (1989), who found that effective strategic decisions in high velocity environments are characterised by speed and comprehensiveness.

In this section of the work, past research providing contradictory results on the relationship between environment uncertainty and rationality will be reviewed, and the hypothesis concerning environmental uncertainty will be noted.

As mentioned above, there is a group of researchers who argue that perceived environmental uncertainty is positively related to the synoptic approach, but negatively related to the incremental mode of strategic planning. Kukalis' (1991) study analysing 200 manufacturing companies showed that growing environmental complexity seems to increase the need for long-range planning. Khandwalla (1976) argued that companies tend to carry out more synoptic and
multifaced strategies when managers perceive the environments of their firms to be ‘rich in contingencies’, as when they are dynamic and unstable.

Miller and Friesen (1983) analysed 5-year changes in environmental dynamism and process rationality, and the relationship of these changes to performance, for a sample of Canadian firms and a separate sample of US firms. They found that for high performing firms, increases in environmental dynamism are accompanied by increases in planning rationality. They also argued that in order to afford top managers with an adequate degree of mastery, a dynamic environment must be analysed cautiously.

In another study testing manufacturing firms, Priem, Rashhed and Kotulic (1995) supported the moderating role of environmental dynamism in the rationality-performance relationship, indicating that higher degrees of strategy making rationality are associated with high performance in dynamic environments, whereas less rationality is associated with high performance in more stable environments.

Slevin and Covin (1997) noted that since hostile environments are unforgiving, companies should carefully plan their strategies, both to avoid being caught off guard and to promote a general consciousness of how the organisation has chosen to deal with uncertain environments. Furthermore they argued that in hostile environments the range of viable strategic alternatives is likely be limited, such that multiple paths will not be equally workable solutions to the question of how the organisation should navigate its environment. Their empirical finding supported these arguments and they concluded that planning strategies are more positively related to sales growth among firms in hostile environments.
In their empirical work, studying a large survey, Hart and Banbury (1994) hypothesised that strategy-making process capability will be positively associated with performance in turbulent environments but not in stable environments, because a turbulent environment appears to require a more sophisticated level of analysis and information processing than does a stable one. Their finding was that high strategy-making process capability appears to make the greatest difference for firms operating in turbulent environments.

Thompson (1967) argued that organisations tend to reduce uncertainty in their environment by creating the necessary structures to deal with it. According to Grinyer et al. (1986), one way is to employ more qualified planners, with more sophisticated forecasting and evaluation methods, where the environmental uncertainty is high. Yasai-Ardekani and Haug (1997) argued that since uncertainty increases the need for a continuous surveillance of competitive conditions, organisations that operate in a turbulent environment are likely to apply a broader, more systematic scanning of their environments, implying that such organisations implement more synoptic planning processes. They found that in turbulent environments, organisations are more likely to allocate significantly greater amounts of financial and human resources to planning in order to facilitate a more intensive environmental surveillance and assessment of competitive conditions.

Competitive environments require the firms to be proactive and able to quickly adjust to competitive conditions. Yasai-Ardekani and Haug (1997) argued that organisations that operate in competitive environments will tend to carry out planning processes that emphasise greater flexibility in their structures. This is because the attainment of organisation-environment alignment depends on
advanced detection of environmental signals, transmission of environmental information to major decision makers in a timely fashion, and speed of decision making and implementation of strategic decisions in dynamic environments. They further argue that high levels of competitive pressures may render inappropriate the formalised structuring of planning processes.

Lindsay and Rue (1980) noted that “if the completeness of the long-range planning process can be seen as a reflection of the degree of structuring of the decision making tasks of the organisation’s internal environment as well as an attempt to meet the uncertainty in the external environment, it is apparent that completeness as a measure of structure should also be consonant with the environment” (p:393). The implication of the argument is that as the uncertainty of the environment increases, so does the completeness of the planning process. They found that long-range planning, applied as managerial perception of environmental complexity and instability, increased in large size firms. Furthermore, they claimed that the large firms tend to seek all possible information, implying that they carried out more complete long-range planning processes as uncertainty increases.

Odom and Boxx (1988) examined the strategic decision process and environment relationship on non-profit organisations and reported several findings. First, they found that as church leaders perceived higher environmental complexity, the planning process was more formal and rational (i.e. synoptic). Secondly, they noted that the formality and comprehensiveness of the planning process was related more to the perceptions of the environment than to the objective measures of the environment. The final finding was that the simple-
complex dimension of the environment was the most important factor in the use of more synoptic planning processes.

In a couple of companion studies, Eisenhardt and Bourgeois analysed decision speed and found a positive relationship between the synoptic mode of the planning process and perceived environmental uncertainty. Bourgeois and Eisenhardt (1988) studied microcomputer firms and found that in high velocity environments, effective firms use rational decision making processes, because as the speed of environmental change accelerates, successful firms deal with their extremely uncertain world by structuring it. They also argued that 'high velocity environments force executives to structure their cognitive maps and to form their theories regarding which strategies will succeed, as well as to cope psychologically with the instability'(p:827). The Eisenhardt (1989) study suggests that in high velocity environments, effective managers tend to accelerate their cognitive processing, instead of avoiding the analytical requirements of the synoptic mode of the strategic planning process. She found that top managers use more information, consider more alternatives, and seek a greater amount of advice. The positive relationship between perceived environmental uncertainty and the synoptic mode of strategy formulation was also confirmed by another study conducted by Eisenhardt and Bourgeois (1988).

Conflicting results were suggested by another group of researchers who argue that perceived environmental uncertainty was positively related to the incremental mode of strategic planning. Mintzberg (1973) advises the 'planning' mode of decision making in a stable environment. The first reason for this was that the information needed to make comprehensive-rational decisions is
potentially available. Secondly, it is relatively easy to integrate decisions into a consistent whole. Moreover, he suggested an ‘adaptive’ process for firms in unstable environments because such environments are too complex to understand and prevent a high level of integration. According to Mintzberg, the planning mode can be implemented by those organisations that are large enough to afford the cost and to operate in an environment that is reasonably stable.

In the same way, Nutt (1976) argued that the ‘closed system’ logic of synoptic processes is applicable only when the environment is predictable, and an incremental process can be employed when the environment places a premium on adaptability. Similarly, Smart and Vertinsky (1984) argued that strategy making became incremental and disjointed in highly complex and turbulent environments that were perceived as uncertain. Another study by Shrivastava and Grant (1985) observed that decision makers who perceived a highly uncertain environment sought incremental decision-making processes wherein negotiation among coalitions dominated.

Fredrickson (1984) found that rationality represented by the comprehensiveness of the planning process, is positively related to performance for firms in an industry with a stable environment. Fredrickson and Mitchell (1984) further pointed out that rationality in the planning process is negatively related to performance in an industry characterised as dynamic. In their study, Fredrickson and Iaquinto (1989) used the same firms in the same industries and mentioned that these relationships are stable over time, and that comprehensiveness exhibits considerable inertia. Fredrickson’ and his colleagues’
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<td>Lindsay and Rue (1980)</td>
<td>199 Firms in 15 industries</td>
<td>Questionnaire</td>
<td>Planning completeness</td>
<td>&quot;firms tend to adopt more complete formal long-range planning processes as the complexity and instability of the environment increases.&quot;</td>
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<td>Miller and Friesen (1983)</td>
<td>a sample of 50 Canadian firms and a separate sample of 36 US firms</td>
<td>Questionnaire</td>
<td>Dynamism, Hostility and Heterogeneity</td>
<td>&quot;for high performing firms, increases in environmental dynamism are accompanied by increases in planning rationality.&quot;</td>
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<td>Analysis, innovation</td>
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<td>ROE for 5 years period</td>
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<td>ROA, % of sales growth</td>
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<td>Shrivastava and Grant (1985)</td>
<td>61 executives in 32 Indian firms</td>
<td>Interviews</td>
<td>No a priori measures/constructs</td>
<td>&quot;decision makers who perceived a highly uncertain environment sought incremental decision-making processes wherein negotiation among coalitions dominated.&quot;</td>
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<td>Organisation records</td>
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<td>Odom and Boxx (1988)</td>
<td>a sample of 175 churches</td>
<td>Questionnaire Secondary Data</td>
<td>Environmental Uncertainty Planning Sophistication Size Growth</td>
<td>&quot;as church leaders perceived higher environmental complexity, the planning process is more formal and comprehensive.&quot;</td>
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<td>Bourgeois and Eisenhardt (1988)</td>
<td>Four decisions in Four microcomputer firms</td>
<td>Interviews Questionnaire</td>
<td>Comprehensiveness, newness of alternatives tried Centralisation of Power Decision speed Sales and Profitability, Market acceptance of product</td>
<td>&quot;effective companies tend to adopt a rational process in high velocity environments.&quot;</td>
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<tr>
<td>Eisenhardt (1989)</td>
<td>Eight Microcomputer Firms</td>
<td>Interviews Questionnaires Secondary Sources</td>
<td>Consensus, real time information, multiple simultaneous alternatives, Centralisation of Power Decision Speed, number of alternatives considered, integration among decisions, commitment Sales growth and profits</td>
<td>“Effective strategic decisions in high velocity environments are characterised by speed and comprehensiveness”</td>
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<tr>
<td>Fredrickson and Iaquinto (1989)</td>
<td>159 executives in 45 Firms from 2 industries</td>
<td>Structured Interviews Questionnaires Utilising decision scenarios</td>
<td>Executive team continuity, size Environmental stability/instability Comprehensiveness ROA after tax</td>
<td>“executives tend to use less rational process of strategic decision-making when faced with problems characterised by a high degree of uncertainty.”</td>
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<tr>
<td>Kukalis (1991)</td>
<td>a sample of 115 large manufacturing firms</td>
<td>Interview Questionnaire Secondary Data</td>
<td>Environmental Complexity Organisational Structure, size Capital intensity, market life-cycle, planning extensiveness, planning horizon, frequency of plan revision, role of corporate planning staff</td>
<td>“the degree of planning extensiveness increases as the environment becomes more complex.”</td>
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<tr>
<td>Bantel (1993)</td>
<td>a sample of 80 US banks</td>
<td>Questionnaire</td>
<td>Planning Formality Team Composition Heterogeneity Environmental complexity and stability Average ROE for 5 years</td>
<td>“Planning formality is positively correlated with environmental complexity.”</td>
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<tr>
<td>Dean and Sharfman (1993a)</td>
<td>a study of 57 decisions in 24 firms</td>
<td>Structured Interviews</td>
<td>Rationality, Importance of the decision, Contention, Environment uncertainty, External Control, Competitive threat, Size (No. of full-time emp.)</td>
<td>&quot;executives tend to use less rational process of strategic decision-making when faced with problems characterised by a high degree of uncertainty.&quot;</td>
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<tr>
<td>Boyd and Fulk (1996)</td>
<td>a sample of 72 executives</td>
<td>Interviews</td>
<td>Scanning, Strategic importance of an event, Strategic variability and complexity</td>
<td>&quot;comprehensive information search and decision-making is positively linked to performance in stable environments, and negatively linked in unstable environments.&quot;</td>
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<tr>
<td>Slevin and Covin (1997)</td>
<td>a sample of 112 manufacturing firms in 73 industries</td>
<td>Questionnaire</td>
<td>Sales Growth Rate, Organic-Mechanic Structure, Emergent-Planned Strategy, Environmental Hostility, Firm Size, Firm Age</td>
<td>&quot;planned strategies are more positively related to sales growth among firms in hostile environment and emergent strategies are more positively related to sales growth in benign environments&quot;</td>
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argument is that, in conditions of instability and information scarcity, strategists would be unable to engage in the structured deliberation and analysis implied in formal strategic planning. Instead, they must react adaptively, dealing with competitive situations only as they arise and with information only as it becomes available. Comprehensive (i.e. synoptic) processes are time-consuming and in a fast changing environment a slow decision-making process would be clearly inappropriate. These results are also supported by the Dean and Sharfman (1993a) study covering 24 firms in 16 manufacturing industries. They reported that decision makers will engage in a less rational process of strategic decision-making when faced with problems characterized by a high degree of uncertainty.

The arguments of Fredrickson and his colleagues were supported by the findings of Boyd and Fulk (1996). They found that perceived threats from uncertain environmental conditions are related to stepped-up scanning for important events for which information seeking activities are already occurring. If an occurrence is not important enough to rate regular monitoring, even high levels of variability are insufficient to generate information search programs. Moreover, the more perceived the complexity, the less the executive scanning activities.

This research argues that synoptic planning processes may be appropriate for increasing firm profitability under a smaller degree of perceived environmental uncertainty, whereas incremental strategies are expected to increase companies’ profits under high perceived uncertainty. The first reason for such a view is that, as discussed in the previous chapter, the synoptic model requires a high level of information from the environment in order to select the maximising alternatives for the goals. According to Mintzberg (1973), the information needed to make
comprehensive-rational decisions is potentially available in stable environments. It is suggested that there is not sufficient information to choose the appropriate alternative in uncertain environments.

Secondly, the synoptic approach suggests the integration of individual decisions into a consistent whole. However, in an extreme uncertain environment information needed for a present decision could be inappropriate in the short or medium term decisions, and, therefore, strategists would be unable to engage in the structured deliberation and analysis implied in formal strategic planning.

Thirdly, the synoptic process assumes that organisations can predict the future. As Mintzberg (1994) argues, the only thing certain about the future is that it is likely to change. However, organisations do not seem to have effective means of knowing. This research argues that an organisation might have difficulty in forecasting the future in high uncertainty conditions.

With these factors in mind, therefore, the present research suggests the following relationships between decision processes and perceived environmental uncertainty:

**HYPOTHESIS 1A:** As the managerial perceptions of environmental uncertainty increase, firms are most likely to use the incremental strategy. In contrast, firms that perceive a low level of environmental uncertainty are most likely to use the synoptic strategy.

**HYPOTHESIS 1B:** Firms that perceive high environmental uncertainty and use the incremental strategy are more likely to perform better than those using synoptic strategies. In contrast, firms that perceive low environmental uncertainty and use the synoptic strategy are likely to perform better than those using incremental strategies.
3.3.2 MUNIFICENCE

The other key environmental factor discussed in this work is environmental munificence. Even though it has been highlighted in the previous literature, there is very little direction on questions related to it in spite of its important implications for managers. Past research has implied that environmental munificence is positively associated with the range of strategy and organisational options available to firms (Bantel and Osborn, 1995). Rajagopalan et. al. (1993) argued that in munificent environments firms are less likely to be penalised for poor or suboptimal decisions than those in non-munificent environments. Thus, when there is munificence in the environment, it is relatively easy for companies to survive. However, when resources are scarce, competition intensifies (Yasai-Ardekani, 1989). It might be expected that in these scarce conditions, companies have little or no slack. Organisational slack is defined as “the difference between the resources available to the organisation and the total requirements of the members of the organisational coalition” (March and Simon, 1958, p:126). Wiersema and Bantel (1993) noted that lack of environmental munificence creates difficult and stressful conditions for managers. They also stated that lack of munificence implies little or no organisational slack, conditions of scarcity, and a threat to the firm’s survival. These statements indicate that environmental munificence is a crucial factor affecting strategic behaviour. Therefore, it seems logical to suggest that there may be a relationship between the level of environmental munificence and the strategic behaviour of the firm. It is expected that decision processes used under environmental munificence conditions may be
inappropriate for resource scarcity conditions. This view is also supported by the literature findings. For example, Chakracvarthy (1982) asserted that when slack is low, the firm is concerned with conserving resources. Consequently, strategic choices are constrained and the organisation is less able to implement divergent means for achieving their ends.

The roots of environmental munificence are found in resource dependence theory (Pfeffer and Salancik, 1978, Aldrich, 1979). According to the proponents of the theory, the resource dependence view argues that "environments affect organisations through the process of making available or withholding resources, and organisational forms can be ranked in terms of their efficiency in obtaining resources" (Aldrich, 1979, p:61). He (1976) defined resource dependency as the extent to which organisations are able to "exploit their environment in the acquisition of scarce resources" (p:232). As can be seen in Osborn and Hunt (1974), resource dependency states the degree of an organisation's reliance on specific environmental resources for growth and survival and the extent to which the resources affect the organisation. Pfeffer and Salancik (1978) defined environmental dependence as the importance of a resource to the organisation and the number of sources from which the resource is available, as well as the number, variety, and relative power of organisations competing for the resource. Aldrich (1979) discussed six dimensions from the organisational task environment. One of his environmental dimensions was munificence, which refers to the ability or capacity of the environment to permit organisational growth. It is argued that such growth and capacity will buffer companies within that environment from external and internal hostilities and enable the accumulation of slack resources within the
organisation (Cyert and March, 1963). The most discussed component of the resource dependency view is the munificence-scarcity dimension (Yasai-Ardekani, 1989). He argued that it can be expected that organisational responses differ according to the munificence-scarcity dimension of the environment. The scarcity dimension is related to the resource dependency model by virtue of the fact that organisations which are able to gain control over valuable, scarce resources maintain competitive advantages in their markets and keep profitable positions (Castanias and Helfat, 1991). Child (1972) conceptualised resource dependency as "environmental illiberality" which refers to the degree of threat from external competition, hostility or even indifference that faces organisational decision-makers in the achievement of their goals. Khandwalla (1973) referred to this concept as environmental stress. He mentioned that several consequences of increasing environmental stress are associated with the reduction of organisational slack.

There are several definitions for the munificence concept in the literature. Aldrich (1979) defined munificence as the environment’s ability to support sustained growth of an organisation. In the same way, Dess and Beard (1984) defined munificence as “an environment’s capacity to provide resources which support the organisation” (p:55). Pfeffer and Salancik’s (1978) definition was; “the product of the importance of a given input or output to the organisation and the extent to which it is controlled by a relatively few organisations” (p:51). Bantel and Osborn (1995) stated that munificence refers to “the extent to which the environment is able to support continued growth, referring to its relative abundance or scarcity of resources” (p:238).
Castrogiovanni (1991) identified three kinds of munificence by referring to past literature. These types are: (1) environmental capacity - level of resources available within an environment context, (2) environmental growth/decline - the relative change in capacity, (3) environmental opportunity/threat - the extent to which capacity is unexploited.

As mentioned earlier, there are some studies in the literature which define this variable as “resource scarcity” (Koberg, 1987), “capacity” (Aldrich, 1979), “illiberality” (Child, 1972). This work will use the term “munificence”, since the previous research seems to suggest that it may be the most important dimension in the resource dependency model. Moreover, using the munificence concept allows us to compare the findings here to those of previous studies. The concept of munificence appeared in some early studies (Cyert and March, 1963). Cyert and March (1963) mentioned that environmental munificence-scarcity is one of the key factors affecting the accumulation of slack resources to ensure organisational stability and survival. This concept also appears in recent studies (Bantel and Osborn 1995, Goll and Rasheed, 1997). Bantel and Osborn (1995) considered munificence as an environmental factor which affects the identifiability of the firm’s strategy.

This research argues that the munificence factor may affect the organisation’s characteristics and its decision making processes. It seems that the munificence-scarcity dimension in a firm’s existing markets increases or decreases the firm’s risk, suggesting a need to expand into new markets or otherwise. Likewise, Koberg (1987) found that environmental scarcity creates frequent administrative, personnel, and strategic changes as well as adaptation of company
structure. Therefore, it seems reasonable to suggest that this dimension may lead to strategic changes which in turn affect firm performance. The logic of this work is that the company’s strategic behaviour may be more synoptic or more incremental, as the environmental resources move through the munificence-scarcity dimension.

The previous research relating munificence and strategy behaviour has various findings. As can be seen in Table 3.3, some researchers claim that in nonmunificent environments, organisations may be more profitable if they use the synoptic model. Pfeffer and Salancik (1974) claimed that when resources are scarce, subdivisions tend to be less political in the process of resource allocation. They also mentioned that high competition increases the demand for even more coordination and control within the organisation. In contrast, when there are abundant resources, political activities increase because powerful groups use their power. According to Schick et. al. (1982), the budgeting process resembled a comprehensive, bureaucratic model, as the number of personnel positions to be budgeted for decreased. Dess and Origer (1987) suggested that organisational need for consensus on goals and means would be increased during nonmunificence, implying that the decision process would become more synoptic as resources become scarcer. Yasai-Ardekani (1989) noted that in munificent environments, companies tend to delegate decision-making authority to lower sub-units. On the other hand, in nonmunificent environments, top executives become more involved in decision-making. He seemed to imply that in nonmunificent conditions, managers tend to apply rational-comprehensive methods because
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<td>Koberg (1987)</td>
<td>88 Schools</td>
<td>Questionnaire</td>
<td>Environmental Uncertainty, Resource Scarcity, Organic Structure, Organizational Adjustments</td>
<td>&quot;resource scarcity was associated with the frequency of strategic adjustments.&quot;</td>
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<td>Yasai-Ardekani (1989)</td>
<td>45 firms in the electrical and electronics industry in England</td>
<td>Interviews</td>
<td>Organizational Complexity, formalization and centralization, Functional specialization, Professional qualifications, Munificence, Perceived Environment, Technology, Size</td>
<td>&quot;there is a negative relationship between synoptic process and munificence.&quot;</td>
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<td>Wiersema and Bantel (1993)</td>
<td>85 firms listed in Fortune 500</td>
<td>Secondary Data</td>
<td>Top Management Team, Turnover, Environmental instability, complexity and munificence, Average ROA for 3 years, Strategic Change, Demographic Heterogeneity</td>
<td>&quot;in nonmunificent environmental circumstances companies tend to apply the incremental approach.&quot;</td>
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<tr>
<td>Bantel and Osborn (1995)</td>
<td>200 moderate-sized banks</td>
<td>Questionnaire</td>
<td>Strategy items, Environmental complexity, munificence and change, ROA, Income growth, Asset growth and Dividends, Size</td>
<td>&quot;companies within munificent environments are more likely to have a synoptic strategy.&quot;</td>
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<tr>
<td>Goll and Rasheed (1997)</td>
<td>62 manufacturing firms</td>
<td>Questionnaire</td>
<td>Rational Decision Making, Munificence, Dynamism, ROA, ROS, Size</td>
<td>synoptic process is more strongly associated with performance in munificent environments</td>
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"losses associated with faulty decisions may be highly damaging to organisations’ continued viability" (p:134).

On the other hand, some of the empirical studies argue that the decision process becomes more political and incremental during less munificent conditions. For example, Wiersema and Bantel (1993) revealed that scarcity and threat are associated with a variety of organisational responses, such as decreased information processing and restriction of communication and control, implying that in such a circumstance companies tend to apply the incremental approach. Pfeffer (1978) found that during the period of nonmunificent conditions, subdivisions may attempt to gain more financial resources by using negotiating and bargaining skills. Powerful units, of course, seem to use their power to achieve more resources. Bantel and Osborn (1995) argued that companies within munificent environments are more likely to have an identifiable (i.e. synoptic) strategy. They surveyed a sample of 200 moderate-sized banks and their findings supported their argument. A recent study based on 62 manufacturing firms was conducted by Goll and Rasheed (1997). They hypothesised that organisational rationality is more strongly associated with performance in munificent environments. Their findings supported this proposition and they concluded that environmental munificence is a moderator of the relationship between strategy making processes and organisational performance.

There are some studies relating to the relationship between profitability and munificent environments. For instance, Hart and Banbury (1994), in their empirical work, indicated that munificent environments may be associated with high performance regardless of strategy-making process capability. Another
study, conducted by Kotha and Nair (1995) concluded that environmental munificence is positively related to firm-level performance.

This research argues that corporations tend to use the synoptic process for decision making during munificent periods, whereas they resort to the incremental process throughout nonminificient environmental conditions. The logic is that in nonmunificient environments an organisation tends to decrease information processing and restrict communication. However, in such environments, companies require to predict their future. Since scarcity leads firms to pay more attention to the conservation of resources, they are unable to make greater analytical efforts to predict their environments.

Another reason for such an argument is that, as Pfeffer (1978) suggests, during the period of nonmunificent conditions, subdivisions may attempt to gain more financial resources by using negotiating and bargaining skills. As mentioned earlier, negotiation and bargaining are characteristics of incremental strategy. Therefore, in such circumstances, firms are expected to use the incremental approach.

The present research suggests the following relationships between decision processes and environmental munificence:

**HYPOTHESIS 2A:** The higher the environmental munificence, the greater the level of use of synoptic strategies. In contrast, the lower the environmental munificence, the greater the level of use of incremental strategies.

**HYPOTHESIS 2B:** Organisations using an incremental strategy are more likely to perform better than those using a synoptic strategy under low
environmental munificence. In contrast, organisations using a synoptic strategy are more likely to perform better than those using an incremental strategy under high environmental munificence.

3.4. FIRM CHARACTERISTICS PERSPECTIVE

There are some studies in the organisation theory and strategic management fields concerning the linkage between strategic planning processes and organisational factors (Koberg, 1987, Slevin and Covin, 1997). These studies implied that whether the strategic decision-making process is more formal or not is affected by the organisational factors. The main theme of these studies was that firms may be more profitable if they use different strategies under varying organisational circumstances.

There are a number of empirical studies concerning the relationship between organisation and the strategic decision-making process. For example, Shrivastava and Grant (1985) argue that formal structures and power centralisation are associated with rationality in decision-making processes, a lower degree of political activity and sub-unit involvement, and quicker decisions. Another study conducted by Fredrickson (1986) indicated that structure restrained the strategic decision-making process by imposing limitations on rationality. There are some other studies focusing on different aspects of organisational factors. By way of illustration, Lorange and Vancil (1977), maintained that large firms are more likely to develop more rational and formalised approaches, whereas small firms can formulate strategies simultaneously because of the small number of chief executives and their more direct control. In addition to structure and size impacts, it is argued that firm performance might affect the strategic decision process.
(Fredrickson, 1985; Bourgeois and Eisenhardt, 1988). These arguments will be analysed in detail in the following sections.

As mentioned earlier, this research postulates that organisational variables may affect the strategic decision processes. This argument is supported by Rajagopalan et. al. (1993). They mentioned that characteristics of strategic decision processes are subject to a variety of organisational influences. The first factor recognised in this work is organisational structure. It is expected that the degree of the organisational structure may play a crucial role in determining the degree of rationality-comprehensiveness in the strategic decision process. By way of illustration, Langley (1989) noted that different dominant patterns in sequencing of formal analysis studies tend to emerge for different issues and different types of organisations. In addition to this, organisation size might also have an impact on the strategy process. There is strong evidence in the previous research to assert such a statement. For example, Gilmore (1971) discussed the issue concerning organisation size and the strategy making process and suggested that large and small organisations will be more efficient if they use different types of strategies. Therefore, this work will also discuss the relationship of organisation size to the decision processes. Finally, as Fredrickson (1985) argued, it is expected that there is a relationship between past performance of the firm and its strategic decision type. The following sections will discuss issues concerning those organisational variables.
3.4.1. STRUCTURE

Structure will be considered as an organisational variable in this research. Bower (1970) argued that the structure of an organisation importantly influences the flow of information and the context and the nature of human interactions. Furthermore, it channels collaboration, specifies modes of coordination, allocates power and responsibility. Since information flow and arrangement of people might affect the decision processes, it is reasonable to maintain structure as a contingency in this research. Child (1972) argued that structure is concerned with the formal allocation of work roles and administrative mechanisms to control and integrate work activities including those which cross formal organisational boundaries. Mintzberg and Waters (1985, p:269) implied that organisation structure is likely to impact whether strategy is planned or simply emerges in organisations. It seems reasonable to maintain that either the arrangement of structure or pattern of events would influence the decision-making processes.

A central problem in relating structure to strategy making is selection of variables. Previous research of organisation theory implies that formalisation of procedures and centralisation of decision making are crucial dimensions of organisational structure. For instance, Walsh and Dewar (1987) considered formalisation as rules, procedures and written documentation, such as policy manuals and job descriptions, that prescribe the rights and duties of employees. Formalisation generally involves variables like the use of specialised positions, formal policies, job descriptions, organisation charts, and cost and quality controls (Miller and Droge, 1986). According to Daft (1995, 168), centralisation refers to "the level of hierarchy with authority to make decisions." Miller (1987)
mentioned that centralisation involves variables like the ratio of administrative to total personnel and mechanisation of production.

Hage and Aiken (1967) studied formalisation and centralisation to unveil organisational power distribution and they found that participation in decision making, one of the components of centralisation, was a good predictor of rule observation, one the components of formalisation. Pugh, Hickson, Hinnings, and Turner (1968) pointed out that formalisation and centralisation are important structural dimensions. Furthermore, more recent studies considered formalisation and centralisation as organisation structure dimensions (Koberg, 1987, Russell and Russell, 1992).

The literature also provides some evidence that formalisation and centralisation are strongly related to organisational size (Pugh et. al. 1969). Carter and Keon (1989) argued that large organisations are more formalised because they rely on rules, procedures, and paperwork to achieve standardisation and control across their large numbers of employees and departments, whereas top managers can use personal observation to control a small organisation. Hage and Aiken (1967) claimed that as an organisation grows larger and has more people and departments, decisions cannot be passed to the top, or senior managers would be overloaded. Therefore, they noted that larger organisations permit greater decentralisation.

Another issue in the previous literature is that there is a relationship between the structure of a firm and its decision speed. It is argued that the more centralised an organisation, the less authority has been delegated by top executives. Of course, it is expected that autocratic decision makers seem to make
faster decisions in part because they rely less on consultation (Eisenhardt, 1989). Organisations under threat often respond through centralisation of authority, presumably to speed response time (Staw et. al., 1981). Information is probably less diffusely held in highly centralised firms (Galbraith, 1973). It is mentioned that formalisation may slow the intelligence and design phases of the decision making process by encouraging the collection of much data and extremely thorough analyses of alternatives (Fredrickson and Mitchell, 1984). However, Eisenhardt (1989) argued that consideration of many alternatives may not impede the pace of decision making.

This research postulates that formalisation and centralisation as major structure components may affect the decision-making process. Organisational structure may have significant direct effects on decision processes as well as on firm performance.

In his mostly cited work, Chandler (1962) argued that as organisations expanded and diversified their product lines, they tended to develop multidivisional as contrasted with unitary or functional structures, implying that strategy determines structure. His findings were systematically investigated by Rumelt (1974). He observed that there was a very strong relationship between product market diversification and organisational structure; in the three periods examined, narrow product line firms tended to be organised functionally, while diversified firms had multidivisional structures. Rumelt (1974) and Chandler (1962) both argued that there was a connection between strategy, particularly product market strategy, and firm structure. Chandler (1962, p:14) stated that
"structure follows strategy and that the most complex type of structure is the result of the concatenation of several basic strategies." He further claimed that:

"strategic growth resulted from an awareness of the opportunities and needs... to employ existing or expanding resources more profitably. A new strategy required a new or at least refashioned structure if the enlarged enterprise was to be operated efficiently."

Another argument among researchers is that structure is a major determinant of strategy. As Galbraith asserted (1991, p:315) "all of the elements must be fit to be in harmony with each other", implying that certain structures require certain types of strategies. The impact of structure on strategic decision-making has received a good deal of attention. The link between strategy and structure has been discussed by Miles and Snow (1978). In their study, they implied that strategy and structure tended to adapt to each other; firms with structures that provided flexibility and innovation also tended to implement strategies relying on these management attributes; firms with structures that facilitated tight control and production efficiency adopted corresponding strategies. Whether strategy preceded structure or vice versa was not critical, and in fact, reciprocal relationships probably occurred. The underlying issue was that the choice of structure fitted the organisation's general strategy, and vice versa. Mintzberg (1990a) claimed that Chandler's (1962) assertion that structure should follow strategy and be determined by it also accepts the opposite scenario. Mintzberg indicates that since the analysis of "organisational strengths and weaknesses is an intrinsic part of the model, a basic input the strategy formulation, and since structure is a key component of this, housing the organisation's capabilities, then structure must play a major role in determining strategy too by
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<td>Shrivastava and Grant</td>
<td>61 executives in 32 Indian firms</td>
<td>Interviews, Organization records</td>
<td>No a priori measures/constructs</td>
<td>&quot;Four strategic decision models discussed are characterized by different organizational conditions.&quot;</td>
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<td>Miller (1987)</td>
<td>97 firms</td>
<td>Questionnaire</td>
<td>Organizational integration, decentralization, complexity</td>
<td>&quot;Formal integration was found to be positively related to rationality and interaction in strategic decision making. Decentralization showed a weak positive association with interaction and assertiveness.&quot;</td>
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<td>Miller et. al. (1988)</td>
<td>77 Firms</td>
<td>Questionnaire</td>
<td>Organizational integration, centralization, formalization CEO need for achievement Environmental Uncertainty Rationality: Assertiveness, Interaction</td>
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<td>Slevin and Covin (1997)</td>
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<td>Questionnaire</td>
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<td>&quot;planned strategies are more positively related to sales growth among firms with a mechanistic (i.e., more formalized and centralized) than organic (i.e., less formalized and centralized) structures.&quot;</td>
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constraining and conditioning it as well as guiding it” (p:183). He (1990a) concludes that “the structure follows structure as the left foot follows the right in walking” (p:183). In addition to this, Hrebiniak and Joyce (1994) stated that in the strategy formulation process, objectives must be set consistent with the choice or the definition of structure. In other words, planning follows from and is outlined by structure. The formulation of strategy, given the existence of primary structure, reflects the constraints and opportunities in the current situation.

There are several studies focusing on the relationships between organisational structure and decision-making processes (see Table 3.4). For example, in an empirical study of strategic decision making in 32 business organisations facing complex environments, Shrivastava and Grant (1985) suggested that formal structures and power centralisation are associated with rationality in decision-making processes, a lower degree of political activity and sub-unit involvement, and quicker decisions. Another empirical study conducted by Miller (1987) covered 97 small and medium sized firms. This investigated the relationship between structural components and strategy making and implications for performance. He investigated four components of organisational structure, namely: integration, formalisation, centralisation and complexity. In the study, Miller hypothesised that there are positive relationships between rationality and three structural dimensions; integration, formalisation and complexity. He suggested that centralisation is negatively associated with rational (i.e. synoptic) strategy making. While the findings supported the positive relationship between rationality and structural integration and formalisation, there were no significant results for centralisation and complexity of organisational structure. Miller et al
(1988) used a sample of 77 firms with 500 or fewer employees. They concluded that Chief-Executive-Officer (CEO) need for achievement influences strategy making rationality, which has a significant impact on structural formalisation and integration. However, as they mentioned, the study failed to support the hypothesis that organisational structure influences rationality. They argued that the main reason for this result is the nature of the study. They implied that results might be quite different in large organisations.

In their study, Mintzberg and Waters (1982) found that the structuring of an organisation preceded the determination of the mode of strategic decision-making. It can be seen in Fredrickson (1986) that structure restrained the strategic decision-making process by imposing limitations on rationality. In another study, Langley (1990) covered ten Strategic Decisions in three medium-sized organisations with different structures. After investigating in depth those three organisations, he concluded that patterns in the decision making processes and the use of a rational approach may be related to organisational structure.

This research underlines that organisation structure might influence the design of the strategic decision-making process. The rationale behind this relationship is explained by Hall and Saias (1980)

"If strategy planning is to succeed and grow, a constant pressure is required. This requirement is only fulfilled if both the organisational structure and the attitude of top management are favorable... in other words the organisational structure may sometimes have to be modified before strategic planning can be introduced."

(p:154)

In the same way, it would seem fair to claim that “overall strategy becomes the lackey of the structure” (Hall and Saias, 1980, p155).
Burgelman (1983, a:b) has revealed the ways in which structure can be directed in order to shape strategy. Burgelman (1983a) discussed the relationship between structural change and new venture creation. In a field study of internal corporate venturing in a diversified major firm, he assessed the ways in which corporate-level management manipulated the structural context to influence the process of new venture development (Burgelman, 1983b).

In their study, Hutt, Reingen and Ronchetto (1988, p:12) hypothesised that "in comparison with bureaucratic (i.e., formalised and centralised) organisational structures, organic (i.e., less formalised and centralised) structures are more likely to spawn autonomous (i.e., incremental) strategic initiatives." In the same way, Slevin and Covin (1997, p:195) hypothesised that "planned strategies are more positively related to sales growth among firms with a mechanistic (i.e., more formalised and centralised) than organic (i.e., less formalised and centralised) structures. Conversely emergent (i.e., incremental) strategies are more positively related to sales growth among firms with organic than mechanistic structures". Their first reason for such a statement was that mechanistic structures will favour the creation of planned strategies because they intentionally confine managerial discretion and strive to eradicate operational and strategic uncertainty wherever possible. Secondly, if planned strategies are carefully controlled throughout the implementation process, then those strategies are more likely to be successful. Since mechanistic structures require control systems which are essential to ensure that planned strategies are implemented as intended (Mintzberg, 1979), then, according to Slevin and Covin (1997), it is logical to maintain that planned
strategies will be more effective when implemented in mechanistically structured organisations.

With regard to the relationship between the strategic decision-making process and centralisation, this research claims that centralisation is positively related to rational decision making. As Mintzberg (1979) claimed, in a centralised organisation, since the power for decision-making is concentrated on a single person or on a small number of people, a consensus on organisational objectives can be achieved easily. Fredrickson (1986, p:285) argued that "centralisation increases the likelihood that strategic decision-making will be a proactive, opportunity-seeking process" implying a positive relationship between centralisation and the rational decision process. Moreover, according to Hyun (1992), decentralised organisation, in which the decision power is dispersed among many individuals, results in negotiation in strategic decision-making. In order to reach a final decision, negotiation may be essential because individuals have different opinions and interests. Thus, decision-making in decentralised organisations may resemble political problem solving.

On the other hand, some researchers argued that centralisation may be negatively associated with rationality in the strategic decision making process (Miller, 1987; Miller, Droge and Toulouse, 1988). For example, Miller (1987) mentioned that centralisation may restrain rationality by 'placing most of the onus of decision making on top executives taxing their cognitive abilities and imposing significant time constraints on them' (p:12). In the same study, he concluded that the relationship of decentralisation with rationality would be stronger in successful firms than in unsuccessful firms. Also, Thompson (1967) argued that
decentralisation divides decision making tasks into more manageable bits, reducing collective cognitive limitations and allowing more planned and analytical approaches. This study postulates that centralisation is negatively related to the incremental decision process, whereas centralisation is positively associated with the synoptic decision process.

HYPOTHESIS 3A: Firms with centralised structure are most likely to use a synoptic process. In contrast, firms with decentralised structure are most likely to use an incremental process.

HYPOTHESIS 3B: Firms with centralised structure and using synoptic strategies are more likely to perform better than those using incremental strategies. In contrast, firms with decentralised structure and using incremental strategies are more likely to perform better than those using synoptic strategies.

Similarly, it has been suggested that formalisation of an organisational structure is positively related to a synoptic model (Langley, 1989). It is expected that even when formalisation exists only at low level, it can affect an organisation's strategic process since participants gather and process information that is passed up the hierarchy (Fredrickson, 1986). Furthermore, Mintzberg (1979) claimed that companies which are highly formalised in their “operating core” tend to be more formalised at all levels. Miller (1987) hypothesised that formalisation will be positively associated with rational strategy making. The reason behind this statement was: since specialists and professional technocrats are components of a formalisation dimension, these staff provide organisations with analytical capabilities and expertise needed for systematic rational strategies. His
empirical study found that the relationship between formalisation and rational strategy was significant. In the same way, Schwenk (1984) argued that when there are not sufficient specialists and technocrats, top managers often avoid analysis and make decisions very quickly and intuitively. It is expected that in a fully formalised organisation, “everyone knows exactly what to do in every event” (Mintzberg, 1979, p:83). Therefore, decision-making can be more objective. Since individual behaviour is regulated by chief top executives, achieving a consensus among organisational members becomes easier. Moreover, rational strategy requires firms to set goals and objectives. Such regulation can also enable companies to achieve those common goals and objectives.

**HYPOTHESIS 3C:** Firms with formalised structure are most likely to use synoptic strategies. In contrast, firms with less formalised structure are most likely to use incremental strategies.

**HYPOTHESIS 3D:** Firms with formalised structure and using synoptic strategies are more likely to perform better than those using incremental strategies. In contrast, firms with less formalised structure and using incremental strategies are more likely to perform better than those using synoptic strategies.

3.4.2. SIZE

Another intraorganisational variable included in this research is organisational size, which is likely to influence the strategy process of a given firm. In organisation theory studies, organisational size has been heavily discussed (Child, 1972). For instance, Pugh and his colleagues (1969) found larger size to be the most influential predictor of their main structural factor which related to the
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<td>Odom and Boxx (1988)</td>
<td>a sample of 175 churches</td>
<td>Questionnaire, Secondary Data</td>
<td>Environmental Uncertainty, Planning Sophistication, Size, Growth</td>
<td>&quot;the larger churches seem to participate in more sophisticated planning than do smaller churches.&quot;</td>
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<tr>
<td>Fredrickson and Iaquinto (1989)</td>
<td>159 executives in 45 Firms from 2 industries</td>
<td>Structured Interviews, Questionnaires, Utilizing decision scenarios</td>
<td>Executive team continuity, size, Environmental stability/instability, Comprehensiveness, ROA after tax</td>
<td>&quot;size is positively related to synoptic strategy mode.&quot;</td>
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<tr>
<td>Bantel and Osborn (1995)</td>
<td>200 moderate-sized banks</td>
<td>Questionnaire</td>
<td>Strategy items, Environmental complexity, munificence and change, ROA, Income growth, Asset growth and Dividends, Size</td>
<td>&quot;larger firms are more likely to have an identifiable strategy (i.e. synoptic, formalized decision-making process).&quot;</td>
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bureaucratic dimensions of specialisation, use of procedures, and reliance on paperwork. Another study conducted by Blau (1970) suggested that increased size leads to structural differentiation within organisations, and that structural differentiation in turn affects the size of an organisation’s administrative component. Miller and Droge (1986) argued that “as an organisation grows it is able to obtain benefits from increasing specialisation and will thus become more differentiated or complex” (p:543). They further noted that such increase in subunits produces coordination problems which in turn lead to changes of control, standard rules and formal procedures, implying that decision making activities become centralised.

Organisational size has also been discussed in strategic management studies (see Table 3.5.). It has been suggested that organisation size can affect strategic decision processes (Gilmore, 1971; Minzberg, 1973). For instance, Hart and Banbury (1994) observed that there is a positive relationship between the number of employees recruited by the firm and the distance between chief executives and organisational members. As a consequence, extra hierarchical levels are created and the strategy making process becomes less centralised and more complex (see also Chander; 1962). It is expected that large firms are more likely to develop more rational and formalised approaches, whereas small firms can formulate strategies simultaneously because of the small number of chief executives and their direct control over operations (Lorange and Vancil, 1977). In the same way, Gilmore (1971) discussed the issue and suggested that large and small organisations will be more efficient if they use different types of strategies. For instance, analytical approaches using computer programs might be more
appropriate for large companies than small companies which cannot afford such analytical procedures. Furthermore, Grinyer et al (1986) argued that in order to co-ordinate large and complex firms, companies should stimulate employment of more specialist staff, applying more sophisticated forecasting techniques within corporation-wide procedural systems, implying that such companies implement a synoptic strategy process. According to Khandwalla (1973), because large organisations generally had to gather and analyse large amounts of information, they tended to employ more experienced staff to absorb and evaluate the information gathered. The implication of the observation was that the decision making process, in large organisations, becomes more rational by employing more staff. In the same way, Mintzberg (1973) analysed three different modes of strategy making. One of his conclusions was related to the size-strategy issue. He suggested that “in order to rely on the planning mode, an organisation must be large enough to afford the costs of formal analysis,...” (p:50). His suggestion supported the argument that size is positively related to a synoptic strategy mode.

It can be seen from Lawrence and Lorsch (1967) that as an organisation grows in number of employees, coordination problems mount as the ability of top managers to personally direct members, action is weakened. A study by Lindsay and Rue (1980), examining the effectiveness of strategic planning systems in relation to environmental complexity, stated that the degree of openness in long-range planning processes is directly related to the degree of environmental complexity for large firms, but inversely related for small firms. They also indicated that large firms have much easier access to various sources of information than small firms. These findings indicate that larger firms are more
likely to use a synoptic strategy, because the synoptic strategy process needs accurate information about the business environment in order to evaluate alternative strategies. In an empirical work, Kukalis (1991) studied 115 large manufacturing firms and argued that organisation size is positively associated with planning extensiveness because increasing size leads to the development of more sub-units which, in turn, will require greater co-ordination among managers. Such co-ordination can be managed by the extension of the synoptic process.

Bantel and Osborn's (1995) empirical study covered 200 Banks and hypothesised that larger firms are more likely to have an identifiable strategy (i.e. a synoptic process). Their first argument was that once a strategy is developed and implemented in a large bank, it is difficult to change because the characteristics of creeping rationality and bureaucratic inertia of larger organisations will lead them to focus on established strategic direction. The second reason was that larger banks might have greater need to develop more mechanisms for integrating the various units within the organisation. The existence of a synoptic strategy process might serve such a mechanism. Their findings supported their arguments.

Odom and Boxx (1988) extended the size-strategy issue to non-profit organisations. In their empirical work, they covered 175 churches. The data was gathered by questionnaire and secondary data. They empirically found that the size of a church exerts a definite influence on its level of planning sophistication (i.e. synoptic process), implying that the larger churches seem to participate in more sophisticated planning than do smaller churches.

Another study conducted by Fredrickson and Iaquinto (1989) discussed the size-strategic planning process issue and claimed that size is positively related to
the rational strategy mode. Their first reason was that a comprehensive process (i.e. a synoptic) is expensive because it includes activities like searching and gathering information, conducting extensive analyses, evaluating various alternatives and so on. Therefore, small firms are less likely to use a synoptic strategy mode. The second reason was that as organisations grow, they create specialised sub-units like planning staff and control systems. They argued that this differentiation within the organisation results in rational strategy making.

Miller (1987) argued that because chief executive officers can manage most things alone in small firms, those firms are able to implement sophisticated structures and interactive, analytical decision making. On the other hand, since there are many departments, sub-units and managers within large organisations, those firms can only implement a synoptic mode of strategy making within structures having enough controls, staff experts and liaison devices to support it. In their empirical work, Dean and Sharfman (1993) claimed that size might be negatively related to procedural rationality. However, this proposition was not supported empirically. They could not identify any significant relationship between organisational size and procedural rationality.

This research argues that large companies are more likely to implement a synoptic strategy, whereas small companies tend to apply an incremental strategy. The first reason behind such an argument is that, as discussed above, much of the research recognises that there is a positive relationship between size and rational strategy. These arguments are also supported by empirical studies (e.g. Odom and Boxx, 1988).
Secondly, in the light of the discussions above, as companies grow, they may need more co-ordination and control mechanisms because there are new departments within the organisation. Since rational strategy forms common goals and means, those activities can be managed by implementing a synoptic strategy.

Thirdly, it would seem fair to suggest that since large organisations have sufficient resources to support a number of specialised staff, they are more likely to use a synoptic strategy. These employees are expected to collect and analyse large amounts of information and evaluate various alternatives. Such processes may increase the level of rationality-comprehensiveness in the organisation. Therefore, it is hypothesised that:

**HYPOTHESIS 4A:** Larger firms are most likely to have a synoptic strategy, whereas smaller firms will have an incremental strategy.

**HYPOTHESIS 4B:** Firms with larger size and using a synoptic strategy are more likely to perform better than other large firms using an incremental strategy. On the contrary, firms with smaller size and using an incremental strategy are more likely to perform better than other small firms using a synoptic strategy.

### 3.4.3. FIRM PERFORMANCE

There are a great deal of studies concerning the relationship between performance and the strategic decision making processes. Some studies focused on the effects of strategic processes on firm performance, whereas others present performance influences on the strategic decision processes. It seems that firm performance may influence as well as be influenced by decision-making processes.
As far as the effect of performance on the strategic decision process is concerned, some researches mentioned a positive relationship between the level of performance and the rationality of the processes. There is some empirical support in the literature for the positive relationship. For instance, Smith et al (1988) found that, for both small and larger firms, comprehensive out-performed less comprehensive decision-making. Likewise, Jones et al. (1992) reported consistently positive relationships between organisational effectiveness and comprehensiveness in decision-making. In the same way, in a recent study Papadakis (1998) investigated this relationship in three industrial sectors. He hypothesised that organisational performance will be positively related to rationality in strategic decision making. The results, gathered from 38 companies, supported the idea that firm performance is positively associated with rationality. Goll and Rasheed (1997) hypothesised that there is a positive relationship between decision rationality and firm performance. They identified a subsample (62 companies) out of 159 responding firms. However, their sample did not find a significant positive relationship between the two concepts.

In contrast, some researchers suggest that there is a negative relationship between firm performance and the level of rationality in the strategy process. By way of illustration, Fredrickson (1985) argues that

“Firms usually do not use slack generated by excellent performance to pay the costs of seeking optimal solutions; instead resources are absorbed as sub-optimal decisions are made. This phenomenon may help explain why managers in historically successful firms sometimes make a series of what appear to be inadequately considered, intuitive decisions that in combination have significant negative consequences.” (p:824).
Some early studies stated the same conclusion. For example, Cyert and March (1963) argued that superior performance is expected to lower the intensity with which organisations will search for information. In addition to this, Bourgeois (1981) suggested that slack resources offer organisations the luxury of satisfying, and suboptimal decision making. Likewise, Bantel (1993) supported this point of view and suggested that high performance will be negatively associated with planning formality. However, the data, gathered from 80 US banks, failed to support the hypothesis. These findings implied that good performance may be negatively related to rational decision making.

Of course, research has produced a range of explanations of this relationship. It seems that the level of performance dictates a range of strategic options available to a business. Porter (1980) argued that the alternatives available to a firm whose performance is steadily declining are very different from those available to a firm that is constantly increasing its performance level. It seems to follow logically that poor performance does not provide sufficient resources. This lack of basic funds is expected to exert pressure on management during the making of crucial strategic decisions, since a wrong decision may drive the company out of business. Thus, since management has less margin for error, they may have strong incentives to follow a synoptic process. (Bourgeois and Eisenhardt, 1988).

This line of thinking suggests that poor firm performance presents a threat to managers as various stakeholders will tend to question their performance in the company. As executives are extremely concerned with earning external legitimacy, they will go to some lengths to give the appearance that they are providing the requisite expertise and leadership to the firm (Mitchell and Scott,
Therefore, the managers of poorly performing firms may hire consultants, seek advice from various sources and conduct extensive financial analyses in order to give that appearance. Such actions are taken with the expectation that a successful decision may positively influence performance. Based on this, Fredrickson (1985) concluded that the actions of poor performers in strategic decision making processes will be more rational-comprehensive than those of excellent performers.

Further research on the performance-strategy processes link suggests that environment plays a crucial role as a moderator. For instance, Fredrickson and Mitchell (1984) and Fredrickson and Iaquinto (1989) suggested that synoptic decision processes are expected to result in superior performance in a stable environment, while a non-comprehensive process, with its speed and flexibility, is expected to have a similar effect in an unstable environment. In the same way, Goll and Rasheed (1997) noted that environmental munificence is a moderator of the relationship between the strategy making process and organisational performance. Their findings support the hypothesis; environmental munificence moderates the relationship between process rationality and organisational performance. Thus, according to this view, environment moderates the performance-rationality relationship.

Contrary to Fredrickson and his colleagues, Bourgeois and Eisenhardt (1988), studying strategic decision making processes in high velocity environments, reached precisely the opposite conclusion. They found that in high velocity environments, the more analytic the strategy process, the better the performance of the firm. Similarly, Eisenhardt (1989) noted that successful
decision makers in high-velocity environments use more information, consider more alternatives. Instead of moving away from the analytical procedures, they intensify their cognitive processes. The quick decisions produce better performance levels. Priem et. al. (1995) provided results consistent with those of Eisenhardt and her colleagues. They noted that process rationality is positively related to performance for firms facing highly dynamic environments.

As can be seen from the discussions above, there is no clear pattern in these conclusions. Research seems to have produced apparently contradictory results and no consensus seems to have emerged as yet. Even though good performance may enable companies to rationalise their internal structure, this research argues that firms with poor performance level postulated a synoptic approach. The reason behind this idea is that companies with poor performance cannot afford errors, therefore, need to conduct intensive analysis, employ consultants. Thus:

**HYPOTHESIS 5.** More performedance firms are most likely to have an incremental strategy, whereas less performedance firms are most likely to use a synoptic strategy.

### 3.5. CONCLUSION

This chapter provided a model and a review of the factors which might influence the strategic decision process. The first two chapters, the reviews of synoptic and incremental approaches, revealed that there is a need to explain strategic behaviour changes by a contingency theory. This contingency model has been briefly discussed in the first section of the chapter. Conflicting arguments and hypotheses concerning environmental factors, perceived environmental
uncertainty and munificence, were discussed in the following section. The last part of the chapter has been devoted to organisational factors, namely; structure, size, and past performance. In the same way, these factors were discussed in the light of previous research and related research hypotheses were noted in this section. Having reviewed the past literature, it seems reasonable to suggest that the degree of rationality-comprehensiveness may depend on environmental and organisational factors.
4.1. Introduction

As discussed in the previous chapters, the purpose of this research is to examine the relationships between strategic decision processes and environmental and organisational factors. In this chapter, the methodology used to test the hypotheses presented in the previous chapter is discussed. In investigating the methodology, characteristics of the sample, the data selection method, and the analysis have been examined.

The first objective of the chapter is to describe the sample used in this research as well as the data collection method. Another objective of the chapter is to develop the instruments of the variables to be used according to prior research. In addition to this, the chapter investigates the methods to be used in the work.

In order to facilitate these objectives, the chapter will firstly discuss the sample. In this section, the general characteristics of the selected companies will be mentioned. Next, the data collection method will be investigated. This section will also cover the issues concerning the follow-up questionnaire. In the following
section, the measures applied in the proposed research will be discussed. This part consists of seven variables. The final section discusses the statistical techniques used in this research.

4.2. Sample

Since the hypotheses consider differing environmental contexts, this work aimed at examining companies which operate in different environmental conditions. The Fortune 500 list has been chosen as the sample for this research, because it consists of various industries in terms of uncertainty. There are companies which compete in unstable conditions such as the computer industry whereas some industries, for example, electric and gas companies, are relatively stable. Of course, there are also some industries which have a moderate level of complexity and munificence conditions such as the banking and insurance industries. Secondly, the Fortune 500 list was used as a sample in previous work in the strategic management field (Wiersema and Bantel, 1993). The basic characteristics of the sampled organisations are that firstly, the Fortune 500 list consists of profit-oriented organisations. In addition to this, the size of the companies are relatively large.

A systematic sample of 250 from the 500 largest manufacturing companies in 1996, as listed in Fortune 500, was selected for study. It is believed that systematic selection enables us to ensure that companies will be represented fairly by their performance and size. Therefore, a total of 250 Fortune 500 companies were contacted. Those selected companies were sent a cover letter (Appendix A) and a single questionnaire (Appendix D) by mail.
The mail questionnaire method can be considered as reliable for the purposes of this research. Firstly, it is argued that the use of a mail questionnaire reduces biasing errors that might result from the personal characteristics of interviewers and variability in their skills (Frankfort-Nachmias and Nachmias, 1996). Another advantage of the method is the cost of the survey. The cost advantages of any method depend on how geographically dispersed the sample is. Mail surveys are barely affected by greater distance (DeVaus, 1993). Since this research examines the largest United States firms, mail survey seemed to be the most efficient method. Finally, there are a great deal of past empirical studies in the strategic management field which applied mail questionnaires (Bantel and Osborn, 1995; Slevin and Covin, 1997). On the other hand, mail questionnaires require simple questions. Otherwise, they would not meet the objectives of the research. This research seems to be free from this danger since the questions are understandable. Therefore, the mailing method was chosen as the survey method for this research.

Managers from 80 firms completed and returned the questionnaire. The response rate was 32 percent. In some responses, there was some missing data about profitability, number of employees and revenue growth. This information was collected from the relevant firms' Annual Reports. Therefore, all responding questionnaires were usable. The respondent firms were from 22 different industries. The firms and their industries are shown in Table 4.1.

As can be seen from the table, seven industries are represented with only one entry. These industries are Forest and Paper Products, Tele Communications, Photo, Health Care, Apparel, Beverages and Mining Oil Production. The Food industry is
Table 4.1: Categorising Responding Firms According to the Industries.

<table>
<thead>
<tr>
<th>Industries</th>
<th>Number</th>
<th>Industries</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>4. Forest and Paper Products</td>
<td>1</td>
<td>15. Industrial and Farm Equ.</td>
<td>6</td>
</tr>
<tr>
<td>5. Food</td>
<td>11</td>
<td>16. Metal Products</td>
<td>2</td>
</tr>
<tr>
<td>6. Tele Communication</td>
<td>1</td>
<td>17. Utilities, Gas, Electric</td>
<td>4</td>
</tr>
<tr>
<td>8. Transport</td>
<td>7</td>
<td>19. Health Care</td>
<td>1</td>
</tr>
<tr>
<td>9. Retailer</td>
<td>5</td>
<td>20. Apparel</td>
<td>1</td>
</tr>
<tr>
<td>11. Photo</td>
<td>1</td>
<td>22. Mining-oil Production</td>
<td>1</td>
</tr>
</tbody>
</table>

the most represented industry with eleven entries. The Transport sector follows with six responses. As far as the age of the firms is concerned, the oldest company is a 165 year-old Electric and Electronic Equipment company, whereas the youngest is a 10-year-old Health Care corporation. The mean of the firms' age is 75.22 with the standard deviation of 39.34. With respect to the number of employees, the mean of the sample is 46342.39 with 32729.66 standard deviation.

Prior research has often used either an individual strategic decision or the overall organisation as the unit of analysis. The unit of inquiry for this study is the individual organisation and its overall strategic decision. Subdivisions such as departments or branches are not recognised as individual organisations. According to DiMaggio and Powell (1983), the departments or branches of an organisation might be influenced by the same institutional environment. The subunits, furthermore, might pursue the same organisational objectives and follow the same
operating procedures. Therefore, a whole organisation instead of a subunit was included as a unit of analysis.

In this research, the incremental and synoptic approaches, and their relationships with environmental and interorganisational variables, were studied at an organisational level. Since this research studied the strategic behavior of an organisation in its specific environment, an organisational level study of decision processes seemed appropriate.

4.3. Data Collection Method

A sample of 250 from the 500 largest companies in 1996, as listed in Fortune 500, was selected for this study. The selection was made by systematic sampling. Questionnaires distributed to sampled organisations. The 1996 Fortune 500 list obtained from the Internet was selected as a unit of sample and 250 firms systematically chosen. Number 6 was randomly chosen as a start. Next, starting from the sixth company on the list, a research questionnaire was sent to every seventh company.

A number of researchers seem to suggest that systematic sampling is more convenient than a simple random sample (DeVaus, 1993). It is argued that the simple random method is not the most efficient. It requires a list of elements and when there is such a list it is more convenient to apply the systematic rather than the random sample method. Furthermore, Babbie (1995) argued that a systematic sample is empirically more efficient than simple random sampling. Because the
Fortune 500 firms are listed according to total revenue and the starting point is selected randomly, systematic sampling applied in this research.

Babbie (1995) recognised that there is a shortcoming of the systematic method. The danger is that the arrangement of elements in the list can result in undesired consequences. This occurs when the list of elements is arranged in a cyclical pattern that coincides with the sampling interval, and a biased sample may be drawn. Since there is no periodicity in this research's sample, the systematic sample seems the most appropriate method of selection.

Having selected the companies, a single survey questionnaire was sent to each. It was required that the questionnaire be answered by a senior corporate planning officer. As far as the titles of the respondents are concerned, the most participating group was Senior Planning Officer, with 28.75 percent. This rate was followed by Senior Vice President with 23.75 percent; Managers 15 percent; Vice President with 8.75 percent; Chief Operating Officer and Chief Financial Officer 5 percent; and with 2.5 percent Chief Executive. These percentages are illustrated in Table 4.2.

Table 4.2. A Summary of the titles of the respondents

<table>
<thead>
<tr>
<th>Title</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chief Executive</td>
<td>2</td>
<td>2.5</td>
</tr>
<tr>
<td>Chief Financial officer</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Vice President</td>
<td>7</td>
<td>8.75</td>
</tr>
<tr>
<td>Senior Planning Officer</td>
<td>23</td>
<td>28.75</td>
</tr>
<tr>
<td>Senior Vice President</td>
<td>19</td>
<td>23.75</td>
</tr>
<tr>
<td>Chief Operating Officer</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Manager</td>
<td>12</td>
<td>15</td>
</tr>
<tr>
<td>Others</td>
<td>9</td>
<td>11.25</td>
</tr>
<tr>
<td>Total</td>
<td>80</td>
<td>100</td>
</tr>
</tbody>
</table>
In survey research, a lack of response from all members of a sample may mean that the conclusions drawn from the study are not representative of the initial sample. The response rate of this study is 32%. This seemed consistent with those studies which were conducted for top managers (Yasai Ardekani 1989, Goll and Rasheed, 1997). There are several studies which reported a less than 30% rate of return, such as Slevin and Covin (1997), 27.5%; Yasai Ardekani and Haug, (1997) 22.3%;. Therefore, it seems fair to maintain that this research's responses will be representative of the initial sample. Table 4.3 shows the respondent firms according to their groups.

Table 4.3 Response Rate

<table>
<thead>
<tr>
<th>Firm Group</th>
<th>Returned</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-100</td>
<td>9</td>
</tr>
<tr>
<td>101-200</td>
<td>17</td>
</tr>
<tr>
<td>201-300</td>
<td>15</td>
</tr>
<tr>
<td>301-400</td>
<td>17</td>
</tr>
<tr>
<td>401-500</td>
<td>22</td>
</tr>
<tr>
<td>Total</td>
<td>80</td>
</tr>
</tbody>
</table>

48 firms responded to initial enquiries. Since this represented a low response rate, a follow-up letter (see Appendix B) and the original questionnaire (Appendix D) were sent to all respondents. Babbie (1995) noted that the methodological literature on follow-up mailings strongly suggests that it is a crucial method for increasing the rate of return in mail surveys. In the follow-up card the importance of the study was underlined. It was stressed that responses would be kept strictly confidential. An
additional 19 responses were received from the follow-up survey. Another follow-up was sent approximately three weeks later to organisations which had not responded. The second follow-up contained a new cover letter (Appendix C) and a replacement questionnaire (Appendix D). Therefore, 80 usable entries were gained through the mailing method. An additional 13 responses were gathered after the second follow-up.

4.4. Measures

A proper assessment of the relationships between hypotheses strongly depends upon the quality of the measures used in the research. It is necessary that there be a high correspondence between the measures and their constructs. The questionnaire (Appendix D) used in this research consists of six sections. Each section of the questionnaire dealt with one of the variables. Those six variables are: (1) perceived environmental uncertainty, (2) munificence, (3) structure variables (formalisation and centralisation), (4) size, (5) strategy process, (6) performance. While some of the items are collected through perceived measures; perceived environmental uncertainty, structure and strategic decision processes, the others are measured by objective data; organisational size, munificence and performance. To be consistent with previous research and to have significant results, past research instruments were used.

4.4.1. Perceived Environmental Uncertainty

Environmental uncertainty is operationalised according to the research conducted by Duncan (1972). His instrument will be adapted for this research. The
environment is conceptualised as consisting of five components: (1) socio-political (2) customer, (3) competitor, (4) technology, (5) labour. According to Duncan (1972), perceived environmental uncertainty is composed of three dimensions: (1) lack of information regarding environmental factors associated with a given decision making situation, (2) not knowing the outcome of a specific decision in terms of how much the organisation would lose if the decision is incorrect, and (3) the inability to assign probabilities with any degree of confidence with regard to how environmental factors are going to affect the success or failure of the organisation in terms of performance. The main reason for using Duncan's (1972) instrument is that it has been widely applied in the previous research (Odom and Box 1988, Koberg 1987). The empirical works using Duncan's scale showed significant relations between strategic behaviour and environment uncertainty.

Appendix D illustrates the questions for perceived environmental uncertainty. The first component, the lack of information, is measured by items 1 to 5. The second component, inability to assign probabilities, is evaluated by items 6 to 10. The final component, not knowing the outcome of a decision, is assessed by items 11-13. A 5-point Likert Scale was used to collect scores. Top executives were asked to choose a single answer from those 13 questions. To specify, scores 1-5 represented never, rarely, occasionally, frequently and always respectively. The lower the score, the more uncertain the environment and the higher the score, the more certain the environment.
4.4.2. Munificence

The prior resource dependency studies suggest a number of measurement types, such as industry sales (Yasai-Ardekani, 1989, Dess and Beard, 1984), and industry profitability (Beard and Dess, 1981). This research will consider financial resource as the appropriate measure for munificence. The reason is that, according to Starbruck (1976), munificence captures the extent to which the environment can provide sustained growth. It might be maintained that the increase in total revenue, a growth-based measure, might reflect the abundance in terms of opportunities for market expansion. In addition to this, financial resources may be an optimal measure for different types of industries. As far as different industries are concerned, measurements such as growth in total employment might not reflect the potential munificence in the environment. This measurement is also mentioned by Dess and Beard (1984). Even though there were other measurement types, sales growth measure was supported by their analysis. In his empirical work, Yasai-Ardekani (1989) used the rate of change of demand for the industry’s products and services to measure the munificence-scarcity dimension. The rate of change of demand seems to be associated with total revenue. As can be seen in Appendix D, an objective measure is used to measure total revenue. Top executives were asked to give their companies’ three year average total revenue. The question directly related to the munificence of financial resources. Using a three-year period seemed to be important because, as Koberg (1987) noted, executives consider the recent past, as opposed to earlier periods, when formulating strategic changes. Therefore, it seems reasonable to state that it is necessary to apply recent past as well as current
circumstances. The higher rate of total revenue indicated higher environmental munificence.

4.4.3. Structure Variables

As can be seen in Fredrickson (1984), the composite dimensions of formalisation and centralisation emerged most consistently in the studies of the components of organisation structure. Formalisation is often made up of variables such as the use of specialised positions, formal policies, job descriptions, organisation charts, and cost and quality controls. Centralisation refers to the distribution of decision-making power in the organisation. As mentioned in the previous chapter, this study examines the effects of structure on strategy and performance. Structure variables, formalisation and centralisation, will be measured by Aiken and Hage’s (1968) research instrument. The instrument gathers perceptual measures of those variables. The first reason for adopting Aiken and Hage’s instrument is that it has been widely used in previous research (Koberg, 1987; Russell and Russell, 1992). Another reason is that the questions can be completed in less than five minutes. It is believed that such utility may convince managers to fill in the instrument.

4.4.3.1. Formalisation

The survey measuring formalisation consists of 15 items. There are five measures constructed from the 15 questions. They are:

1. job codification, questions 1-5
2. rule observation, questions 6-7
3. rule manual, question 8
Replies to these 15 questions are scored from 1 to 4. All questions are asked in 4-point Likert scale form. Score 1 represented ‘definitely true’, whereas score 4 indicates ‘definitely false’. The higher the score, the greater the formalisation in the organisation. There are some reverse questions (Questions 6-7, 12-15). Their scores are reversed in data transforming process.

4.4.3.2. Centralisation

Centralisation consists of two components. These components are measured by 9 items, illustrated in Appendix D. The first component is participation. This component is measured by a 5 point Likert scale quantifying how much the individual participates in decisions about the allocation of resources and the determination of organisational policies. The first four questions measured this component and the responses range from 1 to 5 and demonstrate never, seldom, sometimes, often and always, respectively. The higher the score, the more participation by managers in the strategic decision making. The second item, hierarchy of authority, is measured by questions 5 to 9. This scale measures the degree to which the organisation member participates in decisions involving the tasks associated with his position. As can be seen from Appendix D, the questions are asked on a 4-point Likert scale form and illustrate definitely false, false, true, definitely true, respectively. The higher the score, the higher the degree of hierarchy of authority. To sum up, high scores indicate a high degree of centralisation for all nine questions.
4.4.4. Size

There are a number of measures for size in the previous literature. For instance, a measure of the size might be the number of personnel (Tan and Litschert, 1994, Slevin and Covin, 1997), the amount of assets (Bantel and Osborn, 1995; Bantel, 1993), sales volume (Dean and Sharfman, 1993a). The literature does not provide a strong measure for organisation size. It appears that in organisational research, size is generally expressed as the number of employees. However, the situation of part-time employees is an unsolved issue. Even though using number of employees as a measure has some shortcomings, it still seems to be the most reliable one. Therefore, this research will consider number of full-time employees as the organisational size measure. As can be seen in Appendix D, this measure is obtained by self-reported measures.

4.4.5. Strategic Decision Making Process

Synoptic and incremental strategic decision making is measured by Miller and Friesen’s (1982) survey items. Their questionnaire consists of three characteristics, namely; analysis, futurity and consciousness. According to Miller and Friesen (1982), “the more analysis is performed by key decision makers, that is, the greater the tendency to search deeper for the roots of the problems and to generate the best possible solution alternatives, the more likely it is for innovation opportunities.” (p:5). As far as futurity is concerned, they stated that “planning horizons are also very likely to influence organisational innovation. Executives who are concerned with putting out fires will be too preoccupied with such matters of the moment to be able to assess the long-term adequacy of their product lines and
product designs” (p:5). Finally, with regard to consciousness, they refer to the degree to which strategies have been explicitly considered and deliberately conceptualised. These characteristics are measured in 11 items. The first component, analysis, is measured in the first five questions, as can be seen in Appendix D. Items 6-10 were devoted to measure the futurity component of the strategic decision processes. The last question was to measure the consciousness component.

Using the Miller and Friesen items was consistent with the earlier argument that multiple characteristics of synoptic and incremental approaches should be used in measuring decision processes. One important point of this research was that multiple characteristics of synoptic and incremental approaches should be used in the measurement of decision processes, since rationality and incrementality were the multi-dimensional constructs. Since the Miller and Friesen items measured several characteristics of the approaches, they seemed to be an appropriate instrument for measuring strategic processes.

The items are in 7-point Likert scale form. The responses are from 1-7 and while score one represents absolutely true, score 7 represents absolutely false. Low scores indicated a high degree of using the synoptic approach whereas high scores indicated a high degree of incrementality.

4.4.6. Performance

Firm performance is defined as the organisations performance vis-a-vis other similar firms in its industry, using financial, and operational indicators of performance. This research considers firm profitability as the measurement for firm
performance. Even though profitability is merely one aspect of firm performance, it is a crucial factor for profit-oriented organisations. It is expected that profitability is still one of the key concerns for most of the private organisations (Chakravarthy, 1986). In this context, profitability is considered as an important element of firm performance. In addition to this, previous research concerning organisational decision processes focused on profitability (Fredrickson 1984). Using firm profitability as a performance measure will enable us to compare the results with prior research. Moreover, Rajagopalan et.al (1998) claimed that economic outcomes such as ROI (Return on Investment), and sales growth are more appropriate if the unit of analysis is the organisation’s overall strategy decision process. Since the proposed research’s unit analysis is the overall strategy decision process, using firm profitability as the performance measure seems appropriate. As can be seen in Appendix D, self-reported measures of profitability, return on total assets, were used in this research. The calculation for ROA (Return on Assets) is: ROA = net income after taxes divided by total assets of company. Return on assets is widely used in the previous research (Bantel and Osborn, 1995; Goll and Rasheed, 1997). Previous research consists of different ways of determining the period for analysis. This thesis utilises a three-year period. As Koberg (1987) argues, conditions in the recent past might affect current organisational performance and decision makers may need to consider the recent past.

4.5. Statistical Analysis

This section provides a description of the methods which are used to investigate the data collected from the questionnaire. The investigation of the data
base is conducted in order to ascertain any irregularities in the data which may invalidate the use of multiple regression analysis.

4.5.1. Reliability

Reliability refers to the extent to which a measuring instrument contains variable errors, that is, errors that appear inconsistently from observation to observation during any one measurement attempt, or that vary each time a given unit is measured by the same instrument (Franffort-Nachmias and Nachmias, 1996). Each measurement involves two components: a true component and an error component. Reliability can be defined as the ratio of the true score variance to the total variance in the scores as measured (Franffort-Nachmias and Nachmias, 1996). The literature provides various ways of calculating the variable. According to Peter (1979), coefficient alpha is the most commonly used formula for assessing the reliability of multi-item measurement scales. Due to the widespread acceptance and simplicity of calculation, coefficient alpha is used to assess the reliability of the measurement scales utilised in this research.

4.5.2. Factor analysis

Factor analysis is a procedure for investigating the possibility that a large number of variables have a smaller number of factors in common that account for their intercorrelations. This is done essentially through the generation of artificial factors that correlate highly with several of the real variables and that are independent of one another. By means of factor analysis, we seek to isolate common elements that are present in two or more variables and to which the intercorrelations
among these variables may be attributed. It can be seen, then, that factor analysis is an arithmetical procedure for determining whether the intercorrelations among many variables could be due to a few common factors. The output of factor analysis consists of columns representing the several factors generated from the observed relations among variables plus the correlations between each variable and each factor—called factor loadings.

This research will use factor analysis to analyse the strategy scale (Miller and Friesen 1982) and perceived environmental uncertainty scale (Duncan, 1972). Since the items of the strategy process scale focus on different dimensions (analysis, futurity, consciousness), they will be factor analysed using a varimax rotation in order to assess their dimensionality or 'factoral validity'. The same rotation method will be applied to the perceived environment scale. The reason for using varimax rotation is that because each variable loads on only one factor, the factorial interpretation of variables is the simplest. However, such a characterisation is insufficient for expressing degrees of simplicity. The varimax rotation simplifies each column of the factor matrix by maximising the variance of the squared loadings for each factor (Kim and Mueller, 1978). As noted by Allen and Yen (1979), factoral validity is a form of construct validity. High loadings on a single factor would suggest that although the items focus on different aspects of strategy process, they are empirically related and constitute a distinct, undimensional strategic orientation.
4.5.3 Multiple Regression Analysis

Regression analysis is a statistical technique that attempts to explain movements in one variable, the dependent variable, as a function of movements in a set of other variables, called the independent variables, through the quantification of a single equation. A multiple regression equation describes the extent of linear relationships between the dependent variable and a number of independent or control variables. Multiple regression analysis will be used for the hypotheses examining the environmental, structural, size and performance effects on decision processes.

The impacts of relationships between variables and decision processes on firm profitability will be measured by using interaction in multiple regression analysis. Interaction in regression analysis indicates whether the relationship between a dependent variable and a predictor variable is influenced by, or varies with, changes in another predictor variable. This research will focus on whether the relationships between the synoptic or incremental process and firm profitability depend on or vary with the changes in environmental, structural, and size variables. It should be noted that the subjective data (perceived environment, structure and strategy scale) will be transformed into mean form.

Linear regression is a fairly robust technique and is thus fairly impervious to violations of assumptions (Weisberg, 1985). The assumptions about the data set for the use of regression is that the errors are independent and follow a normal distribution with constant variance (Weisberg, 1985). The assumption of independence concerns whether the subjects are responding independently of one another (Stevens, 1986). Mild violations of the assumption can cause the probability of Type I errors to be several times greater than the level specified (Stevens, 1986).
Due to the data collection method to be employed in this research, problems with the independence assumption are not expected to be a factor.

4.6. Presentation of the Hypotheses in the Form of Multiple Regression Analysis

This part of the chapter covers the multiple regression equations derived from the hypotheses. The purpose of the hypotheses is to assess the relationship between strategic decision processes and environmental and structural factors.

In hypothesis 1A, the dependent variable is the strategic decision process. Therefore, the equation will be as follows. As Equation 1 illustrates, perceived environment, munificence, formalisation, centralisation, organisational size and firm performance are independent variables.

Equation 1

\[ y = a + b_1 x_1 + b_2 x_2 + b_3 x_3 + b_4 x_4 + b_5 x_5 + b_6 x_6 \]

where

- \( y \) = Strategy
- \( a \) = Constant
- \( x_1 \) = Mean centered Perceived Environmental Uncertainty
- \( x_2 \) = Environmental Munificence
- \( x_3 \) = Mean centered Centralisation Scores
- \( x_4 \) = Mean Centered Formalisation Scores
- \( x_5 \) = Number of Full Time Employees
- \( x_6 \) = Performance
- \( b_1, b_2, \ldots, b_6 \) = regression coefficients

As far as hypothesis 1B is concerned, the regression equation will be developed as Equation 1B in which performance is the dependent variable. Strategy,
perceived environmental uncertainty and their interaction effect will be explanatory variables.

\[ y = a + b_1x_1 + b_2x_2 + b_3x_1x_2 \]

where:
- \( y \) = Performance
- \( a \) = Constant
- \( x_1 \) = Strategy
- \( x_2 \) = Mean centered Perceived Environmental Uncertainty
- \( x_1x_2 \) = Strategy by perceived environmental uncertainty interaction
- \( b_1, b_2, b_3 \) = regression coefficients

As noted in the previous chapter, hypothesis 2B investigates the effect of munificence and strategic processes on firm performance. Equation 2B investigates munificence effects on firm performance. The interaction effect of munificence and the strategic process is considered as the explanatory variable in the formula.

\[ y = a + b_1x_1 + b_2x_2 + b_3x_1x_2 \]

where:
- \( y \) = Performance
- \( a \) = Constant
- \( x_1 \) = Strategy
- \( x_2 \) = Munificence
- \( x_1x_2 \) = Strategy by Munificence interaction
- \( b_1, b_2, b_3 \) = regression coefficients

Hypothesis 3B is designed to test the effect of centralisation and the strategic process on firm performance. To investigate this relation, Equation 3B is developed. In this equation, while firm performance is the dependent variable, strategy process,
centralisation and the interaction effect of the strategy process and centralisation are used as independent variables.

**Equation 3B**

\[ y = a + b_1x_1 + b_2x_2 + b_3x_1x_2 \]

where

- \( y \) = Performance
- \( a \) = Constant
- \( x_1 \) = Strategy
- \( x_2 \) = Mean Scored Centralisation
- \( x_1x_2 \) = Strategy by Centralisation interaction
- \( b_1, b_2, b_3 \) = regression coefficients

In hypothesis 3D, firm performance is the dependent variable and strategic process, the degree of formalisation, and their interaction effect are the independent variables. Consequently, the following equation is developed:

**Equation 3D**

\[ y = a + b_1x_1 + b_2x_2 + b_3x_1x_2 \]

where

- \( y \) = Performance
- \( a \) = Constant
- \( x_1 \) = Strategy
- \( x_2 \) = Mean Scored Formalisation
- \( x_1x_2 \) = Strategy by Formalisation interaction
- \( b_1, b_2, b_3 \) = regression coefficients

Hypothesis 4B is designed to analyse the influence of organisation size and strategic process on firm performance. In hypothesis 4B, firm performance is the
dependent variable. In the same hypothesis, strategic process, organisational size and their interaction effect are used as independent variables.

\[
\text{Equation 4B} \quad y = a + b_1 x_1 + b_2 x_2 + b_3 x_1 x_2
\]

where
- \(y\) = Performance
- \(a\) = Constant
- \(x_1\) = Strategy
- \(x_2\) = Number of full time employees
- \(x_1 x_2\) = Strategy by Size interaction
- \(b_1, b_2, b_3\) = regression coefficients

4.7. Conclusion

The objectives of Chapter 4 are (1) to describe the sample used in this research, (2) to develop the instruments of the variables to be used in the proposed research according to prior research, (3) to investigate the methods to be used in the work, (4) to develop regression equations according to the research hypotheses.

To meet the objectives, this chapter first discussed the sample. The following section covered the specifications of the data selection method and respondents. The measures of the research variables have been identified based on the literature review presented in chapter 3. As mentioned above, some instruments were in perceptual forms such as strategy process, whereas self reported measures were used for organisational size, munificence and firm performance. In addition to the survey instruments, this chapter has discussed the methodology and methods used to test the hypotheses presented in the previous chapter. Finally, regression equations are developed.
CHAPTER FIVE
TEST OF HYPOTHESES

5.1 Introduction

This chapter will be devoted to the hypotheses results which examine the relationships between the strategic decision processes and environmental and organisational factors. The findings in this section follow the hypotheses discussed earlier. The objectives of this chapter are

1. to provide some descriptive statistics relating the variables,
2. to test variables in terms of validity and reliability by utilising factor analysis and coefficient alpha,
3. to shed some light on the effects of environmental and organisational variables on strategic decision processes by using regression equations,
4. to state interaction effects of decision processes and environmental-organisational factors on firm performance.

This chapter firstly presents some descriptive statistics of the sample. The next part will deal with validity and reliability tests. The test results of hypotheses relating the effects of environmental and organisational factors on decision processes
will be addressed in the following part. Next, the interaction effects of variables on the firm performance will be discussed in the last section of the chapter.

5.2 Descriptive Analysis

Table 5.1. illustrates means and standard deviations of variables. As far as strategy items are concerned, the mean of 80 responses is 3.54. As noted earlier, the items were in a 7 point Likert scale. Therefore, this mean score indicates that overall, strategy behaviour is slightly on the synoptic side of the dimension. Regarding its components, the mean score of consciousness (3.71) was greatest, whereas futurity (3.42) had the lowest score.

With respect to perceived environmental uncertainty, the mean score was 2.93. The questions were asked in a 5 point Likert scale, consequently, overall the score was nearly in the middle of the 5 point scale. While the inability to assign probabilities dimension had a 2.99 mean score, the lowest mean scored dimension, lack of information, was 2.88.

Regarding the variables measuring formalisation, the mean score of job descriptions (2.82) seemed to be greater than that of the other dimensions. Specification of job description (2.49) scored the lowest mean among the components. As mentioned in the previous chapter, formalisation items were presented in a 4 point Likert scale. Therefore, as far as the mean score of formalisation (2.53) is concerned, it seems fair to maintain that the overall tendency of the sampled firms is towards formalisation in their organisational structure.

Data for the last perceptual measure variable, centralisation, was gathered in 9 items. The mean score of participation in decision making (3.12) was based on a 5-
<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Strategy</strong></td>
<td>3.54</td>
<td>1.02</td>
<td>1.63</td>
<td>5.545</td>
</tr>
<tr>
<td>Analysis</td>
<td>3.63</td>
<td>0.98</td>
<td>1.60</td>
<td>5.400</td>
</tr>
<tr>
<td>Futurity</td>
<td>3.42</td>
<td>1.25</td>
<td>1.00</td>
<td>5.600</td>
</tr>
<tr>
<td>Consciousness</td>
<td>3.71</td>
<td>1.30</td>
<td>1.00</td>
<td>7.000</td>
</tr>
<tr>
<td><strong>Perceived</strong></td>
<td>2.93</td>
<td>0.70</td>
<td>1.61</td>
<td>4.153</td>
</tr>
<tr>
<td><strong>Environmental</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Uncertainty</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lack of Information</td>
<td>2.88</td>
<td>0.73</td>
<td>1.40</td>
<td>4.200</td>
</tr>
<tr>
<td>Inability to assign</td>
<td>2.99</td>
<td>0.74</td>
<td>1.40</td>
<td>4.400</td>
</tr>
<tr>
<td>probabilities</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not knowing the outcome</td>
<td>2.94</td>
<td>0.82</td>
<td>1.00</td>
<td>4.33</td>
</tr>
<tr>
<td><strong>Formalisation</strong></td>
<td>2.53</td>
<td>0.52</td>
<td>1.20</td>
<td>3.53</td>
</tr>
<tr>
<td>Job codification</td>
<td>2.51</td>
<td>0.64</td>
<td>1.00</td>
<td>3.80</td>
</tr>
<tr>
<td>Rule observation</td>
<td>2.51</td>
<td>0.77</td>
<td>1.00</td>
<td>4.00</td>
</tr>
<tr>
<td>Rule manual</td>
<td>2.68</td>
<td>0.92</td>
<td>1.00</td>
<td>4.00</td>
</tr>
<tr>
<td>Job descriptions</td>
<td>2.82</td>
<td>0.86</td>
<td>1.00</td>
<td>4.00</td>
</tr>
<tr>
<td>Specify of job descriptions</td>
<td>2.49</td>
<td>0.61</td>
<td>1.16</td>
<td>3.66</td>
</tr>
<tr>
<td><strong>Centralisation</strong></td>
<td>2.74</td>
<td>0.68</td>
<td>1.62</td>
<td>4.02</td>
</tr>
<tr>
<td>Participation</td>
<td>3.12</td>
<td>0.83</td>
<td>1.75</td>
<td>5.00</td>
</tr>
<tr>
<td>Hierarchy of Authority</td>
<td>2.36</td>
<td>0.74</td>
<td>1.00</td>
<td>4.00</td>
</tr>
<tr>
<td><strong>Self-reported measures</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>% Change in Total</td>
<td>9.10</td>
<td>7.16</td>
<td>-5.50</td>
<td>35</td>
</tr>
<tr>
<td>Revenue</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of Employees</td>
<td>46,342.39</td>
<td>32,729.66</td>
<td>5,600</td>
<td>211,000</td>
</tr>
<tr>
<td>Return of Assets</td>
<td>6.15</td>
<td>4.17</td>
<td>-0.10</td>
<td>21.96</td>
</tr>
</tbody>
</table>
point Likert scale. This score is greater than the middle of the 5-point scale. The second dimension's (hierarchy of authority) mean score (2.36) also seemed to be higher. To conclude, the mean scores indicate that firms tend to be more centralised in their organisational structure.

The same table demonstrates the means and standard deviations of self-reported measures. As far as the munificence measure (three year percentage change in total revenue) is concerned, the mean of the sample was a positive score (9.1) with a 7.16 standard deviation. As mentioned earlier, organisational size was measured by the number of full-time employees of the sampled firms. Its mean score is 46,342.39 with a 32,729.66 standard deviation. Langley (1990) noted that firms can be considered when they have 500-5000 employees, implying that above the range firms could be considered as large. Therefore, it might be maintained that the sampled firms in this research are large in terms of number of employees.

The minimum Return on Asset score was -0.10, whereas the maximum was 21.96. As far as the mean score of return on assets is concerned, it was 6.15, with a 4.17 standard deviation score.

Table 5.2. Description of Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strategy</td>
<td>Mean scores of 11 Strategy items</td>
</tr>
<tr>
<td>Environment</td>
<td>Mean scores of 13 Environmental uncertainty items</td>
</tr>
<tr>
<td>Munificence</td>
<td>Average 3 year % change in total revenue</td>
</tr>
<tr>
<td>Formalisation</td>
<td>Mean scores of 15 Formalisation items</td>
</tr>
<tr>
<td>Centralisation</td>
<td>Mean scores of 9 Centralisation items</td>
</tr>
<tr>
<td>Size</td>
<td>Number of full-time employees</td>
</tr>
<tr>
<td>Performance</td>
<td>Average 3 year % change in Return on Assets</td>
</tr>
</tbody>
</table>
Before testing the hypotheses, it seems worthwhile to point out the descriptions of variables. Table 5.2 provides the descriptions used in this research. The reader should bear in mind that perceptual measures were transformed into mean forms.

5.3. Reliability and Validity tests

Before the data is used to test the hypotheses discussed in chapter IV, preliminary analyses will be conducted. Schewenk and Dalton (1991) found that too little attention was paid to construct validation of measures in the strategic management field. Over seventy percent of the studies reviewed by them did not consider validity at all. In this study, both validity and reliability are taken into consideration for the perceptual measures.

This section covers reliability tests and factor analysis of strategy and environment uncertainty scales. As discussed in the previous chapter, reliability will be assessed by using alpha, as suggested by Nunnally (1978). The reliability test will be applied to the strategy, environmental uncertainty and organisational structure items. Since structure survey items (Aiken and Hage, 1968) are highly used in the previous literature, the factor analysis will not be utilised to assess their validity.

5.3.1. Reliability tests

5.3.1.1. Strategy scale

The first scale to be analysed is the strategy scale (Miller and Friesen, 1982). As noted earlier, this scale consists of three dimensions, namely; analysis, futurity and
consciousness. The scale involves 11 questions (see Appendix D). Coefficient alpha is calculated. As can be seen from Table 5.3., coefficient alpha is calculated to be .88 which greatly exceeds Nunnaly’s (1978) suggested criterion of .50. Therefore, it seems reasonable to suggest that the strategy scale is reliable.

Table 5.3 Reliability results for the Strategy Scale

<table>
<thead>
<tr>
<th>RELIABILITY ANALYSIS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reliability Coefficients</td>
</tr>
<tr>
<td>Number of Cases = 80</td>
</tr>
<tr>
<td>Alpha = .88</td>
</tr>
</tbody>
</table>

5.3.1.2. Environmental Uncertainty Scale

The environmental uncertainty scale consists of 13 questions and has three dimensions, namely; lack of information, inability to assign probabilities and not knowing the outcome. To compare reliability results to the prior research each dimension test will be measured.

Table 5.4. presents the alpha values for the dimensions. The first dimension, lack of information, involves five items. The calculated alpha (.85) exceeds Nunnally’s criterion (.50). The alpha score also exceeds the alpha level of Downey, Hellriegel, and Slocum (1975) which is .59. Although the alpha is not as high as the .90 reported by Duncan (1971), the scale seems to exhibit an acceptable level of reliability for the study.
Table 5.4. Reliability test results for Perceived Environment Uncertainty Scale

<table>
<thead>
<tr>
<th>Reliability Coefficients</th>
<th>Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Cases = 80</td>
<td></td>
</tr>
<tr>
<td>Lack of Information (5 items)</td>
<td>.85</td>
</tr>
<tr>
<td>Inability to Assign Probabilities (5 items)</td>
<td>.87</td>
</tr>
<tr>
<td>Not Knowing the Outcome (3 items)</td>
<td>.87</td>
</tr>
</tbody>
</table>

The second dimension, inability to assign probabilities, also consists of five items (questions 6, 7, 8, 9, 10 in Appendix D). The coefficient alpha is calculated as .87 which greatly exceeds Nunnally's criterion. As far as this dimension is concerned, Downey, Hellriegel, and Slocum (1975) reported .66 coefficient alpha score. Therefore reliability of the sub-scale is considered adequate for the study.

The last dimension of the environmental uncertainty is not knowing the outcome. This subscale consists of three items (questions, 11, 12, 13 in Appendix D). The coefficient alpha is calculated as .87. With regard to the previous studies, Downey, Hellriegel, and Slocum (1975) reported a quite low score (.26) and Duncan calculated a high score (.97). Those two studies present varying results. Based on the proposed research reliability result, one may conclude that the scale is reliable. The .85 coefficient alpha score seems reliable for the purposes of the study.
5.3.1.3. Organisational Structure Variables

Table 5.5. displays the reliability scores for organisational structure variables. As can be seen from the table, the centralisation items’ alpha score is high. Also, the formalisation variable has quite a high score. These results enable us to rely on the organisational structure variables.

Table 5.5. Reliability test results for Organisation Structure Scale

<table>
<thead>
<tr>
<th>RELIABILITY ANALYSIS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reliability Coefficients</td>
</tr>
<tr>
<td>Number of Cases = 80</td>
</tr>
<tr>
<td>Centralisation (9 items)</td>
</tr>
<tr>
<td>Formalisation (15 items)</td>
</tr>
</tbody>
</table>

5.3.2. Validity test

5.3.2.1. Strategy Scale

The present study uses the Miller and Friesen (1982) scale to measure strategy. Since the scale has not been widely used in the previous research, there is a need to analyse the scale in order to determine its dimensionality. As was noted earlier, the scale involves three sub-scales, analysis, futurity and, consciousness. The last dimension, consciousness, is measured with only one item. It is expected that one item is not sufficient to carry out factor analysis. Therefore, this dimension will not be assessed. This research claims that while the first dimension, analysis (questions 1, 2, 3, 4, 5), represents a factor, the remaining dimension, futurity (questions, 6, 7, 8, 9, 10), accounts for another factor.
Table 5.6. illustrates the factor analysis results. As mentioned in the previous chapter, factor loadings were varimax rotated. Kaiser (1960) recommends keeping all factors with eigenvalues greater than one. As seen in Figure 5.1., two factors extracted have eigenvalues greater than one. Therefore, two factors are considered as common factors. This result meets the previous expectations. As can be seen from Table 5.6., the first five items (STR01, STR02, STR03, STR04, STR05) are

<table>
<thead>
<tr>
<th></th>
<th>Factor 1</th>
<th>Factor 2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Analysis</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>STR01</td>
<td>.47</td>
<td>.36</td>
</tr>
<tr>
<td>STR02</td>
<td>.68</td>
<td>.37</td>
</tr>
<tr>
<td>STR03</td>
<td>.78</td>
<td>.39</td>
</tr>
<tr>
<td>STR04</td>
<td>.72</td>
<td>29</td>
</tr>
<tr>
<td>STR05</td>
<td>.64</td>
<td>.46</td>
</tr>
<tr>
<td><strong>Futurity</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>STR06</td>
<td>.19</td>
<td>.51</td>
</tr>
<tr>
<td>STR07</td>
<td>.17</td>
<td>.63</td>
</tr>
<tr>
<td>STR08</td>
<td>.31</td>
<td>.71</td>
</tr>
<tr>
<td>STR09</td>
<td>.33</td>
<td>.62</td>
</tr>
<tr>
<td>STR10</td>
<td>.34</td>
<td>.5718E-02</td>
</tr>
<tr>
<td><strong>Eigenvalue</strong></td>
<td>4.83</td>
<td>1.11</td>
</tr>
</tbody>
</table>


*Loadings in boldface indicate variables used to interpret factors
associated with factor 1. The following four items (STR06, STR07, STR08, STR09) are related to factor two. While it is expected that item 10 (STR10) represents factor 2, it seems to be associated with factor 1 with a low factor loading (0.34). According to Tabachnick and Fidell (1983), this can be considered as a poor loading. Therefore, the analysis in this chapter continues with the remaining items.

Figure 5.1: Scree Plot of Eigen values of Factor Analysis of Miller and Friesen Strategy Scale

Factor Number
In order to analyse eigenvalues, a plot is produced (Figure 5.1). As can be seen from the figure, only two values are higher than 1. Based on the above analyses, the strategy scale based on the research of Miller Friesen (1982) will be used for the study.

5.3.2.2. Perceived Environmental Uncertainty Scale

Table 5.7. Rotated Factor Matrix

<table>
<thead>
<tr>
<th>Factors</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inability to assign probabilities</td>
<td>ENV6</td>
<td>.77</td>
<td>.32</td>
</tr>
<tr>
<td></td>
<td>ENV7</td>
<td>.62</td>
<td>.23</td>
</tr>
<tr>
<td></td>
<td>ENV8</td>
<td>.60</td>
<td>.15</td>
</tr>
<tr>
<td></td>
<td>ENV9</td>
<td>.63</td>
<td>.27</td>
</tr>
<tr>
<td></td>
<td>ENV10</td>
<td>.72</td>
<td>.24</td>
</tr>
<tr>
<td>Lack of Information</td>
<td>ENV1</td>
<td>.14</td>
<td>.53</td>
</tr>
<tr>
<td></td>
<td>ENV2</td>
<td>.31</td>
<td>.49</td>
</tr>
<tr>
<td></td>
<td>ENV3</td>
<td>.34</td>
<td>.54</td>
</tr>
<tr>
<td></td>
<td>ENV4</td>
<td>.32</td>
<td>.66</td>
</tr>
<tr>
<td></td>
<td>ENV5</td>
<td>.27</td>
<td>.82</td>
</tr>
<tr>
<td>Not Knowing the Outcome</td>
<td>ENV11</td>
<td>.38</td>
<td>.28</td>
</tr>
<tr>
<td></td>
<td>ENV12</td>
<td>.20</td>
<td>.21</td>
</tr>
<tr>
<td></td>
<td>ENV13</td>
<td>.38</td>
<td>.37</td>
</tr>
<tr>
<td>Eigenvalue</td>
<td></td>
<td>6.88</td>
<td>1.19</td>
</tr>
</tbody>
</table>


*Loadings in boldface indicate variables used to interpret factors
As noted earlier, the proposed study uses Duncan’s perceived environmental scale. The validity of the scale will be assessed by using factor analysis. The scale consists of three dimensions, namely lack of information, inability to assign probabilities, not knowing the outcome. This research claims that lack of information (questions 1, 2, 3, 4, 5), inability to assign probabilities (questions 6, 7, 8, 9, 10) and not knowing the outcome (questions 11, 12, 13) represent three different factors. Table 5.7. illustrates the factor analysis results. As with the strategy scale, factor loadings were varimax rotated. As Table 5.7 demonstrates, three factors extracted have eigenvalues greater than one. This result meets the previous expectations.

Figure 5.2: Scree Plot of Eigenvalues of Factor Analysis of Duncan’s Perceived Environment Scale
As can be seen from Table 5.7., the first five items (ENV01, ENV02, ENV03, ENV04, ENV05) are associated with factor 2. The following five items associated with inability to assign probabilities (ENV06, ENV07, ENV08, ENV09, ENV10) are related to factor 1. The last dimension, not knowing the outcome (ENV 11, ENV 12, ENV13) is associated with factor 3 as expected.

The eigenvalues can be seen in Figure 5.2. As the figure shows, three values are higher than 1. In the light of the above analysis, it seems reasonable to suggest that the perceived environmental scale is valid for the purposes of this study.

Before proceeding to the results of multiple regression analysis, two econometric problems should be explained. In cross-sectional data, the econometric problems of multicollinearity and heteroskedasticity may be encountered. We therefore test for these problems and make necessary connections before making any interpretation based upon the regression results.

**The Multicollinearity Problem:** The greater the intercorrelation between independent variables, the greater the problem of multicollinearity and the more difficult it is to obtain numerical values for each parameter separately; under full multicollinearity the least squares estimation does not work (Koutsoyiannis, 1977, p:233). Many methods are used to detect multicollinearity. A correlation matrix is commonly used to detect the multicollinearity problem; in this study, it is also utilised (see table.5.8. for correlation matrices). Since there is no high collinearity between variables, the explanatory in the equations seem to be free from the multicollinearity problem.
Table 5.8. Correlation Matrix (Pearson Correlation)

<table>
<thead>
<tr>
<th></th>
<th>Strategy</th>
<th>Environment</th>
<th>Munificence</th>
<th>Centralisation</th>
<th>Formalisation</th>
<th>Size</th>
<th>Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strategy</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Environment</td>
<td>.26**</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Munificence</td>
<td>.04</td>
<td>.20*</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Centralisation</td>
<td>-.54***</td>
<td>-.52***</td>
<td>-.18*</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Formalisation</td>
<td>-.62***</td>
<td>-.32***</td>
<td>-.25**</td>
<td>.59***</td>
<td>1.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Size</td>
<td>-.26**</td>
<td>-.08</td>
<td>-.25**</td>
<td>.23**</td>
<td>.14</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>Performance</td>
<td>-.19*</td>
<td>-.17</td>
<td>.09</td>
<td>.099</td>
<td>.08</td>
<td>.23**</td>
<td>1.00</td>
</tr>
</tbody>
</table>

* Correlation is significant at the 0.10 level (2-tailed)
** Correlation is significant at the 0.05 level (2-tailed)
*** Correlation is significant at the 0.01 level (2-tailed)
The Heteroskedasticity Problem: According to Gujarati (1992), the classical linear regression model assumes that the observations of the error term are drawn from a distribution that has a constant variance. If the error variance is not constant for all the observations, the heteroskedasticity problem is encountered. Gujurati (1992) argued that heteroscedasticity is hard to avoid if researchers use cross-sectional data. One possible consequence of heteroscedasticity is that the usual confidence intervals and hypothesis tests based on t and F distributions are unreliable (Studenmund, 1992). In the presence of this problem, parameter estimates are constant, but usual standard errors and t-ratios will be incorrect and should not be used for inference. Several methods can be used to detect the heteroskedasticity problem, such as visual inspection of residuals, the Goldfeld-Quandt test, the White test, the Breusch-Pagan test (Kennedy, 1998, pp:120-121). The White test has been conducted to detect heteroskedasticity in this study.

5.4. Hypotheses Tests

Since the applied validity and reliability analyses results are proper, it seems that the data set can be used for the purposes of the research. This section deals with the hypotheses tests. The first sub-section involves the effects of environmental and organisational factors on the strategic decision process, whereas the second subsection covers the results of the decision process and factors interaction effects of firm performance.
5.4.1. The Effects of Factors on Decision Processes.

This section covers the hypotheses 1A, 2A, 3A, 3C, 4A and finally 5. In order to test the effects of factors, multiple regression analysis will be utilised. As mentioned in the previous chapter, a regression equation is constructed for the hypotheses. The following table illustrates the regression results for the related hypotheses. The reader should note that the numbers under the coefficient column represent unstandardised regression coefficients.

The heteroskedasticity problem is not found in the estimations. The results based on the estimations are summarised in the following table. Actual and expected signs of the variables are reported.

**Perceived Environmental Uncertainty**

As can be seen from Table 5.9., the regression coefficient of environmental uncertainty is negative and insignificant. The result indicates that there is not a statistical relationship between managerial perceptions of environmental uncertainty and decision processes. These findings are inconsistent with Eisenhardt and Bourgeois (1988) and Fredrickson's (1984) findings. While Eisenhardt and Bourgeois' (1988) study argued that the synoptic process might be appropriate for those firms which operate in uncertain environments, Fredrickson (1984) indicated the incremental approach is more suitable for uncertain environments.
Table: 5.9. Effects of Environmental and Structural Factors on Decision Processes

Dependent variable is Strategy

<table>
<thead>
<tr>
<th>Regressor</th>
<th>Coefficient</th>
<th>Standard Error</th>
<th>T-Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>7.93</td>
<td>.84</td>
<td>9.44***</td>
</tr>
<tr>
<td>Environment</td>
<td>-.02</td>
<td>.14</td>
<td>-.14</td>
</tr>
<tr>
<td>Munificence</td>
<td>-.11</td>
<td>.06</td>
<td>-1.71*</td>
</tr>
<tr>
<td>Centralisation</td>
<td>-.37</td>
<td>.17</td>
<td>-2.08**</td>
</tr>
<tr>
<td>Formalisation</td>
<td>-.96</td>
<td>.20</td>
<td>-4.59***</td>
</tr>
<tr>
<td>Size</td>
<td>-.11</td>
<td>.06</td>
<td>-1.75*</td>
</tr>
<tr>
<td>Performance</td>
<td>-.06</td>
<td>.07</td>
<td>-.88</td>
</tr>
</tbody>
</table>

R-Square        .48
Adjusted R-Square .44
F-Stat.   F(6, 73) 11.53***

*p<0.1,   **p<0.05,   ***p<0.01

********************************************************************
Munificence

The regression coefficient of the munificence variable is negative and significant. Therefore, the results reported in the table support Hypothesis 2A, which indicated that the higher the environmental munificence, the greater the level of using synoptic strategies and the lower the environmental munificence, the greater the level of using incremental strategies. This finding is consistent with Goll and Rasheed's (1997) research. They hypothesised that organisational rationality is more strongly associated with munificent environments. Another study suggesting similar results conducted by Bantel and Osborn (1995), argued that companies within munificent environments are more likely to have an identifiable (i.e. synoptic) strategy.

Table 5.10. A Summary of Findings

<table>
<thead>
<tr>
<th>Variable</th>
<th>Expected sign</th>
<th>Actual Sign</th>
<th>The Coefficient</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environment</td>
<td>-</td>
<td>-</td>
<td>-2.19E-02</td>
<td>Insignificant</td>
</tr>
<tr>
<td>Munificence</td>
<td>-</td>
<td>-</td>
<td>-.11</td>
<td>Significant</td>
</tr>
<tr>
<td>Centralisation</td>
<td>-</td>
<td>-</td>
<td>-.37</td>
<td>Significant</td>
</tr>
<tr>
<td>Formalisation</td>
<td>-</td>
<td>-</td>
<td>-.96</td>
<td>Significant</td>
</tr>
<tr>
<td>Size</td>
<td>-</td>
<td>-</td>
<td>-.11</td>
<td>Significant</td>
</tr>
<tr>
<td>Performance</td>
<td>+</td>
<td>-</td>
<td>-6.30E-02</td>
<td>Insignificant</td>
</tr>
</tbody>
</table>

Centralisation

Table 5.9. also presents regression results of centralisation effects on the decision processes. The results show that there is a high significant relationship between organisational centralisation and the decision processes. A similar
relationship is provided by the correlation matrix (see Table 5.8.). Furthermore, the negative value of the centralisation coefficient supports Hypothesis 3A. Therefore, the result, based on 80 observations, indicates that as organisational centralisation increases, organisations tend to use the synoptic model in their decision process. On the other hand, the finding also unveils that when the level of organisational centralisation lessens, organisations tend to use incremental strategy decision processes. The proposed study's finding concerning the effects of centralisation on decision processes seems to be consistent with Shrivastava and Grant's (1985) and Slevin and Covin's (1997) studies. They also claimed that power centralisation is associated with comprehensiveness in decision-making processes.

**Formalisation**

Table 5.9. illustrates the results concerning formalisation effects on decision processes. As can be seen from Table 5.9. Hypothesis 3C was supported in the sample. The regression equation provides a significant relationship between formalisation and decision processes. The correlation matrix (see Table 5.8.) also illustrates a negative relationship between strategy process and formalisation. The negative value of the formalisation coefficient ( - .96) in the Table 5.9. indicates that as the level of formalisation increases in the organisation, its decision process becomes more comprehensive and analytical. On the other hand, while the structure becomes less formalised, the decision process tends to be incremental. These findings are consistent with some past studies. For example, Shrivastava and Grant (1985) suggested that formal structures are associated with rationality in decision-making processes, a lower degree of political activity and sub-unit involvement, and quicker
decisions. In the same way, Miller (1987) hypothesised that formalisation will be positively associated with rational strategy making. This finding is in contradiction to the Fredrickson (1986) finding which argued that the decision process would resemble incrementalism under a formalised structure.

Size

This research argues that larger firms are most likely to have a synoptic strategy, whereas smaller firms have incremental strategy. Table 5.10. illustrates that there is a significant relationship between organisational size and decision processes. The result, based on 80 observations, also indicates that smaller firms tend to use the incremental approach in their strategy making process. Therefore, the research data supports Hypothesis 4A. The results are consistent with Fredrickson and Iaquinto (1989) and Odom and Boxx (1988), who noted that size is positively related to the synoptic strategy mode.

Performance

The research data failed to support Hypothesis 5, which states that more performanced firms are most likely to have a incremental strategy, whereas less performanced firms are most likely to use synoptic strategy. The expected value of the regression coefficient was positive (see Table 5.10). The regression equation provides a negative value for the independent variable (see Table 5.9.). In addition to this, the value is insignificant. Therefore, the research data implies that there is no statistically significant impact of firm performance on the strategy making process.
5.4.2. Interaction Effects of Factors and the Decision Process On Firm Performance

One of this research’s objectives is to test the interaction effects of decision processes and environmental and organisational variables on firm performance (profitability). In order to analyse the interaction effects, regression analysis was used. This section of the chapter addresses the regression results of relevant regression equations and test summaries. These results will enable us to evaluate the hypotheses (1B, 2B, 3B, 3D, 4B).

Table 5.11. Interaction Effects of Environmental Uncertainty and Decision Processes on Firm Performance

<table>
<thead>
<tr>
<th>Regressor</th>
<th>Coefficient</th>
<th>Standard Error</th>
<th>T-Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>7.43</td>
<td>1.91</td>
<td>3.87***</td>
</tr>
<tr>
<td>Strategy</td>
<td>-1.18</td>
<td>.57</td>
<td>-2.06**</td>
</tr>
<tr>
<td>Environment</td>
<td>-1.29</td>
<td>.63</td>
<td>-2.04**</td>
</tr>
<tr>
<td>Strategy * Environment</td>
<td>.32</td>
<td>.18</td>
<td>1.77*</td>
</tr>
</tbody>
</table>

R-Square .09
Adjusted R-Square .05
F-Stat. F(3, 76) 2.51*

*p<0.1,
**p<0.05,
***p<0.01

Table 5.11. indicates the regression results of interaction effects of environmental uncertainty and decision processes on firm performance. In the
regression equation, the effects of strategy process, environmental uncertainty and their interaction effects on firm performance is regressed. The F statistic results illustrate that hypothesis IB is significant in the sample. As can be seen from the table, the regression coefficients of all explanatory variables are statistically significant. Thus the research suggests that there is an effect of decision process-environmental uncertainty interaction on firm profitability.

The results imply that firms that perceive high environmental uncertainty and which use an incremental strategy are more likely to perform better than those using synoptic strategies. In contrast, firms that perceive low environmental uncertainty and use a synoptic strategy are likely to perform better than those using incremental strategies.

Table 5.12. Interaction Effects of Munificence and Decision Processes on Firm Performance

<table>
<thead>
<tr>
<th>Regressor</th>
<th>Coefficient</th>
<th>Standard Error</th>
<th>T-Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>4.45</td>
<td>1.10</td>
<td>4.02***</td>
</tr>
<tr>
<td>Strategy</td>
<td>-.53</td>
<td>.30</td>
<td>-1.76*</td>
</tr>
<tr>
<td>Munificence</td>
<td>-.23</td>
<td>.32</td>
<td>-.73</td>
</tr>
<tr>
<td>Strategy * Munificence</td>
<td>9.396E-02</td>
<td>.08</td>
<td>1.06</td>
</tr>
</tbody>
</table>

Dependent variable is Performance

R-Square .06
Adjusted R-Square .02
F-Stat. F(3, 76) 1.69

*p<0.1,
**p<0.05,
***p<0.01
Table 5.12. illustrates the interaction effects of munificence and the decision process on firm performance. As can be seen from the table, the regression equation testing hypothesis 2B was highly insignificant in the sample. However, the regression coefficient of the decision processes was significant and negative. The heteroskedasticity problem is also present in this regression equation. As discussed earlier, in the case of heteroscedasticity, one might expect that the usual confidence intervals and hypothesis tests based on t and F distributions are unreliable. Therefore, the results will not be referred to in the following chapter.

<table>
<thead>
<tr>
<th>Regressor</th>
<th>Coefficient</th>
<th>Standard Error</th>
<th>T-Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>1.65</td>
<td>2.44</td>
<td>.67</td>
</tr>
<tr>
<td>Strategy</td>
<td>.41</td>
<td>.69</td>
<td>.60</td>
</tr>
<tr>
<td>Centralisation</td>
<td>.81</td>
<td>.87</td>
<td>.93</td>
</tr>
<tr>
<td>Strategy * Centralisation</td>
<td>-.26</td>
<td>.27</td>
<td>-.99</td>
</tr>
</tbody>
</table>

R-Square                        .05
Adjusted R-Square               .01
F-Stat. F(3, 76)                 1.33
Table 5.13 presents the regression equation results of the interaction effects of centralisation and decision processes on firm performance. The F statistic result indicates that the regression equation is insignificant. Moreover, the regression coefficients of the independent variables are insignificant. These results lead us to conclude that there is no significant relationship between firm performance and the interaction effects of centralisation-decision processes. Therefore, the present sample failed to support Hypothesis 3B.

Table 5.14. Interaction Effects of Formalisation and Decision Process on Firm Performance

<table>
<thead>
<tr>
<th>Regressor</th>
<th>Coefficient</th>
<th>Standard Error</th>
<th>T-Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>.64</td>
<td>3.43</td>
<td>-.18</td>
</tr>
<tr>
<td>Strategy</td>
<td>.96</td>
<td>.81</td>
<td>1.17</td>
</tr>
<tr>
<td>Formalisation</td>
<td>.1.72</td>
<td>1.24</td>
<td>1.38</td>
</tr>
<tr>
<td>Strategy * Formalisation</td>
<td>-.49</td>
<td>.31</td>
<td>-1.57</td>
</tr>
</tbody>
</table>

R-Square  .07
Adjusted R-Square .03
F-Stat. F(3, 76) 1.92
Table 5.14. illustrates the regression analysis results for the interaction effects of formalisation and decision processes on firm performance. As can be seen from the table, the F statistic of the regression equation is insignificant in the sample. At the same time, regression coefficients of the decision process-formalisation interaction are insignificant. The results show no relationships of interaction effects of strategy process and formalisation on firm performance. Therefore, the proposed research failed to find a statistical relationship for the hypothesis 3D.

In order to test the 4B hypothesis, a regression equation was developed. A summary of the results is presented in Table 5.15. It indicates the regression results of the interaction effects of organisational size and decision processes on firm performance. As can be seen from the table, the interaction effects of size (number of employees) and decision processes on firm performance is significant (F statistic significance p<.10). Furthermore, the table displays that regression coefficients of decision process and size are positive. On the other hand, the regression equation does not provide significant coefficients for the explanatory variables. Thus, this research sample fails to support Hypothesis 4B, which indicated that firms with larger size and using a synoptic strategy are more likely to perform better than other large firms using an incremental strategy. On the contrary, firms with smaller size and using an incremental strategy are more likely to perform better than other small firms using a synoptic strategy.
Table 5.15. Interaction Effects of Size and Decision Process on Firm Performance

Dependent variable is PERFORMANCE

<table>
<thead>
<tr>
<th>Regressor</th>
<th>Coefficient</th>
<th>Standard Error</th>
<th>T-Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>1.99</td>
<td>1.26</td>
<td>1.58</td>
</tr>
<tr>
<td>Strategy</td>
<td>8.492E-02</td>
<td>.32</td>
<td>.26</td>
</tr>
<tr>
<td>Size</td>
<td>.47</td>
<td>.34</td>
<td>1.36</td>
</tr>
<tr>
<td>Strategy * Size</td>
<td>-8.42E-02</td>
<td>.09</td>
<td>-.88</td>
</tr>
</tbody>
</table>

R-Square       .08
Adjusted R-Square .04
F-Stat. F(3, 76) 2.34*

*p<0.10

5.5. Conclusion

In Chapter Five, the results of the research discussed in Chapter Three are illustrated. According to the results, (see Table 5.16) the strategic decision process might be affected by environmental munificence, centralisation, formalisation and organisational size. The regression equations presented significant results for these relations. As far as the interaction effects are concerned, only one variable, perceived environmental uncertainty, seems to have an impact on firm performance with strategy process.
Table 5.16 The Summary of Findings

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>2A</td>
<td>The higher the environmental munificence, the greater the level of using synoptic strategies. In contrast, the lower the environmental munificence, the greater the level of using incremental strategies.</td>
</tr>
<tr>
<td>3A</td>
<td>Firms with centralised structure are most likely to use a synoptic process. In contrast, firms with decentralised structure are most likely to use an incremental process.</td>
</tr>
<tr>
<td>3C</td>
<td>Firms with formalised structure are most likely to use synoptic strategies. In contrast, firms with less formalised structure are most likely to use incremental strategies.</td>
</tr>
<tr>
<td>4A</td>
<td>Larger firms are most likely to have a synoptic strategy, whereas smaller firms have incremental strategy.</td>
</tr>
<tr>
<td>1B</td>
<td>Firms that perceive high environmental uncertainty and use an incremental strategy are more likely to perform better than those using synoptic strategies. In contrast, firms that perceive low environmental uncertainty and use a synoptic strategy are likely to perform better than those using incremental strategies.</td>
</tr>
</tbody>
</table>

In Chapter Six the findings provided from Chapter Five are interpreted in more detail. It also contains a summary of the research, contributions, limitations of the study, and future directions.
CHAPTER SIX
DISCUSSIONS OF RESEARCH FINDINGS AND CONCLUSIONS

6.1. Introduction

This chapter draws overall conclusions from the research. It consists of six parts. The first section contains a summary of research. The second part discusses the results. The third indicates the contributions of the research to our knowledge. The fourth section states the limitations of the research. The fifth section indicates implications for managers. The final part suggests directions for further research.

6.2. Summary of the Thesis

The context of the topic of this study was explained in Chapter One. We explained the meaning of strategy and described the existing schools in the strategic management field. Two alternative decision making processes were highlighted. Chapter One also explained the research model and hypotheses and stated the methodology to be used in the research.

Chapter Two clarified the key issues concerning two alternative decision processes. The first section of the chapter covered the general structure of the
models. This enabled us to point out the key characteristics of the schools in the following part. The premises were discussed and compared. The third section reported the basic assumptions of the processes. The final part included the criticisms of approaches in the light of underlined characteristics and assumptions.

In Chapter Three, we reviewed empirical studies in the literature. We determined the factors affecting strategy processes. Measurement considerations concerning environmental uncertainty were also discussed in this chapter. In the light of these discussions, research hypotheses were stated. The chapter also described the research model.

Chapter Four laid out the research methods used. This chapter also presented some issues related to data such as data unit, data source and sampling method. Finally, the regression equations were developed according to the hypotheses in this chapter.

Chapter Five constitutes the analytical part of this study. In this chapter, we examined the effects of environmental and structural factors on strategy processes. Moreover, interaction effects of strategy process and explanatory variables on firm performance were tested. The discussion of Chapter Five will be given with its findings in the following section.

6.3. Discussion of the Results

The results support the main thesis of this study: some relationships exist between design variables of strategic planning systems and a firm’s internal and
external characteristics; there is no one "best" way to design a planning system. Therefore, an overall implication of this study is that academics need to consider a contingency approach when discussing the superiority of synoptic or incremental processes. It is worthwhile pointing out that the merits of each perspective should be stated after discussing the contingency factors.

In this part, the discussions of this research will be stated in the light of empirical findings noted in the previous chapter. Each hypothesis tested will be discussed. While the first part focuses on the effects of factors on the strategy process, the second part discusses the interaction effects.

6.3.1. The Effects of Environmental and Organisational Factors on Decision Processes

Hypothesis 1A

The result of this research indicates that there is no statistically significant relationship between managerial perceptions of environmental uncertainty and decision processes. Therefore, the impact of environmental uncertainty on the strategy process level is unclear.

There are some studies in previous literature arguing that there is no significant relationship between environmental uncertainty and strategy process. For instance, Boulton et al (1982) noted that uncertainty does not have a consistent impact on all aspects of strategic planning. Similarly, Javidan (1984) discussed that the perceived need for internal change, and the perceived value of long-range planning in formulation and implementation of such a change might moderate the impacts of environmental uncertainty. Moreover, Lindsay and Rue (1980) measured
environmental complexity. However, the findings for small companies were not significant. They could also find no support for the hypothesis that increased environmental uncertainty leads to a shorter planning time span. This thesis finding suggests that top managers absorb environmental uncertainty by limiting its impact on the strategic decision making process. This attitude might explain why managers do not attempt the development of strategy processes that are sensitive to the uncertainty level in their particular industry.

An explanation for the absence of a relationship between perceived environmental uncertainty and the decision process may be seen to lie in the sample used in this research. The data set consists of firms which are from a variety of industries. Therefore, different industries are expected to be represented by the sampled firms. Since the sample consists of a large variety of industries and a relatively smaller number of firms, this situation might display firm effects more than industry effects.

This research proposed that as Fredrickson and his colleagues claim, the synoptic process is associated high environmental uncertainty conditions. A variety of factors may account for the lack of relationship between perceived environmental uncertainty and strategic decision process, in contrast to Fredrickson (1984) findings. Differences between their study and this one include the dependent variable (comprehensiveness vs. synoptic) and the range of industries (one stable industry vs. twenty-two industries). Any of these factors may be responsible for this difference in findings between the two studies.
Hypothesis 2A

When the decision process was regressed on munificence, the regression equation and regression coefficients of munificence were statistically significant. Thus, this research finding supports Hypothesis 2A which stated that the higher the environmental munificence, the greater the level of use of synoptic strategies. In contrast, the lower the environmental munificence, the greater the level of use of incremental strategies.

This finding is consistent with Goll and Rasheed's (1997) and Bantel and Osborn's (1995) research findings. They concluded that the synoptic process is more strongly associated with performance in munificent environments. It might be argued that scarcity leads firms to pay more attention to the conservation of resources. Consequently, they are unable to make greater analytical efforts to predict their environments. As discussed in an earlier chapter, the synoptic process requires a high level of information processing, time and financial resources. In such conditions, the incremental approach might be more appropriate for companies. In addition to this, as Pfeffer (1978) states, during the period of nonmunificent conditions, subdivisions may attempt to gain more financial resources by using negotiating and bargaining skills. This argument also leads us to conclude that the incremental approach is superior in nonmunificent environments. In general, results indicate that in munificent environments managers apply to more quantitative techniques to analyse the environment and strategy plans tend to have longer time horizons. In contrast, in nonmunificent environment, strategic plans should have shorter time horizons. In other words, a more flexible planning system is likely to be found in companies operating in nonmunificent environments.
On the other hand, the finding seems to contradict Dess and Origer (1987). They suggested that organisational need for consensus on goals and means would be increased during nonmunificiency, maintaining that the decision process would become more synoptic as resources become scarcer. It should be noted that while Dess and Origer’s study focuses on consensus in strategy formulation, this study investigates other dimensions of strategy process namely, analysis, futurity and consciousness. The difference in the findings might lie on these descriptions of strategy processes.

**Hypothesis 3A**

The present findings suggest that when organisation structure becomes more centralised, the decision process will be more analytical, and rational. This supports Hypothesis 3A which claimed that firms with centralised structure are most likely to use a synoptic process. In contrast, firms with decentralised structure are most likely to use an incremental process, controlling the size effect. A centralised structure is one in which the right decisions and evaluate activities is concentrated. It can be argued that decentralised structures create flexibility, easy communication between the groups and decision making speed. Consequently, an incremental strategy seems to be more appropriate for decentralised structures. On the other hand, centralised structures rely on procedures to minimize managerial uncertainty. As noted in the second chapter, in a synoptic model of decision making ends are identified before the means for achieving them are evaluated. It seems that in a centralised structure this ends-means relationship exists. In other words, the goals of top executives will guide
strategic decision making process. Therefore, centralised structures complement companies with a synoptic strategy.

This finding seems to be on the same line as Fredrickson’s (1986) study which argued that “centralisation increases the likelihood that strategic decision-making will be a proactive, opportunity-seeking process”, implying a positive relationship between centralisation and the synoptic decision process (p:285).

However, Miller (1987) mentioned that centralisation may restrain rationality by ‘placing most of the onus of decision making on top executives taxing their cognitive abilities and imposing significant time constraints on them’ (p:12). In the same study, he concluded that the relationship of decentralisation with rationality would be stronger in successful firms than in unsuccessful firms. The findings of the present study suggest an opposing view.

Even though there are not sufficient studies to draw a firm conclusion on this issue, this thesis argues that managers should emphasise complementarity among elements of structure and strategy process. A more comprehensive and analytical approach might be more suitable for more centralised organisations. The literature on strategic management generally maintains that strategy affects structure. Of course, strategy involves different problems of coordination and control that can be manipulated by structural dimensions such as centralisation. (Chandler, 1962). This study also sheds some light on the effects of centralisation on the strategy process. For example, more centralised organisations might constrain intuitive synthesis, which is a characteristic of the incremental approach. Centralisation might block an individual from responding quickly to a problem.
Hypothesis 3C

The finding of the present study supports Hypothesis 3C, which suggested that firms with formalised structure are most likely to use synoptic strategies, and in contrast, firms with less formalised structure are most likely to use incremental strategies. The regression analysis provided significant results for this proposition. Consequently, it can be maintained that companies which are highly formalised in their structure tend to be more formalised and analytical in their strategic decision processes. One reasonable explanation is provided by Miller (1987). He argued that since specialists and professional technocrats are components of the formalisation dimension, these staff provide organisations with analytical capabilities and expertise needed for systematic rational strategies. Moreover, the synoptic strategy requires firms to set goals and objectives. Formalised structure can also enable companies to achieve those common goals and objectives. It can be argued that a high level of formalisation affects the role that goals play in the strategic process. For example, by prescribing bounds of behaviour, formalised bureaucracies reduce goal incongruities among members and provide reasonably well-defined expectations about performance evaluation. Because of this fact, it is expected that strategic decisions will be made with precise, as opposed to general, goals in mind and that efficiency criteria will dominate.

This finding seems to be on the same line as Miller (1987). His empirical study found that the relationship between formalisation and synoptic strategy was significant. In the same way, Shrivastava and Grant (1985) reported that formal structure is associated with rationality in decision-making processes, and a lower degree of political activity. On the other hand, Fredrickson (1986) supported the
opposite proposal which noted that the top executives would apply incrementalism under a formalised structure. He argued that the degree of structural formalisation will affect how comprehensive an organisation is in making individual strategic decisions. Rules and procedures contribute to the development of a firm’s repertoire of behaviours, and they dictate how various decision making activities will be handled. The main difference between this thesis and Fredrickson’s study is that while this study examines the relationship in empirical terms, Fredrickson’s study was conceptual.

**Hypothesis 4A**

The 80 cross-section data provided support for Hypothesis 4A, which indicated that larger firms are most likely to have a synoptic strategy, whereas smaller firms have incremental strategy. The study found a significant relationship between strategic decision process and organisation size. The results appear to be consistent with past research arguing that since the synoptic process is expensive due to activities like searching and gathering information, conducting extensive analyses, evaluating various alternatives and so on, small firms are less likely to use the synoptic strategy mode. The reason is that small firms are less likely to meet the financial cost of implementing a synoptic process. Miller and Droge (1986) argued that “as an organisation grows it is able to obtain benefits from increasing specialisation and will thus become more differentiated or complex” (p:543). Moreover, Fredrickson and Iaquinto (1989) argued that as organisations grow, they create specialised sub-units like planning staff and control systems. They argued that this differentiation within the organisation results in rational strategy making. This
point of view has been greatly supported by empirical studies (Odom and Boxx, 1988). As Lawrance and Lorsch (1967) argued, as an organisation grows in number, coordination problems mount as the ability of top managers to personally direct members' action weakens. In order to overcome coordination problems, firms are likely to implement formal management practices.

Hypothesis 5

It was expected that firm performance might influence as well as be influenced by decision-making processes. This thesis hypothesised that more performanced firms are most likely to have an incremental strategy, whereas less performanced firms are most likely to use synoptic strategy. However, the research could find no significant relationship for the effect of firm performance on strategy process. With regard to past literature, empirical findings provide all three possible relations. For example, Pearce et. al. reviewed 18 empirical studies examining the strategy process-performance relationship and found them “inconsistent and often contradictory” (1987, p:671). In the same way Shrader et. al. reviewed 32 studies and found “no clear systematic relationship between formal planning and organisational performance” (1984, p:154). The insignificant result in this thesis might be attributed to the specific measurement of firm performance (ROA). It is expected that profitability is still one of the key concerns for most of the private organisations. It appears that, as Bantel and Osborn (1995) noted, the specific measure of performance might make a difference. Papadakis (1998) argued that subjective performance measures might provide better results in the sense of being more highly correlated
with dimensions of strategy process than objective measures. A relatively complex measurement method of firm performance might be required in organisational studies.

6.3.2. Interaction Effects of Variables On Firm Performance

**Hypothesis 1B**

Previous research suggests perceived environmental uncertainty as a moderator of the strategy process-firm performance relationship. The results of this thesis suggested that there is an effect of decision process-environmental uncertainty interaction on firm profitability. More specifically, the result implied that firms that perceive high environmental uncertainty and use an incremental strategy are more likely to perform better than those using synoptic strategies. In contrast, firms that perceive low environmental uncertainty and use a synoptic strategy are likely to perform better than those using incremental strategies.

The support for Hypothesis 1B was consistent with the findings of Fredrickson (1984) and Fredrickson and Mitchell (1984), who argued that rationality represented by the comprehensiveness of the planning process, is positively related to performance for firms in an industry with a stable environment. According to him, the synoptic process is time-consuming, but in fast changing environments a slow decision making process may be inappropriate. Incremental processes are more effective in uncertain environments since such processes have greater speed and flexibility.

This result contradicted the findings of Eisenhardt (1989), Priem et. al. (1995), which stated that the synoptic approach is positively related to performance
for firms facing highly dynamic environments. Eisenhardt (1989) noted that effective
decision makers in highly dynamic environments analyse more, not fewer, alternative
courses of action. This difference between studies may be attributable to
methodological differences. This study investigated the uncertainty dimension of
environment whereas Eisenhardt’s study utilised high-velocity dimension. Moreover,
while this study’s sample consisted of twenty-two different industries, the study
conducted by Eisenhardt investigated only one dynamic environment.

**Hypothesis 2B**

The research data failed to suggest any effects of decision process-munificence interaction on firm profitability. In the regression equation, the problem of heteroskedasticity was encountered. According to Gujurati (1992), heteroscedasticity is hard to avoid if researchers use cross-sectional data. One possible consequence of heteroscedasticity is that the usual confidence intervals and hypothesis tests based on t and F distributions are unreliable. Therefore, this thesis avoids making any inferences about the interaction effects of munificence-strategy on firm performance.

The past research provided a relationship between performance and effects of munificence-decision processes. For instance, Goll and Rasheed (1997) hypothesised that organisational rationality is more strongly associated with performance in munificent environments. Their findings supported this proposition and they concluded that environmental munificence is a moderator of the relationship between strategy making processes and organisational performance. There are some other studies that contradict the findings of Goll and Rasheed. They argued that in
nonmunificent environments, organisations may be more profitable if they use a synoptic model (Pfeffer and Salancik, 1974). The logic was that when resources are scarce, competition intensifies, and firms cannot afford to make mistakes in their decision process. Because of this, it is expected that firms will indulge in synoptic decision making in non-munificent environments which will eventually increase firm performance.

Hypothesis 3B

The results suggest that there is no significant relationship between firm performance and the interaction effects of centralisation-decision processes. Therefore, the research data failed to support Hypothesis 3B, which asserted that firms with centralised structure and using synoptic strategies are more likely to perform better than those using incremental strategies. On the other hand, firms with decentralised structure and using incremental strategies are more likely to perform better than those using synoptic strategies. It seems that centralisation alone is not strong enough to have an interactive effect with decision processes on firm profitability. Miller (1987) argued that comprehensiveness can benefit from organisation structure. Managers can analyse, plan and scan most effectively in structures that provide informative controls, recruit and empower expert staff, and create forums such as committees and task forces to coordinate. He further implied that even though organisation structure is not sufficient for multifaced and informed decision making, it may facilitate it, and consequently, enhance performance. For this reason, it was expected that the synoptic process applied in a centralised firm would increase performance.
Hypothesis 3D

The sample also failed to find support for the interactive effect of formalisation with strategy process on firm performance. It was expected that firms with formalised structure and using synoptic strategies are more likely to perform better than those using incremental strategies. On the other hand, firms with less formalised structure and using incremental strategies are more likely to perform better than those using synoptic strategies. Like the centralisation interaction effect on firm performance, formalisation seems to be insufficient to produce a statistical relationship. It might be maintained that other organisational structure variables, such as integration (Miller, 1987, Miller et. al. 1988) might be associated with firm profitability. For instance, Miller (1987) noted that formal structural integration related to rationality and interaction in decision making, especially in successful firms.

Hypothesis 4B

The sample did not provide significant results for Hypothesis 4B. Hence, the hypothesis that firms with larger size and using a synoptic strategy are more likely to perform better than other large firms using incremental strategy, and firms with smaller size and using an incremental strategy are more likely to perform better than other small firms using a synoptic strategy, was not supported by the sample. It might be concluded that organisational size is not strong enough to have an interaction effect with strategy process on firm performance. The insignificant result might be attributed to the measurement of size. As noted earlier, a single measurement (number of full-time employees) was utilised for organisational size.
The results may provide significant findings if a complex measure of organisational size is applied.

6.4. Contributions of the Thesis

This study provides some contributions to the strategic management field.

The first contribution is the test of contingency theory by the relationships suggested by the hypotheses. In this study, environmental and structural factors were stated as contingency variables. This thesis maintains that strategy decision processes should consider environmental and organisational variables. This research attempted to shed some light on contingency theory by investigating the relationships between environmental, structural factors and strategy process.

This research also reports the effects of environmental and organisational factors on strategy processes in Fortune 500 companies. The thesis suggests that environmental munificence is strongly associated with strategy process. As far as organisational variables are concerned, this thesis maintains that organisational structure has an effect on strategy processes. Both structure dimensions, centralisation and formalisation, have provided significant results. Furthermore, there is a strong relationship between organisational size and strategy process. Finally, this thesis states that the strategy process has an interactive effect with environmental uncertainty on firm performance.

The third contribution is that this study attempts to capture the most important quantitative aspects of the relationships between the strategy process, environmental, structural factors and performance. The model is a generalisation of a number of past
studies conducted on the topic. As discussed in the first chapter, the model has been adopted from Hyun (1992). This study considers firm performance as another organizational factor affecting strategy decision process. This thesis has made it possible to determine whether the presence of an additional variable, performance, improves the estimations significantly.

6.5. Limitations of the Study and Directions for Future Research

The findings and implications of the research should be considered in the light of its limitations. The choice of data, research design and inference procedures involve several inevitable trade-offs.

The relationship between organisational factors, environment, firm performance and strategy remains unclear. It seems that the specific measure of performance makes a difference. Bagozzi and Phillips (1982) argued that organisational performance should be measured with multiple rather than single indicators. The effect of strategy processes would then be related to dimensions of performance, rather than single indicators. In the same vein, Boyd (1991) indicated that to control for measurement error, it is necessary to measure both planning and performance with multiple indicators. Multiple indicators are desirable when a construct can be measured in several ways, as well as in the face of measurement error. As noted earlier, past literature provides positive, negative and no relationship between strategy process and performance. The varying results might be attributed to a lack of inclusion of firm performance. Therefore, it can be maintained that future researchers might benefit from utilising a more complex measure for firm
performance. Furthermore, there are some researchers arguing that subjective performance measures may provide better results in the sense of being more highly correlated with dimensions of strategic decision making processes than objective measures. Papadakis (1998) argues that the better results provided by subjective measures may be attributed to the fact that, unlike objective measures, they are designed to capture the relative significance of each performance dimension to the specific company. It is clear that strategy process-performance implications deserves expanded research attention.

The research design required environmental uncertainty as a variable. Therefore, different industries are expected to be represented by the sampled firms. The sample contains 22 industries and 80 firms in total. It is believed that a large number of industries makes it difficult to differentiate between industry effects and firm effects. Moreover, since the sample was limited to private organisations, the results may not necessarily be generalisable to non-profit organisations.

The proposed study failed to provide a significant relationship between environmental uncertainty and strategy process. The reason might be the environmental uncertainty scale employed in this study. Duncan's environmental uncertainty scale has been criticised by Downey, Hellriegel, and Slocum (1975) in terms of its conceptual and methodological inadequacy. As discussed by Downey et. al., the complexity part of the simple-complex dimension was not a significant factor and was negatively related to perceived uncertainty. Although in the present study three components of perceived environmental uncertainty show high levels of reliability, it appears that Duncan's (1972) operationalisation may not provide an adequate measure of perceived environmental uncertainty. It might be argued that the
scale may not clearly and systematically represent environmental variables. Therefore, researchers should attempt to develop other measures of perceived environmental uncertainty.

An explanation for the absence of a relationship between the interaction effect of organisational size with the decision process on firm performance might lie in the very sample used in this study. The companies selected were drawn from the Fortune 500 list. As noted earlier, these companies are relatively large and more profitable compared to rivals in their particular industries. By covering profitable and large organisations the effects of size with decision processes on firm performance, therefore, could have been obscured. It is suggested that researchers should select a variety of organisations in terms of size and firm performance.

Both organisational structure variables, centralisation and formalisation, could not provide significant findings for the interaction effect with strategy process on firm performance. The reason for this insignificant relationship might be attributed to the variables chosen to measure organisational structure. It seems that both variables may not be strong enough to find a statistical relationship. It can be argued that other organisational structure variables, such as integration (Miller, 1987, Miller et. al. 1988) might be associated with firm profitability. For instance, Miller (1987) noted that formal structural integration related to rationality and interaction in decision making, especially in successful firms. As mentioned earlier, including different variables to organisational structure might provide significant effects on firm performance.

There is some evidence in the past literature that executive characteristics also produced statistically significant but small main effects on strategic decisions, as well
as moderating effects on the criteria used in those decisions (Hitt and Tyler, 1991). Executive characteristics produced main and moderating effects on strategic decision models. The results support contentions by a number of theorists that an accurate understanding of strategic decisions requires consideration of the effects of executives' personal characteristics. For instance, Rajagopalan et. al. (1993) noted that high levels of decision maker confidence can lead to a limited examination of new alternatives, limited information search, and less comprehensive, but faster decision processes. Differences in demographic characteristics of top executives such as age and tenure (Hambrick and Mason, 1984) and heterogeneity in human capital or managerial resources in terms of expertise and skills may explain important differences in strategic decision processes across firms as well as across decisions within a firm. Therefore, the future research might benefit from investigating the relationship between executive characteristics and strategic decision process.

Another suggestion for future research is that academics could ask how effective strategic choice processes vary with the degree of government regulation or cultural differences. Studies of different cultures would be particularly timely since most research on strategic decision making has been conducted in North European and North American countries and even less has been published in the international literature. Schwenk (1995) argues that as much of the research is specific to the US culture, it may be that many of the conclusions about strategic decision making developed in the US context will have to be modified in order to be applicable across cultures. Yet, strategic decision making may be quite different in other cultures, especially as notions of hierarchy and group dynamism vary. As a consequence, the future research might investigate strategy decision process in other cultures.
6.6. Implications for Managers

The findings of strategy process-environment-structure-performance relationships have several implications for practicing managers.

This research suggests that a centralised and formalised structure should be followed by a synoptic decision making process, whereas a less centralised and less formalised structure should be followed by an incremental process. Therefore, managers should consider the link between organisational structure and strategy process when designing their companies' decision making processes.

Another relationship suggested by this research is the linkage between organisational size and decision processes. As noted earlier, large firms are more likely to implement a synoptic process, while small firms tend to use an incremental approach. In adjusting the degree of synopticity and incrementality in decision processes, managers may need to take into consideration the link between size and decision processes.

It appears that managers should consider the relationship between environmental munificence and strategy process. The current research suggests that organisations tend to employ a synoptic process when they compete in munificent environments and in nonmunificent environments firms are more likely to use an incremental approach.

This research also notes that adjusting the level of synoptic and incremental process, according to the environments, is important for firm performance.
6.7. General Conclusion

As noted earlier, this research focuses on the two alternative strategic decision processes and their relationships with environmental and organisational factors, and had three main objectives. These objectives were:

- to provide a detailed review of the two alternative schools,
- to investigate how environmental and intraorganisational variables affect the decision making processes,
- to investigate the interaction effects of environmental and organisational factors with decision processes on firm performance,

This research achieved the review of two schools. A detailed review was discussed in Chapter Three. The ways in which environmental and organisational factors affect strategy decision processes were tested empirically in Chapter Five. In addition, the interaction effects of the variables with decision processes on firm performance were measured in the same section.

We have made an analysis studying Fortune 500 companies and produced five noteworthy findings. We have managed to identify a number of variables, which explain the variations in strategy process. The first main conclusion is that environmental munificence should be taken into account in the strategy decision process. This result yielded several conclusions such as, a more rational and comprehensive strategy process requires a high level of information processing, time and financial resources. Therefore, this type of process is feasible in munificent conditions. We have also been able to state that organisational variables, centralisation, formalisation and size have considerable impact on the variations in the strategy process. This thesis maintains that as organisational structure becomes
more centralised and formalised, top executives tend to employ more rational and comprehensive decision process. Decentralised and less formalised structures should be matched with incremental approach. Decentralised and less formalised structures provide flexibility, communicativeness and decision making speed an organisation needs to successfully modify its strategy as the situation dictates. Therefore, these structures complement firms with incremental approach. Centralised and formalised structures rely upon rules, policies and procedures. Thus, they are more appropriate for synoptic planning model. In the same vein, as organisations grow in size, they employ more systematic strategy processes. The reason behind such a conclusion is that as firms grow, they may need more co-ordination and control mechanisms. Such controls devices can be managed through a synoptic process since it favors formal structure and mechanisms. Another main conclusion is that organisations that use synoptic processes in less uncertain environments are likely to perform better than firms which implement incremental processes. This study argues that strategists might be unable to engage in calculation and analysis mentioned in synoptic process in the conditions of uncertainty. In such conditions, they are expected to implement incremental process and increase firm profitability.

As these findings clearly reveal, top managers should consider contingency variables when the decisions are made. The synoptic approach has strong roots in traditional strategic management thought. On the other hand, the incremental approach has gained favor in recent years as top executives have increasingly recognised the benefits of retaining strategic flexibility and the merits of creating learning organisations. This study argues that each approach is best suited to a particular set of contextual conditions. The superiority of synoptic or incremental
processes depends on the environmental and organisational conditions under which they are employed. A contingency approach to strategy making must be further developed to provide adequate methods for different organisations, with different environments, and different problem requirements.
APPENDIX A
COVER LETTER

Dear Sir/Madam

I am conducting a research concerning the strategy decision-making process. The research requires that the questionnaire needs to be answered by a top manager or a planning officer of your company.

I would like to ask for your voluntary cooperation in completing the attached questionnaire which is being given a number of organisations in the United States. The results will be used as part of my doctoral thesis which I am currently undertaking at the University of Leicester, England. I guarantee all responses to this questionnaire will be strictly confidential and will be used only as part of my thesis. The participants will not be known to public knowledge.

The questionnaire should take approximately 30 minutes to complete and, if possible, should be done in one setting. Please note the instructions and respond to each questions as best as you can. The questions are not designed to be tricky or difficult and no right or wrong responses exist. Thank you very much for participating in this research.
APPENDIX B
THE FIRST FOLLOW-UP LETTER

Dear Sir/Madam

A questionnaire concerning some of your company's financial indicators and strategy decision making practices was mailed to you about six weeks ago. The information obtained from this survey will be used for my doctoral dissertation at the University of Leicester, England.

If you have completed the questionnaire already please accept my sincere thanks. If you have not completed, could you please complete and send it as soon as possible. Since it was sent to a small representative sample due to financial constraints, it is most important that your responses are included in the study if we are to represent people's views adequately.

If by some chance you have not received the questionnaire you can contact method, and another copy will be delivered. The research requires that the questionnaire needs to be completed by a top manager or a planning officer of your company. Please be assure that the final results will not identify specific individuals or organisations.
APPENDIX C
THE SECOND FOLLOW-UP LETTER

Dear Sir/Madam

I have written to you previously for your cooperation in my thesis, which I am currently undertaking in the University of Leicester, England, via a questionnaire which sent to you firstly about ten weeks ago and also by another follow-up letter approximately four weeks ago. The questionnaire was concerning your company’s some financial indicators and strategic decision making practices. I have had no response from previous two letters. Therefore, I am writing again for your participation in my study. The research requires that the questionnaire needs to be answered by a top managers or a planning officer. The information obtained will strictly confidential and only used for research as part of my doctoral thesis. I would be very grateful if you could complete the questionnaire as the information is a great use for my study. Thank you very much.
APPENDIX D
RESEARCH QUESTIONNAIRE

Part I Strategy Decision-making Process

To answer the questions in this part, please use the following response choices.

<table>
<thead>
<tr>
<th>Absolutely true</th>
<th>Neither true Nor false</th>
<th>Absolutely false</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>7</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. My firm often makes decisions aimed at exploiting opportunities in the market.
   1 2 3 4 5 6 7

2. My firm often focuses on long term goals and strategies.
   1 2 3 4 5 6 7

3. My firm often carries out long term forecasting of sales, profits and the nature of markets.
   1 2 3 4 5 6 7

4. My firm often carries out long term forecasting of the technology relevant to the products offered by my firm.
   1 2 3 4 5 6 7

5. My firm often carries out planning of long term investments.
   1 2 3 4 5 6 7

6. In order to decide upon major production, marketing and financial decisions, operations research techniques, such as linear programming and simulation, are often used.
   1 2 3 4 5 6 7

7. In my firm, periodic brainstorming by senior management groups for novel solutions to problems is often applied.
   1 2 3 4 5 6 7
8. My firm often uses a formalized, systematic search for and evaluation of opportunities for acquisitions, new investments, new markets, etc.

1 2 3 4 5 6 7

9. Staff specialists to investigate and write reports are often used on major decisions.

1 2 3 4 5 6 7

10. Choices among strategic alternatives tend very often to be made quickly and without precision as time pressures are often substantial.

1 2 3 4 5 6 7

11. In my firm, strategies are well and precisely conceptualised and guide the modus operandi and decisions.

1 2 3 4 5 6 7

Part II: Environment

A. Perceived Environment Uncertainty

To answer the questions in this section, please use the following response choices.

<table>
<thead>
<tr>
<th>Never</th>
<th>Rarely</th>
<th>Occasionally</th>
<th>Frequently</th>
<th>Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

1. How often do you believe that the information you have about the change in social, economic, or political conditions is sufficient for the next year?

1 2 3 4 5

2. How often do you believe that the information you have about the change in market demand for products/services that your organisation will provide is sufficient for the next year?

1 2 3 4 5
3. How often do you believe that the information you have about what kind of new product/service your competitors will provide is sufficient for the next year?
   1  2  3  4  5

4. How often do you believe that the information you have about the change in technology which may affect your organisation is sufficient for the next year?
   1  2  3  4  5

5. How often do you believe that the information you have about the change in supply of labour to your organisation is sufficient for the next year?
   1  2  3  4  5

6. How often do you feel that you are able to tell whether the expected change in social, economic, and political conditions will have a positive or negative impact on your organisation?
   1  2  3  4  5

7. How often do you feel that you are able to tell whether the expected change in market demand of your products/services will have a positive or negative impact on your organisation?
   1  2  3  4  5

8. How often do you feel that you are able to tell whether the new products/services that your competitors provide will have a positive or negative impact on your organisation?
   1  2  3  4  5

9. How often do you feel that you are able to tell whether the expected change in technology will have a positive or negative impact on your organisation?
   1  2  3  4  5

10. How often do you feel that you are able to tell whether the expected change in supply of labour will have a positive or negative impact on your organisation?
    1  2  3  4  5
11. How often can you predict whether the present marketing (or customer service) policy of your organisation will increase or decrease customer satisfaction for the next year?
   1 2 3 4 5

12. How often can you predict whether the present employee relations will improve satisfaction in your organisation?
   1 2 3 4 5

13. How often can you predict whether the present investment or customer services will improve the financial performance of your organisation?
   1 2 3 4 5

B Munificence

Please indicate the percentages for the following.

For the last three years, what has been the average percentage increase or decrease in total revenue in your organisation? (please indicate percentage figure and whether it is a decrease or increase)

Part III Structure

A. Formalisation

For the questions in this section, please use the following response choices.

<table>
<thead>
<tr>
<th>Definitely true</th>
<th>Definitely false</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>2</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

1. I feel that I am my own boss in most situations.
   1 2 3 4

2. A person can make decisions without asking anyone else.
   1 2 3 4
3. How things are done around here is left pretty much up to the person doing the work.

4. People can do almost everything as they wish.

5. Most people have their own rules on the job.

6. In my firm, the employees are regularly checked on for rule violation.

7. The employees feel as if they are constantly watched to see that they follow all the rules.

8. There is no rules manual.

9. There is no complete written job description for my job.

10. Whatever the circumstance is, we do not have relevant procedures to follow in dealing with it.

11. Not everyone has a specific job to do.

12. The appropriate ways of dealing with situations are constantly emphasised.

13. A written record of everyone's job performance is regularly kept by my firm.
14. The employees must obey strict operating procedures.
   1 2 3 4

15. When we have a problem, we always have to go to the same person for an answer.
   1 2 3 4

**B. Centralisation**

For questions 1 to 4, please use the following response choices.

<table>
<thead>
<tr>
<th>Never</th>
<th>Seldom</th>
<th>Sometimes</th>
<th>Often</th>
<th>Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

1. How often do you participate in decisions on the development of a new product?
   1 2 3 4 5

2. How often do you participate in decisions to employ new staff?
   1 2 3 4 5

3. How often do you participate in decisions on the promotion of any of the professional staff?
   1 2 3 4 5

4. How often do you participate in decisions on the adoption of new marketing or product service strategies?
   1 2 3 4 5

For questions 5 to 9, please use the following response choices.

<table>
<thead>
<tr>
<th>Definitely</th>
<th>Definitely</th>
</tr>
</thead>
<tbody>
<tr>
<td>False</td>
<td>False</td>
</tr>
<tr>
<td>True</td>
<td>True</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

5. Individuals are discouraged from making decisions in my company.
   1 2 3 4
6. Little action can be taken here until a supervisor approves a decision.
   1  2  3  4

7. Even small matters have to be referred to someone higher up for a final decision.
   1  2  3  4

8. I have to ask my boss before I do almost anything.
   1  2  3  4

9. Any decision I make has to have my boss’s approval.
   1  2  3  4

Part IV Size

1. What is your position?
   ——————

2. How old is your organisation?
   ——————

3. What is the total number of full-time employees of your organisation?
   (Include all branches or departments)
   ——————

Part V Performance

1. What were the total assets of your organisation for the last three fiscal years?
   ——————

2. What was the net income of your organisation for the last three fiscal years?
   ——————
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