A MULTIVARIATE EXAMINATION OF THE RELATIONSHIP BETWEEN STRATEGIC PLANNING AND ORGANISATIONAL PERFORMANCE

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Doctor of Philosophy

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ABSTRACT

Strategic planning and more specifically, the impact of strategic planning on organisational performance has been the subject of significant academic interest since the early 1970's. However, despite the significant amount of previous work examining the relationship between strategic planning and organisational performance, a comprehensive literature review identified a number of areas where contributions to the domain of study could be made. In overview, the main areas for further study identified from the literature review were a) a further examination of both the dimensionality and conceptualisation of strategic planning and organisational performance and b) a further, multivariate, examination of the relationship between strategic planning and performance, to capture the newly identified dimensionality.

In addition to the previously identified strategic planning and organisational performance constructs, a comprehensive literature based assessment was undertaken and five main areas were identified for further examination, these were a) organisational flexibility, b) comprehensive strategic choice, c) the quality of strategic options generated, d) political behaviour and e) implementation success. From this, a conceptual model incorporating a set of hypotheses to be tested was formulated. In order to test the conceptual model specified and also the stated hypotheses, data gathering was

undertaken. The quantitative phase of the research involved a mail survey of senior managers in medium to large UK based organisations, of which a total of 366 fully useable responses were received.

Following rigorous individual construct validity and reliability testing, the complete conceptual model was tested using latent variable path analysis. The results for the individual hypotheses and also the complete conceptual model were most encouraging.

The findings, theoretical and managerial implications, limitations and directions for future research are discussed.

KEYWORDS: Strategic Planning, Structural Equation Modelling, Flexibility, Implementation

CONTENTS

1. INTRODUCTION

1.1. Outline of the research.

This chapter presents an introduction to the thesis, and is divided into three broad sections, 1) A brief overview of the context of the research is presented, 2) the research design is outlined and 3) an overview of the thesis structure is discussed.

1.2. The research context.

Much of the literature within the strategic planning domain highlights the high degree of environmental turbulence experienced by organisations, indeed "Today's business environment is dynamic, complex and continually changing" (O'Regan and Ghobadian, 2002). This increase in the intensity of the competitive landscape, or the move towards "hyper-competition" (D'Aveni, 1994) has "challenged the practice of strategic management" (Drejer, 2004).

In an attempt to deal with this level of turbulence in the environment, strategic planning, has received significant attention from practitioners and academics as a mechanism through which environmental turbulence may be managed (Weber, 1984; Javidan, 1984; Lysonski and Pecotich, 1992; Drea, 1997). By setting long-term objectives, through structured analysis and evaluation of the environment, managers have sought to reduce the problems associated with these high levels of competitiveness, uncertainty and complexity. In essence strategic planning has been viewed as a tool to reduce complexity within the environment, with the organisations implementing this effectively anticipating a commensurate impact of performance.

It would be misleading however to suggest that complete academic, or indeed practitioner

agreement exists on how strategic planning should undertake such measures (Ansoff, 1991; Mintzberg, 1991; Ansoff, 1994; Mintzberg, 1994a; Mintzberg, 1994b); or indeed that discussions on strategic planning had not evolved over time (O'Regan and Ghobadian, 2002). Despite these disagreements and changes however, a common theme within the strategic planning literature is the on-going investigation of the relationship between strategic planning and organisational performance. In essence, does the practice of strategic planning present rewards to the participating organisation?

Whilst examined in much greater detail within chapter two, a significant amount of academic effort has been focussed on this issue since the 1970's[1]. Hence in light of increasing levels of environmental turbulence, and given that strategic planning "is the process by which firms derive a strategy to enable them to anticipate and respond to the changing dynamic environment in which they operate" (Hewlett, 1999), the importance of strategic planning in this context is evident.

Unfortunately, the significant academic effort cited above, has received criticism relating to its overall contribution to the domain of study and also in relation to the clarification of the relationship between strategic planning and performance (Armstrong, 1982; Greenley, 1986; Boyd, 1991 Greenley, 1994). The bases of criticism being largely summarised as 1) little evidence of researchers addressing other, possibly mediating, variables, 2) evidence of researcher bias, 3) the lack of commonality of parameters of research and 4) wide variations in the reporting of the statistical significance of results (Greenley, 1986; Greenley, 1994). A thorough literature examination is presented in chapter two however the issues cited are still identifiable in the literature, despite ten tears of further study

[1] See appendix 2.1 for a comprehensive summary.

since their publication. Indeed, "although the prescriptive management literature implies a positive association between strategic planning and company performance, results are equivocal" (Greenley, 1994).

1.3. Summary of research context.

Given the apparent importance of strategic planning highlighted above, then the relatively slow development of research within this domain is intuitively disappointing. An interesting comparison can be drawn with research relating to the concept of market orientation within the marketing domain. From the seminal works of Narver and Slater (1990) and Kohli and Jawaorski (1990), the concept of market orientation has gradually evolved, where different contexts and indeed conceptual additions have taken place (Hart and Diamantopoulos, 1993; Cadogan and Diamantopoulos, 1995; Greenley, 1995a; Greenley, 1995b; Morgan and Strong, 1998; Gray et al, 1998; Piercy, Harris and Lane, 2002; Harris and Piercy, 2002; Morgan and Strong, 2003; Lings, 2004; Deshpande and Farley, 2004). In essence, the concept of market orientation has evolved significantly faster than studies investigating the relationship between strategic planning and performance. Whilst a little unjust to directly compare two essentially different areas of academic study in such a way, the illustration is made in order to highlight the incremental, and relatively speedy, change in domain level knowledge experienced over time.

Additionally, and dealt with further within chapter two, a lack of conceptual consensus is apparent within the empirical research investigating the relationship between strategic planning and performance. Alternatively a high degree of consensus is identified within the more prescriptive, or normative literature. Interestingly, the consensus exhibited

within the prescriptive literature has not been utilised to address the conceptual variation exhibited within the empirical literature. Hence research attempting to address the issues briefly highlighted above, and to present further insight into the strategic planning domain is required.

The thesis presented will firstly identify, through a thorough literature search, the relevant issues impacting on the relationship between strategic planning and organisational performance. Following this, a conceptual model will be constructed, and tested through structural equation modelling, or more specifically latent variable path analysis. The following section presents further detail on the research design.

1.4. Research Design.

No one method can be cited as being ideal for all data gathering exercises as, "all research problems require their own special emphases and approaches, because every marketing research problem is unique in some way" (Churchill, 2002). However, techniques utilised within the strategic planning and, as cited above, the marketing domains are generally drawn from either a qualitative or quantitative base (Hammersley, 1992). Indeed a combination of the two approaches is often utilised in an attempt to overcome the inherent weaknesses in each approach[2] (Brewer and Hunter, 1989). Additionally, the use of mixed methods in data gathering has been cited as leading to "more valid results" (Jick, 1989). Whilst a broader, and more in-depth discussion of the methodological choices made within this thesis is available in chapter four, the mixed methods technique incorporating both qualitative and quantitative methods was utilised.

[2] For a further examination of the strengths and weaknesses highlighted, see table 3.1 in chapter 3.

The methods chosen were tailored specifically in order to address specific issues at different stages of the research process. These are highlighted within table 1.1.

The data gathering process is essentially divided into two main stages. The first stage is mostly qualitative, and addresses domain level issues as well as issues regarding newly developed constructs and questionnaire testing. The second stage administers the refined questionnaire on a large sample of the target population, and tests the data collected within a structural equation modelling framework.

Table 1.1: Summary of the research methods and objectives

Stage	Research Method	Sample Size	Objectives	Analysis
1	a) Qualitative interviews	8 (2 CEO's / 1 MD's / 5 Senior Managers)	1) Understanding of research area 2) Clarify terminology 3) Discussion of strategic planning process 4) Item generation	1) Manual coding
	b) Expert analysis of items generated	4 (Academic experts)	1) Refinement of item pool	1) Manual sorting of items / manual analysis of results
	c) Pre-testing of scales developed: *Protocols*	4 (2 Senior Managers / 1 MD / 1 CEO)	1) Issues of clarity, engagement, question flow and question length	1) Manual notation
	d) Pre-testing of scales developed: *Pre-test*	55 (Mixed Senior Managers)**	1) Identification of any wording / scale issues	1) Reliability and validity assessment of the constructs under investigation
2	a) Quantitative data collection	366 (Mixed Senior Managers)**	1) Examination of newly developed scales 2) Examination of the hypotheses stated	1) Structural Equation Modelling (Latent variable path analysis: LISREL)

Note: ** The mixed senior managers sample highlighted here, was drawn from a Dunn and Bradstreet database incorporating CEO's, MD's and Senior Management Executives[3].

Stage 1a consisted of qualitative interviews with a number of senior personnel all involved in the organisational strategic planning processes. The purpose of undertaking this stage was to gain both insight and further understanding of the process of strategic planning from the perspective of senior planning personnel. Whilst the process of strategic planning was investigated, other issues examined at this stage were the terminology utilised when discussing strategic planning. Additionally the opportunity for further non-literature based scale item generation was seized, for previously under-developed areas of investigation. Stage 1b was conducted with a panel of academic experts and presented evidence for further refinement of the scale items generated, subsequently stage 1d allowed some initial descriptive statistical testing of these, and other previously utilised measures. Stage 1c allowed an initial draft questionnaire to be administered to a small sample of senior managers, in order to receive direct and instant qualitative feedback on areas such as questionnaire design, clarity and language utilised. Following the scale development and questionnaire refinement stages highlighted above, the questionnaire was administered to a large sample of senior managers in stage 2. Here the amount of quantitative data collected allowed a further statistical examination of the constructs utilised, as well as a thorough investigation of the hypothesised relationships between the constructs administered, discussed further in chapter three.

In summary, the two stages highlighted above focussed on two main issues a) development and testing of measurement scales for previously under-researched areas of

[3] For further justification of the database and sample profile chosen, see chapter 3 section 3.9.2.

investigation within the strategic planning domain; b) exploration of the strategic planning process and its relationship with organisational performance.

1.5. Structure of the thesis.

The thesis is structured into seven chapters, including the current one.

Chapter two presents a comprehensive theoretical examination and development on both the normative and empirical literature identified within the strategic planning domain. In light of the normative and empirical literature presented within the strategic planning domain, it is argued that further academic insight is required through conceptual development and hypotheses testing. Additionally, the development of new constructs of a) Organisational Flexibility, b) Comprehensive Strategic Choice and c) Quality of Strategic Options is presented. As the concepts outlined here are highlighted as relatively empirically unexamined within the strategic planning domain, evidence is presented of measure development based upon the literature review presented. Following this a conceptual model and a set of hypotheses to be tested through empirical field based research are presented.

Whilst issues of measure development are presented in the preceding chapter, chapter three describes in detail the methodology utilised in order to further investigate the measurement model presented in chapter two. Operationalisations of all of the variables to be tested are presented, and the instrument of administration, a questionnaire, is discussed at some length. The questionnaire pre-testing process is then described, with subsequent alterations being highlighted. Finally the main questionnaire administration

process is presented, with the responses discussed at some length with regards to methodological issues such as non-response bias.

Chapter four presents the methodological underpinnings and the results of the descriptive analysis, in relation to the responses received from the main questionnaire survey. The characteristics of the respondents are initially examined with tests for differences between early and late responses being presented. Subsequently the measures utilised to capture the constructs of interest are examined with issues of dimensionality, reliability and validity being explored through exploratory and confirmatory factor analysis. The process described is a rigorous one, based on recommended and published procedures, in order to allow subsequent model testing in chapter six.

Chapter five discusses at some length the statistical testing of the measures developed for a) Organisational Flexibility, b) Comprehensive Strategic Choice and c) Quality of Strategic Options. The multi-item scales presented are analysed, and the psychometric properties explored further. The chapter is divided into two main parts, a) the justification for the process utilised is presented and discussed in relation to each of the constructs of interest; b) the process of measure assessment and purification is discussed. Here issues of dimensionality, reliability and validity are examined and tested within a previously defined and published statistical methodology. As with the descriptive analysis presented in chapter five, the statistical properties of the constructs under investigation are made available for model testing only when they have satisfied rigorous statistical tests.

Chapter six highlights the results of the model testing procedure. The constructs of interest, at this stage proven to be statistically acceptable, are tested within a structural

equation modelling framework. The results are initially examined from a statistical perspective, and subsequently the implications of these results for the previously stated hypotheses are outlined.

Chapter seven concludes the dissertation with a more in-depth discussion of the results form chapter seven. The impact of the results identified are then examined in relation to the strategic planning domain, in particular the implications for existing theory and methodology. The implications of the results obtained are then examined in relation to the practice of strategic planning, both at the individual and organisational levels. Additionally the limitations of the study presented are examined, with recommendations for future research being presented.

2. THEORETICAL BACKGROUND AND DEVELOPMENT

The previous introductory chapter broadly discussed the various strands of research that exist within the strategic planning domain. This chapter develops these strands further, exploring the inherent conceptual underpinnings, their inter-relationships and moreover their contribution to the growth of knowledge within the domain.

The chapter is divided into three main areas. Firstly, much of the discussion previously highlighted will be made through a thorough examination of empirical research in the strategic planning and organisational performance domains. An overview of the research identified will be presented, and followed with an examination of the conceptual and methodological details such as conceptualisation of the dependent and independent variables, sample size and profile, respondent profile, choice of data collection instrument and method of analysis chosen. Secondly, the literature review will widen its scope to incorporate some of the more normative literature available within the strategic planning domain. Comparisons between this and the empirical studies highlighted will then be drawn. Thirdly, the scope of the literature review will widen further to examine related concepts that appear to have received little attention to date within the empirical, and also the normative literature in relation to their impact on organisational strategic planning.

2.1. Strategic planning and organisational performance: An assessment of previous empirical studies.

Fifty-nine studies empirically investigating the relationship between strategic planning and organisational performance were identified. These are presented for ease of reference in appendix 2.1. The format utilised in appendix 2.1 was chosen to aid direct comparison of a large amount of conceptually similar empirical work, and to apply a degree of

structure to the analysis. Prior to deciding the criteria against which the empirical studies identified would be analysed, a number of methodological references were consulted (Cooper and Emory, 1995; Chisnall, 2001; Churchill, 2002), however no recommended schema for classifying data of this type was identified in the literature. In the absence of a literature-based guide, a number of criteria were selected, and confirmed to be appropriate by three separate academic referees. Of note the classification table presented, whilst not dealt with within the methodological references cited, is similar in approach to a previously published work within the strategic planning domain (Greenley, 1986; Greenley, 1994).

The following sections 2.1.2 to 2.2 provide a detailed examination of the empirical studies identified, and presented in appendix 2.1.

2.1.1. Conceptualisation of planning.

A variety of conceptualisations of strategic planning were identified in the studies presented in appendix 2.1, for example 1) formalisation (Ackelsberg and Arlow, 1985; Pearce et al, 1987; O'Regan and Ghobadian, 2002), 2) sophistication (Sapp and Seiler, 1981; Pekar and Abraham, 1995; Hahn and Powers, 1999; Phillips, 2000), 3) intensity (Hopkins and Hopkins, 1997), 4) quality (Burt, 1978), 5) completeness (Fulmer and Rue, 1974; Kudla, 1980), 6) comprehensiveness (Fredrickson and Mitchell, 1984) and 7) planning commitment (Kallman and Shapiro, 1978).

Twenty of the studies presented in table 2.1, utilised either a measure of strategic planning formality, or investigated an apparently simplistic division of respondent organisations into planners and non-planners.

In examining the absolute number, and also the variety of the conceptualisations presented above, it appears that research in the strategic planning domain has flourished and that empirical study in this area has been wide ranging. From this it would be intuitively simple to infer that as a domain, the numerous studies presented should have added to knowledge of the concepts involved. Further investigation however, questions this assumption somewhat. Indeed, the variation exhibited in the nature and definition of the independent variable, implies that the same management procedures have not been investigated across the studies presented.

An illustration of the variance exhibited within the measures utilised is now presented. Rather than an extensive and possibly complex summary of the semantic differences present in table 2.1, an illustration is presented here through a comparison of empirical studies that describe strategic planning formality as the independent variable of interest (Pearce et al, 1987; Hopkins and Hopkins, 1997). Hopkins and Hopkins (1997) measured strategic planning formality by asking respondents to rate a number of components of the strategic planning process used in their organisations, on a scale from 1 (a weak emphasis) to 10 (a strong emphasis). The components of the planning process utilised in the study were drawn from a previous strategic planning study undertaken by Armstrong (1982). No explanation was provided in the literature for this choice of rating scale. Pearce et al (1987) measured strategic planning formalisation, by asking respondents to highlight one of six descriptions that best described the particular planning process in their organization. As with the Hopkins and Hopkins (1997) study, Pearce at al (1987) utilised descriptions of strategic planning that were drawn from previous research (Wood and LaForge, 1979), and were designed to demonstrate the "completeness, commitment

to, and utilization of the strategic planning activities" (Pearce at al, 1987). Again, little justification of this approach is apparent in the study, as appears to be the case with many of the empirical studies identified within this domain. Whilst both studies cite strategic planning formality as the independent variable of interest, the variance in both the conceptualisation and measurement is evident from the illustration above.

Interestingly, and to an extent compounding the issues of variance cited above, Ramanujam and Venkatraman (1987) state that whilst most of the "early research studies divided companies into planners or non-planners, or formal planner / informal planner", this practice was inappropriate as "few large corporations would belong to the non-planner category today".

Due to the variation exhibited in the conceptualisations of strategic planning in the studies identified, doubt is present as to the discriminatory ability of the measures utilised. Given the evidence presented, it is likely that organisations classed as formal planners in one study could be classed as informal planners in another. The conceptualisation and measurement issues described appear to hinder the development of academic knowledge within the domain. As such it is difficult to estimate the progress made in at least thirty-four years of empirical study.

2.1.2. Measures of performance.

Variance in the measures employed to capture performance is once again present in the studies identified. The majority of the studies highlighted in appendix 2.1 utilise a quantitative and financially based assessment of an organisations performance. The number of measures employed varies between the studies identified, with the largest

number of indicators being 13 (Ansoff et al, 1970), and the smallest being only 1 (Welsh, 1984; Pekar and Abraham, 1995).

Whilst in the minority, two of the studies identified provide justification for using a purely financially based assessment of organisational performance (Grinyer and Norburn, 1975; Welsh, 1984; Hopkins and Hopkins, 1997). Whilst Grinyer and Norburn (1975) acknowledge the limitations of this approach, they cite that financial survival in a capitalistic economy was the "only objective" Welsh (1984). In a similar vein Welsh (1984), states that the single financial measure used, in this instance share price reflected, "what people in finance generally agree is the normative and long term ultimate goal of investor owned companies – maximization of stock price". No supporting literature based argument is present in the study, (Welsh, 1984) hence the advocacy of this measure appears somewhat subjective. Hopkins and Hopkins (1997) in a study of the US banking sector provide an industry specific explanation as to the appropriateness of the variables used. Interestingly, other empirical studies within this industry (Sapp and Seiler, 1981; Hahn and Powers, 1999) do not provide an explanation of the measures used, but do however utilise similar measures.

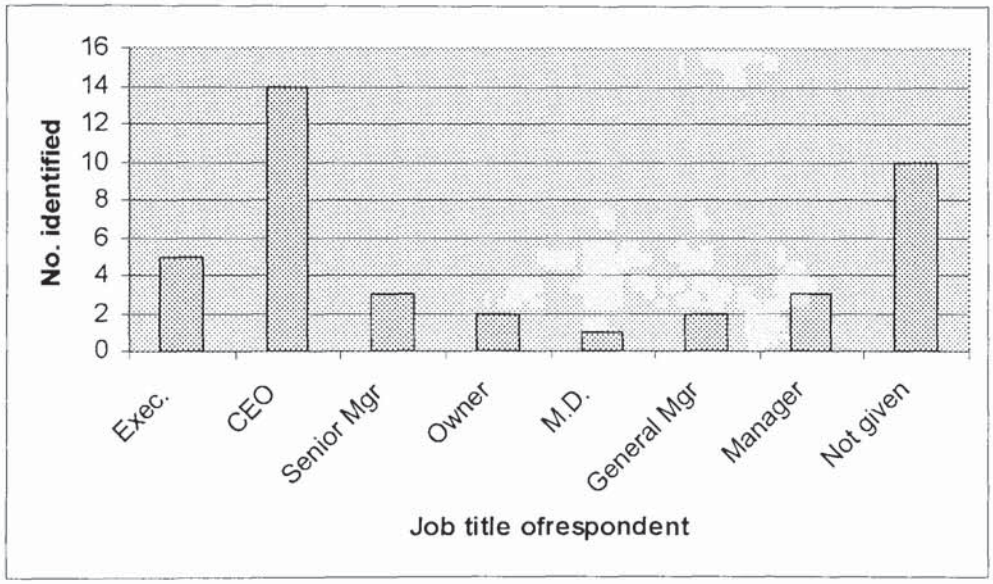
A number of studies provided one subjective measure, in an attempt to capture a non-financially based assessment of the overall competitive position of the organisation (Pearce et al, 1987; Robinson and Pearce, 1988; Baker Adams and Davis, 1993; Pekar and Abraham, 1995; Peel and Bridge, 1998). Here respondents were asked to assess their organisations overall competitive performance against that of the competition, based on a Likert-type scale. This method of assessment was however in the minority, and once again is largely based on a financial standpoint. It is not clear from the data presented in

the published articles, whether the subjective overall competitive assessment cited, was an attempt to incorporate a non-financially based assessment of performance. One possibility is that the researchers were attempting to capture a wider, richer assessment of the dependent variable or, as appears more likely given the evidence, merely an attempt to estimate an otherwise financially obscure concept.

2.1.3. Sample profile.

Figure 2.1 below presents a summary of the job titles of the respondents identified in the studies highlighted in appendix 2.1.

Figure 2.1: Job title of respondents



In the data presented in figure 2.1, the CEO category had been amalgamated with other senior executives, such as the Chairman (Glaister and Falshaw, 1999) and the President and Chief Planning Officer (Pekar and Abraham, 1995). It is evident from the data presented in table 2.1 that the CEO and Executive categories have proven to be the preferred respondent job title for researchers in this domain. What is not evident however, is justification of the choices made. Indeed, nine of the studies identified did not present

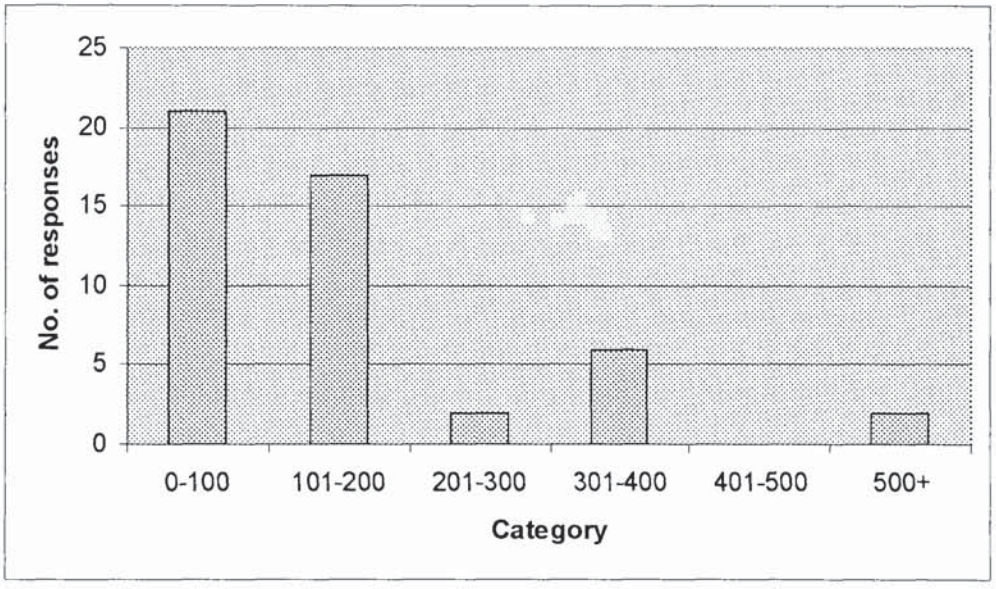
any evidence of who their chosen respondents were, although presumably based on the evidence here the assumption is that they were most likely to be senior managers and above. Furthermore, of the studies that clearly identified the chosen respondent, only one (Pearce, Robbins and Robinson, 1987) explains the choice made, citing senior managerial respondents as possessing the greatest insight into the strategic planning process. Other studies, whilst not explaining the choice of respondent, make reference to "bias, distortion or unintended error (through being) overly optimistic" (Hopkins and Hopkins, 1997). Interestingly, few studies take steps to address any such issues and compensate for them (Karger and Malik, 1975; Welsh, 1984; Pearce, Robbins and Robinson, 1987; Bracker, Keats and Pearson, 1988; Rogers, Miller and Judge, 1999). Furthermore, some of the steps taken in the studies to address the aforementioned bias related issues appear somewhat arbitrary in the absence of academic argument; Hopkins and Hopkins (1997) for example incorporating a managerial allowance into their conceptual model. Whilst the application of a bias adjustment in order to address the problems highlighted may appear intuitively parsimonious, the researchers assume that bias is always present, and additionally at a constant rate, hence the researchers involved provide the bias sought.

An additional problem with the job titles presented is that they are taken from different contexts. Within a single context, clarity as to what constitutes a senior manager or an executive would be present allowing direct comparisons of the differences in role scope and definition. These comparisons however become less evident, when taken across different organisations within the same industry, or indeed as is the case in the empirical work identified in table 2.1, different industries and different countries. In the absence of clear justification, and explanations regarding why particular respondents have been

chosen for research in this domain, cross-study comparisons and reflections become extremely problematic, and based on semantic as opposed to practical criteria.

Variance is once again demonstrated within the studies identified, in the size of sample analysed. The smallest sample size is 14 (Burt, 1978), and the largest 518 (Woodburn, 1984). The groupings of sample size identified are presented in figure 2.2 below. Worthy of note is that the figures presented below indicate the number of useable responses generated for analysis purposes by the respective surveys. The issue of response rates will be dealt with separately.

Figure 2.2: No. of useable responses



In the studies identified the majority of useable responses for analysis, were in the zero to two hundred brackets. Whilst more meaningful when related to response rate, and also the type of analysis method chosen, as is done below, figure 2.2 demonstrates a propensity for studies in this domain to concentrate on sample sizes of less than 200 for analysis purposes. The possible reasons behind this choice are examined later in this section, however once again, it is apparent that little evidence within the studies identified

is presented to justify, or debate, the efficacy of the sample sizes highlighted.

Relating directly to the size of the data sample available for analysis is the response rate achieved. The response rate achieved in the studies of interest, vary from 10% (Pekar and Abraham, 1995) to 70% (Burt, 1978). The high response rate achieved in the empirical study by Burt (1978) in an Australian retail context, is somewhat misleading however as the original total population was a relatively small, twenty. The second highest response rate identified was that of 60% (Sapp and Seiler, 1981). Evidence of techniques to increase response rates, or indeed to provide a sampling framework or plan (Churchill, 2002) from which to control the data gathering process, are generally lacking in the studies identified. Three studies provide some evidence of this (Karger and Mailk, 1975; Bracker, Keats and Pearson, 1988; McKieman and Morris, 1994). Karger and Malik (1975) state that reminder letters were sent out in order to increase response rates, and both Bracker, Keats and Pearson (1988) and McKiernan and Morris (1994), employ the Total Design Method or package, (Dillman, 1978)[4] with which to increase their overall "response rates, response speeds and response quality" (McKiernan and Morris, 1994). Whilst not statistically tested here, on reflection there appears to be no relationship between the response rate achieved, and the level of methodological rigour reported in the studies of interest. However once again, the omissions in the published work cannot be taken as conclusive evidence that the issues discussed were not accounted for, merely that they remain unreported.

A further factor regarding the previously cited comparability issues is that of the size definitions utilised, more specifically the different categories of large and small

[4] For full explanation see Dillman, D.A. (1978). "Mail and Telephone Surveys: The Total Design Method", Wiley. New York. In summary the Total Design Method attempts to increase response rates to mail surveys by employing a systematic procedure of reminder mailings and follow-up telephone calls.

organisations cited in the studies presented in table 2.1. For example, Lyles et al (1993) describe small organisations as having less than 500 employees. Peel and Bridge (1998) however, suggest that a small organisation has less than 50 employees, and in fact a medium sized organisation has less than 500 employees. O'Regan and Ghobadian (2002) cite organisations with less than 250 employees as being classified as small. Whilst not cited here, the same pattern of confusion exists within the large organisations category. Once again, whilst the studies cited are methodologically correct in stating the organisational classification utilised, occasionally with supporting justification, differences are evident and hence comparability is problematic, impacting on the incremental contribution to the domain of research.

Of the minority of studies presenting a justification of sample choice, the justification appears to concentrate on controlling for industry effects (Grinyer and Norburn, 1975) or issues of "representativeness" (McKiernan and Morris, 1994). The latter rather than justifying the choice of sample per se, extolling the merits of a χ^2 difference test in order to assess the differences between different industries represented in their sample. Andersen (2000) appears to present the most compelling evidence for the choice of sample made, dedicating an entire section of the empirical paper to this particular issue. A summary of the industries examined is presented in appendix 2.2.

Of the forty-eight studies highlighted that empirically investigate the relationship between strategic planning and organisational performance, thirty-seven are taken from a U.S. based context. The U.K. provides the second largest concentration of studies with seven studies, other countries being represented only once, for example Australia (Burt, 1978), South Africa (Woodburn, 1984) and Belgium (Caeldries and Van Dierdonck,

1988). This concentration of empirical study from one country is problematic, indeed "the strategic management field can be criticized for not examining particular phenomena in non-US contexts" (Kotha and Nair, 1995). Further criticism is available in the literature, regarding the intrinsic differences between the studies identified, "Although the principles of strategic planning should, of course, have universal application, there may be national differences in strategic planning, country dependent influences from business culture, and influences from different trading conditions" (Greenley, 1994), highlighting further the comparability issues previously discussed.

2.1.4. Methodological Issues.

The following section will briefly outline the methodological issues surrounding the empirical studies identified and summarised in appendix 2.1.

Of the forty-eight studies identified, forty-one utilised some form of self-report questionnaire. Of these, thirty-eight were mailed to the respondent, with one study (Caeldries and Van Dierdonck, 1998) omitting the method of administration from their published paper[5]. Of interest, only eleven of these studies, whether using newly developed measures or not, demonstrated any evidence of either pilot or pre-test developments. Whilst not conclusive, as these procedures may have been undertaken and not reported, a further doubt about the methodological rigour of some of the studies under investigation is presented. Indeed, Welsh (1984) states "From a financial point of view the long-term ultimate goal of the firm is to maximise its stock price". Whilst intuitively this does not seem an unreasonable statement to make and is indeed presented as a statement of fact in the published article, it is completely unsupported empirically. Hence

[5] The method of administration chosen was assumed to be through mail delivery, from the absence of any other references such as face-to-face semi-structured interviews, or other questionnaire based techniques.

it appears to serve only as punitive support for the single measure of performance present in the study, that is the P/E multiple.

Greenley (1994) refers to examples such as this, as "researcher bias". Whilst not explicitly capturing all of the overtly negative aspects of the word *bias*, the use of the term in this context refers more to the lack of evidence presented, in order to support a particular methodological standpoint. Further evidence of researcher bias (Greenley, 1994) is present in the studies identified indeed whilst problematic to avoid entirely, the studies all demonstrate a degree of subjectivity. Hopkins and Hopkins (1997), quoting Clapham and Schwenk (1991) refer to a phenomenon called "biases in causal attributions". Specifically in this context, banks that exhibit above average financial performance are likely to be pleased with the planning system in place, and may have a tendency to rate their beliefs about the planning system in place, and also their personal strategic planning expertise, highly or at least favourably. Hopkins and Hopkins (1997) in attempting to allow for this phenomenon, incorporate a contingent weighting to the results identified.

As previously discussed in sections 2.1.2 and 2.1.3, a variety of measures have been utilised within the studies identified, to capture the dependent and independent variables of interest. Consequently different analysis techniques have been employed, for example 1) comparison of statistical means (O'Regan and Ghobadian, 2002), 2) comparison of percentages in some of the earlier studies in the domain (Kallman and Shapiro, 1978) and 3) regression (Andersen, 2000). Once again the ability to compare the results of semantically similar studies is severely restricted. In addition, variance is present in the levels of significance being tested for. For example, Pearce, Robbins and Robinson

(1987), 0.01 level of significance and Bracker, Keats and Pearson (1988), 0.001 level.

Sections to 2.1 to 2.1.5 have presented an overview of the conceptual and methodological issues surrounding previous empirical study with the strategic planning domain. More specifically, previous empirical work investigating the relationship between competing conceptualisations of strategic planning and performance, have been examined. A number of concerns are expressed regarding the empirical studies identified, in relation to 1) conceptualisation of the dependent and independent variables, 2) methodological issues and 3) the nature of the relationship between strategic planning and performance. The combination of the factors highlighted, present a number of concerns regarding the overall contribution to the domain of study made by the literature identified.

The problematic comparison of the studies identified is apparent, however eleven further studies have been identified, that attempt to clarify the issues surrounding the cumulative impact of such study on the research domain. These are reviewed briefly in section 2.2 prior to presenting a summary of the issues relating to research within this domain in section 2.3.

2.2. Studies presenting an overview of strategic planning research.

The eleven studies presented in table 2.2 (overleaf), attempt to draw conclusions regarding the relationship between strategic planning and performance, but do so through a synthesis of previous empirical study.

Two main techniques have been applied in the literature identified 1) meta-analysis and 2) a summary utilising author specific criteria or "narrative techniques" (Cooper and

Rosenthal (1980).

Table 2.2: Studies examining collations of previous empirical study

Author/s	Year	Type of analysis	No. studies examined	Result
Armstrong	1982	Review	12	Mostly +ve support
Schrader, Taylor & Dalton	1984	Review	31	No evidence
Greenley	1986	Review	9	No evidence
Capon, Farley & Hoenig	1990	Meta-analysis	320	Some +ve evidence
Armstrong	1991	Review	28	+ve association
Boyd	1991	Meta-analysis	21	Relationship is unclear
Schwenk & Shrader	1993	Meta-analysis	14	+ve association
Miller & Cardinal	1994	Meta-analysis	26	+ve association
Capon, Farley & Hulbert	1994	Augmentation / comparison of previous meta-analysis	Augmentation of Boyd (1991) to include 113 more studies	+ve association
Greenley	1994	Review	29	No evidence
Bowman & Helfat	2001	Review	11	+ve

Whilst more comprehensive definitions are available in the literature, meta-analysis is a statistical technique that "reviews a body of empirical work, and estimates a "weighted average" correlation between two variables. Meta-analysis uses summary data usually available in published papers, and does not require access to the original data" (Boyd, 1991). Indeed, meta-analysis appears to provide a convenient solution to some of the issues raised in section 2.1.5, specifically in relation to the problematic comparison of theoretically similar studies. This is summarised thus "Meta-analysis provides one approach to information summary that quantifies a comparison of results from diverse studies which are not directly comparable in terms of research technology or model specification" Capon, Farley and Hulbert (1990).

Five meta-analytical studies were identified in the literature (Capon, Fraley and Hoenig, 1990; Boyd, 1991; Schwenk and Schrader 1993; Miller and Cardinal 1994; Capon, Farley and Hulbert, 1994), with the other five studies taking a less statistically driven approach, and providing insights into the literature identified through comparison across pre-determined criteria (Armstrong, 1982; Shrader, Taylor and Dalton, 1984; Greenley, 1986; Greenley, 1994; Armstrong, 1991).

Differences within the studies presented in table 2.2 are evident. Seven of the studies provide evidence to support a positive association between strategic planning and performance, with four either finding no evidence, or an unclear relationship (Boyd, 1991). Of note, one of the studies citing a positive relationship between strategic planning and company performance (Armstrong, 1991), bases this assertion on an examination of the absolute number of studies supporting either a positive or negative association between the constructs of interest. Furthermore it is stated that as more studies have found evidence of a positive relationship between strategic planning and performance than have not, a positive relationship between the two variables is supported. Intuitively, and academically this cannot be the case.

The two chosen methodologies however are subject to criticism, and whilst intuitively appealing, suffer from some of the methodological inadequacies of the empirical studies examined in sections 2.1.2 to 2.1.5.

Meta-analytical techniques have received criticism on two main areas 1) unless contained in the original articles, no assessment of the degree of measurement error present can be presented, allowing large and potentially distorting error to impact of results; 2)

depending on which articles are selected, and also to an extent on the rigour of the previous researchers, different criteria may be selected on which to assess the data; thereby the potential to produce different results from the same data is present (Schwenk and Shrader, 1993; Miller and Cardinal, 1994). Additionally, "Quantitative comparison of results from different studies is difficult, principally because model specifications and operationalisations of explanatory and dependent variables differ widely" (Capon, Farley and Hoening, 1990). Alternatively, the other technique employed in the studies highlighted in table 2.2 has also received criticism regarding the criteria chosen and methodology utilised in analysing the studies of interest (Armstrong, 1991). The implication being that the criteria utilised against which the data was analysed, appeared somewhat arbitrary and lacking in academic support.

A further and seemingly unaddressed issue regarding data comparison across countries is that of measurement invariance (Steenkamp and Baumgartner, 1998), or "whether or not, under different conditions of observing and studying phenomena, measurement operations yield measures of the same attribute" (Horn and McArdle, 1992). Intuitively an issue of validity and generalisability, if scales statistically vary across countries then interpretation of the results becomes problematic within a domain context, as essentially "the same construct may not be measured across countries" (Sharma and Weathers, 2003). Whilst unavailable to many of the empirical studies highlighted in table 2.1, published academic discussion is present regarding this issue during the 1990's (Durvasula et al, 1993; Singh, 1995; Steenkamp and Baumgartner, 1998). None of the summary articles discussed above take steps to address this issue, or indeed make any attempt to account for it, consequently "conclusions based on (the research) are at best ambiguous and at worst erroneous" (Sharma and Weathers, 2003).

Therefore whilst intuitively attractive, studies that seek parsimony through presenting a statistical analysis, or overview of previous empirical investigation provide problematic conclusions. These problems are apparent not only in the bases for comparison, but also the more general tendency for meta-analytical and narrative techniques to produce competing results (Cooper and Rosenthal, 1980). Implications for the domain of study are less attractive than originally implied by the comparison techniques cited.

2.3. Summary of examination of empirical studies investigating the relationship between strategic planning and performance.

Prior to presenting a summary discussion of the previous evidence within the domain, it is important to clarify the purpose of this section. Criticism of the studies presented in table 2.1 is evident, however the concerns expressed are not done so in order to simply debate competing methodological perspectives. On the contrary, the comments made at the individual study level are done so in order to illustrate wider, and domain specific issues. It is the impact on the strategic planning domain as a whole that is of interest here.

Previous sections have outlined the differences between both empirical and largely narrative studies investigating the relationship between strategic planning and performance. Criticism of this domain of research is evident in the literature (Armstrong, 1982; Greenley, 1986; Boyd, 1991; Greenley, 1994).

Criticism of studies investigating the relationship between strategic planning and performance are based on conceptual and methodological grounds (Boyd and Reuning-Elliot, 1998). The bases of criticism are largely summarised by Greenley (1986;

Greenley, 1994) as 1) little evidence of researchers addressing other, possibly mediating variables 2) evidence of researcher bias 3) the lack of commonality of parameters of research and 4) wide variations in the reporting of the statistical significance of results. The points presented above are now addressed in further detail, with the inclusion of others drawn from the discussion above.

Evidence of researchers investigating additional, possibly mediating factors in the strategic planning and performance interface is present in the studies identified in table 2.1. These are however in the minority of studies, to an extent validating initial criticisms (Greenley, 1986; Greenley, 1994). Of interest and of conceptually equal importance however is the lack of commonality demonstrated in the relevant studies. For example little evidence of a common theme was identified in the studies presented, with additional factors under investigation ranging from a) managerial perceptions, and their desire for change (Grinyer and Norburn, 1975) to b) the financial / planning interface (Phillips, 2000). Two studies were identified that examined semantically similar factors, both referring to implementation "issues" (O'Regan and Ghobadian, 2002; Hahn and Powers, 1999). Conceptually however, the constructs under empirical investigation were dissimilar.

Evidence of subjectivity and the lack of commonality of research parameters, points 2 and 3 above, are examined together here simultaneously, as a degree of commonality is evident. It is suggested here that the lack of commonality in the research parameters is caused largely by the large degree of subjectivity identified in the studies. Indeed, very little evidence is presented in the studies identified to justify the choices made, either conceptually or methodologically. As previously discussed, this is not conclusive proof of

a lack of conceptual and methodological rigour, however when taken in overview, the domain of research does not benefit from these consistent omissions, thereby casting doubt on the efficacy of the body of knowledge.

Conceptualisations of what is generally hypothesised as the independent variable (see further discussions on causality below) range from simple planning / non-planning discussions (Ansoff et al, 1970; Peel and Bridge, 1998) to more complex typologies (Ackelsberg and Arlow, 1985; Bracker, Keats and Pearson, 1988) and categories (Rhyne, 1986). Once again, with the variety of conceptualisations presented in the literature, an overview as to the impact on the domain of research is unclear, as comparisons become problematic, additionally compounded by the disparate sample profiles.

Whilst discussed further in section 2.4, an interesting domain level dichotomy is present, when the normative strategic planning literature is examined, and compared with the empirical studies presented. A domain that appears to have a high level of confusion regarding empirical conceptualisations of strategic planning, and a low level of confusion regarding normative discussion of strategic planning is presented.

A further example of researcher bias (Greenley, 1994) is exhibited in the choice of dependent variable, with the studies presented exhibiting "an almost exclusive pre-occupation with the financial pay-offs from planning" (Ramanujam and Venkatraman, 1987). Whilst there is nothing inherently wrong with using economic objectives for evaluations of strategic planning (Sinha, 1990), once again no explanation of the financial variables chosen is evident. Hence, with financial measures of performance open to manipulation and the production of misleading results (Doyle, 1994; Rowe and Morrow,

1999), compounded by differences in accounting standards across countries (Drury, 2000), non-financially based assessments of strategic planning efficacy have been called for in the literature (Chakravarthy, 1986; Greenley, 1986; Greenley, 1994). Here an alternative, possibly motivational (Greenley, 1994), assessment of the impact of strategic planning may be made. Of the studies identified in appendix 2.1, relatively few attempt a qualitative assessment of the dependent variable, in this case performance, hence this call remains largely un-addressed in the literature. Whilst the debate here concerns itself primarily with the studies presented in appendix 2.1, a wider discussion of the non-financial benefits of strategic planning can be found in section 2.5.

A question of causality underpins the studies identified (Rhyne, 1986), and once again remains largely un-addressed. More specifically, in the studies investigating the relationship between the various conceptualisations of strategic planning and performance, did the strategic planning cause the performance exhibited, or alternatively did the performance exhibited allow additional resources to be made available to the strategic planning function? Whilst "difficult to specify" Rhyne (1986), no evidence is present of attempts to address this particular issue in the studies identified. Indeed, no evidence in the empirical studies presented in table 2.1, other than Rhyne (1986), was found to highlight any acknowledgement of the possible distortion in results this issue may cause, or account for it methodologically.

To summarise, it appears that despite over three decades of empirical study investigating the relationship between strategic planning and performance, little progress has been made in addressing the majority of underlying methodological and conceptual issues. They appear to remain un-addressed due to "little evidence of the studies attempting to

build-on or replicate previous studies" Greenley (1994). In essence despite the weight of research in this domain, "their results cannot be legitimately combined, and therefore it cannot be concluded that an association is evident" (Greenley, 1994). This is intuitively disappointing given the volume of research presented in table 2.1. The following section explores the essentially normative, or textbook based literature, and presents a further discussion regarding the constructs of interest, that is strategic planning and performance. This is then compared to, and discussed against the problems highlighted in the empirical studies identified. As discussed previously, the high degree of apparent disagreement within the domain at an empirical level is contrasted with the high level of agreement in the normative literature, as to the conceptualisation of strategic planning.

2.4. Normative planning literature[6].

Little consensus in terms of conceptualisation of strategic planning was identified in the empirical literature highlighted in appendix 2.1. Hence a number of strategic management (Higgins and Vincze, 1993; Finlay, 2000; Haberberg and Rieple, 2001; Hill and Jones, 2001; Thompson, 2001; Hitt, Ireland and Hoskinson, 2003; David, 2003; Thompson and Strickland, 2003; De Wit and Meyer, 2004; Whelan and Hunger, 2004) and corporate strategy (Johnson and Scholes, 2002; Lynch, 2003) textbooks were consulted, and examined for direction on the constituent elements of the independent variable of interest.

A large degree of consensus was identified within the normative literature, with all of the references above conceptualising strategic planning as an essentially five stage process of 1) mission / vision generation, 2) analysis, 3) strategy formulation and selection, 4) strategy implementation and 5) on-going control. It would be unrepresentative to state

[6] Here, the term normative is used to categorise discussion that is essentially conceptual and non-empirically based.

that complete standardisation occurred in the references listed however the five-stage model cited could be clearly identified in all of the references provided.

The consensus in relation to the constituent elements of strategic planning within the normative literature, appear in stark contrast to numerous and varied conceptualisations that were identified in the empirical literature, where a relatively small amount of studies attempt to include this largely process-based perspective (Boyd and Reuning-Elliot, 1998; Hahn and Powers, 1999).

Boyd and Reuning-Elliot (1998), in attempting to "validate a multiple-indicator measure of strategic planning", concluded that there was strong evidence to support the measurement properties of a strategic planning construct consisting of 1) mission statement, 2) trend analysis, 3) competitor analysis, 4) long term and annual goals, 5) action plans and on-going evaluation. Interestingly within this study, strategic planning was "defined as a normative process" (Boyd and Reuning Elliot, 1998), with the five elements cited being synthesised from the literature. No reference to any process of choice, or option generation is made, or indeed accounted for in the subsequent analysis. This appears surprising, and in contrast to the extensive review of the normative strategic planning literature presented above, that highlighted strategy formulation and selection as a central element to the variety of strategic planning processes examined. Whilst the measure developed presented reliable and apparently valid results (Boyd and Reuning-Elliot, 1998), it was administered to a US based samples of hospital executives, hence presenting some questions as to the generalisability of the scale.

A similar review of textbook based strategic planning literature was conducted by Hahn

and Powers (1999), citing five steps 1) defining a firm's mission, 2) performing an environmental scan and competency analysis, 3) establishing objectives, strategies and tactics, 4) implementing (structure / leadership / motivation) and 5) providing a performance review and adjustment mechanism. Here the issue of strategy choice is apparently acknowledged, and whilst not stated in the original article, the issue of options may be implicitly assumed to be included.

2.4.1. Summary of normative planning literature.

In contrast to the empirical studies investigating the relationship between strategic planning and performance, the normative literature provides a much clearer definition of the constituent elements of the strategic planning process, with a striking degree of consensus exhibited in the literature examined. Despite apparent acknowledgement within the empirical literature, regarding the lack of consensus demonstrated with regard to conceptualisations of strategic planning (Armstrong, 1982; Greenley, 1986; Boyd, 1991; Greenley, 1994), few studies have attempted to directly address this issue (Boyd and Reuning-Elliot, 1998; Hahn and Powers, 1999) those that have, apparently omitting crucial elements of the process.

The previous section has examined further the normative literature on what has generally been conceptualised as the independent variable. The following sections examine further the literature regarding organisational performance, highlighting alternative perspectives to the "almost exclusive pre-occupation with the financial pay-offs from planning" (Ramanujam and Venkatraman, 1987).

2.5. Non-financial benefits of strategic planning.

A number of conceptual studies have argued for a more process-based, or non-financial assessment of the organisational benefits of strategic planning, (Camillus, 1975; Lorange and Vancil, 1977; Dyson and Foster, 1980; Ramanujam and Venkatraman, 1987; Sinha, 1990; Greenley, 1994; Rowe and Morrow, 1999). With various non-financial benefits[7] being attributed to strategic planning activities such benefits as 1) providing clarity of direction, 2) motivation of middle managers through a sense of involvement, 3) co-ordination of organisational movement, with the involvement of individuals from outside the planning function, 4) forcing organisations to consider strategic issues, 5) providing objective facts, 6) forcing organisations to consider resource allocation issues in some depth and 7) improving organisational strategic communication and thereby attitude towards change (Camillus, 1975; Greenley, 1986; Yoo and Digman, 1987).

Interestingly, the literature highlights a longitudinal element, in that the longer managers or planners are involved with strategic planning, the more familiar they become with the strategic position of the organisation in question, and are therefore able to develop a wider vision of the organisations activities (Greenley, 1986). Also, the more involved a manager becomes in the strategic process, then the more favourably strategy and planning may be looked upon (Greenley, 1986). As previously highlighted, a favourable attitude to change can greatly aid the strategic planning process.

While initially the literature examining non-financial benefits to planning appears to provide an interesting development in the measurement of performance in this domain,

[7] Of note, a temporal issue arises. Whilst not referred to directly in some of the literature cited, it is acknowledged that a financially based measure could be utilised, eventually, to capture some of the benefits cited. For example, a more motivated middle management team may manifest itself in an improvement in the profit and loss account. However here, the eventual financially based outcome is inferred rather than being the variable of direct interest.

the concept remains largely untested empirically within the strategic planning domain, possibly due to "the degree of difficulty associated with the measurement of the concepts involved" Greenley (1986). Additionally, appendix 2.1 highlights that the majority of studies undertaken within the strategic planning domain utilise a cross sectional, questionnaire based methodology. Given the longitudinal emphasis of some of the non-financially based benefits of strategic planning cited, this dominant methodological approach would not capture the true value of the dependent variable. Hence whilst the "a priori" (Greenley, 1986; Greenley, 1994) case for exploring the non-financial benefits of strategic planning, little developmental evidence is present in the literature.

2.6. Organisational performance measurement: Non-financial measures.

Whilst the preceding section discussed the non-financial benefits that may accrue to organisations practicing strategic planning, the following section discusses the literature examining organisational performance measurement, more specifically non-financial performance measurement.

Financially based performance measures in strategy research have been criticised as "weak" (Barker, 1995), "superficial" (Crowther, 1996) and "backward looking" Bourne et al, (2000). Indeed, in reviews of the performance literature, (Venkatraman and Ramanujam, 1986; Crowther, 1996; Clark, 1999; Rowe and Morrow, 1999; Kennerley and Neely, 2003), highlight a consensus that the "traditional performance measures were no longer sufficient to manage organisations competing in modern markets" (Kennerly and Neely, 2003).

A number of studies outside the strategic planning domain have attempted to address these concerns, incorporating both financial and non-financial measures of organisational performance. Examples of the non-financial measures that have been utilised in empirical studies are 1) success of market entry, 2) increased awareness of the organisation, 3) quality and independence of management and human resource management and 4) ethical behaviour towards employees (Cavusgil and Zou, 1994; Dempsey et al, 1997; Meschi and Metais, 1998; Rowe and Morrow, 1999). A further development on this literature was the "balanced scorecard" (Kaplan and Norton, 1996). The scorecard referred to here, attempted to produce a "wider" (Kaplan and Norton, 1996), definition of organisational performance and suggested as well as traditional financial measures of performance the following should be included, 1) customer based measures, 2) internal business process measures and 3) learning and growth measures.

Once again, whilst the call for alternatives to the financially based measures of performance in strategy research is evident, it is clear that attempts to address this issue have received attention from a number of different perspectives. Indeed, in a comprehensive review of the history of performance measurement in specifically the marketing domain, Clark (1999) highlights thirteen different measures that have been cited in empirical research to capture non-financial performance. Of the measures cited by Clark (1999), "effectiveness" has received the most attention within the strategic planning literature.

2.6.1. Strategic planning effectiveness.

The effectiveness of strategic planning systems drew largely normative attention in the strategic planning literature during the 1980's. In reviewing the literature regarding non-

financial assessments of strategic planning efficacy this strand of literature was considered important with regards to the alternative perspective presented to financially based assessments, although criticisms of this literature are addressed later in this section. In essence, at the time of publication it was considered there was "a considerable amount of literature on how to do strategic planning effectively. There is however no concise statement of effectiveness in strategic planning" (Dyson and Foster, 1980). The literature addressing strategic planning effectiveness was an attempt to address this apparent omission.

Dyson and Foster (1980) presented an essentially normative assessment of the attributes an effective planning process should contain, and produced a 12-point model of planning effectiveness including attributes such as 1) the level if integration of the planning function, 2) the breadth of evaluation and 3) assumptions made. In order to assess the effectiveness of a particular strategic planning process, the respondent would be asked to rank the particular planning effectiveness attribute on a seven-point Likert scale from zero (not important) to seven (very important). Unfortunately, literature provides little in the way of instructions as to how the scale or the "multi- attribute model" (Dyson and Foster, 1980) should be used in practice. Hence while providing an interesting alternative to goal-focused or outcome based research, it is however little more than a normative account.

Further work added to this and presented an "adaptive goals-achievement model" (Foster and Foster, 1982) which developed the initial study by incorporating a greater degree of contextual variables into the initial model discussed above, allowing the incorporation of tangible, more financially based goals (Foster and Foster, 1982). This addition, whilst

intuitively appealing appears somewhat surprising, as the previous model remained untested empirically, once again being subsumed by later normative work (Dyson and Foster, 1983).

Despite the promise of the strategic planning effectiveness approach it is limited by a number of factors examined here 1) respondents chosen to assess the effectiveness of planning systems are likely to be involved in the administration of this process, and hence may give a poor reflection of the real situation through personal bias. 2) Assessment of effectiveness against a number of pre-determined attributes does purely that. The attributes themselves cannot be assumed to be overall measures of planning effectiveness, as they empirically unsupported theories presented on previous experience. Other, possibly more important, attributes may have been overlooked and hence, the system cannot be assumed to be wholly effective due to these deficiencies, in effect a question of measurement error. Furthermore in utilising the measures of effectiveness presented in the literature, an organisation categorised as an effective planner, may still not achieve pre-determined objectives, hence the question of defining effective strategic planning appears to be on-going. Additionally, the usefulness of an organisation categorised as an effective planner that does not achieve any of the financial goals set, appears limited in practice. 3) Methodological differences are also present in the small number of effectiveness studies undertaken in relation to country of origin and size/type of the sample company. Relating this to the problems discussed with the planning / company performance literature, even if the appropriateness of the theories is accepted, the comparability and the enhancement of overall knowledge in this area is non-existent.

2.6.2. Summary of non-financial performance literature.

From an examination of the literature calling for a non-financially based assessment of organisational performance, it is apparent that a wider definition of performance is required. The wider definition cited here, is required in order to a) capture all of the benefits of strategic planning that are accrued to an organisation practicing it, for example employee based / motivational measures, financial measures and market / customer based measures and b) to address, at least in part, one of the main criticisms cited with reference to previous empirical investigation regarding the strategic planning and organisational performance relationship.

Two main themes are apparent in relation to the strategic planning domain, 1) the non-financial benefits accrued to organisations practicing strategic planning require further development and empirical testing, and additionally 2) the non-financial measures already utilised in domains outside that of strategic planning require further development and empirical testing within the domain.

2.7. Summary of strategic planning literature.

In summary, despite the considerable amount of research effort directed at exploring the relationship between competing conceptualisations of strategic planning and organisational performance, results remain equivocal. Studies examining the relationship between strategic planning and company performance directly, suffer from methodological inconsistencies coupled with a pre-occupation with financial measures of performance. Additionally, little exploration of contingent variables to the strategic planning and organisational performance relationship has been made.

Consensus is apparent in the majority of the normative literature examined, generally citing a five stage process of 1) mission / vision generation, 2) analysis, 3) strategy formulation and selection, 4) strategy implementation and 5) on-going control. Unfortunately this conceptualisation was not repeated in the majority of the empirical investigation, thereby presenting a relatively unhelpful array of conceptualisation and measurement, at the domain level.

Whilst attempts have been made in the literature to replicate the normative model of strategic planning process, (Boyd and Reuning-Elliot, 1998; Hahn and Powers, 1999) key elements of the process have been omitted, for example the way in which organisations construct and choose between different strategic options presented to them through their analysis of the internal and external environments

Support is evident in the literature for an alternative, non-financially based perspective, attempts to address this issue concentrate largely on normative accounts of efficacy or effectiveness, and remain largely untested at an empirical level, partially due to the problems of measurement associated with the concepts involved (Greenley, 1986). Hence, little empirical evidence is available in the literature of further development of this idea.

Whilst the intuitive appeal of the non-financial benefits of strategic planning is evident, for example motivation of participants; exactly what element of the strategic planning process facilitates this, remains unclear. More specifically, much of the non-financial performance literature refers directly to, and criticises, studies examining a direct relationship between strategic planning and performance, advocating instead an

investigation of the non-financial benefits. Unfortunately, this approach infers that the non-financial benefits of strategic planning can be observed as a direct result of the strategic planning process, as previously conceptualised in the cited studies, in essence an alternative dependent variable.

It is argued here that in order to successfully capture the non-financial benefits of the strategic panning process, a more complex conceptualisation of the dependent variable is required. For example, motivation of individuals involved in the strategic planning process is cited as a non-financial benefit. However this would be particularly manifest largely within the discursive stages of the decision making process, possibly where choices between strategies are made or indeed where discussion regarding strategy implementation is undertaken. Therefore, whilst the calls for further investigation into the non-financial benefits of strategic planning are valid, an alternative approach is advocated here where the component factors of the strategic planning process are conceptualised as impacting on non-financial performance. This discussion is further developed later within this literature review, and incorporated into the hypotheses presented.

A question of causality is apparent within the discussion regarding the non-financial and financial performance of an organisation, i.e. does non-financial performance impact on financial performance or vice versa? Given the debate presented then a mutually beneficial relationship is intuitive, whereby the motivational aspects of non-financial performance impact positively on financial performance in terms of increased productivity. The increased productivity is then subsequently re-invested in the organisations ability to sustain profitability into the long-term, hence increasing job security and thereby motivation, and so on. However, given the cross-sectional

limitations of the study presented here, this delicate relationship may prove to be problematic to capture. Indeed, whilst other areas of the overall study would suffer[8] a longitudinal approach would possibly be more amenable to capturing the subtle nuances of a relationship of this kind. Hence, the following hypothesis is presented:

H_1: Organisational financial performance will exhibit a direct and positive impact on organisational non-financial performance.

The majority of the previous empirical work identified[9] suggests that a positive association exists between strategic planning and financial performance, as does the essentially normative text-book based literature. Additionally, and on a more theoretically grounded level, strategic planning allows organisations to a) identify and react to threats and opportunities, b) reduce uncertainty, c) integrate various organisational functional groupings and d) implement a control framework for the organisation (McKiernan and Morris, 1994). Formally hypothesising:

H_2: Strategic planning will exhibit a direct and positive relationship with organisational financial performance.

Building on the discussion presented above regarding the conceptualisation and measurement of the component elements of the strategic planning process, the next section examines strategic options.

[8] See methodology chapter six.
[9] See appendix 2.1.

2.8. Strategic Options.

The generation of strategic options is defined in the literature as "a process of organisational resource-investment choices" (Bowman and Hurry, 1987; Hurry, 1993). Worthy of note is that differences are apparent in terminology cited in relation to this concept, other terms identified are "strategic choice options" (Pearce and Robinson, 2003), "strategy options" (David, 2003) and "strategic alternatives" (Thompson and Strickland, 2003). Rather than a comprehensive semantic debate, the inferences made by the authors are consistent and hence strategic options will be the common term utilised here.

As discussed previously the generation of strategic alternatives, or options is an integral element of the normative, essentially process-based models of strategic planning identified earlier (Higgins and Vincze, 1993; Finlay, 2000; Haberberg and Rieple, 2001; Hill and Jones, 2001; Thompson, 2001; Johnson and Scholes, 2002; Hitt, Ireland and Hoskinson, 2003; Lynch, 2003; David, 2003; Thompson and Strickland, 2003; De Wit and Meyer, 2004; Whelan and Hunger, 2004). The literature suggests that a strategic planning process will produce a "wide range of possible futures", (Ramanujam and Venkatraman, 1987) and is "a mechanism for identifying new business opportunities" (Ramanujam and Venkatraman, 1987). Hence, sufficient support is present in the literature for inclusion of the concept of option generation, and subsequent evaluation[10] in a conceptualisation of the strategic planning process.

Highlighted within the various empirical studies identified in appendix 2.1, Lyles et al (1993) discuss "strategy options", however these are conceptualised and measured as

[10] Further exploration of the concept of strategic option evaluation or strategic choice is made in section 2.9.

competing strategic typologies, as opposed to a measure of how well, or how badly the options have been created. It could be argued that rather than the options cited, Lyles et al (1993) were, in reality capturing the quality of the formulation of strategy. As this was the only study identified in the literature examining the relationship between strategic planning and performance that discussed strategic options in any form, a further examination of the strategic planning and strategy literature was undertaken for evidence of empirical testing of various conceptualisations of strategic option generation, or indeed strategic options. None were found to be helpful.

Other domains of research were examined for studies in relation to options and how organisations may construct them, for example financial economics (Cox and Rubinstein, 1985; Trigeorgis, 1998) and accounting (Andersen, 2002). Whilst the definitions strategic options presented appear invariant across the domains examined, the conceptualisations found were largely unhelpful within a strategic planning context as a purely numerical assessment of the economic value of the options was made, as opposed to an assessment of the quality of the options being generated through the strategic planning process.

Hence following a search of the empirical literature in a number of strategy related domains of study, agreement is apparent in the definition of what an option or a strategic option is. However the measurement of whether the options created are good, bad or indifferent relative to the organisation and the environmental factors present is less clear.

2.8.1. Strategic options: Normative literature.

The normative strategic planning literature was examined (Higgins and Vincze, 1993; Finlay, 2000; Haberberg and Rieple, 2001; Hill and Jones, 2001; Thompson, 2001;

Johnson and Scholes, 2002; Hitt, Ireland and Hoskinson, 2003; Lynch, 2003; David, 2003; Thompson and Strickland, 2003; De Wit and Meyer, 2004; Whelan and Hunger, 2004) with strategic options being referred to directly in a number of texts (Finlay, 2000; Haberberg and Rieple, 2001; Johnson and Scholes, 2002; Lynch, 2003). Other references to conceptually identical concepts were "strategic alternatives" (Higgins and Vincze, 1993; Hill and Jones, 2001) and "alternative strategies" (David, 2003). Within the references highlighted, guidelines on the constituent factors of well-constructed strategic options were presented. A summary of the factors cited is presented in appendix 2.3.

Consensus was found in the literature, regarding the constituent elements. Whilst different terminology was utilised by the authors cited, further inspection highlighted conceptually similar factors. For example, Lynch (2003) cites 1) the extent of the academic rigour utilised in constructing the particular strategic option to be of importance, as well as 2) the degree to which the particular strategic option is "application related" i.e. is consistent with the goals of the organisation and will enhance overall competitive advantage. Alternatively, Johnson and Scholes (2002) cite the suitability, feasibility and acceptability of strategic options to be the main "success criteria". Whilst different in terms of the terminology utilised, explanations contained in the Johnson and Scholes (2002) and Lynch (2003) texts, present extremely similar conceptual underpinnings. This is also true of the other texts presented.

Additionally, what is apparent from the references cited, is that the "success factors" (Johnson and Scholes, 2002) described are not grounded in empirical investigation, and are more representative of the authors experience or insight. Hence it is unsurprising that the descriptions used are quite broad and appear to overlap. This given, due to the scope

of the definitions presented in the Johnson and Scholes (2002) text, all of the other references identified appear to have been addressed and incorporated within their suitability, acceptability and feasibility criteria.

Other domains of research were examined for studies in relation to options and how organisations may construct them, for example financial economics (Cox and Rubinstein, 1985; Trigeorgis, 1998) and accounting (Andersen, 2002), however the conceptualisations found were largely unhelpful within a strategic planning context.

2.8.2. Summary of strategic options literature.

The literature addressing the issue of strategic options falls broadly into two sections. The first contains financial and economically based literature (Cox and Rubinstein, 1985; Trigeorgis, 1998) that conceptualises strategic options purely in financial terms. The second section, relates to the normative strategy literature that tends to suffer from broad definitions of the constituent elements of what are considered to be well-constructed strategic options. Despite this, a degree of consensus was identified in the literature regarding the conceptual underpinnings of the semantically different and broad, definitions presented. The Johnson and Scholes (2002) criteria of suitability, acceptability and feasibility were examined against the competing definitions and terminologies presented in the normative strategy literature, and found to be conceptually representative of good or quality strategic options.

Given the central role that the generation of strategic options has in the normative strategic planning literature, it is surprising that more academic effort has not been directed into empirical exploration of the concept within the strategic planning domain.

Additionally, whilst little empirical evidence is available in the strategy literature, a strong a priori argument exists for a positive association with organisational performance. However given the previous debate regarding how the discursive elements of the strategic planning process impact upon organisational non-financial performance[11], then it is suggested here that the organisational process of deciding on the suitability, feasibility and acceptability of the strategic options available will impact on organisational non-financial performance. Stated more formally:

H_5: The suitability of strategic options will have a positive and direct impact on organisational non-financial performance.

H_4: The feasibility of strategic options will have a positive and direct impact on organisational non-financial performance.

H_5: The acceptability of strategic options will have a positive and direct impact on organisational non-financial performance.

2.9. Strategic choice.

Various definitions are available in the literature regarding strategic choice. For example, Thompson (2001) suggests that strategic choice decisions "are important for determining future courses of action", whereas Hill and Jones (2001), state "Strategic choice is the process of (management) choosing among alternatives generated by a SWOT[12] analysis". Whilst semantic differences are present in the literature a degree of consensus is present with strategic choice being defined as "the evaluation of alternative strategies and

[11] See section 2.7.
[12] Strengths, Weaknesses, Opportunities and Threats analysis.

selection of the best alternative" (Wheelan and Hunger, 2004), usually inferred to be conducted by managers or senior managers.

The inference made in much of the normative literature cited, is that managers may indeed control for environmental factors, however this is not a view shared by all academics. Section 2.9.1 will deal with this debate prior to examining the concept of strategic choice further in section 2.9.5.

2.9.1. Strategic choice versus Environmental Determinism: An overview of the literature.

The purpose of this section is to present a critique of the environmental determinism versus strategic choice debate, identified in the literature (Lawrence and Lorsch, 1967; Lieberson and O' Connor, 1972; Hannan and Freeman, 1977; Pfeffer and Salancik, 1978; Thomas, 1988; McCabe, 1990; Dean Sharfman, 1996; Gopalakrishnan and Dugal, 1998). Whilst the critique is presented from a choice based paradigm, it is not intended to be completely inclusive of all literature pertaining to the debate, but rather to acknowledge the alternative perspectives presented in the strategy literature, and to account for them[13].

Theories surrounding the concept of the environmental determinism suggest that managers are severely constrained by their external environment and organisational structural conditions, and therefore cannot make a significant impact on an organisational strategic development (Lawrence and Lorsch, 1967; Hannan and Freeman, 1977).

[13] Comprehensive reviews are available in the literature, see Morgan and Hunt (2002).

Rather than a comprehensive and in-depth analysis of the literature pertaining to the theories of environmental determinism and strategic choice, (Lieberson and O' Connor, 1972; Pfeffer and Salancik, 1978; Thomas, 1988; McCabe, 1990; Dean Sharfman, 1996; Gopalakrishnan and Dugal, 1998) a critique is developed via than main tenets of the schools of thought.

2.9.2. Critique of the deterministic school.

Much of the literature relating to environmental determinism appears as essentially normative and largely unsupported empirically. The critique will now develop the following specific areas of concern, 1) the role of leadership, 2) environmental constraints and controls on the organisation and 3) organisational inertia.

The role of leadership: The deterministic school suggests that leaders play a limited role in organisations, and that a leaders' role in performance attainment is therefore constrained (Hannan and Freeman; 1977; Pfeffer and Salancik, 1978). Lieberson and O' Connor (1972), state that when compared to factors such as the general economic conditions and company effects, the impact of managerial decision making was limited. Thomas (1988) however, examined this study and interpreted the results differently. Managerial decision-making, whilst having little impact on both sales and net earnings, was found to impact greatly on profit margins. Intuitively and also additionally supported with considerable empirical evidence linking managerial behaviour and organisational performance, a strong a priori case is suggested for a positive association. While the argument presented here has little theoretical basis on which sound strategic management principles should be constructed, the antithesis of this is that there is no basis to suggest that managerial factors do not contribute to organisational performance or change.

Environmental constrains and controls on the organisation: A significant body of empirical and normative evidence relating to strategic planning and managers attempting to cope with uncertainty exists. This is achieved through managers analysing and making sense of their environment, hence this tenet of the deterministic approach is intuitively flawed. Additional support is available in the literature (McCabe, 1990; Dean and Sharfman, 1996). McCabe (1990) highlighted differences in managerial perceptions of the external environment however the differences identified, did not significantly affect organisational performance, as the respondent managers had selected a view of their external environment and subsequently structured the organisation to fit this view. Additionally, Dean and Sharfman (1996) stated that the effectiveness of strategic decision processes were directly related to managers collecting and using information rationally, again highlighting the choices made in the light of environmental changes.

Organisational Inertia: Hannan and Freeman (1977) cite that organisations exhibit inertia, and are incapable of exhibiting fast change in light of environmental turbulence. The inertia exhibited is suggested to be a function of economic, political and historical / cultural factors, however the scale of change required is unexplored; however the inference appears to be large-scale change. Economic factors relate to the transferability of assets in plant, equipment or specialised assets. Political factors are defined here as possible negative responses to proposed changes, and cultural factors referring to shared values, beliefs, attitudes, customs, norms, personalities and heroes that describe a firm (David, 2003). Whilst large–scale and unpredictable environmental change is generally unlikely, occurrence would intuitively limit an organisations ability to change and adapt in the short-term. Unpredictable or unforeseen, environmental change may prove

problematic for most organisations, however concepts such as organisational slack[14] allow rapid reaction to take place. This in turn may be planned for. Additionally, early warning signs of potential changes and possible future discontinuity within the organisations trading environment may be highlighted through extensive environmental scanning. Attempts could then be made to lessen the impact on the organisation through direct and swift managerial action.

2.9.3. Theoretical developments.

Gopalakrishnan and Dugal (1998) proposed that while the theory of strategic choice generally prevails a number of factors inhibit the choice and discretion of managers. These are given as, 1) industry related factors such as extent of regulation, and stage of life cycle, 2) organisation-related factors such as characteristics of top management and organisation size and 3) time related factors such as short-term focus or long-term focus. The factors are provided as a set of propositions and are empirically unsupported. These will now be addressed individually from a strategic choice perspective.

1) Industry related factors. The extent of regulation within an industry will severely restrict managerial discretion, and environmental factors will play a much more important role in the strategy and performance of organisations (Hambrick and Finkelstein, 1987; Finkelstein and Hambrick, 1990). Little argument can be made against this proposition. However in relation to the stage of life cycle proposition, Gopalakrishman and Dugal (1998) cite the way in which IBM failed to recognise the threat of Dell and Compaq, and the new PC based technologies. While this may be an ill-chosen illustration, an alternative perspective could be that IBM's failure to recognise the emerging market was

[14] See section 2.10.1 on organisational slack.

not due to a reduced number of strategic options, but a failure to generate effective new options. IBM had become "bureaucratic and pre-occupied with internal structures" (Gopalakrishman and Dugal, 1998) for reasons other than the mature phase the industry had evolved into.

2) Organisation related factors. Gopalahrishnan and Dugal (1998) draw upon the organisational behaviour literature and examined elements of group decision-making in a wider context, and how this may affect the decision-making process. Worthy of note is that an assumption that senior management is responsible for all strategic decisions is implicit in their argument. This assumption is challenged by the literature relating to middle manager influence on decision-making (March and Simon, 1958; Thompson, 1967; Taylor, 1976; Lyles and Lenz, 1982; Burgelman, 1983; MacMillan and Guth, 1985; Boxer and Wensley, 1986; Wooldridge and Floyd, 1990; Burgelman, 1994; Noble, 1999). Additionally, much of the organisational behaviour literature not quoted within their study supports the premise that groups foster different decision-making processes than those exhibited by individuals. For example, groups tend to exhibit conformity behaviour (Asch, 1955; Leavitt, 1972; Milgram, 1974), and also a type of decision-making inertia entitled groupthink (Janis, 1972). The latter theory suggests that a group, such as a board of directors, displays excessive optimism and risk-taking through an unquestioning belief in the groups' abilities. Those that question the abilities of the group are considered foolish, and their opinions ignored. This presents support for the proposition that the longer the tenure of the particular decision-maker, the more restricted the strategic choice process may become.

Gopalahrishnan and Dugal (1988) relate organizational size to the resources available to invest in strategic options. The larger the organization, it is proposed, the more slack resources and overcapacity will be available, to allow a greater ability to withstand uncertainty and instability in the environment[15]. However, little empirical evidence is present in the literature to suggest a positive association between the amount of slack resources exhibited by a large organisation and its performance, indeed some studies have hypothesised a negative relationship (Davis and Stout 1992). Additionally, given the argument presented, a small organisation is possibly less likely to exhibit the negative characteristics such as the group decision-making processes and the bureaucratic organisational structure. Hence, rather than inhibiting managerial discretion, there is an a priori case to suggest that it may improve it.

3). Time related factors. Here, Gopalakrishnan and Dugal (1998) suggest that strategic choice is limited in the long run as opposed to the short run. Little argument can be made against this point, simply in relation to the levels of uncertainty that are involved over the long term. However one might suggest that even over the long term this not a sound basis for an acceptance of environmental determinism. As an effective strategic planning process would sense and attempt to anticipate changes in the external environment of the firm through a succession of short term plans; adapting to various external changes as it progresses.

2.9.4. Summary of the determinism and environmental choice debate.

A review of the literature supporting a largely deterministic viewpoint has been undertaken, and various arguments have been presented in favour of a strategic choice

[15] Further discussion on the concept of slack resources is presented in section 2.10.1

based paradigm. Gopalakrishnan and Dugal (1998) attempted to incorporate determinism and choice perspectives, with the main tenets suggested being reduced to the following factors restricting managerial decision-making i.e. 1) industry regulation and 2) characteristics of decision-making teams. Point 1) has been addressed in the literature review above, however point 2) requires further expansion as instead of the characteristics of top management teams quoted in the original literature, the influencing factor now relates to decision-making in teams. This acknowledges that strategic decisions are not made solely by senior managers, but also by middle managers and possibly employees. Whilst an interesting perspective, it is suggested here that while middle managers or employees may inhibit, impede or resist new strategic direction, generally the initial strategic choices made are beyond their scope of influence.

2.9.5. Strategic choice: Evidence of conceptualisation.

Evidence of conceptualisation of strategic choice, or "situation recognition" (March, 1994) is present in the literature (Vroom and Yetton, 1973; Pfeffer, 1992; Butler, 1998). However in comprehensive summaries of this, and similar literature the conceptualisations presented have been acknowledged as taking a largely "normative perspective" (Nutt, 2002). Similarly to the strategic options discussion presented in section 2.8, where normative investigation of the concept is present in the literature, however empirical investigation and testing within a strategic planning context, is largely absent.

Empirical investigations of frameworks of strategic choice are present in the literature (Daft and Weick, 1984; Nutt, 1989; Eisenhardt amd Zbaracki, 1992; Nutt, 2002). However, as with much of the strategy literature examined, different perspectives are

presented with a consensus hard to define. For example, Nutt (1998) concludes that the organisations in the sample studies would benefit from 1) "training that sharpens their knowledge of analytical tools" and 2) "consensus building tactics that rely on bargaining and analytical tools" (Nutt, 1998). In a similar study Nutt (2002) suggests that a decision-making typology matrix cited by Thompson (1967) presents a "feasible and desirable" (Nutt, 1998b) method for selecting a decision approach. The decision making typology matrix presented by Thompson (1967) suggests four types of management decision styles that include "analysis", "judgement", "bargaining" and "inspiration" that are largely dependent on whether the a) ends and objectives of the decision are known or knowable or b) means of producing the results are known or knowable. The differences cited earlier are evident.

Additionally, the relationship under investigation in the majority of studies identified was essentially between strategic choice and an outcome, for example organisational performance. Hence many of the studies cited, attempt to account for additional, possibly contextual elements such as non-rational decision-making (Fredrickson and Mitchell, 1984) or cognitive limitations (Anderson, 1983; Pinfield, 1986) within the independent variable i.e. strategic choice. For example, in the typology presented by Thompson (1967) and utilised by Nutt (2002), factors such as a) "unknown ends or objectives" or b) "unknown means of producing results" are cited. Within a comprehensive strategic planning context, much of the uncertainty inferred by the terminology utilised by Thompson (1967), would be reduced as a) the objectives would be set, and known, prior to managers choosing between alternatives and b) the means of producing the results, or capabilities and resources, would also be known to the managerial decision makers through detailed analysis.

Hence whilst useful within the decision making domain, much of the literature highlighting strategic choice as the independent variable of interest appear to use overly complex conceptualisations when examined in a wider strategic planning context. This given, then it is the more rational dimensions of the process of strategic choice that are of interest here, with the context being addressed separately[16]. Additionally, and in support of the more rational dimensions of strategic choice, is the assumption that "intuitive judgements tend to be generally inaccurate" (Trailer and Morgan, 2004). Both the empirical and normative literature examining the process of strategic choice were examined and categorised as presented in table 2.3.

Once again disagreement in terminology was present in the literature. The category headings presented of quality, consultation and process are designed to capture the essence of the literature cited, and are further expanded overleaf.

Quality refers to the information on which the decision maker in question has to base the strategic choice on. Here decisions are based on a large amount of detailed information. Much of the normative strategic management literature supports this perspective, presenting numerous analytical techniques with which to support, or enhance the efficacy of strategic choice. For example, analysis tools present in the literature include five forces analysis and the value chain (Porter, 1980), as well as the ubiquitous strengths, weaknesses, opportunities and strengths matrix. Many other are present.

[16] See section 2.9.7 for a discussion of organisational political behaviour.

Table 2.3: Summary of the normative strategic choice literature

		Quality	Consultation	Process
	Year			
Daft & Weick	1984	**		**
Eisenhardt and Zbaracki	1992		**	**
Rodrigues and Higson	1995	**		
Eisenhardt, Kahwajy and Bourgeois	1997		**	
Nutt	1998		**	
Eisenhardt	1999		**	
Daniels and Bailey	1999		**	
Harrison	1999	**	**	
Finlay	2000	**	**	**
Hill and Jones	2001	**		**
Saloner, Shepard and Podolny	2001	**	**	**
Haberberg and Rieple	2001	**		**
Johnson and Scholes	2002	**	**	**
Brody, Godschalk and Burdy	2003		**	
Hitt et al	2003	**		**
David	2003	**	**	**
Lynch	2003	**	**	**
Hunger and Whelan	2004	**		**
Trailer and Morgan	2004			**

Consultation refers to the degree to which other managers and employees opinions are sought within the decision making process. Here a consensus is suggested, as opposed to strategic choice by dictate. For example "collective intuition" (Eisenhardt, 1999) and "participative decision making" (Daniels and Bailey, 1999) are presented as key factors for successful strategy selection.

Process refers to a logical and sequential approach to the decision making process. Here the decision maker would not necessarily utilise "intuitive judgements" (Trailer and Morgan, 2004), opting rather for a sequential approach. Much of the normative strategic planning literature supports this perspective, as discussed in section 2.4.

Once again, the linkages within the discussion presented above and the discursive, essentially non-financial benefits of strategic planning are identifiable. Strategic choice has been demonstrated to include a large amount of discussion, incorporating possibly elements of inter-departmental interaction. This behaviour relates strongly to the discursive and essentially motivational factors cited by the studies extolling the non-financial benefits of strategic planning. Hence, whilst an integral factor of the strategic planning process, it is unlikely that a direct impact on the financial performance of an organisation will be felt through the choice process adopted, and therefore the following hypotheses are presented:

H_6: The quality of the strategic choice process will impact directly and positively on organisational non-financial performance.

H_7: Consultation in the strategic choice process will impact directly and positively on organisational non-financial performance.

H_8: Process in the strategic choice process will impact directly and positively on organisational non-financial performance.

The above section presented both a critique of the determinism literature, and an overview of the empirical and normative evidence concerning the strategic choice literature. A defence of managers' ability to influence organisational performance through strategic choice was presented, whilst acknowledging the limiting effects of some environmental factors.

Hence if managers are able to exercise a strategic choice process that is a) based on a large amount of accurate data, b) involves consultation, as opposed to management by dictate and c) follows a logical and rigorous process, as opposed to exercising largely subjective assessments, a strong case for a positive association with superior organisational performance is present.

2.9.6. Strategic choice: Summary of the literature.

The literature regarding "the evaluation of alternative strategies and selection of the best alternative" (Wheelan and Hunger, 2004) has been examined from a number of perspectives. The normative decision making literature was examined, followed by an examination of the deterministic argument and subsequently the factors impacting on the managerial decision making process. The ability of organisations, and managers, to exercise strategic choice was supported.

Empirical literature attempting to conceptualise the strategic choice process was seen to be inconsistent, and presented no real consensus. Alternatively, three main areas were identified within the normative literature regarding the methods utilised by organisations in order to choose between the options presented by the strategic planning process. The three main areas cited were 1) quality, 2) consultation and 3) process.

Whilst empirical support is largely lacking, it is suggested that by utilising the comprehensive areas cited, organisations will choose between the options presented by the strategic planning process more effectively. Hence a direct and positive relationship between this comprehensive strategic choice process and organisational performance is suggested.

2.9.7. Internal Restrictions on rational choice.

Strategy development intrinsically involves a human element, and hence the literature acknowledges a degree of subjectivity, or non-rational thought, impacting on the process (Pearce and Robinson, 2003; David, 2003; Wheelen and Hunger, 2004). Much of the debate within the literature suggests that political behaviour, often discussed in relation to power structures, is a primary factor in the aforementioned non-linear process (Thompson, 2001; David, 2003; Pearce and Robinson, 2003). In order to fully develop the discussion, research from both the strategic management and organisational behaviour domains[17] is presented here. This said, the literature recognises that it is "something of an art" Wilkins (1983) for a researcher, who is essentially external to an organisation, to be able to fully appreciate the true dynamics of the interactions taking place in a political behavioural context.

2.9.8. Internal organisational political aspects.

There is "little agreement" (Witt, Andrews and Kacmar, 2000) on a precise definition of organisational politics however, political behaviour within a managerial context is described in the literature as "those activities within an organisation to acquire, develop,

[17] The domain titles presented are for convenience, and allow easy reference. It is recognised, and largely utilised within the research presented here, that a cross-disciplinary approach will present alternative perspectives provoking new thought.

and use power and other resources to obtain one's preferred outcomes in a situation where there is uncertainty about choices"(Pfeffer, 1981). This definition focussing on the individual manager within the organisational decision making process, with no reference made to political behaviour within groups. This omission is, in part addressed by Miles (1980) who defines politics as "processes whereby individuals or interest groups exercise whatever power they can gather to influence the goals criteria and processes used in organisational decision making to advance their own interests". The definition cited makes clear reference to a process or processes of political behaviour however this idea is undeveloped in the literature. Given this apparent omission however, self or group interest appears to be the distorting factor of interest within an otherwise rational decision-making process, impacting directly on the achievement of organisational goals (Dean and Sharfman, 1996).

The negative impact of managers attempting to "influence strategic decisions to produce the outcome they believe is best, or is in their best interests" (Brouthers, Andriessen and Nicolaes, 1998) has been explored widely in the literature (March and Olsen, 1976; Wilson, 1982; Hickson et al, 1986; Cohen and Lachman, 1988), with some essentially normative remedies cited (Beeman and Sharkey, 1987). Alternatively, this political process of interaction and discussion surrounding strategy choice and formulation may encourage a more comprehensive and possibly more effective final decision (Dror and Romm, 1988).

Whilst a full review of the entire literature surrounding all political behaviour within a strategic management context is somewhat beyond the scope of the review presented here, it is apparent that managers will attempt to influence the outcomes of particular

decisions by using a variety of techniques including 1) coalition building, 2) lobbying, 3) information manipulation and 4) agenda control (Pettigrew, 1973; Bacharach and Lawler, 1980; Pfeffer, 1981; Brouthers, Andriessen and Nicolaes, 1998). This assertion is supported empirically, with a widely cited example being Hinings et al (1974) who examined political behaviour in the Canadian brewing industry. Interestingly, this example and much of the literature identified (Witt, Andrews and Kacmar, 2000) seeks to assess the level of organisational politics as a whole, as opposed to the levels of management specific political actions impacting of strategic decisions. Given the scope of the review presented here, it is the latter that is of more interest, albeit an empirically unfounded proposition might be that the greater the general level of organisational political behaviour, then the greater the level of managerial political behaviour. However at this stage it appears unwise to open an additional strand of literature that may lead into a wider cultural debate, and instead literature concerning managerial politics will be discussed.

Little discussion is present in the normative strategic planning literature identified (Higgins and Vincze, 1993; Finlay, 2000; Haberberg and Rieple, 2001; Hill and Jones, 2001; Thompson, 2001; Johnson and Scholes, 2002; Hitt, Ireland and Hoskinson, 2003; David, 2003; Lynch, 2003; Thompson and Strickland, 2003; De Wit and Meyer, 2004; Whelan and Hunger, 2004). Those examining organisational politics identify it as a possible distortion to the strategic decision making process.

Generally, the discussion to this point has centred on the negative impact of political behaviours on the decision making process. However an interesting and alternative perspective is also present in the literature suggesting that political behaviour may have a

positive impact on organisational performance. The argument presented suggests that as organisations are fundamentally political bodies (Morgan, 1997), "one does not have to be consciously cunning or deviously political to end up playing organisational politics" (Morgan, 1997). As such, the view of political activity within organisations as being " "dirty" and a little underhand" (Lewis, 2002), appear to be less important. Additionally, the presence of political activity or more specifically the discussions and debates commonly associated with political activity, "are particularly effective for triggering and implementing the change process" (Lewis, 2002). Further support for the positive impact of political activity is found within the innovation literature (Nemeth, 1997), where it is suggested that employees within the organisation who challenge the norm and advocate deviance from the dominant paradigm, can positively impact on innovation. This link, it is suggested, occurs through the additional and incremental discussion provoked by these dissidents, that otherwise would be lost to the organisation (Nemeth, 1997).

Given the previous debate presented in relation to the importance of discursive factors within the strategic planning process, and additionally their impact on organisational non-financial performance, the following hypothesis is presented:

H_9: Organisational political behaviour will have a direct and positive impact on organisational non-financial performance.

2.9.9. Summary of literature on organisational political behaviour.

It is suggested in some of the literature identified that politically motivated behaviours impacting on the strategic decision making process cannot, by definition be orientated towards the achievement of organisational goals, and are distorted by personal desires

and agendas. However given the perspective of Morgan (1997) and Nemeth (1997) cited above, where the organisation is viewed as fundamentally politically driven, and where individuals are intrinsically political, lessens the negative connotations somewhat. Additionally, and taking a decision making perspective where alternative viewpoints are actively sought, including views that deviate from the norm, the positive impact of political behaviour becomes less intuitively awkward. Indeed, when taken in relation to the discursive benefits of the strategic planning process cited previously, activity of this type conforms well to a more productive outcome.

2.10. Organisational Flexibility.

The concept of flexibility in an organisational context, or the "expedient capability for managing capricious settings" (Evans, 1991) is cited as being able to "enhance firm performance" (Grewal and Tansuhaj, 2001), as it helps "manage (the firms) environment" (Evans, 1991), through being able to respond "in a proactive or reactive manner to market threats and opportunities" (Grewal and Tansuhaj, 2001).

Despite the intuitively appealing definitions presented in the literature, the concept of flexibility, strategic flexibility, organisational flexibility or strategic adaptability suffers from three main problems 1) semantic issues 2) little conceptual development in the textbook based literature and 3) little conceptual development or testing in the empirical, largely journal based literature.

Semantic issues exist with many related terms being presented in the literature examined, causing a degree of confusion in terms of a precise definition of strategic flexibility Greenley and Oktemgil (1998). Indeed, Evans (1991) cites twelve related terms, 1)

adaptability, 2) agility, 3) corrigibility, 4) elasticity, 5) hedging, 6) liquidity, 7) malleability, 8) plasticity, 9) pliability, 10) resilience, 11) robustness and 12) versatility, and suggests that whilst "the use of the word flexibility is ubiquitous, yet it is not always clear what is meant by the term" (Evans, 1991). The confusion cited above is reflected in a wider search of the literature detailed below.

An examination of the normative strategic management literature (Haperberg and Rieple, 2001; Hill and Jones, 2001; Pearce and Robinson, 2003; Wheelan and Hunger, 2004; Sanchez and Heene; 2004) presents a number of positive references towards flexibility in organisations. Most of the references listed are supportive of manufacturing flexibility. These references however do not provide conceptualisations of how the flexibility cited as beneficial, should be manifest on a strategic level, or where else within an organisation flexibility is important.

The journal-based literature provides a more in-depth discussion of the concept of strategic flexibility and how organisations may develop the elusive concept (Hitt et al, 1998).

Additionally, multi-dimensional scales are presented and empirically tested (Grewal and Tansuhaj, 2001; Dreyer and Gronhaug, 2004). Grewal and Tansuhaj (2001) present little evidence of adherence to established scale development procedures (Spector, 1992; DeVellis, 2003), thereby casting doubt on the validity, and indeed the reliability of the measure. Further investigation of the proposed measure (Grewal and Tansuhaj, 2001) casts further doubt on its conceptual underpinnings as the four main tenets, or dimensions (Diamantopoulos and Siguaw, 2000) that are claimed to be examined are 1) the

organisational objective of building excess resources by hedging, 2) organisational attempts to build agility and versatility by instilling capabilities to respond to disparate situations, 3) firms emphasis on deriving benefits from diversity in the environment and 4) a firms strategic emphasis on managing macro-environmental risk. The four dimensions cited are described as being captured by one item each, and are subsequently analysed through confirmatory factor analysis (Gerbing and Anderson, 1998) as the dependent variable. Whilst not wishing to engage in a full-scale debate on the methodological approach taken, enough doubt is present to once again question scale validity. Additionally, an apparently brief and narrow definition of strategic flexibility appears to have been utilised in order to capture a conceptually complex construct. Additionally, and on a more semantic level, the reference to "hedging" (Grewal and Tansuhaj, 2001), bears more resemblance to a concept referred to in much of the economic options literature (Cox and Rubinstein, 1985; Trigeorgis, 1998). Unfortunately, due to the brevity exhibited within the original article, it is unknown whether this issue was identified as unimportant through development work with pre-test respondents.

More recently, Dreyer and Gronhaug (2004) present a multi-dimension conceptualisation of flexibility including 1) volume flexibility, 2) labour flexibility, 3) product flexibility and 4) financial flexibility. This appears to present a more strategically oriented model, capturing functional level flexibilities through rigorous scale development and testing.

From the literature identified, of the twelve "related terms" (Evans, 1991) cited, adaptability appears to receive the majority of the academic attention. Table 2.4 summarises the literature identified.

Table 2.4: Summary of adaptation or adaptability literature

Author	Year	Prefix	Terminology
Miller & Friesen	1980	Organisational	Adaptation
Hrebiniak & Joyce	1985	Organisational	Adaptation
Yasai-Ardekani	1986	Structural	Adaptations
McKee, Varadarajan & Pride	1989	Strategic	Adaptability
Boeker & Goodstein	1991		Adaptation
Jennings & Seaman	1994	Organisational	Adaptation
Stoica & Schindehutte	1999		Adaptation
Tuominen, Rajala and Moller	2004		Adaptability

Once again, a high degree of variance is exhibited in the studies identified both in the conceptualisation and the measurement of adaptation or adaptability. For instance Boeker and Goodstein (1991) and Stoica and Schindehutte (1999) appear to conceptually examine identical issues. However on closer examination the former do not actually measure the degree of adaptation exhibited in the sample organisations. Inferences are made as to the degree of adaptability exhibited with reference to related constructs. The latter (Stoica and Schindehutte, 1999) measure the degree of adaptability exhibited in the sample, however once again little attention to established measure development theory (Spector, 1992; DeVellis, 2003), casting doubt on the conceptual adequacy of the measure.

Of the studies identified citing organisational adaptation as the factor under investigation (Miller and Friesen, 1980; Hrebiniak and Joyce, 1985; Jennings and Seaman, 1994), different conceptualisations and measures were once again present, from five financial ratios (Jenings and Seaman, 1994) to once again inferring the degree of organisational adaptation present through several strategic typologies identified. Interestingly while Jennings and Seaman (1994) cite organisational adaptation, McKee at al (1989) discuss strategic adaptability, and do so utilising the same strategic typologies and similar

methodologies. This reinforces the case for further conceptual development regarding research into organisational[18] flexibility.

More recent empirical attempts to capture "strategic adaptability" (Tuominen, Rajala and Moller, 2004) have been empirically tested in the marketing domain. Tuominen et al (2004) present a multi-dimension conceptualisation of adaptability including 1) technology, 2) market focus and 3) organisational design.

Whilst not referring directly to the concept of flexibility per se, the following definition of dynamic capabilities (Teece, Pisano and Shuen, 1997) was identified, that appears both semantically and conceptually similar to the discussions above i.e. "the firm's ability to integrate, build, and reconfigure internal and external competencies to address rapidly changing environments". Although not empirically supported, and largely resource based, the article calls for empirical research where strategy researchers need to "join forces with researchers in the field of innovation, manufacturing and organisational behaviour and business history if they are to unlock the riddles that lie behind corporate as well as national competitive advantage" (Teece, Pisano and Shuen, 1997). Again, whilst not directly referring to flexibility per se, it appears that recognition is present in the literature for a wider definition of the construct of interest.

Interestingly, this call for a more functional specific remit given, citations regarding flexibility and organisational adaptability were obtained from a wide range of domain or functional specific journals such as 1) economics (Acs and Audretsch, 1990; Reid, 2003), 2) information technology (Adler, 1988; Sraeel, 1996; Harris, 2002), 3) human resources

[18] Used here as the unit of interest.

(Slack et al, 1995; Freiberg and Freiberg, 1997; Brodbeck, 2002) 4) financial (Wilkins, 1980; Joseph, 1989; Mensah and Werner, 2003) and 5) manufacturing and operations (Slack et al, 1995; Tang and Tikoo, 1999; Underdown and Talluri, 2002; Chang et al, 2003; Zhang, Vonderembse and Lim, 2003), all of which referred to the impact of flexibility on the dependent variable, or some manifestation of performance. Whilst in some way, addressing the call for a wider exploration of the flexibility concept, these functional specific explorations in reality, narrow the focus somewhat on an organisational and strategic level. Interestingly, the literature examining technology related flexibility made reference to the facilitative benefits of technology, however inferred the significant financial benefits associated with use (Slack et al, 1995; Freiberg and Freiberg, 1997; Brodbeck, 2002).

2.10.1. Slack Resources.

Further to the financially based studies highlighted above (Wilkins, 1980; Frederick, 1989; Mensah and Werner, 2003), the concept of resource flexibility has received further attention in the literature with regards to the concept of organizational slack, or "that cushion of actual or potential resources that allows an organization to successfully adapt to change, by providing the means for adapting strategies to the external environment" (Cyert and March, 1963).

A number of empirical studies examining the relationship between levels of organisational slack and performance were identified in the literature, citing alternative perspectives. Indeed, a number of associations are hypothesised to exist between the amount of slack exhibited in an organisation and performance, for example 1) positive association (Cyert and March, 1963; Singh, 1986), 2) curvilinear or "n" shaped

relationship (Bourgeois, 1981; Davis and Stout, 1992) and 3) mixed (Bromily, 1991; Cheng and Kesner, 1997). One study (Greenley and Oktemgil, 1998), reviewed four empirical studies testing this relationship (Singh, 1986; Bromily, 1991; McArthur and Nystrom, 1991; Oktemgil and Greenley, 1996), and whilst the overall evidence appeared to support a positive relationship, the studies received criticism on the form of the association and methodology. With specific reference to the debate presented here, comment was additionally made, that the studies identified largely ignored the planning practices of the sample organisations (Greenley and Oktemgil, 1998). Whilst apparently inconclusive, this discussion coupled with the above references (Wilkins, 1980; Frederick, 1989; Mensah and Werner, 2003), highlights an additional financially based dimension of a wider flexibility construct, previously unexamined empirically.

2.10.2. Organisational Structure.

A "long-running debate" (Harris and Ruefli, 2000) is present in the literature regarding the temporal sequence of business strategy and organisational structure. A number of authors have suggested that structure follows strategy (Chandler, 1962; Fouraker and Stopford, 1968; Donaldson, 1987; Nelson, 1991; Hamilton and Shergil, 1992; Hamilton and Shergil, 1993; Donaldson, 1996), and a number have suggested that the temporal order in reversed (Child, 1972; Galbraith and Nathanson, 1978; Fredrickson, 1986). Additionally, a number have suggested that the order does not matter (Hrebiniak and Joyce, 1984; Kazanjian and Drazin, 1987; Hill and Hoskisson, 1987; Mintzberg, 1990).

In an extension of the above debate, other studies have hypothesised linkages between the environmental conditions faced by organisations, the strategies adopted and organisational structure (Burns and Stalker, 1961; Thompson, 1967; Lawrence and

Lorsch, 1967; Galbraith, 1973; Grinyer et al, 1980; Cravens et al, 1996), with mixed results.

A reconciliation of the various strands of debate available, through a full literature review of all of the empirical evidence, is somewhat outside the scope of the literature review presented here[19]. However, whilst disagreement is present in the empirical literature, a common theme is that "all organisations must be structured in a way that most effectively handles the contingencies posed by their environments" (Miller, 1987). This given, then an apparently important omission from previous literature regarding flexibility, or as is the case here organisational flexibility is a structural dimension.

2.10.3. Environmental fit.

A concept that presents further support for the importance of organisational flexibility is that of environmental fit, where an organisation strives to achieve a balance between its objectives, resources and environmental threats and opportunities (Andrews, 1971; Bourgeois, 1980; Venkatraman and Camillus, 1984; Venkatraman, 1990).

As with flexibility, other "related terms" (Evans, 1991) are present in the literature, for example "consonance" (Rumelt, 1980) and "co-alignment" (Venkatraman, 1990), all of which suggest an organisation changing its state in order to react to some stimulus or stimuli. Consonance is stated as the process of "matching a firms key internal and external factors in the formulation of strategy" (Rumelt, 1980), whereas strategic co-alignment is described as "the efficient alignment of organisational resources and capabilities with environmental opportunities and threats" (Venkatraman, 1990;

[19] These are available in the literature, see (Harris and Ruefli, 2000; Miller, 1986).

Venkatraman and Prescott, 1990), both presenting semantically similar definitions to that of environmental fit.

Whilst empirical evidence is available in the literature regarding superior performance being attributed to better levels of fit (Venkatraman, 1990), support is far from equivocal. However what is important is that once again, support outside the flexibility literature is evident, regarding an organisations ability to change, adapt, co-align and achieve consonance with its environment. This perspective adds considerable weight to the call for a more in depth and a greater understanding of the concept of organisational flexibility.

2.10.4. Organisational Flexibility: Summary of the literature.

Despite the literature examined in sections 2.10 to 2.10.3, there appears to be no satisfactory organisation-wide measure of flexibility indeed, "Flexibility as a competitive goal still lacks clear and accurate definition" (Aranda, 2003). Factors, or possibly dimensions such as structural flexibility, operational or production flexibility and responsiveness, information technology flexibility, human resource flexibility and financial flexibility have all been discussed in relation to a conceptualisation of flexibility but have not thus far been combined to present an overall measure.

The literature presented whilst apparently requiring further conceptual and empirical testing, presents a strong case for the importance of flexibility within an organisational context. Moreover, as flexibility is evidently required within specific functional groupings commensurate with particular environmental problems, a multi-dimensional approach is advocated. The inference here, being that an organisation that is more flexible

than the nearest competitors may be able to adapt more quickly and to react to environmental change. This being the case, the organisation also holds a valuable source of competitive advantage, and hence a route to superior organisational performance.

As previously stated, whilst a large amount of support is available in the literature regarding the concept of a flexible organisation, little empirical development has occurred. Additionally, no evidence is available to suggest how the dimensionality of a conceptualisation of organisational flexibility would impact on organisational performance. In addressing this issue, hypotheses are presented for each of the five dimensions highlighted above, in relation to the two dependent variables previously discussed i.e. organisational financial performance and organisational non-financial performance.

Operational flexibility: In turbulent environments, organisations will need to change their current modes of operation and outputs in order to remain competitive in light of environmental change[20]. In doing, so organisations will be able to maintain a fit with their environment and become profitable into the long term.

H_{10}: Operational flexibility will have a direct and positive impact on organisational financial performance.

Financial flexibility: Intuitively, financial flexibility is unlikely to have a direct and positive impact on non-financial performance[21]. Hence organisations that can exhibit financial flexibility, in terms of the ease with which funding may be allocated and

[20] See previous discussions.
[21] Examined further in section 2.5 and 2.6.

obtained, may respond to changes in the trading environment faster than those organisations lacking in financial flexibility. The changes are likely to be funded rapidly, and without a fundamentally disastrous impact on the stability of the particular organisation. Hence:

H_{11}: Financial flexibility will have a direct and positive impact on organisational financial performance.

Human resource flexibility: In responding to environmental pressures organisations adapt and change through, and because of, the actions of employees. Whilst the short-term organisational impact of being able to add and reduce human resource may well be positive in terms of financial performance, a longer-term symptom may be a negative impact on employee morale and indeed retention. More formally:

H_{12}: Human resource flexibility will have a direct and positive impact on financial performance.

H_{13}: Human resource flexibility will have a direct and negative impact on non-financial performance.

Technological flexibility: With reference to the previously outlined literature i.e. Slack et al (1995), Freiberg and Freiberg (1997) and Brodbeck (2002) the facilitative nature of technology is apparent (Morgan, 2002; Morgan, 2004). More specifically, employees or organisations utilising technology well may reap rewards in terms of "speeding up" (Slack et al, 1995) internal processes, however in much of this literature the impact on the

employee is ignored, and the idea of routine and otherwise tedious activities being fundamentally and positively altered are not developed. Intuitively, the introduction of new technology if appropriate to the adopting organisation will impact positively on the employees utilising it and hence the immediate benefits will be manifest non-financially as opposed to financially. More formally:

H_{14}: Technology related flexibility will have a direct and positive impact on organisational non-financial performance.

Structural flexibility: As discussed at some length previously[22]organisational structure is viewed as essentially facilitative, as "all organisations must be structured in a way that most effectively handles the contingencies posed by their environments" (Miller, 1987). Hence an organisation that is structurally flexible is able to adapt and change its structure in order to best reflect the dominant environmental conditions. However and intrinsically linked to the discussions relating to human resource flexibility above, changes in structure equate to changes in the human resources. Hence the following hypothesis is presented:

H_{15}: Structural flexibility will have a direct and positive impact on organisational non-financial performance.

Table 2.5 presents the hypotheses presented relating to organisational flexibility for ease of reference.

[22] See section 2.10.2.

Table 2.5: Summary of hypotheses relating to organisational flexibility

Dimension of flexibility	Financial Performance	Non-financial performance
Operational	+ve impact	
Financial	+ve impact	
Human resource	-ve impact	+ve impact
Technology		+ve impact
Structural		+ve impact

2.11. Strategic planning: Implementation.

The literature defines strategy implementation as the "translation of strategy into organisational action through organisational structure and design, resource planning and the management of strategic change" (Johnson and Scholes, 2002). Other definitions are more overt in suggesting a process of implementation (Thompson and Strickland, 2003), with alternative perspectives discussing "managing" and "changing" an organisation interchangeably with the strategy implementation process (Thompson, 2001; Haberberg and Rieple, 2001).

The importance of the methods utilised by organisations in order to implement strategies successfully are of great importance, with the possibility of strategic plan failing or becoming "diluted" (Morgan and Piercy, 1993) at implementation. Indeed well formulated plans are likely to fall short of the objective set if not implemented in a structured and efficient manner (Drucker, 1974; Bourgeois and Brodwin, 1984; Noble and Mokwa, 1999; Thompson, 2001). Alternatively, less appropriate or successful strategic plans may be "redeemed" by "good implementation" (Wheelan and Hunger, 2004).

From the brief citations above, the successful implementation of strategy is of importance to organisations, and their managers. The methods advocated and empirically tested in the literature will be examined in relation to this.

Interestingly it is suggested in the literature that the "whole issue of strategy implementation is relatively inadequately researched and documented" (Zinkham and Pereira, 1994), and has received "scant attention" (Bourgeois, 1995). Despite these assertions, a structured approach was taken in order to address the relevant literature. As with much of the literature discussed previously a review of the normative and textbook based literature is presented, followed by a discussion of empirical study within the domain.

2.11.1. Strategy Implementation: Normative literature.

A number of different perspectives were identified in the literature however a general consensus was identified regarding the constituent elements of the strategy implementation process. Worthy of note is that whilst a discussion of context is included in some of the normative texts, many are presented as step by step guides on how to implement strategy, in essence presenting the constituent elements of an effective strategy implementation procedure. These are summarised below in table 2.6.

Table 2.6: Summary of normative strategy implementation literature

Author/s	Year	Leadership	Organisational Structure	Communication	Resource Allocation	On-going Control
Higgins & Vincze	1993	**	**	**		**
Finlay	2000	**	**	**	**	**
Haperberg & Rieple	2001	**	**		**	**
Hill & Jones	2001	**	**	**	**	**
Thompson	2001					
Johnson & Scholes	2002	**	**	**	**	
Lynch	2002	**	**	**	**	
David	2003		**		**	**
Thompson & Strickland	2003	**	**	**	**	**
Pearce & Robinson	2003	**	**	**	**	**

Many similarities in the underlying concepts were found in the literature presented, however this may present a slightly misleading, and possibly simplistic interpretation of the data analysed. The following categories are presented to illustrate the differences found in the literature cited. 1) Leadership. This was discussed with regard to managing conflict (David, 2003), managing resistance to change (Haperberg and Rieple, 2001; David, 2003) and additionally a normative recital of different styles of leadership and how these may be appropriate, or otherwise (Higgins & Vincze, 1993). 2) Resource allocation. Discussion on the levels of support, in terms of resources, available for strategies and their implementation was present (David, 2003). Additionally organisational re-engineering (Hill and Jones, 2001), conflict resolution (Hill & Jones, 2001) and systems support, more specifically information technology (Thompson & Strickland, 2003) were discussed at length in terms of resource allocation issues. 3) Communication. Issues such as involvement of groups in the strategy implementation process (Higgins and Vincze, 1993), and also the impact of organisational structure as a

facilitator or inhibitor of communication were discussed in relation to organisational communication (Hill & Jones, 2001). 4) Structure. Typologies of organisational structure were cited in the literature (Hill & Jones, 2001), and the impact of different structural types on communication speed discussed. Additionally the appropriateness of the different types of organisational structure was discussed in relation to the type of change required by the particular strategy. Alternatively Lynch (2002) discusses structure in terms of its impact on, and consequences for "employment and morale". 5) Control. Varying treatments of implementation control are presented in the literature, with some authors presenting quite detailed discussions (Finlay, 2000; Pearce and Robinson, 2003), with other discussions being limited to a broad outline of control systems with which to monitor the success, or otherwise of strategy implementation (Haperberg & Rieple, 2001).

Of interest are the discussions presented above, and the political behaviour literature examined in section 2.9.8. All of the four dimensions cited above involve discussion, or group work or some element of interaction between interested functional parties.

Cultural factors impacting on strategy implementation were considered as a separate category, and indeed are referred to in the texts examined (Hill and Jones, 2001). However on closer examination, it was decided that the cultural factors expressed in the literature existed externally to the process, and hence would not be included in the category headings.

2.11.2. Summary of normative strategy implementation literature.

A variety of approaches were present in the normative texts identified, adding to the complexity if the categorisation process. In some way support was identified for the

previously cited reference regarding research into strategy implementation being "relatively inadequately researched and documented" (Zinkham and Pereira, 1994). Due to the apparent semantic complexities, and in an attempt to avoid an extensive semantic debate, the table overleaf summarises both the category headings identified and also the underlying discussions that are being referred to.

Table 2.7: Summary of underlying concept of category heading identified

	Leadership	**Organisational Structure**	**Communication**	**Resource Allocation**	**On-going Control**
Factors discussed	Focal point of leadership Strategy leaders Facilitative leadership Involvement Fostering teamwork	Matching strategy and structure / structure to strategy Facilitative role of structure	Consistency Appropriateness Group work	Ensuring resource availability Consideration for resource issues	Types of measurement Re-enforcement of measurement Concern for strategy once implemented

2.11.3. Strategy Implementation: Empirical and journal based research.

Empirically based literature regarding the organisational strategy implementation process is diverse in nature, and represents a number of different domains and levels of strategic study, for example, 1) the implementation of marketing strategies (Bonoma and Crittenden, 1988; Morgan and Piercy, 1993; Noble and Mokwa, 1999), 2) information systems implementation (Lederer and Sethi, 1988), 3) administrative mechanisms i.e. budgets (Govindarajan, 1988) and 4) environmental strategies (Maxwell et al, 1997). Additionally, various contexts of strategy implementation have been empirically explored, for example 1) the higher education industry (Zajac and Kraatz, 1993), 2) manufacturing businesses (Pendlebury, 1987), 3) relationship marketing (Gummerson, 1998), 4) human resources (Zabriske and Hullmantel, 1989; Simkin, 2002) and more generally 5) "dynamic environments" (Feurer and Chaharbaghi, 1995).

The conceptualisation and measurement of strategy implementation presents a similarly diverse result. Case study based articles, presenting checklists of effective strategy implementation were identified of varying length, for example Werhnam (1984) presents a six point checklist and Slevin and Pinto (1987) present a ten point checklist. Examinations of the barriers facing strategy implementation are also available (Piercy, 1989; Morgan and Piercy, 1991). Additionally scale development and testing was identified in the literature, with once again mixed results. For example Noble and Mokwa (1999) utilise a 58-item, 14 dimension scale, to capture implementation success. Alternatively, Hahn and Powers (1999) utilises a one item measure of quality of implementation. Further conceptualisations of the factors contributing to effective or successful strategy implementation are available in the literature, see section 2.7.5 for further discussion however, the diversity present is exemplified within the measures presented above. Interestingly, the similarities between the diverse conceptualisations of successful strategy implementation and the differences in the conceptualisation of strategic planning investigated in section 2.1.2 are apparent.

Whilst diversity in conceptualisation and methodology is evident in the literature presented, there are "still many underlying issues, activities and strategies that are common to them all" (Mabert, Soni and Venkataramanan, 2003). This given, the section below relates the findings within the journal based literature to the category headings presented in the normative summary presented in table 2.6. Similarities are identified and subsequently discussed. Of note, other, more broadly based articles were identified in relation to strategic plan implementation, however these are summarised after the initial category headings have been discussed. Literature from outside the strategy

implementation studies was also examined and utilised, in order to present as broad an examination of the relevant concepts as possible.

2.11.4. Category 1: Communication.

The value of middle managers to organisations is cited in the literature (Thompson, 1967; Pugh et al, 1968), in addition to their role in strategy implementation (March and Simon, 1958; Thompson, 1967; Boxer and Wensley, 1986; Piercy, 1996; Piercy, 1998). Involvement of middle managers in strategy process is cited to be either positive (Wooldridge and Floyd, 1990; Burgelman, 1994) or negative (Ewing, 1969; Taylor, 1976; Lyles and Lenz, 1982; Burgelman, 1983b; MacMillan and Guth, 1985; Noble, 1999). Further examination of the studies suggesting a negative impact reveal that the negative behaviour suggested manifests as a result of poorly defined or ill-communicated strategy. Hence effective communication provides a central role in the implementation of strategic plans through encouraging strategic consensus throughout the organisation (Floyd and Wooldridge, 1992; Piercy, 1998; Rapert, Velliquette and Garretson, 2002). Additionally the issue of involvement aids the "buy-in" (Noble and Mokwa, 1999) of employees and managers alike, to the proposed strategic change, thereby facilitating the implementation process (Noble and Mokwa, 1999).

Studies investigating linkages between managerial consensus and firm performance[23], have on the whole presented mixed results (Bourgeois, 1980; Hrebiniak and Snow 1982; Bourgeois 1985), however empirical support is present (Dess and Origer, 1987) and hence an a priori case for clear communication and involvement of individuals other than senior management in the implementation process is made.

[23] Measured with financial indicators.

2.11.5. Category 2: Leadership involvement.

Empirical studies examining the impact of leadership and different managerial styles on strategy implementation are evident in the literature (Gupta and Govindarajan, 1984; Nutt, 1993; Nutt 1987; Nutt, 1989; Gibson and Mazur, 1995), with effective implementation being dependent upon the contingencies of management style and the situation faced by the organisation (Bourgeois and Brodwin, 1984). Strategy "champions" i.e. individuals seeking responsibility (Nutt, 1993), are also been identified as important factors, utilised by management in order to increase the likelihood of strategy implementation success. Despite the variance in the studies highlighted, "Beyond acknowledging the pivotal role of the manager, little else about implementation seems generally accepted" (Nutt, 1987). Again, an a priori case is made for the important and guiding influence of organisational leadership, including managers. Additionally the linkages between the qualities of leadership highlighted here, and the previously discussed category of communication is clear.

2.11.6. Category 3: On –going control.

Few empirical studies were identified that addressed the issue of implementation control specifically (Jaworski and MacInnis, 1989; Kellinghausen and Wubbenhorst, 1990; Jaworski, Stathakopoulos and Krishnan, 1993). Kellinghausen and Wubbenhorst (1990) citing that "Successful implementation of a strategy requires not just that the actions necessary are identified, but that some way of measuring the business's strategic performance against its strategic plan is available". A contingency perspective was presented where the control system to be utilised was dependent on the firm and strategy type (Jaworski, Stathakopoulos and Krishnan, 1993), additionally the importance of informal and formal control mechanisms was cited (Jaworski and MacInnis, 1989).

Whilst three studies do not present a convincing body of evidence regarding the presence of control mechanisms within the strategy implementation process, the weight of normative support presented in section 2.7.2 as well as the additional empirical support presented in section 2.7.5 below provides sufficient argument for inclusion.

2.11.7. Categories 4 and 5: Structural issues and resource allocation.

Other than the more widely focussed implementation studies examined below in section 2.7.5, little empirical evidence was available within the strategy implementation literature to support the inclusion of these category heading. In relation to structure, given the previously mentioned support in section 2.7.2, combined with the substantial debate presented in relation to organisational flexibility in section 2.10.2, the case for inclusion has been sufficiently made. Resources were the focus of one empirical study within the implementation literature (Mabert, Soni and Venkataramanan, 2003), however similar to the structural dimension cited above, justification for inclusion is apparent elsewhere.

2.11.8. Support for category headings from more widely focussed literature.

Due to the scope of the literature identified focussing on capturing an overview of all of the elements of an "effective" (Floyd and Wooldridge, 1992; Morgan and Piercy, 1993) or successful (Gibson and Mazur, 1995) strategy implementation process, a summary is presented in table 2.7 overleaf. Support for the category headings is evident from the summary given.

Interestingly, much of the literature cited appears to conceptualise strategy implementation as an essentially linear process impacting on organisational performance directly. However, on further examination a different perspective is presented, albeit not

necessarily investigated directly. The alternative perspective suggests that strategy implementation, possibly due to the intrinsically discursive nature of the process is highly politicised; where middle management deliberately alter or distort strategy in order to best serve their interests (Burgelman, 1983b). Indeed, where strategic consensus does not exist within an organisation it is argued that managers may intentionally deviate from a particular strategic initiative (Noble, 1999) in order to serve self-interest. Specific reference to managers acting "politically" (Sviokla, 1996) is available in relation to the strategy implementation process. Here managers deliberately alter the intended strategy in order to protect their position in the organisation.

Table 2.8: Summary of additional implementation literature

	Year	Leadership involvement	Structural Issues	Communication	Resource Allocation	On-going Control
Govindarajan	1988	**	**	**	**	**
Bonoma & Crittenden	1988	**	**	**	**	**
Piercy	1989	**	**	**	**	**
Morgan & Piercy	1993	**	**	**	**	**
Simkin	1996	**	**	**	**	
Sashittal & Tankersley	1997	**	**	**	**	
Maxwell et al	1997	**	**	**	**	**
Lorange	1998	**	**	**	**	**
Noble & Mokwa	1999	**	**	**	**	**
Simkin	2002	**	**	**	**	
Mabert et al	2003	**	**	**	**	**

Intuitively in implementing new strategies organisations impact upon the status quo, where it is highly likely that some interested parties will gain, and some will loose. Hence

it is unsurprising that mangers act irrationally or at least contrary to the wishes of the organisation.

2.11.9. Strategy Implementation: Summary of discussion.

The literature suggests that strategy implementation is critical to the success of a given strategy and that poor implementation can severely moderate the results or the performance, of a well-conceived strategy (Koontz, 1976; Greenley, 1983; Brodwin and Bourgeois, 1984; Wernham, 1984; Lorange and Murphy, 1984; Bonoma, 1984; Reed and Buckley, 1988; Cravens, 1998; Noble and Mokwa, 1999).

Whilst initially, consensus within the literature was not evident, a further structured examination of firstly normative and subsequently empirical literature presented a framework of five main factors, or dimensions, that impact on "effective" (Floyd and Wooldridge, 1992; Morgan and Piercy, 1993) or "successful" (Gibson and Mazur, 1995) strategy implementation. The factors identified were 1) leadership involvement, 2) structural issues, 3) communication, 4) resource allocation and 5) on-going control, or a concern for strategies once implemented.

Given the arguments presented in sections 2.7.1 to 2.7.5, then it is suggested here that significant evidence exists to support a hypothetical link between the dimensions of strategic implementation described and the political behaviour exhibited within an organisation. Here political behaviour adopting an essentially mediating role between strategy implementation and organisational non-financial performance. Hence the following hypotheses are formally presented:

H_{16}: Communication within the strategy implementation process will impact directly and positively with the levels of political behaviour exhibited.

H_{17}: Leadership involvement within the strategy implementation process will impact directly and positively on political behaviour.

H_{18}: On-going control within the strategy implementation process will impact directly and positively on political behaviour.

H_{19}: Structural issues within the strategy implementation process will impact directly and positively on political behaviour.

H_{20}: Resource allocation within the strategy implementation process will impact directly and positively on political behaviour.

2.12. Strategic planning: environmental turbulence.

Environmental turbulence is described in the literature as "a function of changeability and predictability" (Emery and Trist, 1965) in the trading environment within which the organisation operates. However, despite a long running and an apparently on-going debate in the literature[24] "Evidence of the impact of environmental turbulence upon strategic planning is limited. Cross-sectional studies have produced inconsistent findings. Longitudinal evidence is fragmented" (Grant, 2003).

[24] See section 2.9.1: Environmental determinism versus strategic choice debate.

Support for a positive impact of environmental turbulence on strategic planning is available in related literature regarding the information processing abilities of top management teams (Thompson, 1967; Shull et al, 1970; Keck and Tushman, 1993; McLarney, 2001) where it is suggested, "as an environment grows more turbulent and a firm's decision-making tasks grow more difficult, managers have greater information processing requirements" (McLarney, 2001). Here it is argued that the increasing requirements of the organisation on managerial information-processing, impacts positively and significantly on organisational strategic planning i.e., the more turbulent the environment the more comprehensive the strategic planning in order to cope with it.

Interestingly, little variance in the conceptualisation of environmental turbulence is apparent in the literature where generally, measures of a) market change, b) speed of change, c) intensity of competition, d) technological change, e) changes in customer preferences and f) government influence and group pressure are cited (Dwyer and Welsh, 1985; Thwaites and Glaister, 1992; Jaworski and Kohli, 1993; Cadogan et al, 2002; Cadogan, Diamantopoulos and Siguaw, 2002). Therefore, given the positive association cited above, and the consensus in measurement cited above, the following hypotheses are presented:

H_{21}: Market turbulence will have a positive and significant impact on comprehensive strategic planning.

H_{22}: Competitive turbulence will have a positive and significant impact on comprehensive strategic planning.

H_{23}: Technological turbulence will have a positive and significant impact on comprehensive strategic planning.

H_{24}: Regulatory turbulence will have a positive and significant impact on comprehensive strategic planning.

2.13. Summary: Implications for the present study.

This chapter has presented a review of both the normative and empirical literature available regarding strategic planning. Several of the main factors impacting on strategic planning efficacy, or success were also examined these were, 1) organisational flexibility, 2) comprehensive choice process, 3) quality of strategic options, 4) organisational political behaviour and 5) effective implementation and 6) the environment. The dependent variable, in this case i.e. performance, was also discussed. Whilst some, albeit few of the above factors have been investigated explicitly in an empirical context, no previously identified study has attempted a simultaneous exploration of the variables of interest, despite their obvious importance in the literature. Additionally, and possibly of more importance, is the lack of available measures or scales with which to capture the variables of interest[25].

A general lack of consensus characterises the empirical studies examining the impact of strategic planning on organisational performance. This is manifest not only in the conceptualisations utilised, but also within the methodological approach adopted. Interestingly the antithesis of this was identified within the normative strategic planning literature, where a high degree of consensus was available. These differences were

[25] A summary of the hypotheses discussed is available in appendix 2.4.

discussed in relation to a number of factors, however it was highlighted that whilst some significant contributions were available, despite over thirty years of study, very similar relationships were being examined within the domain. Additionally the consensus identified within the normative literature, had not been widely utilised within the empirical studies as a base or platform for further exploration of the domain.

An additional omission appeared to be the lack of development, and also consensus, regarding the component elements of the strategic planning process[26]. Despite the high degree of consensus regarding their inclusion within the strategic planning process, little investigation of their individual contribution to organisational performance was identified, one example of this being the quality of strategic options generated by the strategic planning process.

Whilst the other factors identified are argued to impact directly on the relationship between strategic planning and performance e.g. 1) organisational political behaviour and 2) environmental turbulence, or impact specifically on organisational performance e.g. 1) quality of strategic options, 2) comprehensive choice process, 3) organisational flexibility and 4) effective implementation, little empirical evidence was identified attempting to address these issues within this context.

2.14. Overview of conceptual model.

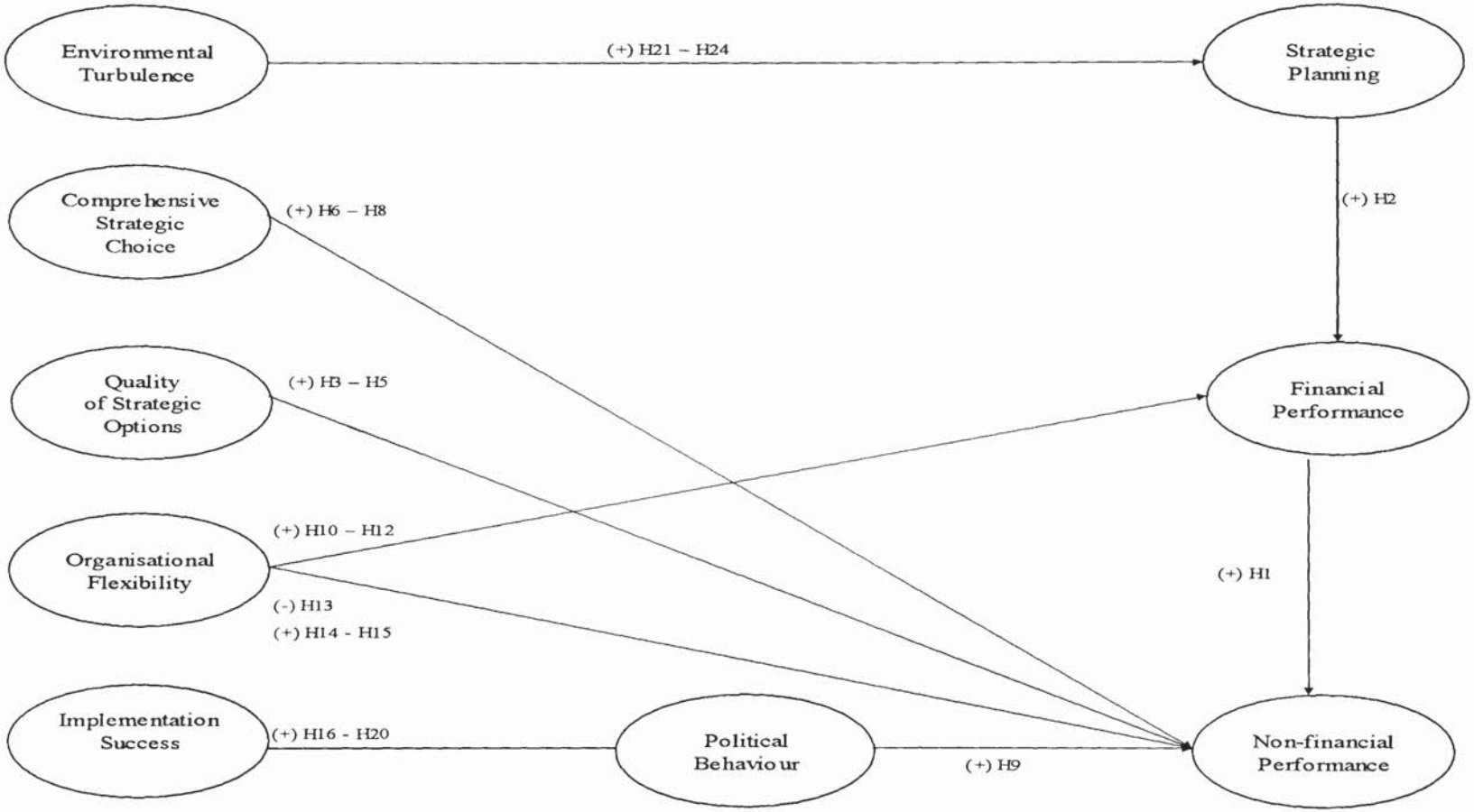
In line with the discussions presented above, an initial conceptual model to be empirically tested was specified, and is presented in figure 2.3 (overleaf). The hypothesised relationships between the constructs of interest have been developed through an extensive

[26] Cited here in section 2.4 as a five stage process of 1) mission / vision generation, 2) analysis, 3) strategy formulation and selection, 4) strategy implementation and 5) on-going control.

review of the literature and will not be discussed further within this chapter. It is acknowledged however, that evidence as to why the hypothesised relationships should be investigated within the framework presented is lacking, and is therefore discussed further in the next section.

In much of the more prescriptive strategy literature, a sequential relationship is argued between the constructs identified. For example, and to cite one of the references utilised earlier, Pearce and Robinson (2003) suggest that strategic choice, or more specifically the process of choosing between the strategic options presented through analysis, precedes strategy implementation. In order to reflect this standpoint most of the independent variables highlighted in the conceptual model presented, would be linked through other hypotheses to be tested. Why is this not specified within the conceptual model presented?

Figure 2.3: Hypothesised model to be tested



The constructs of interest remain un-associated within this context due to the previously cited empirical absences within the extant literature. More specifically, whilst much of the prescriptive and indeed some of the empirical evidence, suggests a temporal order to the independent variables of interest, they remain relatively untested within this context i.e. little, or in some cases no scale development evidence is available, for some of the independent variables of interest. As such, whilst the cumulative impact of these variables is of interest to the domain of research, the individual impact of the independent variables of interest on organisational performance is of primary importance. Moreover, without insight into the individual impact on organisational performance of the independent variables cited, then empirical study of the cumulative impact would lack depth and meaning.

The need for clarification of the relationships identified above is apparent from the literature examined. By developing knowledge about the component elements of the strategic planning process further, and additionally the factors impacting upon this process, domain level research may move forward to examine more fruitful areas. This is opposed to repeating similar empirical study time and time again. Further exploration of the issues cited is presented in the following chapter.

3. METHODOLOGY

The foundations of the conceptual model have been examined in previous chapters. This chapter provides a detailed examination of the design and application of a measuring instrument, in order to test the conceptual model in chapter two.

3.1. Introduction.

A number of approaches to the research process were examined (Lehman, Gupta and Steckel, 1997; Weiers, 1998; Aaker, Kumar and Day, 1998; Chisnall, 2001; Churchill, 2002). A number of similarities in the suggested approaches were identified for example, Churchill (2002) states that market research should follow six distinct steps quoted as 1) formulate the problem, 2) determine research design, 3) data collection method and forms, 3) design sample and collect data, 4) analyse and interpret the data and 5) prepare the research report. Alternatively Chisnall (2001) cites only five stages to a market research project, these being a) research brief, b) research proposal, c) data collection, d) data analysis and evaluation and e) preparation and presentation of research report. The differences in the approaches appear largely semantic, and indicate a high degree of similarity in the underlying processes described. For the purposes of this study, the approach suggested by Churchill (2002) will be utilised, and is re-stated here for convenience: 1) Formulate the problem, 2) Determine research design, 3) Data collection method and forms, 4) Design sample and collect data, 5) Analyse and interpret the data and 6) Prepare the research report.

Stage 1) has been completed within the critical literature review in chapter two. This chapter will confine itself to stages two, three and four as stages five and six are examined in subsequent chapters.

3.2. Research Design.

A research design is the "plan" (Cooper and Emory, 1995) or "blueprint" (Churchill, 2002) utilised by researchers, in collecting and analysing research data. The research literature cites three main classifications of research design 1) exploratory, 2) descriptive and 3) causal (Cooper and Emory, 1995; Chisnall, 2001; Churchill, 2002; Webb, 2002). These are discussed further in section 3.2.1.

3.2.1. Exploratory Research.

Exploratory research adopts a semi-structured approach, and is used to gain background information into the nature of the research problem, define and clarify terms, formulate hypotheses and establish research priorities. It is particularly applicable in the early stages of a research project (Saunders, Lewis and Thornhill, 2000; Churchill, 2002). Selitz, Wrightsman and Cook (1976) suggest that exploratory studies have five main purposes 1) formulating a problem for more precise investigation or for developing hypothesis, 2) establishing priorities, 3) gathering information about the practical problems of carrying out research on particular conjectural statements, 4) increasing the analysts familiarity with the problem and 5) clarifying concepts. The emphasis cited here, placing exploratory research firmly in the formative or preliminary stages of the research process. Described in the literature as the most flexible research design (Churchill, 2002; Webb, 2002), exploratory research consists of four types (Churchill, 2002) of exploratory study (Selltiz, Wrightsman and Cook, 1976); these are a) literature search, b) experience survey, c) focus groups and d) analysis of selected cases (Churchill, 2002). The techniques associated with conducting the exploratory analysis include secondary data analysis, experience surveys, case analysis, focus groups, in-depth interviews and projective techniques (Burns and Bush, 2001)

3.2.2. Descriptive Research.

Guided by an initial hypothesis or proposition, descriptive research seeks to identify the frequency of a particular occurrence, or the relationship between two variables (Chuchill, 2002). This is achieved by extracting a sample from a population, and estimating the behaviour of the population based on the results achieved. Descriptive research assumes a degree of knowledge about the phenomenon under investigation, possibly derived from exploratory research. In contrast to the exploratory research described in section 3.2.1, descriptive research is characterised as being very rigid, with a very clear specification and well-defined boundaries (Churchill, 2002; Webb, 2002). A descriptive research design is characterised by adopting either a longitudinal or a cross-sectional approach (Churchill, 2002). Cross-sectional research studies utilise samples that are considered representative of a wider population, with data being collected from the selected sample at one point in time only. Alternatively, longitudinal studies employ panel data and panel methods i.e. a fixed sample is taken from a given population and measured on a number of different occasions.

It is worthy of note that a limitation of descriptive research is that it does not explain causality between variables, only relationships (Webb, 2002).

3.2.3. Causal Research.

"A causal research design is concerned with identifying cause and effect relationships" (Churchill, 2002), in essence attempting to address the inherent weakness of causality identified in 3.2.2. Causal research attempts to identify the nature of the relationship under investigation, rather than concentrating on the identification of a hypothesised relationship per se. Typically an experimental approach is taken with causal research

designs (Churchill, 2002). This approach requires a high degree of control by the researcher, in order to be able to convincingly manipulate the dependent and independent variables, and measure if "X causes Y" (Burns and Bush, 2001; Churchill, 2002).

3.3. Summary of research design.

The three research designs highlighted above were presented as distinct sections in order to allow a clear overview. It is argued here that they should not be considered mutually exclusive. Indeed, the literature cites that "all research problems require their own special emphases and approaches, because every marketing research problem is unique in some way" (Churchill, 2002), thereby advocating a flexible and pragmatic approach in applying the prescribed formulas. Therefore, whilst primarily a descriptive approach was adopted, elements of an exploratory research design were utilised.

Justification for the adoption of the descriptive research design rests on the hypotheses developed in chapter 2. The research outcomes are therefore related to the frequencies of the specified occurrences, and also the relationships between the variables stated. As these are the focus of this dissertation, developed through a critical review of the extant literature, a descriptive approach is largely utilised.

Exploratory research, as defined in the literature (Churchill, 2002), is utilised as part of the descriptive process. The application of the exploratory techniques will be discussed further in the next section.

The question of causality, whilst not addressed specifically within the research design, has not been dismissed and is discussed further in the limitations section of chapter 7.

3.4. Longitudinal and cross-sectional data collection.

The literature defines cross-sectional research as "selecting different organisations, or units in different contexts, and investigating how other factors vary across these units at one point in time" (Easterby-Smith et al, 1999). Longitudinal research is defined as examining a panel of samples across a time period (Churchill, 2002). However the methodology adopted should be guided by the purposes of the research for which it is intended (Churchill, 2002). Issues of 1) measure development and 2) examining and predicting relationships across defined populations are addressed here.

Longitudinal research has received criticism in the literature due to its lack of "representativeness" (Chisnall, 1997; Churchill, 2002) hence a cross-sectional approach is favoured in order to avoid these criticisms. Additionally, a cross-sectional approach allows theory development, by sampling a representative number of the organisations for which the theory will be applicable. It is important to note that longitudinal research is not precluded here purely on the basis of the number of respondents that could be generated. However, in order to generate a sample size large enough to be considered representative, cost would become a significant and inhibitory factor, thereby precluding this approach (Churchill, 2002). An additional, but secondary, factor is the time period required. Within the confines of a PhD programme this may prove to be problematic.

Chapter 2 highlighted that the majority of studies previously undertaken within the strategic planning domain adopted a largely cross-sectional data collection approach, with subsequent justification, largely absent. Whilst alone, sufficient theoretical weight for the adoption of a cross-sectional methodology is absent, however combined with the

discussions above, a compelling argument for cross-sectional data gathering is presented. This was adopted for the purposes of this the study.

3.5. Method of administration.

A number of primary data collection methods are suggested by the market research literature including personal interview, telephone interviews, e-mail and web-based questionnaires and mail questionnaires (Weirs, 1988; Lehmann et al, 1988; Easterby-Smith et al, 1997; Churchill, 2002); all possessing benefits and drawbacks associated with their use. Rather than an in-depth debate of the large amount of literature available, a summary is provided in table 3.1 (overleaf). The individual elements are subsequently commented on, where necessary.

Table 3.1: Summary of data gathering techniques

Type	Advantages	Disadvantages
Face to face	1) Feedback-the interviewer can adjust questions 2) Rapport- building rapport with the respondent can gain confidence 3) Quality Control- Interviewers can select respondents more accurately and respondents are more likely to be truthful when responding face-to-face 4) Adaptability- Interviewer is able to adapt to respondent differences	1) Slower than other methods of administration. This depends on the sample required and the number of interviewers 2) Prone to human errors 3) May need a separate data-input step, to analyses data 4) Cost - more expensive method of administration compared to mail survey 5) Interviewer bias possible
Telephone	1) Useful when data is required quickly 2) Does not entail the costs of sending interviewers into the field 3) Can use respondents who are a relatively remote, where face-to-face interview may be impractical	1) Sample is limited to those people who have telephones 2) Interview is less personal 3) Not possible to show stimuli during the interview and therefore limits the number of techniques that can be used
Computer administered	1) Speed- faster than the human interview approach, translated into cost savings 2) Error-free interviews- zero interviewer errors e.g. fatigue 3) Use of pictures and graphics facilitates the use of a wide range of visual displays 4) Real-time capture of data-information is directly entered into a computer's data storage system to be instantaneously used for tabulation 5) Respondents may provide truthful answers to potentially sensitive topics when interacting with a "non-person".	1) Significant set-up costs 2) Privacy issues may deter respondents 3) Sample monitoring may be problematic, due to scale issues
Self administered	1) Eliminates interviewer costs 2) Respondents can answer questions at their leisure, and feel at ease	1) Completion is optional 2) False answers may be used deliberately 3) Response rates may be low and untimely 4) Respondents may respond in a socially desired way
Postal Surveys	1) Low cost method of administration 2) Facilitate the use of a wide geographical sample 3) Can be facilitated through the availability of very specific mailing lists	1) Response rates may be low 2) Format of the survey needs to be clear and pre-tested due to lack of personal contact 3) Involves self-selection bias, yielding an unrepresentative sample 4) Comparatively slow (compared to other methods)

Table adapted from, Dillman (1978), Webster (1996), Hooley, Saunders and Piercy (1998), Easterby-Smith, (1999), Saunders, Lewis and Thornhill (2000), Thietart (2001) and Burns and Bush (2001).

3.5.1. E-mail and web-based questionnaires.

In addition to the above, and often neglected in much of the literature, are e-mail and web-based questionnaires. Whilst cost effective, the web-based survey techniques have received criticism in the literature regarding the respondent profile (Forrest, 1999). It is suggested that a limited socio-economic grouping have access to the internet and hence the responses provided could be problematic depending on the information sought (Forrest, 1999). For the research presented in this thesis, a database of e-mail contacts for senior managers was examined, but found to be non-existent. Additionally it suggested that in hierarchical organisations, senior executives e-mails are filtered by secretaries impacting on non-response. Variance in this filtering behaviour could provide an unnecessary source of bias, and hence this approach was rejected.

3.5.2. Personal interviews.

Previously highlighted issues of travel costs and sample size (Weiers, 1988), presented negative factors in relation to this data gathering technique. Additionally the issue of the researcher also being the interviewer is problematic (Webster, 1996), as a degree of subjectivity associated with the ways in which the interviewer gathers and records the interview may exist (Weiers, 1988).

3.5.3. Telephone interviews.

Telephone interviews have been found to be problematic, with one empirical study finding that the probability of contacting the desired respondent was "less than one in

ten" (Kerin and Peterson, 1983). Database issues could be cited as a possible explanation of these findings, however a nevertheless disturbing result in absence of further information. A further negative factor regarding telephone interviews as a primary method of data collection is the large amount of data to be gathered. For example, Churchill (2002) highlights that telephone interviews are the least appropriate method of handling long questionnaires, with respondents becoming rapidly fatigued and disinterested.

3.5.4. Mailed questionnaires.

Mailed questionnaires overcome a number of the problems highlighted above. Cost is the most often cited reason for the adoption of mailed questionnaires as the preferred data gathering method (Weiers, 1988; Lehman et al, 1988; Churchill, 1991). While the issue of cost is secondary to more theoretical concerns, endorsement is found in Jobber (1989) who states that, "no other survey method can compete in terms of cost for reaching widely dispersed populations". Other advantages of the mailed questionnaire cited are based around three main areas, 1) the anonymity afforded to the respondent in terms of feedback on potentially sensitive internal issues (McDonagh and Rosenblum, 1965; Churchill, 1991), 2) the respondent is allowed to work at their own pace (Lehman et al, 1988) and also 3) the elimination of interviewer bias (Rosenthal, 1966; Lehman et al, 1988; Weiers, 1988; Churchill, 1991). These issues are particularly relevant as 1) strategic plans are likely to contain potentially sensitive material 2) the senior managers targeted, are unlikely view a research questionnaire as their main priority, and hence brevity and easy of completion could be key factors, 3) as the main researcher and also the author of the research, personal biases could be a problem within an interview situation.

3.5.5. Problems associated with mail questionnaires.

It would however be misleading to omit a discussion of the problems cited in the literature relating to the use of mailed questionnaires. Two main problems associated with the mailed questionnaires are low response rates and non-response bias (Schlegelmilch and Diamantopoulos, 1991; Jobber and O' Reilley, 1995; Diamantopoulos and Schlegelmilch, 1996; Aaker et al, 1998; Lehman, 1998; Churchill, 2002; Webb, 2002).

Whilst "little agreement" is cited, regarding techniques for increasing response rates in survey research (Churchill, 2002) meta-analytical reviews of the domain provide insight into a degree of consensus (Fox, Crask and Kim, 1988; Yammarino, Skinner and Childers, 1991). The reviews cited suggest techniques such as reply paid envelope, postcard follow up, incentives, personalisation of the covering letter and a promise of anonymity to the respondent.

Whilst examined further in section 3.10.1, non-response bias infers that non-responders to a survey differ in some way to respondents. The implication being that the results drawn from the survey are not representative of the targeted population. Intuitively, researchers initially employ a variety of the techniques cited above in order to increase response rates and therefore minimise non-response problems. However, techniques to estimate the direction and magnitude of non-response bias in mail surveys are available (Armstrong and Overton, 1977), and are applied to the data drawn from the administration of the main survey in section 3.10.2. In summary and to draw this section to a close, in order to address the research problem presented, the mailed questionnaire was identified as being the most effective and appropriate method.

3.6. Sample selection.

Sample selection is integral to the total research design (Chisnall, 1997), and contributes significantly to its integrity (Churchill, 2002). The market research literature was examined and broad agreement noted on an approach to sample design (Lehman, Gupta and Steckel, 1997; Chisnall, 1997; Weiers, 1998; Aaker, Kumar and Day, 1998; Churchill, 2002). The process of sample design will be examined under the following headings 1) population definition, 2) sampling procedure and 3) sample size, to be investigated later.

3.6.1. Population definition.

Churchill (2002) defines the research population as the totality of cases in the sample that conform to some previously specified design parameters. Hence, for the research problem presented, it is important to identify these more specifically.

Following the extensive literature review provided in chapter two, the design parameters that are relevant to sample selection, can be given as medium to large UK based organisations.[27] The importance of utilising a sample consisting of medium to large organisations is paramount, as small organisations have been demonstrated in previous research not to have significant resources to allocate to a separate planning function (Robinson and Pearce, 1984). Whilst this does not negate the concept of planning within small organisations (Lyles et al, 1993; Peel and Bridge, 1998; O'Regan and Ghobadian, 2002), the measures utilised may not be applicable within a small business context, and hence at this time, beyond the scope of this research. The previously highlighted studies investigating the relationship between strategic planning and company performance have,

[27] Medium to large organisations defined as firms with over 50 employees (DTI, 2003).

for the most part, utilised a mixed or representative sample of US based organisations from which to draw their sample. Hence, it is suggested here that significant scope exists for a UK specific study allowing an expansion of existing knowledge within the domain.

The sample profile utilised, was chosen to build on the knowledge base presented from previous research. An examination of strategic planning practices is central to this research presented. Hence the ability to survey organisations with sufficient funding to allocate to strategic planning is of paramount importance No evidence of a database relating specifically to the incidence (Churchill, 1995) of strategic planning in UK based organisations was available, and hence medium to large organisations were chosen in relation to the arguments presented above. Additionally, and as was noted in the critical literature review in chapter two, few of the studies examining the strategic planning / performance interface were from organisations outside the US. Hence this was seen to be important in the context of this study.

3.6.2. Sampling procedure.

A sampling frame is a list of elements from which the sample may be drawn including mailing lists, directory references and other large-scale organisational listing sources. Alternative methods for extracting the desired sample are cited in the literature, and can be divided broadly into two categories, 1) probability sampling and 2) non-probability sampling. Probability sampling occurs where every element in the population has an equal probability of selection (Aaker et al, 1998), whereas in non-probability sampling the probability of any particular member of the population being chosen is unknown (Zikmund, 1997). The selection of sampling units in non-probability sampling is

intuitively quite arbitrary, and hence no method is known for estimating random sampling error, and hence probability sampling was the preferred method.

The most widely used method of probability sampling is simple random sampling (Churchill, 1995; Zikmund, 1997; Aaker et al, 1998). Simple random sampling occurs when a completely random sample is drawn from a specified population for example, where organisations are drawn one by one, from a desired population hat. Bias may still exist however in the way in which, or indeed the order with which the population is placed in the hat.

Stratified sampling is another, and possibly more accurate (Churchill, 1995) option, that separates the chosen population into certain sub-groupings. The necessary sample is then taken from the given sub-groupings. In the sample of medium to large UK manufacturing organisations, the stratification occurred by the number of employees. Organisations with less than 50 employees were excluded as being small (DTI, 2003).

A stratified sample is considered to be more accurate than a simple random sample in the literature for the following reason. In a simple random sample, two sets of sample error have to be considered, first the error between the various strata in the population and secondly, the error within each stratum of the population. With the stratified sample, the variation between the strata is dealt with by the particular sub-groupings.

3.6.3. Respondent profile.

The respondents chosen for the questionnaire were senior managers with responsibility for strategic planning. Here, the term senior manager refers to board level positions or responsibility for example, Managing Directors, Chief Executives and other senior

managers. Senior managers were chosen as they have been previously cited as possessing a wider perspective and a greater insight into strategic matters (Snow and Hrebiniak, 1980; Pearce, Robbins and Robinson, 1987) than other managers or non-managerial employees. It is recognised that the use of a single organisational respondent in strategy research has received criticism in the literature (Bowman and Ambrosini, 1997) however, it is argued here that managerial "schemata" or "cognitive frameworks" (Day and Nedungadi, 1994) exist within specific organisational settings, that constrain, or "shape" (Day and Nedungadi, 1994) decisions. The reference here suggesting a specific paradigm or mindset acts as a guiding framework, within which organisational decisions are shaped. Hence in terms of perception and regardless of job title, a small degree of variance is implied between senior managerial perceptions of the strategic direction of an organisation.

3.6.4. Summary of chosen method of administration.

The following table presents a summary of the chosen methodology discussed in sections 3.1 to 3.6.3.

Table 3.2: Summary of method of administration

Approach	Method of Administration	Comments
Cross-sectional	*Mailed questionnaire*	Question types: Closed ended (Predominantly)
		Pre-test: Protocols and Pilot study
		Population: Medium and large UK based organisations
		Sampling procedure: Stratified

3.7. Operationalisation of constructs.

The following section examines the constructs to be measured, incorporating criticism of previously utilised measures, and details the development of measures for the factors identified in the proposed model in order to allow testing of the associated propositions.

Table 3.3 Information sought

• Environmental Turbulence o Market Turbulence o Competitive Turbulence o Technological Turbulence o Regulatory Turbulence
• Strategic Planning o Scope of activities
• Quality of Strategic Options o Suitability o Acceptability o Feasibility
• Comprehensive Strategic Choice o Quality o Consultation o Process
• Organisational Flexibility o Operational flexibility o Human Resource flexibility o Information Technology Flexibility o Structural Flexibility o Financial Flexibility

Table 3.3 continued

• Political Behaviour o Scale of political impact
• Performance o Financial Performance o Non-financial performance
• Implementation success o Communication o Leadership Involvement o On-going Control o Structural issues o Resource allocation

Three of the constructs highlighted in table 3.3 require multiple indicators to be developed, as no satisfactory measures were identified in the literature. For ease of reference the constructs under discussion are 1) organisational flexibility, 2) selection of strategic options and 3) comprehensive strategic choice.

In order to develop satisfactory measures of these constructs, the following procedure was followed, and was adapted from Spector (1992), Churchill (2002) and DeVellis (2003). 1) Specify the domain of the construct, 2) generate a sample of items (an item pool), 3) have the item pool reviewed by experts, 4) collect data, 5) purify the measure and 6) assess validity of the measure.

Whilst all of the steps recommended by the cited literature have been included here, only steps 1 to 3 are dealt with in the following section, as the subsequent steps are examined within chapter 4 examining measure development. The domain of the constructs under

investigation had largely been established in the critical literature review in chapter 2, and hence clarity at this stage was not of significant concern.

Within the item pool generation process, Churchill (2002) suggests that the primary source should be the existing academic literature and indeed this was largely the method utilised here. Additionally, Spector (1992) suggests that measure development is best undertaken on a sample of respondents that is "as representative as possible of the ultimate population for which the scale is intended". In line with the recommendations cited, a number of interviews were conducted with senior managers involved within the strategic planning processes of their respective businesses. From the literature reviewed, and also the interviews conducted, a number of items were generated for further development.

Factors such as item redundancy avoidance of exceptionally lengthy items, avoidance of incongruous words or jargon, number of items generated and positively and negatively worded items were all considered, and their relevance examined, in developing the item pools (Churchill, 2002; DeVellis, 2003).

Following the initial item pools development described above, a further review was conducted by experts (DeVellis, 2003), in order to assess the items for face or construct validity as well as more pragmatic factors such as spelling and grammar. This stage provides a valuable early examination of the item pools, and provided the opportunity to refine any obviously erroneous items prior to incurring any further data gathering costs (Spector, 1992; DeVeillis, 2003).

Four academic experts were chosen for the aforementioned review, and presented with the original list of items generated by the qualitative interviews. They were then asked to indicate which of the items listed, in their opinion, was related to which construct. An example of the forms utilised in this process is provided in appendix 3.1. Definitions of the constructs under investigation were provided to the academic experts prior to the commencement of the exercise.

On completion a simple counting process highlighted how well, or how badly the items had been assessed as being representative of the construct under investigation. Table 3.4 below summarises the item development process.

Table 3.4: Summary of item pool development

Construct	Dimensions	No. of items following qualitative interviews	No. of items following expert analysis
Organisational flexibility	Operational	10	4
	Technological	9	4
	Human Resources	9	4
	Structural	12	4
	Financially	5	3
Quality of strategic options	Suitability	15	7
	Feasibility	8	4
	Acceptability	11	5
Comprehensive strategic choice	Quality of inputs	9	3
	Consultation	8	4
	Process	12	5

The measures described in the following sections did not require formal measure development procedures as well tested, and previously developed measures were

available in the literature. Despite this, during the pre-testing phase of the research process, the previously utilised scales were discussed with reference to the applicability, wording and meaning of the items involved. This was undertaken in order to ensure that the previously utilised measures were appropriate for use within the context cited here[28].

3.7.1. Environmental Turbulence.

Environmental turbulence was measured by a 15-item scale. The scale consisted of four dimensions, 1) market turbulence (3 items), 2) competitive turbulence (3 items), 3) technological turbulence (3 items) and 4) regulatory turbulence (6 items), and was an adapted scale from Jaworski and Kohli (1993) and Dwyer and Welsh (1995), previously administered by Cadogan, Diamantopoulos and Siguaw (2002). Generally positive results had previously been obtained from this measure, and hence confidence in its use was high.

3.7.2. Strategic Planning.

Strategic planning was measured by a previously empirically validated measure (Boyd and Reuning-Elliot, 1998). The 7-item measure originally proposed as being indicative of the process of strategic planning (Boyd and Reuning-Elliot, 1998), was expanded to an 11 item measure following comments from the protocols undertaken[29]. Generally positive results have been cited for this measure, and hence once again confidence in its use was high.

[28] Discussed further in section 3.9.1
[29] Summarised in appendix 3.2.

3.7.3. Organisational Performance.

Performance was measured utilising two dimensions, 1) financial and 2) non-financial performance. Financial performance was measured by a sale adapted from Cadogan, Diamantopoulos and Siguaw (2002). Non-financial performance was adapted from measures proposed by Thomas (1998) and Meschi and Metais (1998). Both financial and non-financial measures reported significant and empirically reliable results and hence confidence in their inclusion was high. The scale was adapted to control for industry effects by asking respondents to rate their performance relative to their nearest competitor, on a much worse to much better 5-point Likert scale.

3.7.4. Political Behaviour.

Political behaviour was measured by adapting an empirically tested and validated measure (Dean and Sharfman, 1996). The adaptations made were in line with recommendations from the protocols discussed in section 3.9.1, and were designed to increase the clarity and thereby the response rate (Churchill, 2002) to the administered questionnaire.

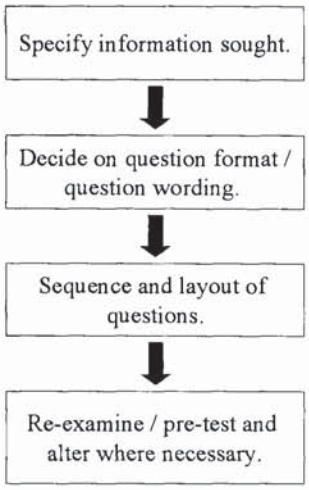
3.7.5. Implementation success.

Effective implementation was measured by adapting an empirically tested and validated measure (Noble and Mokwa, 1999). The adaptations made were in line with recommendations made during the expert analysis phase, and also by the protocols undertaken. The adaptations made were designed to increase the response rate of the questionnaire, and to add clarity to the response form (Churchill, 2002).

3.8. Questionnaire design.

The approach to questionnaire design detailed below is a synthesis of a number of methodological texts, which cite a number of steps to be taken in designing a questionnaire (Zikmund, 1997; Aaker et al, 1998; Churchill, 2002).

Figure 3.1: Questionnaire design process



Adapted from (Zikmund, 1997; Aaker et al, 1998; Churchill, 2002)

The above steps are provided as a guide or checklist (Churchill, 1991) or as rules of thumb (Aaker et al, 1998), as all research projects will require some interaction between the steps highlighted above and the individual circumstances involved.

3.8.1. Question format and wording.

Question types

There are three types of question that may be utilised in questionnaire research 1) open – ended and closed-ended, 2) multiple choice and 3) dichotomous (Chisnall, 1997; Lehman, Gupta and Steckel, 1997; Weiers, 1998; Aaker, Kumar and Day, 1998;

Churchill, 2002). The question types listed all have advantages and disadvantages that are briefly discussed here in relation to the research problem.

Open-ended questions

Open-ended response questions are those that pose a question, and ask the respondent to answer in their own words, essentially allowing the respondent to free-answer (Zikmund, 1997). Advantages and disadvantages are cited in the literature, with regard to the particular research issue. For example, open–ended response questions can provide a large range of responses incorporating very different perspectives of the same question. Whilst providing an interesting range of data, this can be counter-productive as the data will intrinsically be extremely hard to classify. Additionally open-ended questions place great emphasis on the ability of the respondent to articulate their perspective on the question posed, allowing also for a large degree of personal bias from the respondent. This was thought to be particularly relevant in relation to the research problem identified here and even more so when considering the chosen method of administration. An open-ended approach may generate a large amount of unclassifiable data and additionally, the data generated could not be analysed in a systematic fashion hence leaving it largely useless.

Closed-answer (or close-ended)

Closed-ended questions require the respondents to make a choice from either a range of answers, or alternatively from a given rating scale. Such questions may be easier to answer by the respondent (Aaker et al, 1998), as only a limited choice is available and little interpretation should be required, problems however are cited in the literature. One disadvantage of closed response questions is that a response will be received to a

particular question, no matter how irrelevant the question is in that particular context (Bishop, Tuchfarber and Oldendick, 1986). Hence, if a large number of categories are included in the closed-response question, all the categories will receive a certain percentage of responses (Malhotra and Birks, 2000), regardless of relevance.

Mixed question types

Much of the literature suggests that the choice between closed-response and open-ended questions is not necessarily an either / or choice (Churchill, 1995; Chisnall, 1997; Weiers, 1998). Indeed, open-ended questions may be used to supplement closed-response questions, a common utilisation of this technique being the opportunity for respondents who have not chosen any of the options provided to expand on their answer (Aaker et al, 1998). As highlighted previously however, the use of open-ended questions should be restricted in order to allow the classification of returned data. A large number of open-ended responses in this context could prove to be problematic and also time consuming within the analysis phase of the research process.

3.8.2. Comment on response form.

The response formats utilised in the questionnaire were chosen for a number of reasons that have been previously outlined, but will be reinforced here for clarity. Closed-ended (Churchill, 1991; Zikmund, 1997) questions were selected to minimise the amount of time required by the respondent to answer, and reduce respondent fatigue (Chisnall, 1997). This was regarded as the most appropriate method in relation to the size of the questionnaire and also the time constraints of respondents. A positive impact on overall response rate was anticipated. Additionally, closed responses would allow a relatively

efficient collation of the data gathered, due to the removal of semantic problems in interpretation of large amounts of open-ended responses.

The Likert scale (Likert, 1932) is quoted in the normative marketing research literature as being the "most frequently used" scale (Cooper and Emory, 1996). As highlighted in chapter two, the majority of the studies examining the relationship between strategic planning and company performance utilised this approach (Kallman and Shapiro, 1974; Cavusgil and Zou, 1994; Hopkins and Hopkins, 1997; Peel and Bridge, 1998; Claycomb et al, 2000). Whilst not the deciding factor, this precedent was important in relation to the criticisms levelled at previous empirical work in this domain (Boyd, 1991; Greenley, 1994; Greenley, 1996). Hence the Likert scale was deemed the most applicable and appropriate measurement technique due not only to the simplicity involved for the respondent, but also the analytical rigour that can be applied to the resultant data.

The use of largely closed-ended question based on a Likert scale format was utilised to gather the data required. Some open-ended questions were utilised for descriptive data, however due to the number of constructs under investigation and the necessity to decrease the levels of perceived complexity for the respondent, closed-ended questions were predominantly used.

3.8.3. Sequence and layout of questions.

Churchill (1999) suggests that the order in which the questions are presented is crucial to the success of the particular survey. The literature suggests that whilst there is no one perfect layout (Webb, 2002), there are general guidelines that should be considered (Webb, 2002; Churchill, 2002). These guidelines can be summarised thus, 1) use simple /

interesting relevant opening questions, 2) use a funnel approach i.e. start with broad questions first gradually narrowing the focus, 3) classification information last and 4) difficult or sensitive questions, such as performance data, should be placed towards the end of the questionnaire. Prior to mailing the final version of the questionnaire to the respondents, these recommendations were incorporated into the sequencing of the questions.

3.9. Pre-testing the questionnaire.

The questionnaire pre-test is regarded as vital in the research literature (Reynolds, Diamantopoulos and Schlegelmilch, 1993; Reynolds and Diamantopoulos, 1996; Chisnall, 1997; Churchill, 2002). Pre-testing is cited as possessing two main practical aims 1) to assess how well the phraseology, layout and wording of the questionnaire is dealt with, and understood by respondents, and 2) to provide an estimation of the response rate for the final questionnaire.

Two pre-tests are recommended in the literature (Churchill, 2002), the first being a personal interview or "protocols" (Diamantopoulos, Reynolds and Schlegelmilch, 1994). The second pre-test should be a replication as far as possible, of the final full-scale study (Churchill, 2002). This two-stage process was adopted for the research project outlined here, as it appeared to provide the most comprehensive assessment technique available.

3.9.1. Stage 1 pre-test: Protocols.

Protocols (Diamantopoulos, Reynolds, Schlegelmilch, 1994; Webb, 2002) are similar to an interview, however the researcher takes a more passive role and simply notes the comments made by the respondent as the pre-test questionnaire is completed. Problems

with questionnaire wording, sequence, layout and size can be clearly highlighted. It is important to highlight problems in these areas at an early stage, as previous research has indicated that response rates can be increased through clarity of format and wording Albaum et al, (1998).

The framework for conducting the protocols was adapted from Webb, (2002) and focussed on establishing the following, 1) the question meaning was clear, 2) the questions were viewed as being relatively easy to answer, 3) the questions appeared to flow logically from one to another, 4) any instructions appeared clear, 5) the questionnaire length was appropriate and 5) the questionnaire engaged the respondent.

Four protocols were undertaken[30], and the questionnaire adjusted in line with these. Where one respondent expressed a viewpoint in conflict with the majority of others, a majority view was taken following consultation with an academic third party.

3.9.2. Stage 2 pre-test: Mail survey.

Changes were made to the initial questionnaire following the protocol feedback, and subsequently a mail based survey was administered to a sample of 400 senior managers in order to highlight any previously undetected issues. The pre-test sample of 400 senior managers was drawn from a geographically random Dunn and Bradstreet database of senior UK managers[31].

[30] A summary of comments from the protocol interviews are available in appendix 3.2.
[31] The title "Senior UK Managers" is used here as a generic term. Also contained within the data are other job titles such as Director, Managing Director and Chief Executive. This was previously specified and agreed with the data provider which in this case was Dunn and Bradstreet.

A covering letter was despatched with the pre-test questionnaire. The letter emphasised the importance of the research, not only to the researcher involved but also to the potential respondent. Anonymity was assured, and an invitation to receive a free copy of a summary of the results obtained was made. All letters were addressed personally to the respondent, and included a return paid envelope. In addition, the following sentence was added to the letter "if there is a more appropriate member of your senior management team who is perhaps closer to your strategic planning process, then I would be most grateful if you could pass it on to them". By inserting this sentence it was hoped that response rates could be increased, as rather than disposing of the questionnaire another senior manager respondent would respond.

3.9.3. Response analysis of pre-test questionnaire.

Of the 500 questionnaires sent out 55, useable responses were received over a four week period[32], providing an initial estimate of the response rate at 11%. In line with established practice (Churchill, 2002), this initial estimate was recalculated to incorporate what the postal service refer to as "gone away" or "no longer at this address" of which there were 26. Following these adjustments the response rate increased to 12%. Three main elements emerged for further consideration from the pre-test questionnaire, 1) the number of inaccurate contacts provided in the initial Dunn and Bradstreet database and 2) the response rate achieved and 3) analysis and comment on the pre-test data. Elements one and two are discussed in brief below, however the comments received are separately discussed in section 3.9.4.

[32] Appendix 3.4 presents a graph of the resulting responses received over time.

1) Data Issues: The number of inaccurate contacts provided by Dunn and Bradstreet was a source of concern, representing 6.5% of the total pre-test sample provided. This concern was communicated to the data providers who committed to ensure that their most recent data was made available for the main survey. 2) Pre-test response rate: The response rate achieved was in line with previous analysis, and within the range of acceptable limits given the subject matter of the survey. Based on these findings, it was anticipated that a response rate of 15% to 20% would be acceptable for the main survey.

3.9.4. Comments from respondents.

From the comments provided by the pre-test respondents, the questionnaire exhibited face validity (DeVellis, 2003). Despite the criticisms levelled at face validity as a measure (Idler and Benyamini, 1997; DeVellis, 2003), the comments received from the pre-test respondents provided support for the questionnaires layout and degree of difficulty. A small sample of these are summarised in table 3.5 below.

Table 3.5: Summary of comments made from pre-test respondents

Comment made	Date received
The questionnaire contains some good thought provoking questions	10/09
Good overview of organisational issues	15/09
The questionnaire challenges some basic assumptions about what we feel as "actually" going on in our organisations as new thoughts and strategies are introduced.	17/09
It's good to see a questionnaire of this sort written in comprehensible language.	18/09
A cleverly worded series of questions	25/09

No major changes were necessary as a result of the analysis undertaken. Due to the relatively small sample size, the statistical outputs generated from the exploratory analysis were used as indicators of changes required as opposed to absolute deciding factors. A summary of the findings and resultant changes is presented in appendix 3.3.

3.10. Main data collection procedure.

A sample of the final and modified questionnaire is presented in appendix 3.6.

3.10.1. Sample frame selection and administration.

A number of factors are cited in the literature as providing an influence on sample size determination (Hair et al, 1998; Webb, 2002; Churchill, 2002). A combination of the factors highlighted in the literature are utilised here.

The type of analysis to be undertaken is one factor in estimating sample size (Hair et al, 1998; Churchill, 2002). Hair et al (1998) suggests that in terms of the number of respondents required, there should be a minimum ratio of 5 times the number of parameters to be estimated, with a ratio of 10 times the number of parameters being more appropriate. For the items utilised in the main survey, this would require a sample of no less than 100 and ideally 200 or greater.

Judgement is another method cited (Webb, 2002), and indicators from previous empirical work in the domain were examined. From the literature review presented in chapter 2, it was found that a wide range of sample sizes have been previously utilised, the smallest sample size being 20 firms (Burt, 1978) and the largest 1333 firms (Fulmer and Rue,

1974). As previously highlighted, little explanation of the sample size chosen is available in the empirical studies examined, and hence this data is used here only to assist in estimation.

A further consideration relating to the issue of sample size is that of expected response rate. A brief discussion of the literature relating to response rates and non-response bias in survey research can be found in the following section. However, a review of the empirical evidence within the domain provides the following results. Kallman and Shapiro (1978) attained a 56% response rate, Kudla (1980) 62 %, Bracker et al (1988) 45%, Ackelsberg and Arlow (1985) 18% and Rhyne (1981) 42%. Where cited, a variety of methods were utilised in an attempt to increase response rates, however the average of the above appears intuitively high at approximately 45%. Pooled response was considered however the longitudinal nature of the data collection procedure was deemed to outweigh any benefits regarding sample size and variance.

The expected response rate for the main survey was estimated at between 11% and 25%, based on the above empirical evidence, and also the pre-test results. 11% was taken as a worst-case scenario given that since the initial development work, the questionnaire was considered to have improved, and additional steps would be taken in order to increase the response rate further. Taking into account the above information a sample size of 1800 was estimated. On this basis Dunn and Bradstreet were once again approached for a data file of senior UK managers, providing 2290 records in total. In order to account for any random error the entire file was utilised. The administration method of the main survey was largely identical to the pre-test however additional steps were taken in relation to improving the overall response rate.

3.10.2. Improving response rate.

Often cited as one of the best methods for decreasing non-response error (Churchill, 2002), a significant amount of empirical cause and effect guidance is available on increasing mail survey response rates. Many of these are summarised in Fox, Crask and Kim (1988), Jobber and O'Reilly (1995), Diamantopoulos and Schlegelmilch (1996) and Churchill (2002). An overview of these methods is provided in table 3.6 below.

Table 3.6: Summary of techniques for improving response rates in mail surveys

Method Cited	Incorporated into main survey *
Preliminary notification e.g. postcard or advance letter	
Follow-ups, and/or repeated contacts	*
Sponsorship e.g. company, trade association, university	*
Appeals e.g. help, altruism, social unity	*
Provision of reply paid envelope	*
Return postage paid	*
Personalisation i.e. to the addressee	*
Monetary incentive	
Non-monetary incentives e.g. summary of the results of the survey	*
Promise of anonymity	*
Questionnaire shorter than 4 pages	
Personally signed cover letter	*
Specification of deadline for returning	*

Debate exists over which method is more or less effective (Churchill, 2002). However the benefits of employing a specific technique, must out-weight the cost, both in terms of time and expense, of employing it (Jobber and O'Reilly, 1995).

Of the methods identified in table 3.6, all were utilised other than pre-notification and the fact that the questionnaire was longer than 4 pages long. It was felt that trying to restrict the questionnaire to 4 pages or less, would compromise both the aesthetic appeal, and also potentially the scope of the research. This was ruled out for this reason. Pre-notification was initially appealing, however funding issues precluded both a pre-

notification mailing and a follow-up mailing. Hence, a follow-up mailing was chosen, as any invalid contacts could be flagged at an early stage through the post office, and excluded from the follow-up mailing hence increasing its effectiveness.

A sample of the follow-up mailing is available in appendix 3.7. The follow up mailing was designed to once again satisfy the recommendations made in table 3.6 however, humour was chosen as an additional attempt to differentiate the research, and to provoke an emotional and positive response. This was mailed two weeks after the initial mailing. Interestingly, an increase in the number of questionnaires returned can be seen on the returns graph presented in figure 3.3, on day 16 after the initial mailing occurred; two days after the follow-up was mailed out.

A copy of the covering letter is presented in appendix 3.5, evidence of personalisation, sponsorship, appeals, monetary and non-monetary incentives, promise of anonymity and specification of the deadline for returns are available, and have been highlighted for ease of reference.

3.10.3. Response Rate.

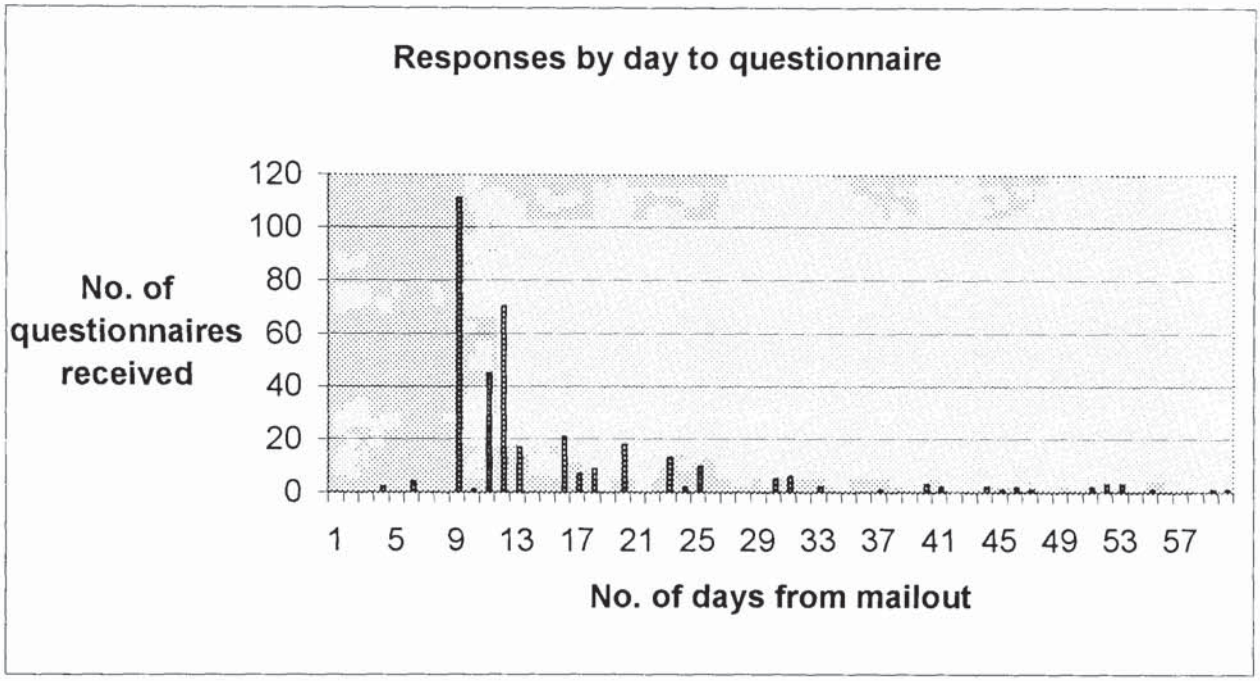
A total of 512 responses were received from the mail-out. The responses received exhibited the characteristics highlighted in table 3.7.

Table 3.7: Response profile to main survey

Type	**No.**	**Percentage**
Useable responses	366	16%
Partially completed	110	4.5%
Refusals / Blank / Spoilt	36	1.5%
Total	**512**	**22%**

The overall response rate for the survey was 16%, which appeared to be within expected limits given the evidence described in section 3.10.1. Figure 3.3 below presents the number of responses received over time.

Figure 3.3: Main survey: No. of questionnaire responses over time



3.10.4. Estimating non-response error.

Non-response error or non-response bias (Churchill, 1999) occurs when a study "fails to obtain information from some elements of the population that were selected and designated for the sample" (Churchill, 2002 p528). The underlying issue being the un-captured differences between non-respondents and respondents, and hence the confidence with which generalisations can be made about the general population (Churchill, 2002). A number of techniques are suggested in the literature for identifying the degree of non-response bias in mail surveys (Armstrong and Overton, 1977; Aaker and Day, 1990; Churchill, 2002). Armstrong and Overton (1977) suggest that late respondents in mail

surveys have more in common with non-respondents. Hence, by comparing early and late respondents to a mail survey an estimation of the degree of non-response bias present can be made. This technique is cited as extrapolation (Armstrong and Overton, 1977). Absent in the literature is any reference as to what the classification criteria are for a late and early respondent are. Guidelines are available in the literature (Armstrong and Overton, 1977; Webb, 2002; Churchill, 2002), and a sample of 150 early respondents, and 150 late respondents was drawn from the data sample and tested against the key variables from the questionnaire (Churchill, 2002). The results are summarised in table 3.8 below.

Table 3.8: Summary of non-response bias test

	Mean value	Mean value	
Variable	Early Respondents	Late Respondents	Significance of t*
Environment	2.88	3.18	0.433
Planning	4.03	4.02	0.893
Options	3.62	3.76	0.131
Choice	3.57	3.80	0.122
Flexibility	3.30	3.49	0.412
Politics	2.95	3.25	0.394
Performance	3.30	3.46	0.122
Implementation	3.51	3.61	0.377
Organisation size	4.7	4.3	0.413
Organisation type	4.4	3.8	0.171

* 2-tailed significance (0.05)

No significant difference was found in any of the key variables at 5% level of significance. Additionally both organisational size and type yielded no problematic results.

3.10.5. Summary of methodology.

This chapter provided details of the methodology applied to the research problem. A measuring instrument, in the form of a self-report questionnaire, was designed and

administered to a sample of senior managers in UK manufacturing organisations. The instrument design was based on established research practices, and thorough pre-testing. The mail survey was sent to 2290 senior managers and generated a usable response rate of 16% that represented an absolute figure of 366. Response error between early and late respondents was tested for, with no significant differences occurring at the 95% level. Hence no evidence of response bias was identified in the responses received. Table 3.9 below summarises the measures used to capture the constructs of interest.

Table 3.9: Table of operationalisation of constructs utilised.

Constructs	Scales	Sources / comments
Environmental Turbulence	15-item Likert type scale	Adapted from Jaworski and Kohli (1993) and Dwyer and Welsh (1995)
Comprehensive Strategic Planning	11-item Likert type scale	Adapted from Boyd & Reuning Elliot (1998)
Quality of Strategic Options	16-item Likert type scale	Newly developed measure. For conceptual discussion see chapter two, section 2.8 onwards. For statistical development see chapter five, section 5.2.3.
Comprehensive Strategic Choice	12-item Likert type scale	Newly developed measure. For conceptual discussion see chapter two, section 2.9 onwards. For statistical development see chapter five, section 5.2.2.
Organisational Flexibility	19-item Likert-type scale	Newly developed measure. For conceptual discussion see chapter two, section 2.9.9 onwards. For statistical development see chapter five, section 5.2.1.
Organisational Performance	8-item Likert type scale	Financial Performance adapted from Cadogan, Diamantopoulos and Siguaw (2002) Non-financial performance adapted from Thomas (1998) and Meschi and Metais (1998).
Political Behaviour	6-item Likert type scale	Adapted from Dean & Sharfman (1996)
Implementation Success	20-item Likert type scale	Adapted from Noble and Mokwa (1999)

The 366 useable responses were deemed suitable for further analysis. This is detailed in the following chapters.

4. DESCRIPTIVE ANALYSIS

4.1. Introduction.

The previous chapter described the methodology employed in gathering data to address the hypotheses stated in Chapter two. The scales utilised in capturing data for the constructs of interest were of essentially of two types 1) previously utilised and empirically tested scales and 2) newly developed scales to reflect empirically unexplored factors.

This chapter will confine itself to a descriptive examination of the data, dividing broadly into two main sections. The first section will provide a brief outline of the respondent organisation industry type and size of organisation. The second section will present a detailed and rigorous examination of the previously developed measures that were utilised in order to capture data on 1) Environmental Turbulence, 2) Comprehensive Strategic Planning, 3) Organisational Performance, 4) Political Behaviour and 5) Implementation Success.

"Multivariate techniques demand much from the data they are to analyse" (Hair et al, 1998), and as such have to meet rigorous criteria in order to be acceptable for use within this context (Sharma, 1996). This chapter concentrates on this premise, and through both exploratory and confirmatory factor analysis, assesses the suitability the data collected for structural equation modelling[33].

[33] Justification of the use of structural equation modelling, and more specifically latent variable path analysis in this context, is presented in chapter seven

4.2. Respondent analysis.

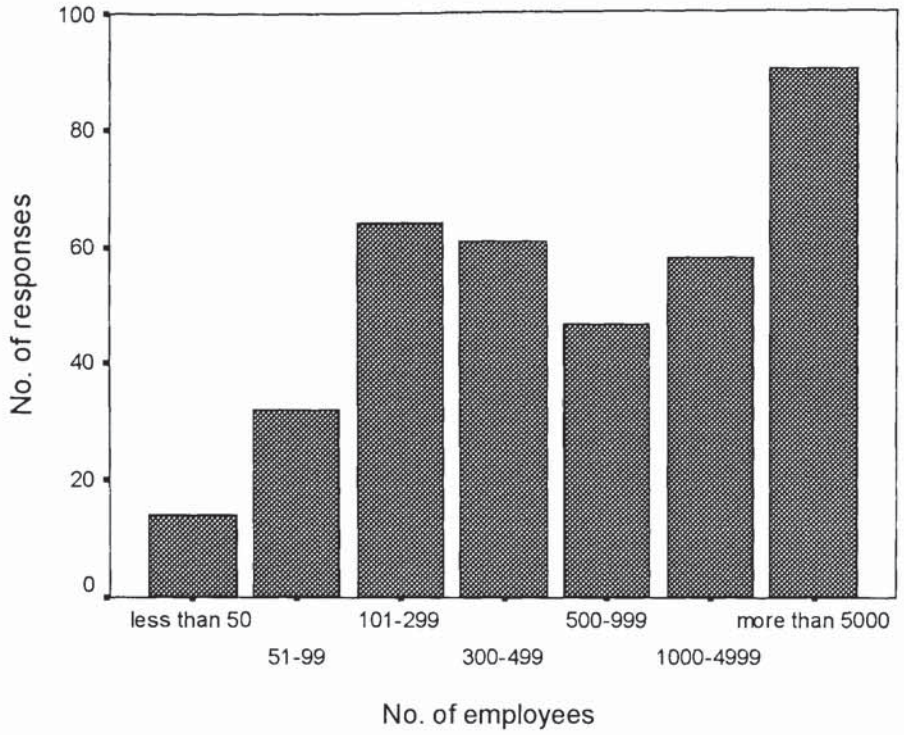
Data was collected on two elements of respondent profile 1) company size and 2) type of business. Company size was assessed by number of employees, with business type being indicated against a number of widely used industry codes. The opportunity to collect further respondent data was present, however at ten pages the questionnaire was considered to have reached a critical size, where inclusion of more questions may have impacted on the overall response rate[34]. Following consultation with both academic and practitioner experts, it was decided to limit the demographic profiling section, as opposed to compromise the theoretical scope of the questionnaire.

4.2.1. Profile of respondent organisation size.

Figure 4.1 presents the distribution of organisation size against number of responses received. No missing values were provided for this question, and hence no substitution of data was required. Whilst compromise was made in terms of the amount of demographic data collected, little concern in terms of an unrepresentative sample was raised from analysis of this data coupled with the non-response analysis conducted in the previous chapter[35].

[34] See discussion on response rates presented in section 3.10.2 of chapter three.
[35] The data obtained in the "less than fifty employees" category was omitted from the survey. This was due to data provider error.

Figure 4.1: Response by business size

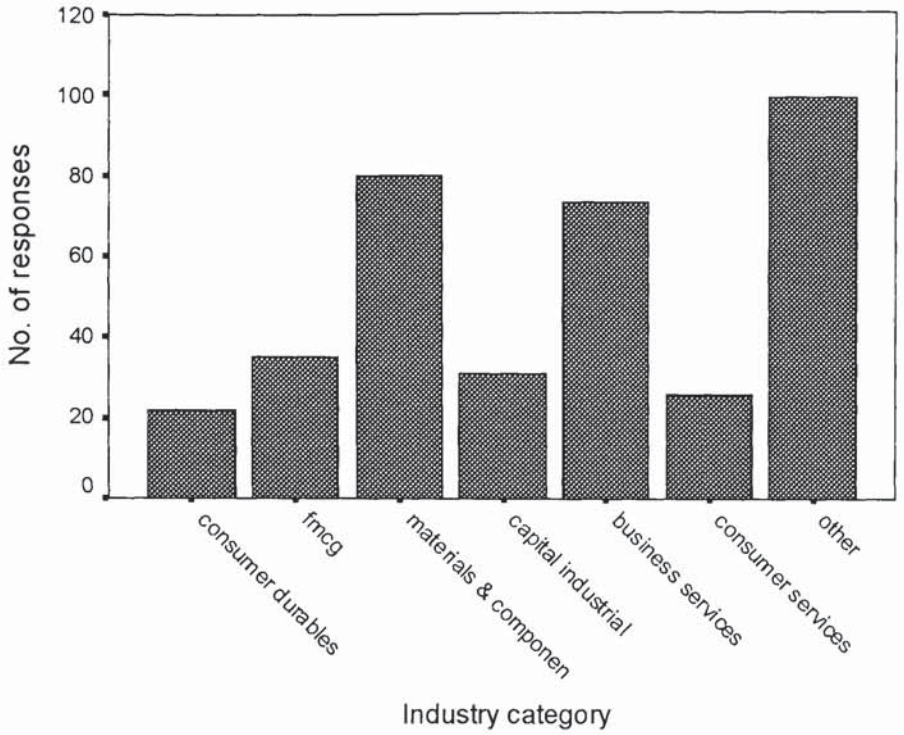


4.2.2. Profile of Respondent Business Type.

Figure 4.2 presents the cumulative distribution of industry type for the respondents to the survey. Category sizes ranged from 3.6% for Heavy Industrial to 27.6% for "other".

The categories representing nearly 75% of all responses were a) Component Manufacturers at 21.9 % and b) Business Services at 19.9% and "Other" including responses such as "consultancy" and "tool making" at 27%. The latter, relatively high figure could be related to misinterpretation of the category headings by the respondents leading to the "Other" category being chosen for ease as opposed to applicability. This is demonstrated in the "consultancy" response above, as intuitively this should be classed as "Business Services".

Figure 4.2: Responses for Business Type



4.3. Assessment of previously developed scales.

A number of approaches are suggested in the literature for assessing multi-item scales. Hair et al (1998) suggests a four stage approach as follows, 1) confirm that the scale conforms to its conceptual definition, 2) is uni-dimensional, 3) meets the necessary levels of reliability and 4) is valid.

Stages two to four will be adopted here, as stage one is applicable to the development of new multi-item measures, as opposed to the testing of previously developed scales. The concepts of interest are firstly introduced, and subsequently applied to the appropriate data.

4.3.1. Dimensionality.

It has been cited in the literature that one of the most important issues in scale development is that of unidimensionality (c.f. Hattie, 1985; Gerbing and Anderson, 1988). Essentially, the researcher must make an assessment as to whether the scale items are strongly associated with each other and represent a single concept, or not (c.f. Hair et al, 1998). Unidimensionality is however only one measure of scale validity, in that a lack of unidimensionality provides evidence of a lack of validity, but acceptable unidimensionality does not assure the researcher of a measure's validity (Peter, 1981).

4.3.2. Validity.

Validity is a measure of whether a multi-item scale, actually measures what it purports to (c.f. Churchill, 1979). As well as the issue of unidimensionality discussed above, three other types of validity are cited in the literature, 1) nomological, 2) convergent and 3) discriminant. Nomological validity assesses how well a scale predicts other concepts in theoretically based models (c.f. Hair et al, 1998). As the previously developed scales under investigation had been subject to rigorous development and testing in the literature, nomological validity was largely assumed. Convergent validity assesses the degree that two measures of the same concept are correlated (Hair at al, 1998), and discriminant validity assesses how similar two conceptually similar concepts are distinct. Both discriminant and convergent validity were assessed through confirmatory factor analysis[36] (CFA), discussed within the data analysis sections to follow. However in addition to this the following correlations are presented and discussed.

[36] It is recognised that both principal components analysis (PCA) and factor analysis are different processes, but are generally labelled as data-reduction techniques (Sharma, 1996). In PCA the primary objective is to reduce the amount of variance in the data. In factor analysis the objectives is primarily to identify the underlying factors, or latent constructs that can explain correlations amongst variables. The latter was thought to best match the objectives of the research.

Table 4.1: Correlation Matrix between the constructs of interest

	Construct	1	2	3	4	5	6	7	8
1	Politics	1.000							
2	Planning	0.368**	1.000						
3	Environ.	-0.005	0.248**	1.000					
4	Options	0.402**	0.491**	0.121*	1.000				
5	Choice	0.401**	0.468**	0.171**	0.386**	1.000			
6	Flexibility	0.304**	0.152**	-0.019	0.289**	0.036	1.000		
7	Performance	0.243**	.0228**	-0.031	0.265**	0.127*	0.482**	1.000	
8	Implemen.	0.596**	0.429**	0.000	0.454**	0.404**	0.423**	0.384**	1.000

Few of the constructs appear to be significantly correlated at the 10% level, however many demonstrate significant correlations at the 5% level. Whilst encouraging, in terms of the degree of insight available into the specified domain, pragmatism is important in when inspecting the results obtained from any correlation matrix (Diamantopoulos, 2000). The warning inferred within the reference above, highlights firstly the need for the researcher to be initially focussed on the research question at hand, and not to be drawn by interesting and possibly unspecified correlations. Secondly, "if you compute a large enough number of correlation coefficients some relationships will turn out to be significant by pure chance" (Diamantopoulos, 2000). Additionally, and further referred to in chapter four, section 4.4., it appears intuitively and conceptually inadequate to treat the factors highlighted as uncorrelated, leading to the choice of orthogonal rotation within the exploratory factor analysis outlined.

Reliability is an assessment of the degree of consistency present between multiple measures of a particular variable. The concept of internal consistency is based on the concept of high inter-variable correlations being "manifestations of the same thing" (DeVellis, 2003). A further implication is that if high inter-item correlations exist then strong relationships between items and the latent variable, also exist. Hence, "a unidimensional scale or a single dimension of a multi-dimensional scale should consist of

a set of items that correlate well with each other" (DeVellis, 2003). This concept of internal consistency is "typically" (DeVellis, 2003) measured in the marketing literature with coefficient alpha (Nunally, 1978), with high levels of internal consistency generally being considered as desirable (Churchill, 1979). DeVellis (2003, p95) suggests a number of guidelines for coefficient alpha summarised in table 4.2 below.

Table 4.2: Recommendations of coefficient alpha acceptability

Value of coefficient alpha	Acceptability of level of internal consistency manifest
< 0.6	Unacceptable
0.6 – 0.65	Undesirable
0.65 – 0.7	Minimally acceptable
0.7 – 0.8	Respectable
0.8 – 0.9	Very Good
> 0.9	Consider shortening scale

Theoretically, coefficient alpha may take any value between 0 and 1 however, a lower limit of between 0.65 and 0.7 is suggested as acceptable in much of the literature, and applied here (Nunally, 1978; Hair et al, 1998).

4.4. Exploratory factor analysis and internal consistency.

Exploratory factor analysis was conducted on the previously developed scales, and measure purification was undertaken as a result. The exploratory factor analysis (EFA) described was produced by use of an SPSS statistical package.

In order to decide on the appropriateness of the items for EFA, two main criteria were applied to the scales. The two criteria applied to the scales were 1) Bartlett's test of sphericity and the 2) Kaiser Mayer-Olkin measure of sampling adequacy. Bartlett's test of sphericity measures the presence of correlations amongst scale variables, and estimates

the probability that the correlation matrix has significant correlations amongst some of its variables. Hence a significant result in a Bartlett test implies that the correlation matrix is not orthogonal and hence appropriate for factoring (Sharma, 1996). One drawback of this approach is that "increasing the sample size causes the Bartlett test to become more sensitive" to the detection of correlations (Hair et al, 1998). This was considered to be a factor given that the number of cases to be examined here was 366. Hence in order to account for this, an additional measure was utilised to enhance the overall rigour.

The Kaiser Meyer-Olkin (KMO) test is a measure of sampling adequacy, and can produce values ranging between 0 and 1. Any value above 0.5 is cited as being an indication of the homogeneity of the variables, and hence appropriate for factor analysis (Hair et al, 1998). Sharma (1996) presents the KMO guidelines presented in table 4.3 below.

Table 4.3: Guidelines for acceptability of KMO test results

KMO Measure	**Recommendation**
> or = 0.90	Marvellous
0.80+	Meritorious
0.70+	Middling
0.60+	Mediocre
0.50+	Miserable
Below 0.50	Unacceptable

At first glance the above guide appears intuitively helpful however, a more detailed examination of the criteria cited presents some interpretation issues. For example, "mediocre" and "middling" are separated by 0.20 albeit semantically appearing to be very similar. Moreover a "middling" and a "meritorious" result appear to be separated by an extremely thin boundary. This given however, a minimum result of 0.60 appears to satisfy the required criteria, and is applied here.

Each item was subsequently examined for the loading produced on the extracted factors. When examining the loadings, a minimum value of 0.30 was used as the lower boundary for significance. The value of 0.3 was consistent for the sample size (Hair et al, 1998), and is commonly considered a threshold level to produce a significant and reliable result at the 5% level (c.f. Spector, 1992).

The EFA procedure used in all of the factor analysis performed was principle components analysis (PCA) with an oblimin oblique rotation. Where evidence was cited, the previously utilised measures were largely developed through orthogonal rotations. One main reason impacted on the choice of obliminal rotation as opposed to orthogonal rotation. It appeared conceptually and intuitively inadequate to treat the factors to be rotated as uncorrelated, which is a basic assumption of orthogonal rotation (Cattell, 1978; Sharma, 1996; Hair et al, 1998). Cattell (1978) reinforces this point and adds, "We should not expect influences in a common universe to remain mutually uninfluenced and uncorrelated. To this we can add an unquestionable statistical argument, namely, that if factors were by some rule uncorrelated in the total population, they would still nevertheless be correlated in the sample".

It is acknowledged that there are multicolinearity issues regarding the choice of obliminal rotation over that of orthogonal, however techniques are available with which to deal with this problem specifically and these are discussed further within the chapter five, measure development.

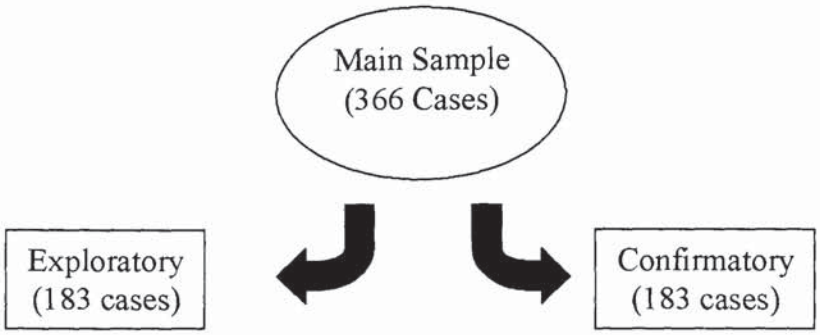
4.5. Confirmatory Factor analysis.

Following the above largely exploratory factor analysis the resultant scale items were further subjected to confirmatory factor analysis. Whilst the exploratory factor analysis above was produced with the SPSS statistical package, the confirmatory analysis detailed utilised LISREL 8.3 and maximum likelihood estimation (MLE). MLE is cited in the literature as the most common estimation procedure however, sensitivity to sample size is also highlighted as being problematic (Hair et al, 1998; Kelloway, 1998). It is suggested that a sample size of 100 to 200 is ideal, with samples of 400 or more providing poor goodness of fit statistics (Hair et al, 1998).

As highlighted in figure 4.3 below, in the interests of rigour initial analysis was conducted on the main sample of 366 cases. The main sample was then split into two separate samples of 183 cases, and exploratory and confirmatory analyses re-run. The 183 cases were well within the recommended range of sample size provided by Hair et al, (1998) and Kelloway (1998). Of note, the threshold loading level for the rotated variables was altered in line with Hair et al (1998), as a split data sample was utilised. This increased the loading value, for a significant result at the 5% level, from 0.3 to 0.45.

The analysis presented here, in the main body of the thesis, is based on the main sample of 366 cases. As previously noted, in the interests of rigour, split sample tests were carried out, and the confirmatory results are presented in appendix 4.1. Following item purification procedures, all tests with both the main and split samples statistically confirmed the factor structures sufficiently to allow further analysis, and hypothesis testing to take place.

Figure 4.3: Testing procedure on data collected



The results of the procedures above were used to purify the measures by removing any items that negatively impacted on model fit, for example those items exhibiting highly correlated error terms (Kelloway, 1998).

4.6. Individual scale results.

The following section provides the results of the exploratory and confirmatory factor analysis undertaken on the previously developed scales.

4.6.1. Environmental turbulence.

Environmental turbulence was initially measured with a 15-item scale capturing 4 dimensions of turbulence 1) market, 2) competitive, 3) technological and 4) regulatory. Cronbach's alpha was initially acceptable at 0.7334 (Nunally, 1978). EFA results are presented in table 4.4 overleaf.

Table 4.4: First EFA results for Environmental turbulence

Item No.	Scale Item	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
1	Our customers preferences change frequently over time	0.777				
2	New customers tend to have product related needs that are different to those of our existing customers	0.763				
3	Our customers tend to look for new products all the time	0.764				
4	One hears of a new competitive move almost every day		*NS			
5	In our main market there are many "promotion wars"		0.759			
6	In our main market aggressive selling is the norm		0.902			
7	Technological changes provide big opportunities in our main market			0.887		
8	Technology in our industry is changing rapidly			0.870		
9	A large number of new product ideas have been made possible through technological breakthroughs in our industry			0.836		
10	Government product standards have a high impact on our business				0.806	
11	Government pricing regulations have a high impact on our business				0.886	
12	Environmental protection laws have a high impact on our business					0.827
13	Regulation by trade association has a high impact on our business				0.505	
14	Health and safety legislation has a high impact on our business					0.907
15	Employment law has a high impact on our business					0.718

*NS = Non significant (< 0.30) loading on any factor (Hair et al, 1998)

Note: Rotation converged in 7 iterations. 67.793% of the total variance was extracted.

Contrary to expectation, EFA extracted five dimensions, one dimension more than was originally cited by the previous empirical studies. It was observed that the 6 items designed to capture regulatory turbulence split into two separate dimensions. An initial investigation of the wording of the items suggests a possible explanation for the structure established here. Items 10, 11 and 13 refer to pricing regulations, product standards and trade association regulation, whereas items 12, 14 and 15 refer to the environmental protection, health and safety law and employment law. Whilst an area for further research, it is suggested here that items 10, 11 and 13 appear to capture a governmental regulation of competition dimension, with items 12, 14 and 15 capturing a governmental

regulation of organisational operations dimension unspecified in previous empirical studies.

Following measure purification due to non-significant loadings, items 4, 10 and 11 were removed from the second EFA process. The second EFA process produced the expected four dimensional structure. Factor loadings as a result of this are highlighted overleaf in table 4.5.

Overall Cronbach's alpha for the second set of items was 0.6752, once again above acceptable limits (Nunally, 1978), with 70.86% of the total variance explained. Both the Kaiser-Mayer-Olkin and Bartlett's test of sphericity provided satisfactory results.

Dimension 2 presented a two-item scale following item reduction procedures. Two item scales are considered as being acceptable if the constructs are oblique (correlated), as opposed to orthogonal (Kelloway, 1998). This is consistent with the approach previously outlined, and hence acceptable here.

Comparison between the results achieved here and the previous empirical evidence was problematic. Either little analytical data was included in the original papers or subsequent articles, or the tools of analysis applied to the original measures were less complex and hence did not produce the type of output seen in table 4.4. Of the evidence available (Jaworski and Kohli, 1993; Cadogan et al, 2002), the Cronbach alpha results achieved here were comparable, and in some instances better than the previous empirical utilisations.

Table 4.5: Second EFA results for Environmental Turbulence

Item number	Scale Item	Factor 1	Factor 2	Factor 3	Factor 4	Cronbach Alpha (Dimensional)
1	Our customers preferences change frequently over time	0.806				
2	New customers tend to have product related needs that are different to those of our existing customers	0.791				0.6882
3	Our customers tend to look for new products all the time	0.751				
5	In our main market there are many "promotion wars"		0.837			0.6416
6	In our main market aggressive selling is the norm		0.867			
7	Technological changes provide big opportunities in our main market			0.883		
8	Technology in our industry is changing rapidly			0.882		0.8398
9	A large number of new product ideas have been made possible through technological breakthroughs in our industry			0.842		
12	Environmental protection laws have a high impact on our business				0.828	
14	Health and safety legislation has a high impact on our business				0.922	0.8014
15	Employment law has a high impact on our business				0.726	

Note: for the above factor structure the following data was collected.

Rotation converged in 6 iterations, KMO=0.674, Bartlett's test: Chi square=1175.271, d.f. = 55, Sig. = 0.000.

4.6.2. Performance.

Performance was measured using an 8 item scale, consisting of two 4-item dimensions of 1) financial performance and 2) non-financial performance. Cronbach's alpha was above acceptable limits (Nunally, 1978) at 0.8038. Factor loadings following the first EFA are provided in table 4.6 below.

Table 4.6: First EFA results for Performance

Item number	Scale item	Factor 1	Factor 2
1	Profit growth	0.799	
2	Sales growth	0.953	
3	Market share	0.891	
4	New product success rate	0.503	
5	Levels of customer satisfaction achieved		0.696
6	Levels of customer loyalty achieved		0.668
7	Levels of employee satisfaction with their jobs		0.825
8	Levels of employee retention		0.813

Note: Rotation converged in 5 iterations

An investigation of the item scores provided an encouraging result as highlighted in table 4.6. However items 4, 5 and 6 were subsequently removed for low communality scores (> 0.5, Hair et al, 1998), thereby increasing the overall variance extracted to 80.226%.

Following the above process, EFA was once again conducted on the remaining items. Cronbach's alpha was reduced slightly to 0.7671, however still well within acceptable limits (Nunally, 1978). The results are presented in table 4.7 below. Additionally the Kaiser Meyer-Olkin score and the result for Bartlett's test of sphericity presented no problematic results.

Table 4.7: Second EFA results for Performance

Item Number	Scale item	Factor 1	Factor 2	Cronbach's Alpha (Dimensional)
1	Profit growth	0.810		
2	Sales growth	0.948		
3	Market share	0.897		0.8594
7	Levels of employee satisfaction with their jobs		0.898	
8	Levels of employee retention		0.915	0.7813

Note: for the above factor structure the following data was collected.

Rotation converged in 5 iterations, KMO=0.663, Bartlett's test: Chi square = 805.868, d.f. = 10, Sig. = 0.000.

4.6.3. Political behaviour.

Political behaviour was measured using a six-item measure. Cronbach's alpha was encouragingly above acceptable limits at 0.7040. However as shown in table 4.8 below, a non-significant loading was presented on item 4 (i.e. below 0.3 as per Hair et al, 1998). Hence the scale was purified with the removal of this item, producing the results presented in table 4.9.

Table 4.8: First EFA for Political Behaviour (shortened wording)

Item number	Scale item	Factor 1	Factor 2
1	members own goals	0.725	
2	group members interests and preferences	0.549	
3	the use of power and influence	0.814	
4	negotiation and compromise		*NS
5	a totally rational process	0.700	
6	Status is irrelevant	0.728	

Table 4.9: Second EFA for Political behaviour

Item Number	Scale item	Factor 1	Cronbach's alpha
1	members own goals	0.751	
2	group members interests and preferences	0.639	
3	the use of power and influence	0.766	0.757
4	a totally rational process	0.682	
5	Status is irrelevant	0.721	

Note: for the above factor structure the following data was collected

KMO=0.757, Bartlett's test: Chi square= 409.055, d.f. = 10, Sig. = 0.000

As presented above, one single factor was extracted explaining 51% of the common variance. While a relatively low level of variance was explained, it was decided that it was within acceptable limits (Hair et al, 1998), and hence the remaining items were all retained for subsequent analysis.

Comparison of the output presented here and previous empirical studies provided pleasing results. For example, Cronbach's alpha of 0.66 is cited in Dean and Sharfman (1996), as opposed to the 0.7573 extracted from the sample data here.

4.6.4. Comprehensive strategic planning.

As expected the comprehensive strategic planning scale produced a high Cronbach's alpha value of 0.8101, well above the recommended threshold (Nunally, 1978). All of the loadings achieved were above significant levels, with one factor being extracted. The amount of variance explained by this solution was 57.637%. Given the acceptable Bartlett's test results and the significant KMO test results, no further analysis was deemed necessary on this scale.

Table 4.10: Comprehensive strategic planning (shortened wording)

Item Number	Scale item	Factor 1	Cronbach's alpha
1	Mission Statement	0.841	
2	Analysis of competitor trends	0.808	
3	Analysis of supplier trends	0.760	
4	Analysis of market trends	0.727	
5	Internal analysis	0.627	0.8101
6	Long term, corporate level strategies	0.673	
7	Medium term, business level strategies	0.707	
8	Short term, functional level strategies	0.501	
9	barriers to strategy implementation	0.615	
10	Analysis of contingencies	0.690	
11	On-going evaluation and control	0.737	
	KMO=0.850 Bartlett's test: Chi square=1086.955 Df=55 Sig.=0.000		

Comparison with previous empirical research utilising this measure (Boyd and Reuning-Elliot, 1998; Andersen, 2000) provided comparable results. For example Boyd and Reuning-Elliot (1998), utilising LISREL, achieved a goodness of fit index (GFI) of 0.89 and a root mean square residual (RMR) of 0.09. This compares favourably with the output achieved here i.e. GFI = 0.84 and RMR = 0.083. A full presentation of the LISREL output for the measures utilised here is presented in appendix 4.1. A more complete discussion of LISREL modelling and measures of model fit is provided in chapter five.

4.6.5. Implementation success.

Implementation success was measured by a twenty-item measure capturing five dimensions. Cronbach's alpha provided a promising result at 0.8764, well above acceptable limits (Nunally, 1978). However a number of items demonstrated extremely low communalities, and loaded below acceptable limits at less than 0.30 (Hair et al, 1998). Additionally three as opposed to five factors were extracted from the data.

Cronbach's alpha for the entire scale was well above acceptable limits at 0.8557[37], with dimensional reliability proving more problematic (Nunally, 1978). Dimension 2 and Dimension 3 were above acceptable limits at 0.8061 and 0.6193 respectively (Nunally, 1978). Dimension 1 presented a Cronbach's alpha of 0.5856 that was slightly below published the published guidelines presented in table 4.3. However taking this problem in overview against other more supportive data, it was decided to move to the hypothesis testing phase with the structure outlined. An overall Cronbach alpha of 0.8557 was obtained.

[37] It is acknowledged here that Cronbach's alpha can be dependent on the number of items in a scale. The possibility exists that as item count increases, so does the alpha score (Gerbring and Anderson, 1988).

Table 4.11: Implementation success (shortened wording)

Item No.	Scale Item	Factor 1	Factor 2	Factor 3	Cronbach's Alpha
1	Clear communications of goals and purpose	0.600			0.5856
2	teams implementing strategies have a clear understanding of goals and purposes	0.926			
3	managers aware of strategic direction		0.625		
5	Strategies lack true leaders ®		0.597		0.8061
6	It is clear who is responsible		0.668		
8	Individual work groups feel alone ®		0.880		
13	Once strategies are implemented they tend to be forgotten		0.513		
9	Strategies generally receive high levels of "buy-in"			0.503	
10	Senior managers work together with the relevant managers			0.757	0.6193
12	Senior managers are open to managers suggestions			0.676	
14	Strategies are monitored and altered where necessary			0.648	
20	resource requirements examined prior to implementation			0.792	

NOTE: ® represents reverse coded items

For the above factor structure the following results were obtained:

KMO= 0.862, Bartlett's test: Chi squared =1403.96, d.f. = 66, Sig. = 0.000.

The dimensionality cited above was tested as being as follows, 1) Clarity of communication / strategic direction, 2) Senior management involvement and 3) On-going support (senior).

4.7. Confirmatory analysis.

The above factor structures were further tested using LISREL 8.3. The results presented here are based on the main sample of 366 cases. The table below summarises the LISREL output for the measures tested. A detailed examination of the meaning and representativeness of the criteria cited is presented in chapter five.

Table 4.12: Confirmatory Output for factor structure of previously utilised measures (366 cases)

Measure	**Environment**	**Performance**	**Politics**	**Planning**	**Implementation**
Goodness of Fit Index **(GFI)**	0.96	0.98	0.92	0.90	0.94
Standardised Root Mean Square Residual **(Std. RMR)**	0.05	0.04	0.04	0.06	0.04
Comparative Fit Index **(CFI)**	0.96	0.98	0.93	0.83	0.93
Root Mean Square Error of Approximation **(RMSEA)**	0.06	0.09	0.10	0.10	0.06
Critical **N**	237.55	251.90	185.92	119.37	214.51

The criteria chosen to represent the data are based on published recommendations made by Diamantopoulos and Siguaw (2000). A full debate of the assessment of LISREL, model fit criteria, is undertaken in chapter five. All of the above statistics presented in table 4.12 are acceptable, given published limits (Diamantopoulos and Siguaw, 2000).

As previously described, the factor structures described were further tested on a split sample and the resultant statistics presented in appendix 4.1. No cause for concern was found in any of the output generated, adding to the confidence in the factor structures described.

On this basis, it was felt that once descriptive testing had been examined, the factor and item structures exhibited above would be acceptable for hypothesis testing with structural equation modelling.

4.8. Descriptive analysis of individual scales.

Following the measure purification procedure outlined in the preceding sections, further statistical analysis was undertaken in order to examine the characteristics of the individual scales. The analysis was undertaken to ensure that the final measurement scales were appropriate for further use in hypothesis testing applications i.e. structural equation modelling. In line with Hair et al (1998), both graphical and statistical measures were utilised to assess the amount of departure from normality.

Hence, in order to assess the statistical properties of the measurement scales, two main tests were examined 1) a visual test of the distribution and 2) the Kolmogorov-Smirnov (KS) test. The KS test is essentially a statistical test of the skewness or kurtosis of a distribution, carried out through an SPSS statistical package. The statistical output from the test presents an absolute KS value for both the skewness and kurtosis of a particular distribution. Additionally, and arguably more importantly, a level of significance is presented for the variance observed from a normal distribution. The results of the tests highlighted are presented in appendix 4.2. No statistically problematic results were obtained, and hence the data presented no cause for concern at this stage.

4.9. Summary of descriptive analysis.

This chapter was presented in two main sections. The first section presented an overview of the respondent data collected and the second section, presented a statistical analysis of

the previously utilised measures administered in the main survey. Tests of dimensionality, reliability and validity were performed with the main data assessment process focussing on both exploratory and confirmatory factor analysis, utilising SPSS and LISREL statistical computer packages.

From the procedures undertaken all item and factor structures provided statistically acceptable values. The Implementation success scale required the most attention, and a number of modifications were required prior to allowing the scale to be made available for further analysis with structural equation models.

The next chapter presents the Measure Development procedure for scales measuring 1) Organisational Flexibility, 2) Quality of Strategic Options and 3) Comprehensive Strategic Choice.

5. MEASURE DEVELOPMENT

This chapter describes the measure development and purification process utilised in developing rating scales for 1) Organisational Flexibility, 2) Quality of Strategic Options and 3) Comprehensive Strategic Choice.) Having specified the domain, and developed propositions about the nature of the constructs in chapter two. Chapter three generated reflective items and described the data collection process in more detail. This chapter focuses on the measures previously described, and explores issues of measure purification, dimensionality, reliability and validity using established guidelines from the literature (Churchill, 1979; Spector, 1992; Churchill, 2002; DeVellis, 2003).

In developing the measures highlighted above, much the same strategy was followed as the one utilised to purify the measures, described in chapter four. First, an essentially exploratory analysis was conducted in order to assess issues such as reliability, dimensionality and validity of the constructs under investigation (Churchill, 1979; Spector, 1992; Churchill, 2002; DeVellis, 2003). Secondly, a confirmatory approach is utilised in order to provide a more rigorous examination of the constructs of interest (Sharma, 1996; Hair et al, 1998; Gerbing and Anderson, 1998; Kelloway, 1998).

5.1. The measure development process.

In analysing the data relating to the constructs of interest, it was important to utilise a format or framework in order to ensure that no omissions were made, in essence adding to the rigour of the analysis. A number of alternatives were examined, of differing levels of complexity (Sharma, 1996; Hair et al, 1998). Joreskog and Sorbom (1999) however, cite the simple framework presented in table 5.1 as a guide the data analysis process. This was adopted here as the framework for data analysis conducted.

Table 5.1: Framework for data analysis

Step	Description
1	Specify initial model
2	Estimate the measurement model for each construct separately
3	Estimate the measurement model for each pair of constructs
4	Estimate the measurement model for all of the constructs
5	Estimate the structural equation model for the constructs jointly with the measurement model

Adapted from Joreskog and Sorbom (1999)

As previously highlighted the theoretical underpinnings of construct development is presented in the theoretical background and development, presented in chapter two. Hence, step 1 above will not be undertaken here, and is assumed to have been developed to an acceptable level in chapter three. Utilising the model presented in table 5.1, the next stage is to estimate the measurement model for each construct separately, and this is now examined in the next section.

5.1.1. Item Analysis.

The first stage in the data analysis process begins to assess the scale items, and highlight possible candidates for deletion, and to begin to "purify" the scale items (Churchill, 2002).

The scales employed in the data collection process in order to measure the constructs of interest, all consisted of a number of items. The items that were utilised in the measurement process were designed to reflect the underlying latent variable, or construct of interest. As previously stated, the latent variables under investigation here are 1) Organisational Flexibility, 2) Quality of Strategic Options and 3) Comprehensive Strategic Choice. As the items consisting of the scale are said to reflect the underlying

latent variable, then a relationship between the items must exist, as well a relationship between the items and the latent variable (c.f. DeVellis, 2003). This relationship or correlation provides a means by which the internal consistency (Spector, 1992; DeVellis, 2003) of a scale can be assessed. Intuitively, the stronger the relationship between the items of a scale, the stronger the relationship between the latent variable and the scale items must be. Indeed, a high inter-item correlation is a highly desirable characteristic in any multi-item reflective scale (Churchill, 2002; DeVellis, 2003).

"Typically" (DeVellis, 2003) Cronbach's alpha value (Cronbach, 1951) has been utilised in measuring the degree of internal consistency exhibited by items within summated rating scales. The calculated alpha value, as defined above, represents "the proportion of a scales total variance that is attributable to a common source, presumably the true score of the latent variable" DeVellis (2003). Hence in theory, the higher the value, the more internally consistent, or reliable the scale is, as less error variance is present.

In theory, Cronbach's alpha may vary from a low of 0.0 to a high of 1.0 however, given the discussion of error variance above, coupled with previous academic discussion regarding acceptable levels (Spector, 1992; Zikmund, 1997; Churchill, 2002; DeVellis, 2003), then a lower bound of 0.7 is recommended. It has been also suggested in the literature that for scale development purposes, a lower boundary may be acceptable (see table 5.1). The implicit assumption in the values highlighted above, is that all of the underlying items are scaled in the same direction (Spector, 1992). For example, if any of the items in a particular scale have been negatively worded, then it is important that they are reverse-coded prior to examining the alpha value. If this is not done, then it is likely

that negative alpha values will be produced, possibly distorting the scale purification process and causing useful scale items to be deleted (Devellis, 2003).

Whilst popular in the marketing literature, it is acknowledged that Cronbach's alpha is sensitive to sample size (Spector, 1992). Indeed "Coefficient alpha can be raised by increasing the number of items (in a scale) or by raising their inter-correlation. Even items with very low inter-correlations can produce a relatively high coefficient alpha, if there are enough of them" (Spector, 1992). Despite the widespread use of coefficient alpha, it is important to utilise other measures in order to address these criticisms.

This given however, an important stage in the item analysis process is to examine the alpha values presented, with a high alpha value indicating a high level of internal consistency between the items consisting the measure of interest. Items with a relatively low alpha score are considered as candidates for deletion.

An extension of this process is the examination of the item-total correlation of each item (DeVellis, 2003), which is the extent that an individual item correlates with the sum of the entire scale. Items with particularly low item-total correlations are also considered as possible candidates for deletion. Of note, the literature cites two methods for calculating the inter-item total correlation. One is the uncorrected item-total correlation and the other is the corrected item-total correlation. The former correlates the item of interest with the all of the scale items including itself, the latter correlates the item of interest with all of the other scale items, with itself excluded (DeVellis, 2003). It is the corrected item-total correlation that is advised in the literature and is adopted here (DeVellis, 2003).

Internal consistency is but one measure that can be utilised in order to assess scale items, Churchill (1979) cites other criteria that should be considered. Both a high variance, and a mean that is close to the centre of a scales range is also seen as desirable. Here, a high variance suggests that the item can discriminate among individuals with varying levels of the construct of interest. Additionally, if the mean of the scale is closer to the centre of the scale range, then the wording of the items has not provoked any particularly skewed responses.

In summary issues of reliability and internal consistency are important factors when considering scale purification, and item deletion. Items that appear detrimental to these factors can be considered as candidates for deletion.

5.1.2. Split Samples, or Cross Validation.

A further step that can be taken regarding scale assessment is recommended (Hair et al, 1998; DeVellis, 2003), where split samples are utilised as a way of reducing anomalous results thereby providing a "valuable" insight into overall scale stability (DeVellis, 2003). It is suggested that the original sample, if of a sufficiently large size ("at least 100" Hair et al, 1998) is split into two samples. Exploratory tests such as Cronbach alpha calculation and item deletion is undertaken on one half of the sample or the analysis sample (Hair et al, 1998); with the second sub-sample, or the holdout sample (Hair et al, 1998) being used as a check to corroborate the results from the first sub-sample. DeVellis' (2003) argues that in the first sub-sample opportunities exist for chance factors to intervene with the data analysis process, indeed in some cases being confused with reliable covariation patterns. However this apparently random chance could not impact in

the second sub-sample, can confirm or highlight problematic items within the proposed factor structure.

In accordance with the above, a split sample methodology was undertaken, following scale development on the larger main sample. Whilst not directly referred to in DeVellis (2003), this essentially two-stage process was adopted in order to further reinforce the scale development rigour[38].

5.1.3. Issues of dimensionality.

Building on previous discussions regarding the relationship of the items in a scale, and the underlying latent variable (see section 5.1.1), a key assumption in the creation of a summated rating scale is that of unidimensionality (Churchill, 1979; Gerbring and Anderson, 1988; Spector, 1992; DeVellis, 2003). Unidimensionality is described here as "the items are unidimensional, meaning that they are strongly associated with each other and represent a single construct" (Hair et al, 1998 p 117). Hence it is imperative that any scale development process, contains an assessment of unidimensionality. In other words the multiple items used to measure a particular construct must be assessed as to whether they are "alternative indicators of the same construct" (Gerbing and Anderson, 1988).

Two different approaches are cited in the literature, regarding the assessment of scale dimensionality (Churchill, 1979; Gerbing and Anderson, 1988). The approaches differ mainly in terms of the sequence of analytical events in the scale development process. Churchill (1979) advocates that the dimensionality of a scale should only be assessed after internal consistency has been examined. Alternatively, Gerbing and Anderson

[38] Of note, the main sample of 366 cases was split randomly into two separate sub-samples of 183 cases for further confirmation / rigour.

(1988) suggest that dimensionality should be examined prior to issues of internal consistency. This approach assumes that the factors impacting on the accuracy of the internal consistency measures (for a further debate see section 5.1.1), may lead to the creation of a set of items that are not in fact unidimensional. Interestingly, in cases where there are a large number of items to be examined, Gerbing and Anderson (1988) appear to advocate the use of item purification prior to any dimensionality assessment, thereby reducing complexity.

Based on the evidence presented in the above discussion, the approach adopted here was to purify the scales first using the techniques previously described, and then proceed to assess the dimensionality of the scale.

A factor analytical approach is adopted here in addressing issues of dimensionality. "The purpose of factor analysis is to help the investigator determine how many latent variables underlie a set of items" (DeVellis, 2003); therefore an important element in the issue of dimensionality under discussion. Once again, two main approaches are cited in the literature regarding assessment of dimensionality in scale development.

The first approach makes no assumption about the underlying structure of the dimensions of a scale, and is essentially exploratory in nature (DeVellis, 2003). Here, evidence of unidimensionality would be present if all items in a scale loaded significantly on to one factor (Spector, 1992). If the analysed items do not load significantly on to one factor, but present a multi-dimensional factor structure that is significant, then the issue of interpretability is the key i.e. does the factor structure presented make conceptual sense (Spector, 1992)? If the factor structure appears to make theoretical sense, then this is

further evidence of multi-dimensionality. If however a theoretically based explanation is not evident from the literature, then evidence of error is demonstrated and the items forming the erroneous dimensions should be considered for deletion (DeVellis, 2003).

Hair et al (1998) cites the second, less exploratory approach. This suggests that when testing hypotheses regarding the number of dimensions underlying a particular set of items, the researcher conducting the analysis should "simply (instruct) the computer to stop the analysis when the desired number of factors has been extracted" (Sharma, 1996; Hair et al, 1998; DeVellis, 2003). For this case, unidimensionality would be evident if the items loaded on the hypothesised dimension(s).

Factor analysis involves repeated iterations of the data (c.f.Sharma, 1996). It is argued here, that stopping this process prematurely does not allow the full gambit of analysis to be run, impacting on the quality of the conclusions drawn from the analysis. It is for this reason that the factor extraction analysis conducted here was not instructed to halt the extraction process at a specified number of factors, and was allowed to continue to iterate until all items had loaded. Whilst not wholly supported in the literature, this method appears intuitively a more parsimonious approach, than one that imposes a set number of factors to be extracted from the data.

5.1.4. Issues of construct validity.

The validity of a scale is the degree to which it "measures or accurately represents the concept of interest" (Churchill, 2002). Issues of internal consistency, reliability and unidimensionality have been discussed, and indeed are important in relation to the assessment of a rating scales' validity (Churchill, 1979), however these issues are

"necessary but not sufficient" (Peter, 1981) indicators of a scales' validity. Furthermore, statistical reliability and unidimensionality can only provide negative evidence of construct validity, in that if it is not reliable then the measure is not valid (Churchill, 2002). A number of different types of validity are cited in the literature 1) discriminant, 2) criterion-related, 3) nomological and 4) convergent (Churchill, 2003).

Criterion related, or predictive (Carmines and Zeller, 1979; DeVellis, 2003; Churchill, 2003) validity is related to the degree with which a construct behaves in relation to some criteria, for example the degree to which one construct relates to another. It is however, irrelevant whether the theoretical basis for the relationship is understood, as "it is concerned not with understanding a process but merely with predicting it" (DeVellis, 2003).

Nomological validity is a reflection of "the degree that the summated scale makes accurate predictions of other concepts in a theoretically based model" (Hair et al, 1998). Whilst semantically similar to the concept of criterion based validity, the conceptual difference is clear in that nomological validity is present, if a construct behaves as expected in relation to another construct which it is theoretically linked to (Churchill, 2003). As previously discussed, the theoretical linkages do not have to be necessarily present for criterion related validity to be present.

Convergent validity is present if the correlations between items measuring the same concept are high (Hair et al, 1998). Reliability measures such as coefficient alpha have been cited as adequate indicators of convergent validity (Fornell and Larcker, 1981; Bagozzi and Yi, 1982). Fornell and Larcker (1981) cite the amount of variance accounted

for by the factor structures extracted from the as an additional assessment. Guidelines suggest that a minimum acceptable level for acceptance of 0.5, as a factor structure should capture more of the construct it purports to measure than the error present (Hair et al, 1998).

5.2. Constructing the measures.

In constructing the measures of interest, a similar process was undertaken as displayed in chapter four, descriptive analysis. The adopted process, as far as possible, followed previously published guidelines (Spector 1992; DeVellis, 2003).

Firstly any negatively worded items were reversed, in order to prevent any spurious results from occurring. Subsequently more detailed analysis was undertaken utilising the SPSS statistical package, including inter-item correlations, coefficient alpha examination and consideration of items for deletion. Once the primarily exploratory analysis was complete, confirmatory analysis utilising structural equation modelling was undertaken with the LISREL statistical package. This was completed on both the main sample of 366 cases and also a split sample of 183 cases in order to make an assessment of scale stability (DeVellis, 2003). These stages are further explored in the following sections.

5.2.1. Organisational flexibility.

Organisational flexibility was conceptualised as a 19-item scale, consisting of 5 dimensions of 1) Operational Flexibility, 2) Financial Flexibility 3) Human Resource Flexibility, 4) Technological Flexibility and 5) Structural Flexibility. Initially the coefficient alpha for the entire scale was 0.8773, which was promising in light of the recommended acceptable limits previously discussed (see table 5.1). No items were

therefore considered for deletion based upon this criteria, and hence all items were taken through to the next phase i.e. factor rotation.

An oblique / obliminal rotation was undertaken on the all of the items[39], and the results analysed. Examination of factor loadings and correlation matrices highlighted a number of candidates for deletion following factor rotation. Prior to deleting any of the candidates highlighted, the impact that the specific deletion would have on the overall coefficient alpha of the scale was considered, as well as factor communalities.

Communalities of less than 0.4 and item loadings of less than 0.3 were considered as candidates for deletion, as this is the generally accepted limit for this sample size (Hair et al, 1998).

Eigenvalues and scree plots were also examined to ensure that the most representative and parsimonious set of components was obtained.

Following the above assessment, the remaining items were re-run, and the factor structure presented in table 5.2 below was obtained. All items loaded significantly with acceptable communalities, explaining 77.644% of the total variance.

[39] For a full discussion on the merits of this method of factor rotation see section 4.4 in chapter four.

Table 5.2: Organisational Flexibility (Shortened Wording)

Scale Item	Factor 1	Factor2	Factor 3	Factor 4	Cronbach's alpha
Change production with market demand	0.910				0.8445
Change our product mix as market demand changes	0.934				
"Up to date" computer system		0.907			0.8921
Adaptable computer system		0.929			
Add / reduce computing capacity		0.868			
Communicate between departments			0.834		0.8080
Reduce bureaucracy			0.842		
Structurally flexible			0.806		
Fund organisational changes from within				0.792	0.7928
Additional funding from outside the organisation				0.847	
Financially flexible				0.872	

For the above factor structure the following results were obtained:

KMO= 0.748, Bartlett's test: Chi-square = 1880.412, d.f. = 55, Sig. = 0.000

Kaiser Meyer-Olkin and Bartlett's test all proved satisfactory[40], hence no concerns with appropriateness for factoring, or sampling adequacy were expressed.

Worthy of note, of the five originally hypothesised dimensions, table 5.2 identified only four remaining dimensions of organisational flexibility. The problematic dimension in this instance was human resource flexibility as significant cross-loadings were observed with items of structural, operational and financial flexibility. In the absence of further qualitative and indeed quantitative research, the following explanation is cited as possible

[40] For a full discussion of the Kaiser Meyer-Olkin (KMO) test and Bartlett's test see section 4.4 in chapter four.

insight as opposed to conclusive explanation. Structural Flexibility: Respondents may have viewed this as facilitative of human resource flexibility, allowing the organisations human resources to achieve individual or group flexibilities through the organisational structure. Financial flexibility: Respondents may view this similarly to human resource flexibility, as removal or addition of employees cause significant cost implications. Operational flexibility: Respondents may view operational elements of the organisation as synonymous with human resource activity.

To close, the literature suggested that a human resource dimension would be consistent with a conceptualisation of organisational flexibility. Following rigorous measure development and data collection, no clear dimensionality was identified and hence this was removed from further analysis. The remaining dimensionality originally hypothesised, was supported strongly by the data collected.

5.2.2. Comprehensive strategic choice.

Comprehensive strategic choice was conceptualised as a 12-item scale, consisting 3 dimensions of 1) Quality, 2) Consultation and 3) Process. Coefficient alpha for the entire scale was initially acceptable at 0.8012 (DeVellis, 2003). Individual item correlation coefficients were also examined, and it was found that overall scale reliability could not be significantly improved by the deletion of any items at this early stage.

The scale items were then subjected to an obliminal factor rotation using an SPSS statistical package. Output such as loadings, number of factors extracted and communalities were all examined providing candidates for item deletion. The criteria

utilised in the deletion process have been previously outlined both in chapter four, and also in previous sections in this chapter, and hence are not repeated here.

Whilst three dimensions were initially extracted from the data, items than did not meet acceptable loading or communality limits were short listed for deletion. Candidature for deletion was assessed against overall scale reliability, and also the degree to which the amount of variance explained by the remaining items would increase. Once this had been examined the remaining items were deleted and the structure presented in table 5.3 was obtained.

As a result of the factor analysis process described above, overall variance explained increasing from 65.783% to 76.449%. Overall scale reliability was slightly reduced to 0.7265, however well within acceptable limits for scale development purposes.

Table 5.3: Comprehensive Strategic Choice (Shortened wording)

Scale item	Factor 1	Factor 2	Factor 3	Cronbach's alpha
Large amount of information	0.924			0.8170
Detailed information	0.911			
No *one* person decides "on their own"		0.865		0.6783
Consensus		0.872		
Distinct process			0.855	0.7950
Methodical approach			0.880	
Decision making is deliberate			0.784	

For the above factor structure the following results were obtained:

KMO= 0.653, Bartlett's test: Chi square= 796.965, d.f. = 21, Sig. = 0.000

Given the acceptability of all of the measures for the reduced scale, the structure presented above was taken forward into the confirmatory data analysis phase described in section 5.4.3.

5.2.3. Quality of strategic options.

Quality of Strategic Options was conceptualised as a 16-item measure, capturing three dimensions of 1) Suitability, 2) Feasibility and 3) Acceptability. Coefficient alpha for the entire scale was 0.6948, above acceptable limits for scale development purposes (DeVellis, 2003). In contrast to the scales examined in sections 5.2.1 and 5.2.2 four items were initially deleted at this stage, improving the overall coefficient alpha from 0.6948 to 0.7630.

The remaining items were subjected to an obliminal rotation using an SPSS statistical package. Three dimensions were extracted from the data however a number of problems were noted. Only 48.322% of the variance in the data had been explained by the factor structure, and six of the remaining items had either communalities or loadings below the acceptable limits of 0.3 and 0.4 respectively (Hair et al, 1998). Subsequently, each problematic item was examined in turn, and the effect on deletion of the item assessed against the reliability of the overall scale. This was done in conjunction with an assessment of the amount of variance being explained by the remaining items.

Once this extensive process had been completed, the factor structure presented in table 5.4 was observed.

Table 5.4: Quality of Strategic Options (Shortened wording)

Scale item	Factor 1	Factor 2	Cronbach's alpha
Build upon organisational strengths	0.611		
Overcome organisational weaknesses	0.826		0.6376
Overcome threats to the organisation	0.723		
Capitalise on opportunities in the market	0.546		
Are generally suitable for our organisation		0.619	
Can be rapidly financed either internally or externally		0.701	0.655
Are generally feasible		0.753	
Are acceptable to all stakeholders		0.718	

For the above factor structure the following results were obtained:

KMO= 0.766, Bartlett's test: Chi square= 462.83, d.f. = 28, Sig. = 0.000

Following the deletions described above the overall coefficient alpha for the total scale was decreased slightly from 0.7630 to 0.7077. This was not considered problematic, as the alpha value produced was still above published and accepted limits (DeVellis, 2003).

The main discussion point arising from the exploratory analysis conducted on the above scale was the reduction in dimensions from a conceptualised three, to a statistically derived two. Once satisfied on the criteria for item deletion and also the underlying process used, an examination of the remaining items was made in order to develop a further understanding of the factor structure derived.

Dimension 1 taps into the strengths, weaknesses, opportunities and threats analysis (SWOT). Whilst widely cited as a tool for analysis in the marketing literature, here it

appears to capture a decision framework through which managers formulate the best or preferred strategy options, whilst demonstrating a concern for resource utilisation within their organisations. Here it will be referred to as a *logical framework*.

Dimension 2 is less clear, and highlights elements of acceptability, feasibility and suitability. In the initial conceptualisation concern was expressed by two of the managers interviewed that the concepts of acceptability, feasibility and suitability did not appear widely different. Unfortunately, this was overlooked in the scale development process, but appears to have been represented in the collected data quite strongly. Interestingly, and quite apart from dimension 1, dimension 2 appears to tap the less rigid elements of the Quality of Strategic Options. For example, dimension 1 appears to capture quite a logical element, whereas dimension 2 appears to tap into a less formal, more consultative element, referring to financial concerns and wider concerns with other stakeholders in general. For this reason, dimension 2 will be referred to as *Consultation with Stakeholders.*

Hence, the original conceptualisation of the Quality of Strategic Options consisted of three dimensions of 1) Suitability, 2) Feasibility and 3) Acceptability. Following the data analysis process above, two dimensions were captured consisting of 1) a Logical Framework and 2) Consultation with Stakeholders.

5.2.4. Simultaneous analysis of newly developed scales.

Due to the conceptual proximity of the three newly developed scales, a check on discriminant validity was undertaken utilising the SPSS statistical package. The factor analysis results are presented in table 5.5 overleaf.

The rotation explained 66.699% of the total variance. Whilst a small degree of cross loading was observed in the analysis (see shading in table 5.5), the small size of the loading coupled with the conceptually similar associations of the constructs, was deemed to be sufficient reason to accept the level of discriminant validity demonstrated, and to proceed to confirmatory factor analysis with LISREL.

Table 5.5: Factor Analysis of scales (combined)

Scale	Dimension	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7	Factor 8	Factor 9
Options	1	0.510								
		0.807								
		0.697								
		0.484								
	2		0.678							
			0.566		0.386					
			0.724							
			0.531							
Choice	1			0.903						
				0.878						
	2				0.808					
					0.823					
	3					0.848				
						0.886				
						0.763				
Flexibility	1						0.737			
							0.698			
	2							0.907		
								0.932		
								0.874		
	3						0.396		0.556	
							0.343		0.448	
									0.750	
	4									0.776
										0.839
										0.857

For the above factor structure the following results were obtained:

KMO= 0.75, Bartlett's test: Chi square= 3546.972, d.f. = 325, Sig. = 0.000

Note: Rotation converged in 8 iterations.

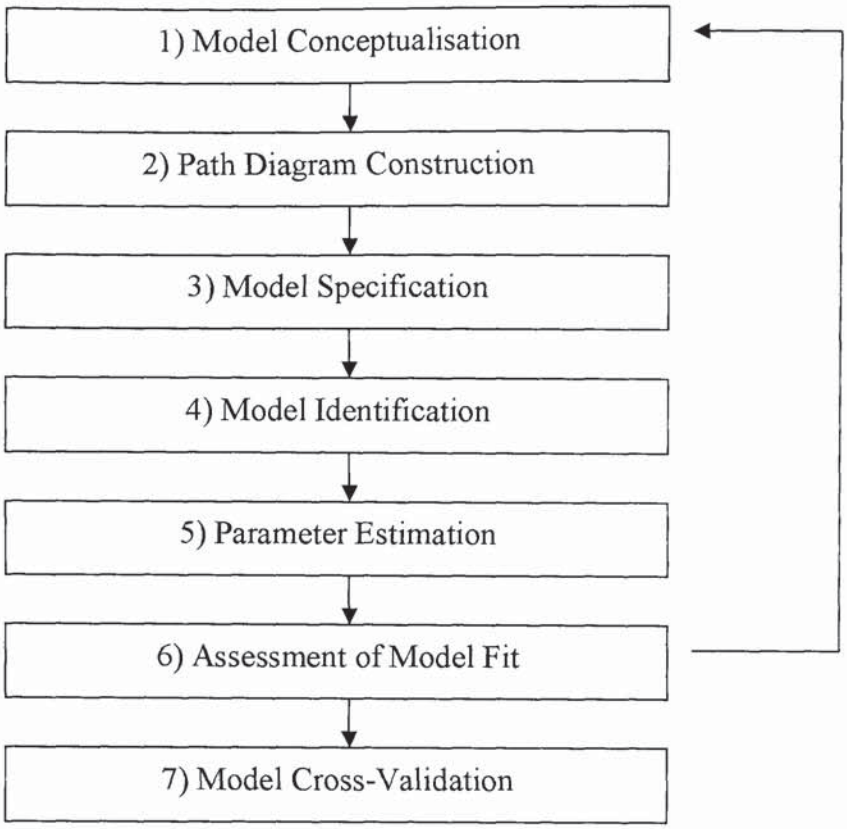
5.3. Confirmatory factor analysis.

It has been argued in the literature that the essentially exploratory factor analytical techniques employed thus far in this chapter are not sufficiently rigorous to assure researchers of the reliability and validity of their measures (Gerbing and Anderson, 1988; Bollen and Lennox, 1991). Gerbing and Anderson (1988) state that whilst the use of exploratory factor analysis is useful, it is a "preliminary technique" and that "subsequent confirmatory factor analysis would be needed to evaluate and likely refine, the resulting scales". Sharma (1996) is supportive of this viewpoint, highlighting that once the factor or construct structure is known through exploratory analysis, then confirmatory factor analysis can "empirically verify or confirm the factor structure" (Shrama, 1996 p 128). Hence the measures that have been outlined in the sections above were subjected to an additional and confirmatory factor analysis, utilising LISREL 8.30 (Joreskog and Sorbom, 1996). The following sections outline the process.

The process followed in order to complete the necessary confirmatory analysis, was literature based (Sharma, 1996; Kelloway, 1998; Diamantopoulos and Siguaw, 2000), and is adapted in figure 5.1 overleaf.

Stage 1 highlighted in figure 5.1 has been previously discussed in chapter three, and hence is not repeated here. This section will commence with step 2 i.e. path diagram construction.

Figure 5.1: Adapted Confirmatory Factor Analysis Process

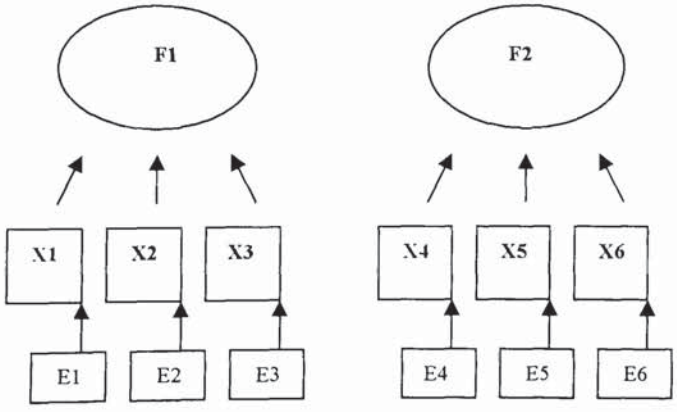


Adapted from Sharma (1996), Kelloway (1998), Diamantopoulos and Siguaw (2000)

5.3.1. Path diagram construction.

Figure 5.2 below, illustrates graphically the principle underlying path diagram construction, and is adapted from Kelloway (1998).

Figure 5.2: Example of a two factor path diagram (adapted from Kelloway, 1998)



In figure 5.2, F1 and F2 are two common factors or latent variables. They are described as latent because they cannot be observed directly. X1 to X6 are the observed or manifest variables and E1 to E6 the error terms. As DeVellis (2003) highlights, the observed score for any scale designed to reflect a latent variable consists of two elements i.e. the correlation of the observed score to the true score, and the error term. Confirmatory factor analysis allows researchers to examine the error term and its relationship with the observed scores, which is impossible within the confines of exploratory factor analysis. The relationships exhibited in figure 7.2 are specified and calculated through structural equations within the LISREL statistical programme, with a covariance matrix being produced that, in effect, estimates all of the parameters shown above and their interrelationships or the degree to which they co-vary.

It is recognised that within the marketing literature reflective measurement of latent variables "is, by far the most common approach" (Diamantopoulos, 1999); an alternative perspective however advocates the application of formative measures (Diamantopoulos and Winklhofer, 2001). Whilst a comprehensive debate of the subtle nuances of each perspective is outside the scope of the discussion presented here, the main difference between formative and reflective indices can be summarised as "the causal priority between the latent variable and its indicators" (Diamantopouls, 1999)[41]. In essence, items in reflective measures are impacted upon by the underlying latent variable, whereas under formative indices "a concept is assumed to be defined by, or a function of its measurements" (Diamantopoulos, 1999). Thus said, the literature suggests that both

[41] See also (Cohen et al, 1990 and Fornell, Rhee and Yi (1991).

theoretical and empirical issues should impact on the choice between formative and reflective indices, as well as the objectives of the particular study.

With specific reference to the measures utilised within the study presented here; firstly a number of previously published and statistically sound measures were incorporated in order to capture five of the dimensions highlighted. Whilst reflective, further discussion of their use and inclusion within this context is largely available within chapter 3, methodology. Of the newly developed measures cited, a reflective approach was adopted due to the relatively exploratory nature of the research and the need for clearer definition of the underlying latent variable. More specifically whilst there appeared to be compelling evidence within the literature for the dimensionality presented, it was decided that the use of a formative index whereby "a concept becomes its measure and has no meaning beyond that measure" (Diamantopoulos and Winklhofer, 2001) was inappropriate and hence further investigation was not deemed necessary.

Nested or competing models were also examined as recommended in the literature (Hayduk, 1987; Kelloway, 1998; Diamantopoulos and Siguaw, 2000). This involves a number of competing parameter structures being simultaneously examined against a number of statistical measures. The measures examined assess the degree to which the originally hypothesised parameter structure fits to the observed covariance matrix, and are examined later in more detail within the confirmatory factor analysis sections. Kelloway (1998) suggests that the competing or nested models should be created as far as possible, from previous research literature that may argue, or present a case for a different parameter structure. It is acknowledged however that this may not always be possible when investigating previously underdeveloped research areas (Kelloway, 1998;

Diamantopoulos and Siguaw, 2000) and an alternative route of constraining the inter-factor correlations to unity, or an orthogonal structure may be created by constraining inter-factor correlations to zero. The approaches highlighted can then be statistically compared as to their levels of fit between the hypothesised parameter structure and the observed covariance matrix.

5.3.2. Model identification.

Model identification relates to whether "sufficient information to obtain a unique solution for the parameters to be estimated in the model" (Diamantopoulos and Siguaw, 2000). The literature suggests that models may be 1) unidentified or under-identified, 2) just-identified or 3) over-identified (Kelloway, 1998). A model is said to be under-identified where the number of unknown parameters exceeds the number of equations used to specify the model. Hence no unique solution can be obtained from the data. A model is said to be just-identified, when the number of parameters is exactly equal to the number of equations, and hence one set of parameters will always be able to exactly reproduce the covariance matrix. In an over-identified model, the number of equations exceeds the number of unknown parameters, and thus there are a number of different unique solutions (Kelloway, 1998). An over-identified model allows a number of options to be examined in an attempt to determine the optimum fit to the collected data (Bollen, 1989).

Whilst the underlying conceptual argument surrounding the above is central to the model identification process, "LISREL has an excellent diagnostic facility" (Diamantopoulos and Siguaw, 2000), and detects identification issues for the user. The programme then produces a written warning to the user of the form "WARNING: parameter so-and-so may no be identified. Standard error estimates, T-values, Modification Indices and

Standardised residuals cannot be computed" (adapted from Diamantopoulos and Siguaw, 2000).

5.3.3. Assessing model fit.

Assessing a model's fit provides an estimate of the extent to which a hypothesised model relates to the evidence from the data collected (Diamantopoulos and Siguaw, 2000). Whilst there is no single measure that can best describe the overall fit of structural equation models (Hair et al, 1998), there are a number of measures, or goodness of fit measures that can be consulted to provide a guide.

Three main areas of model fit assessment are present in the literature and, whilst competing terminology is used, divide broadly into three main areas of 1) absolute fit, 2) comparative fit and 3) parsimonious fit statistics (Hair et al, 1998).

Absolute fit statistics are designed to measure the degree to which the covariance or correlations observed are predicted by the overall model. The most "fundamental" (Hair et al, 1998) measure of absolute fit is the chi-squared or χ^2 statistic. The statistic provides a test of the null hypothesis, which states that the produced matrix is equivalent to the observed matrix. Therefore a non-significant chi-squared statistic, rejecting the null hypothesis, is the desired result (Kelloway, 1998). A non-significant chi-squared result is not enough in isolation to ensure that the "correct" model has been specified and tested (Hair et al, 1998). All that is known from the chi squared test is that the model in question appears to approximate to the observed covariances and correlations well. It does not however, infer that another model would fit better or as well. One important criticism of the Chi squared statistic is that it is sensitive to sample size (Hayduk, 1987; Sharma,

1996; Kelloway, 1998; Hair et al, 1998; Diamantopoulos and Siguaw, 2000), with sample sizes of larger than 200 having a greater likelihood of presenting significant differences in competing models. Additionally, sample sizes of less than 100 tend to demonstrate acceptable fit statistics "even when none of the model relationships are shown to be statistically significant" (Hair et al, 1998).

Whilst the arguments above provide no real evidence to reject this measure completely, given the problems associated with its use, researchers are encouraged to compliment the chi-squared assessment with additional measures (Sharma, 1996; Hair et al, 1998; Kelloway; 1998; Diamantopoulos and Siguaw, 2000). Due to the number of statistical references advocated in the literature, and also provided as output by LISREL, these have been summarised for ease of reference in appendix 5.1.

In addition to the statistical references quoted in appendix 7.1, and in answer to some of the criticisms levelled at the chi-squared statistic discussed above (Hayduk, 1987; Wheaton, 1987) another measure that is cited as of importance in model assessment, is that of critical N (CN), (Diamantopoulos and Siguaw, 2000). The CN statistic indicates the size of the data sample statistically required in order for the fit of the model to be acceptable. A CN of larger than 200 is cited as an indication that the model is an accurate representation of the data. Indeed Hoelter (1983a) argues that researchers should "refocus our attention on the issue of the size of N rather than on d.f. (degrees of freedom)".

5.3.4. Assessment of reliability.

Following any assessment of model fit, issues of reliability require attention (Sharma, 1996). Reliability refers to the degree to which random error is excluded.

Earlier in this chapter and also in chapter four, coefficient alpha was utilised as one method of assessing reliability. However Gerbing and Anderson (1998), argue that this will tend to underestimate reliability if the items do not have equal reliability, or if the number of items in a scale is small. Hence the formula cited below is utilised in order to assess composite reliability.

$$\frac{\sum(\text{standardised loadings})^2}{\sum(\text{standardised loadings})^2 + \varepsilon j}$$

Nunnally (1978) suggests that 0.7 is a minimum acceptable level for composite reliability. DeVellis (2003) suggests that lower levels of composite reliability are acceptable in the early stages of scale development, 0.6 and above being considered as desirable (Bagozzi and Yi, 1981).

5.3.5. Assessment of validity.

Validity refers to the extent that a measure actually captures what it is supposed to. Fornell and Larcker (1981) suggest that scale reliability reflects convergent validity within a given scale. Therefore if the required criteria are met, then evidence of convergent validity is present[42]. In addition to the composite reliability calculation Fornell and Larcker (1981) suggest the examination of the shared variance of the scale. The average variance extracted (AVE) formula is presented below. Here, a minimum lower threshold of 0.5 is recommended. Intuitively this appears a fair threshold given that at a lower level, more error is being accounted for than the construct of interest.

[42] Bagozzi and Yi (1981) suggest that a minimum level of 0.6 is acceptable.

$$\frac{\sum(\text{standardised loadings}^2)}{\sum(\text{standardised loadings}^2)+\varepsilon j}$$

5.3.6. Model power estimation.

Tests of model power is an additional tool which assesses the likelihood of making a type two error i.e. not rejecting an incorrect model (Diamantopoulos and Siguaw, 2000). The underlying premise of power calculation (MacCallum, Browne and Sugawara, 1996), suggests that most of the statistical tests conducted on measurement models test for type one error i.e. rejection of the correct model. Hence calculation of type two error is appealing, as knowing the likelihood of rejecting the false model (or null hypothesis) is as important as assessing the degree of type one error. Two types of power test are suggested in the literature (MacCallum, Browne and Sugawara, 1996), these are 1) test of exact fit and 2) test of close fit. Test of exact fit examines whether the measurement model proposed fits the population perfectly i.e. the null hypothesis. Test of close fit examines whether the proposed model approximates to the population i.e. takes into account a more "realistic" (Diamantopoulos and Siguaw, 2000) assessment. Testing of model power is an "often neglected" (Diamantopoulos and Siguaw, 2000) process, however here it is conducted by utilising measures from MacCallum, Browne and Sugawara (1996).

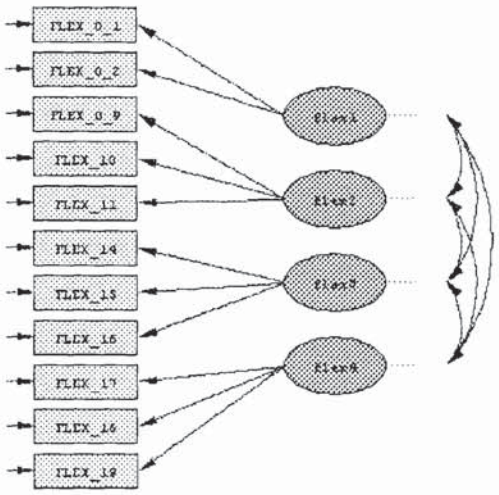
5.4. Model specification.

In this section the measurement models for the constructs of interest are specified and tested against the previously discussed criteria.

5.4.1. Organisational flexibility.

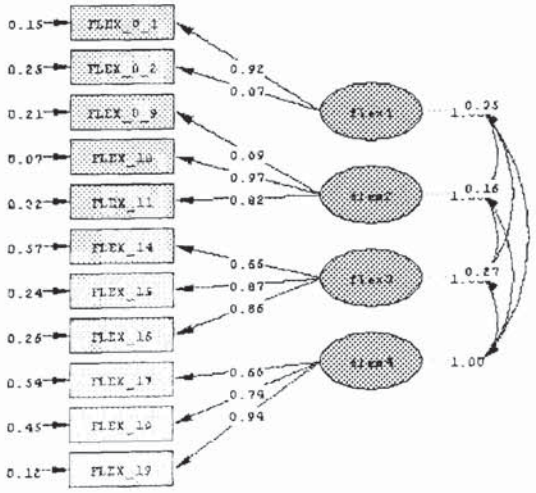
From the exploratory analysis presented in section 5.2.1, the factor structure presented in figure 5.3 was established. Here, Organisational Flexibility consists of 4 dimensions of 1) Operational Flexibility, 2) Structural Flexibility, 3) Technology Related Flexibility and 4) Financial Flexibility.

Figure 5.3: Conceptual factor structure for Organisational Flexibility Construct



This factor structure was modelled for confirmatory factor analysis purposes using the LISREL package and the results are presented in figure 5.4.

Figure 7.4: Path Diagram for Organisational Flexibility



Chi-Square=100.11, df=38, P-value=0.00000, RMSEA=0.067

5.4.1.1. Assessment of organisational flexibility model fit.

Firstly an assessment of the overall fit of the hypothesised model was made, against the output provided. The main fit criteria are presented in table 5.6 below. The choice of test statistics is not random, and is based on recommendations by Hair et al (1998) and Diamantopoulos and Siguaw (2000), citing that the statistics presented "should be more than sufficient to reach an informed decision concerning the model's overall fit" (Diamantopoulos and Siguaw, 2000).

Table 5.6: Organisational Flexibility: Assessment of Hypothesised Model Fit

	Test Result	**Acceptable level**
GFI	0.953	>0.90
PGFI	0.548	>0.5
NFI	0.957	>0.90
PNFI	0.661	>0.5
RFI	0.938	>0.90
Standardised RMR	0.0424	<0.05
RMSEA	0.0669	<0.08 – reasonable fit
CFI	0.972	>0.90
Critical N	213.663	Sample size 366 cases

Given the output presented in table 5.6 following the confirmatory factor analysis, the factor structure hypothesised demonstrated no cause for concern with regards to model fit.

5.4.1.2. Assessment of validity.

The hypothesised factor structure was then assessed for its validity i.e. the extent to which an indicator of a construct measures exactly what is purports to measure (Diamantopoulos and Siguaw, 2000). This was done once again, by examining the output provided by LISREL. Convergent validity was assessed by an examination of the magnitude (the standardised loadings) and significance (the t-values) of the paths between the hypothesised latent factors and the Organisational Flexibility construct were examined, and are presented in table 5.7.

Table 5.7: Standardised loadings and t-values for Hypothesised Organisational Flexibility model

	Operational	Structural	Technological	Financial
Item				
1	0.925 (19.803)			
2	0.865 (18.242)			
3		0.891 (21.326)		
4		0.966 (24.416)		
5		0.824 (18.968)		
6			0.658 (13.402)	
7			0.872 (19.277)	
8			0.862 (18.995)	
9				0.680 (13.780)
10				0.744 (15.302)
11				0.940 (20.405)

All standardised loading presented are well above acceptable limits, as are the t-values produced (Diamantopoulos and Siguaw, 2000).

Discriminant Validity of the factors was assessed by an examination of the inter-dimensional correlations present, a Phi coefficient of significantly less than 1 indicating support for the ability of the factors present to discriminate between constructs. Table 5.8 presents the information found. Once again, support was found regarding construct validity.

Table 5.8: Phi coefficient for Hypothesised Organisational Flexibility model

	Operational	**H.R.**	**Tech.**	**Structural**
Operational	1.000			
H.R.	0.294	1.000		
Tech.	0.577	0.243	1.000	
Structural	0.348	0.158	0.274	1.000

In summary, no evidence was presented to cause concern over the validity of the factor structure hypothesised.

5.4.1.3. Assessment of reliability.

Diamantopoulos and Siguaw (2000) suggest three main indicators of reliability to be examined in relation to a confirmatory factor analysis. These are a) the R^2 statistics, b) the composite reliability and c) the average variance extracted.

The R^2 statistic examines the squared multiple correlations of the indicators of interest. They provide an assessment of the amount of variance in the undying latent variable, explained by the particular indicator, the implication here being that the remaining

variance is due to measurement error. Composite reliability is a similar concept to the coefficient alpha examined in section 5.1.1, and explained in more detail in chapter four. In short, composite reliability is an indicator of the extent to which all of the indicators of interest are free from measurement error. Average variance extracted is a direct measure of the amount of variance present due to measurement error, in relation to the amount of variance captured by the construct (Hair et al, 1998; Diamantopoulos and Siguaw, 2000). In overview, the above measures attempt to provide an assessment of the amount of measurement error present within a specified construct, less being desirable. Table 5.9 summarises the findings relating to the Organisational Flexibility construct.

Table 5.9: Summary of reliability statistics for hypothesised Organisational Flexibility Model

	Operational	**H.R.**	**Tech.**	**Structural**	
Item					
1	0.855				
2	0.749				
3		0.793			R
4		0.934			Squared
5		0.679			Statistic
6			0.433		
7			0.760		
8			0.743		
9				0.463	
10				0.554	
11				0.884	
Composite Reliability	0.890	0.897	0.860	0.848	
Average Variance Extracted	0.802	0.745	0.675	0.655	

Taken in overview, the statistics presented caused no real cause for concern regarding the hypothesised factor structure.

Additional assessments were made regarding the power of the measurement model (see section 5.3.6). The test of exact fit yielded a power estimate of 0.952. The test of close fit (regarded as more "realistic" Diamantopoulos and Siguaw (2000)) yielded a figure of 0.952. Hence no concerns about the power of the measurement model were expressed.

5.4.1.4. Competing models.

As discussed previously a nested or competing models approach was adopted, the result of which are detailed in this section.

The rival model specification is presented in figure 5.5, and demonstrates a first-order construct of "flexibility" that all items are hypothesised to reflect. Essentially, all of the items were forced to load onto one underlying construct within the LISREL modelling programme.

Figure 5.5: First order construct of Organisational Flexibility

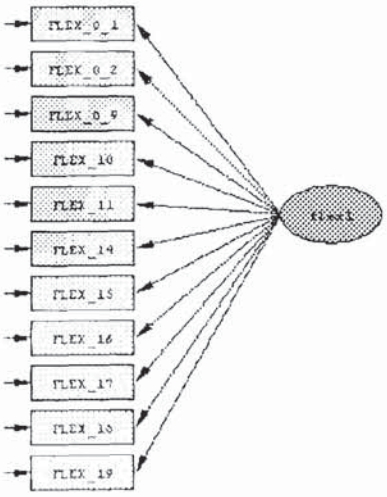


Table 5.10 presents the comparative results for the two competing models

Table 5.10: Organisational Flexibility. Comparison of nested model fit

	Hypothesised Model	Competing Model
Chi-Squared	100.1	1538.75
Degrees of Freedom	38	44
RMSEA	0.067	0.305
Adj. GFI Index	0.953	0.35
Incremental Fit Index	0.972	0.36
Comparative Fit Index	0.972	0.36
Relative Fit Index	0.938	0.20
Parsimony GFI	0.548	0.38

Table 5.10 highlights the differences in the fit statistics produced by the competing models. A chi-squared difference test produced a significant difference, inferring that the competing model produced a significant deterioration in model fit, further reinforcing the discriminant validity demonstrated earlier.

5.4.1.5. Histograms, skewness and kurtosis of confirmed factor structure.

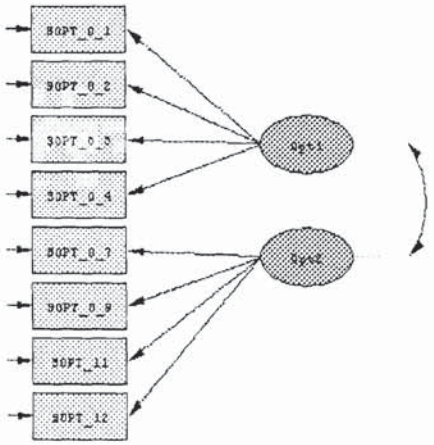
The previous sections were designed to demonstrate the dimensionality, reliability and validity of the Organisational Flexibility construct. Further analysis was conducted on the final factor structure. This analysis is presented in appendix 5.2 for ease of reference. The appendix provides information regarding the distribution of the average scores for the hypothesised dimensions of Organisational Flexibility, as well as a statistical assessment of skewness and kurtosis of the distributions examined. No problematic dimensions were noted.

5.4.2. Quality of strategic options.

Rather than merely re-state much of the discussion presented in sections 5.4.1 to 5.4.1.5, regarding the hypothesised factor structure for Organisational Flexibility, this section will present the data relating to the construct of interest in summary only. Any anomalous data or problematic outputs will be discussed where relevant.

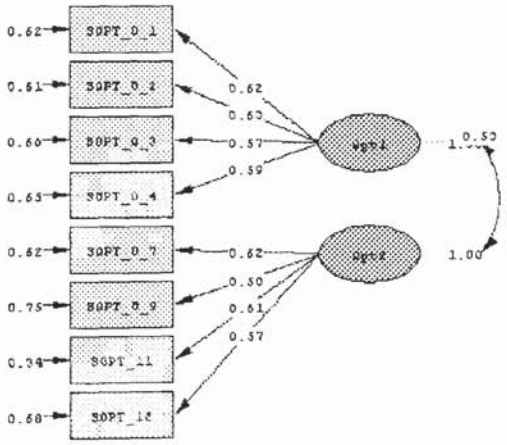
Figure 5.6 below provides the hypothesised factor structure.

Figure 5.6: Hypothesised factor structure for Quality of Strategic Options



Following confirmatory factor analysis utilising LISREL, the following factor structure was obtained for the hypothesised model.

Figure 5.7: Path diagram for Quality of Strategic Options



Chi-Square=55.85, df=19, P-value=0.00002, RMSEA=0.073

Table 5.11 below provides a summary of the confirmatory factor analysis key indicator output.

Table 5.11: Quality of Strategic Options - Assessment of Hypothesised Model Fit

	Test Result	**Acceptable level**
GFI	0.963	>0.90
PGFI	0.508	>0.5
NFI	0.902	>0.90
PNFI	0.612	>0.5
Standardised RMR	0.0496	<0.05
RMSEA	0.0729	<0.08 – reasonable fit
CFI	0.930	>0.90
Critical N	218.792	Sample size 366 cases

No unacceptable criteria were found, given the limits established from the literature (Hair et al, 1998; Diamantopoulos and Siguaw, 2000). From the data presented here, the hypothesised model demonstrated an acceptable level of fit, indeed on many of the criteria provided an extremely acceptable result.

Table 5.12: Standardised loadings and t-values for Hypothesised Quality of Strategic Options Model

	Logical Framework	Consultation with Stakeholders
Item		
1	0.617 (10.759)	
2	0.625 (10.910)	
3	0.565 (9.784)	
4	0.592 (19.282)	
5		0.615 (11.291)
6		0.501 (8.988)
7		0.811 (15.178)
8		0.568 (10.234)

Given the criteria previously stated i.e. standardised loadings >0.5 and t-values >1.96 (absolute), the output above can be considered as acceptable.

Table 5.13: Phi coefficient for Hypothesised Quality of Strategic Options Model

	Logical Framework	Consultation with Stakeholders
Logical Framework	1.000	
Consultation with Stakeholders	0.532	1.000

Once again, no data present to cause concern regarding the discriminant validity of the dimensions modelled.

Table 5.14: Summary of reliability statistics for Hypothesised Quality of Strategic Options Model

	Logical Framework	Consultation with Stakeholders	
Item			
1	0.381		
2	0.391		R
3	0.320		Squared
4	0.350		Statistic
5		0.379	
6		0.251	
7		0.658	
8		0.322	
Composite Reliability	0.692	0.30	
Average Variance Extracted	0.73	0.40	

Reliability assessment was more problematic for this hypothesised factor structure, with regards to the amount of variance being explained by the individual factors. As presented in table 5.14 the lowest R^2 value being 0.251, which demonstrates that 25% of the variance in the latent variable is explained by this factor, 75% statistically being attributed to measurement error.

For the Logical Framework dimension highlighted composite reliability and average variance extracted were deemed to be acceptable given the previous discussions in sections 5.3.4 and 5.3.5. However, for the Consultation with Stakeholders dimension more problematic statistics were exhibited, and were indeed somewhat below what might have been considered to be automatically acceptable.

Whilst not ideal, it was considered that in light of the other statistical data available regarding the construct and the two dimensions, at this stage no further amendments

would occur and that an overview would be taken, as recommended in the literature (Kelloway, 1998; Hair et al, 1998; Diamantopoulos and Siguaw, 2000; Churchill, 2002).

Once again, the dimensions of the hypothesised model were forced to load onto one underlying factor in order to conduct a Chi squared difference test (Kelloway, 1998).

Figure 5.8: First order construct, Quality of Strategic Options

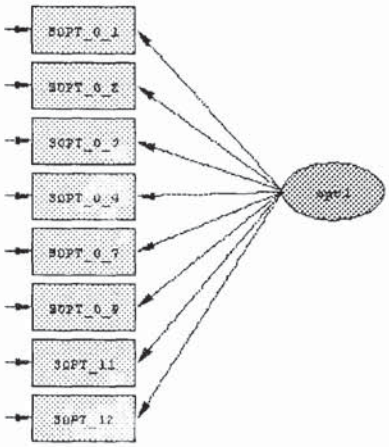


Table 5.15: Quality of Strategic Options. Comparison of nested model fit

	Hypothesised Model	**Competing Model**
Chi-squared	39.19	187.12
Degrees of Freedom	19	20
RMSEA	0.054	0.151
Adj. GFI Index	0.95	0.15
Incremental Fit Index	0.94	0.76
Comparative Fit Index	0.94	0.75
Parsimony GFI	0.61	0.49

From the evidence presented in table 5.15 the competing model does not demonstrate acceptable fit statistics and also, a chi-squared difference test presented a significantly different result, inferring that the competing model produced a significant deterioration in model fit. Whilst not conclusive, this result appears to somewhat alleviate some the problems associated with discriminant validity in the data above.

The factor structure exhibited above was subject to further examination regarding the distribution of the inter-dimensional item scores. Additionally, any skewness or kurtosis was statistically proven to be absent. The summary results are presented in appendix 5.3.

5.4.3. Comprehensive strategic choice.

As with section 5.4.2 the relevant data will be stated here and, where appropriate, anomalies will be discussed. Following confirmatory factor analysis utilising LISREL, the following factor structure was obtained for the hypothesised model.

Figure 5.9: Hypothesised factor structure for Comprehensive Strategic Choice

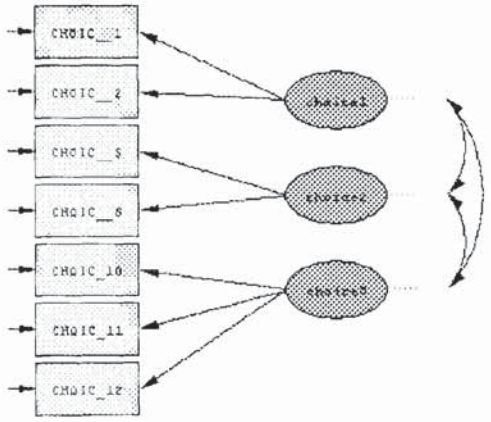
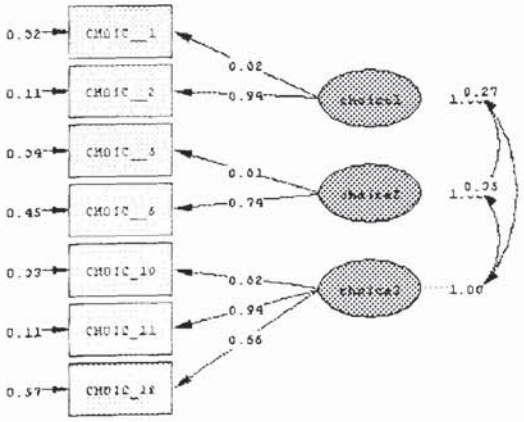


Figure 5.10: Path diagram for Comprehensive Strategic Choice



Chi-Square=31.22, df=11, P-value=0.00102, RMSEA=0.071

Table 5.16 provides a summary of the confirmatory factor analysis key indicator output.

Table 5.16: Comprehensive Strategic Choice - Assessment of Hypothesised Model Fit

	Test Result	Acceptable level
GFI	0.976	>0.90
PGFI	0.383	>0.5
NFI	0.971	>0.90
PNFI	0.508	>0.5
Standardised RMR	0.0302	<0.05
RMSEA	0.0710	<0.08 – reasonable fit
CFI	0.980	>0.90
Critical N	275.725	Sample size 366 cases

No particularly unacceptable criteria were found, given the limits established from the literature (Hair et al, 1998; Diamantopoulos and Siguaw, 2000). One problematic result was that of the PGFI (Parsimony Goodness of Fit Index), however as all of the other measures were above acceptable limits, this anomaly was overlooked here. Additionally, Diamantopoulos and Siguaw (2000) cite the GFI as the "most reliable measure of absolute fit", and hence as this easily meets the desired criteria, the poor PGFI result is overlooked. Also, other parsimonious indicators meet acceptable limits, and hence provide another reason why this should be classed as an anomaly. From the data presented here, the hypothesised model demonstrated an acceptable level of fit, indeed on many of the criteria provided an extremely acceptable result.

Table 5.17: Standardised loadings and t-values for Hypothesised Comprehensive Strategic Choice model

	Quality	Consultation	Process
Item			
1	0.822 (13.112)		
2	0.942 (14.354)		
3		0.812 (11.637)	
4		0.741 (11.027	
5			0.819 (17.614)
6			0.941 (21.209)
7			0.658 (13.485)

Given the criteria previously stated i.e. standardised loadings >0.5 and t-values >1.96 (absolute), the output above can be considered as acceptable.

Table 5.18: Phi coefficient for Hypothesised Comprehensive Strategic Choice Model

	Quality	Consultation	Process
Quality	1.000		
Consultation	0.339	1.000	
Process	0.268	0.353	1.000

Once again, no data present to cause concern regarding the discriminant validity of the dimensions modelled.

Table 5.19: Summary of reliability statistics for Hypothesised Quality of Strategic Options Model

	Quality	Consultation	Process	
Item				
1	0.676			
2	0.887			R
3		0.660		Squared
4		0.549		Statistic
5			0.670	
6			0.885	
7			0.434	
Composite Reliability	0.877	0.753	0.839	
Average Variance Extracted	0.782	0.604	0.640	

All of the R^2 statistics reported are above acceptable limits, as are the composite reliability statistics and the variance extracted. Only one score was considered borderline i.e. the 0.434 exhibited by item 7 in dimension 3. As occurred in the previous assessment of the Quality of Strategic options measure, it was considered that in light of the other statistical data, no further deletions would occur and that an overview would be taken, as recommended in the literature (Kelloway, 1998; Hair et al, 1998; Diamantopoulos and Siguaw, 2000; Churchill, 2002). Interestingly, for a measure under development, the average variance extracted and the composite reliability output were considered to be well above what might be generally acceptable.

Once again, the dimensions of the hypothesised model were forced to load onto one underlying factor in order to conduct a chi-squared difference test (Kelloway, 1998).

Figure 5.10: First order construct - Comprehensive Strategic Choice

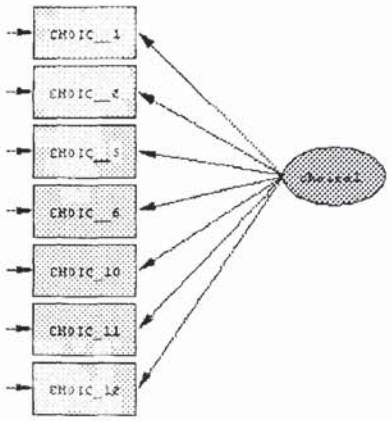


Table 5.20: Comprehensive Strategic Choice - Comparison of nested model fit

	Hypothesised Model	Competing Model
Chi-squared	31.22	667.38
Degrees of Freedom	11	14
RMSEA	0.710	0.358
Adj. GFI Index	0.939	0.31
Incremental Fit Index	0.980	0.41
Comparative Fit Index	0.980	0.40

From the evidence presented in table 5.20 the competing model does not demonstrate acceptable fit statistics and also, a chi-squared difference test presented a significantly different result, inferring that the competing model produced a significant deterioration in model fit.

The factor structure exhibited above was subject to further examination regarding the distribution of the inter-dimensional item scores. Additionally, any skewness or kurtosis was statistically proven to be absent. The summary results are presented in appendix 5.4.

5.5. Summary: Measure development.

This chapter has examined the newly developed constructs of 1) Organisational Flexibility, 2) Quality of Strategic Options and 3) Comprehensive Strategic Choice, and

subjected them to confirmatory factor analysis utilising the LISREL structural equation modelling package. All constructs were seen to have met previously published limits of statistical acceptability.

Of note, the initial hypotheses presented in chapter two reflected an initial, exploratory search of the literature. However, following significant development and refinement of the constructs of interest[43], the hypotheses are re-stated for further testing, in order to reflect the dimensionality statistically derived from the exploratory and confirmatory analysis presented. The re-stated hypotheses are presented in appendix 5.5.

The next chapter investigates the relationships between the previously utilised measures described in chapter four and the measures described above. Once more, the relationships are investigated through the use of structural equation modelling, using LISREL.

[43] See chapters three and four.

6. STRATEGIC PLANNING AND PERFORMANCE: MODEL TESTING

The previous chapters have presented a review of the literature within the strategic planning and organisational performance domain, an examination of the measures utilised to capture the variables of interest, a conceptual model and additionally a profile of the respondents to the administered questionnaire. This chapter focuses on the methods of analysis utilised in order to test the conceptual model presented and also a brief discussion of the findings, post analysis.

Latent variable path analysis was utilised to test the conceptual model presented. The method and additional justification for its usage within this context, is now discussed further.

6.1. Latent variable path analysis.

As "Constructs such as attitudes, personality and intelligence cannot be directly observed" (Sharma, 1996), they are referred to as latent variables, in that a number of elements, or indicators (Hair et al, 1998), reflect the underlying variable[44].

Within the literature examining the relationship between strategic planning and organisational performance, few examples of studies utilising latent path analysis were highlighted[45]. However given that variable path analysis has been cited as a more comprehensive and flexible method of analysis than any other statistical model in current use within the social sciences (Hoyle, 1995), support is present for its use within this context.

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[44] Further discussion of latent constructs available in chapters four and five.
[45] See chapter 2 section 2.1.5 for further discussion.

Latent variable path analysis is part of a "family" (Hair at al, 1998) of models, encompassed under the heading of structural equation modelling (SEM). Unfortunately, due to the "widespread use and so many variations in applications, many researchers are uncertain about what constitutes structural equation modelling" (Hair et al, 1998). For example other members of the SEM "family" (Hair et al, 1998) are covariance structure analysis and confirmatory factor analysis, with other applications being regression, principal components analysis and canonical correlation. For clarity, within the bounds of the research presented here SEM will refer principally to applications of confirmatory factor analysis and latent variable path analysis.

6.1.2. Advantages of structural equation modelling.

While some support was presented for the use of latent variable path analysis in the previous chapter, further justification is presented here in relation to the advantages of SEM over alternative approaches. For example, within SEM the data utilised is subject to stringent "assumptions[46]" (Sharma, 1996), and whilst "In most empirical studies some or all of the assumptions will be violated" (Sharma, 1996), this will directly impact on the quality of the results obtained. This is in contrast to, for example, multiple regression that exercises far less stringent a regarding the quality of the data utilised.

The previously cited flexibility (Hoyle, 1995) of this approach manifests itself in two main areas cited by Hair et al (1998), 1) the ability to estimate multiple and interrelated dependence relationships and 2) the ability to incorporate unobserved concepts within these relationships and account for measurement error. For example, multiple regression will only allow direct effect specification on a single outcome variable (Hair et al, 1998),

[46] The "assumptions" (Shrama, 1996) highlighted are further examined in section 8.1.3.

however SEM approaches, such as latent variable path analysis, can examine multiple relationships between independent and dependent variables. Hence this intuitively appears to be particularly appropriate, in addition to presenting a more robust test of the entire model simultaneously, as opposed to examining it piecemeal. Additionally the issue of measurement error presents a further advantage over multiple regression techniques. Whilst unavailable within multiple regression, or indeed ANNOVA, SEM utilising latent variable path analysis, allows an estimation of measurement error and reliability.

Association, isolation and directionality are cited as the three conditions constituting a causal relationship (Bollen, 1989). Whilst the literature would suggest that SEM satisfies both the association and isolation criteria, the issue of directionality is less clear indeed "we caution any researcher against assuming that the techniques discussed (SEM) ....provide a means of "proving" causation" (Hair et al, 1998). This given, support is present in the literature for making assumptions regarding causality through SEM providing that sufficient theoretical support is available for the direction of causality presented (Hayduk, 1987; Kelloway, 1998; Hair et al, 1998). Of note however, within this section the advantages of SEM over alternative methodologies were to be examined, and whilst these have been presented and supported, the issue of causality is unresolved and hence is not presented here as an advantage per se.

6.1.3. Assumptions of structural equation modelling.

Whilst complete agreement is absent in the literature, the assumptions described are generally as follows, and refer to the data being analysed 1) multivariate normality, 2) linearity of relationships and 3) continuous data (Hair et al, 1998; Sharma, 1996; Hoyle,

1995). 1) Multivariate normality cannot be assumed even if all univariate distributions are normal (Sharma, 1996; Hair et al, 1998), albeit that multivariate normality can be disproven through a lack of univariate normality. Given the critical nature of multivariate normality Sharma (1996), reports that very few statistical tests are available for the researcher, suggesting that a graph of the ordered squared Malhanalanobis distance against the chi-squared statistic be visually explored and estimated for its approximation to linearity. If the researcher believes that the plot is close to linear, then the assumption of univariate normality is reasonable. Whilst intuitively this technique does suggest an element of randomness, the literature cites that SEM techniques are generally relatively robust regarding departures from normality (Hoyle, 1995). 2) The assumption of linearity between independent and dependent variables, whilst being a common one in much research, is implicit within the research design of this research. For example, all relationships hypothesised in chapter two are essentially linear, additionally the respondents to the survey administered, whilst employees of an organisation, were all individuals and hence the unit of analysis was a single respondent, assumed to be independent of any other respondent. 3) Related to the concept of normality is an assumption regarding the continuous nature of the data utilised within SEM. Within Likert measurement scales there is assumed to be an underlying continuous variable (Joreskog and Sorbom, 1996), hence satisfying the aforementioned criteria.

6.1.4. Model specification and identification.

Both structural and measurement factors are examined in relation to the hypothesised model, within latent variable path analysis (Hoyle, 1995; Sharma, 1996; Kelloway, 1998). In chapters four and five, much of the literature regarding structural equation modelling was examined in relation to the measurement model, hence in order to

facilitate a more concise discussion here, only those elements in addition to those previously outlined will be highlighted.

Various approaches to testing structural models are cited in the literature (Sharma, 1996; Hair et al, 1998; Kelloway, 1998) however, Joreskog and Sorbom (1996) present a classification of three approaches citing 1) strictly confirmatory, 2) alternative models and 3) model generation. 1) Within the strictly confirmatory approach, a single model is presented and tested, with the primary and sole aim of either accepting or rejecting the model. 2) With alternative models the researcher not surprisingly, presents a number of different models with the one delivering the best empirical results being selected. 3) In a model generation strategy, a tentative model is firstly hypothesised. If a problematic fit with the data is observed, it is subsequently adjusted or modified, and re-analysed using the same data set. It is the latter model generation approach that is cited in the literature as being the most widely used by researchers (Joreskog and Sorbom, 1993), mainly due to 1) researchers not wishing to reject a single model without suggesting alternatives and 2) the alternatives are hardly ever specified a priori.

The model generation approach however has attracted criticism, with the literature suggesting that modifying a model on the basis of empirical results alone, presents the possibility of the acceptance of "spurious" results (Hair et al, 1998), unless a plausible theoretical justification can be made. Kelloway (1998) however, citing Steiger (1990) presents a negative perspective on model re-specification on theoretical grounds, suggesting "What percentage of researchers would find themselves unable to think up a "theoretical justification" for freeing a parameter? In the absence of empirical information to the contrary, I assume that the answer... is near zero".

Whilst unsupportive discussion is present in the literature, support for model re-specification and testing is considerable (Hair et al, 1998; Sharma, 1996; Kelloway, 1998). Indeed, whilst complete rejection of the initial model is justified within the "classical decision-making view of hypothesis testing" (Kelloway, 1998), any insight into what the "correct" (Kelloway, 1998) theory may be, is lost without re-specification and subsequent testing.

Given the discussion presented here, and the issues highlighted previously regarding the lack of consensus within the strategic planning domain, the model generation approach was adopted, in order to present both a rigorous and insightful analysis.

6.1.5. Additional issues for consideration.

Other issues examined in relation to the analysis undertaken include 1) multicolinearity, 2) outliers or outlying data points, 3) power of the test and 4) sample size, with the latter being particularly pertinent to SEM modelling techniques.

Multicolinearity, or colinearity (Hayduk, 1987) refers to the degree to which the independent variables within a regression model significantly correlate (Kelloway, 1998; Hair et al, 1998). As the level of multicolinearity increases within a structural equation model, interpretation becomes problematic as the effects of the independent variables become difficult to separate, leading to unstable statistical results (Cohen and Cohen, 1975). Whilst support for the deletion of the problematic variables is available in the literature (Cohen and Cohen, 1975), model specification problems are noted in relation to this course of action.

An outlier is defined in the literature as "an observation so different in magnitude from the rest of the observations that the analyst chooses to treat it as a special case" (Churchill, 2002). While outlying data "affect the results of structural equation modelling" (West, Finch and Curran, 1995), they may do so in beneficial and also negative ways. For example, an outlier may reflect characteristics of the population that may be undiscovered normally, alternatively distortions may arise that negatively impact on the data analysis process (Hair et al, 1998). Outliers may arise from a number of sources for example an initial coding error prior administration of the data collection instrument, respondent error or data entry error additionally the case may arise where few of the respondents were outside the population of interest (Hair et al, 1998). Whilst treatment of the outlying data should depend upon sound empirical, conceptual and theoretical underpinnings, the options open to researchers are essentially three-fold, 1) delete the outlier, 2) redefine the population of interest or 3) re-specify the model.

The issue of power assessment is important in SEM techniques and is associated with the likelihood of making a type two error i.e. not rejecting an incorrect model (Diamantopoulos and Siguaw, 2000). The underlying premise of power calculation (MacCallum, Browne and Sugawara, 1996), suggests that most of the statistical tests conducted on measurement models test for type one error i.e. rejection of the correct model. Hence calculation of type two error is appealing, as knowing the likelihood of rejecting the false model (or null hypothesis), is as important as assessing the degree of type one error[47].

[47] For further discussion see chapter 7 section 7.3.6.

The issue of power and sample size will be dealt with here simultaneously as they are related terms within this context, in that "An important issue in research design involves the determination of sample size necessary to achieve adequate power to carry out planned hypothesis tests" (MacCallum, Browne and Sugwara, 1996). Despite power being referred to as "very much a large sample technique" (Kelloway, 1998), and the inference of larger sample sizes impacting directly on statistical power tests (Kaplan, 1995), the importance of an investigation of the interdependence within this context is apparent.

Additionally and of direct impact, is the issue of sample size within a SEM context. For the research presented here, maximum likelihood estimation (MLE) was utilised, with guidance on sample size parameters available in the literature (Hair et al, 1998; Kelloway, 1998; Diamantopoulos and Siguaw, 2000; Churchill, 2002) with Kelloway (1998) suggesting that a minimum of 200 cases is necessary where latent variables are concerned. An alternative perspective to the absolute figures presented above is that of the ratio of sample size to the number of parameters to be estimated. Bentler and Chou (1987) suggesting that the ratio should be between 5:1 and 10:1.

6.2. Operationalisation of the variables.

This section presents a discussion of the operationalisation of the variables utilised in the analysis of the hypothesised model. Previous sections have discussed the advantages of latent variable path analysis, one of which being the opportunity to estimate the structural and measurement models simultaneously (Kelloway, 1998). While the ability to estimate two models simultaneously presents inherent advantages to the researcher, problematic fit statistics for example, present the researcher with identification issues i.e. was the problem with the measurement model, or the structural model? To remedy this issue, the

literature suggests that the measurement model is estimated first, followed by the structural model (Anderson and Gerbing, 1988). This procedure was adopted here with measurement model estimation being presented largely in chapters two, four and five, and the structural element presented later within this chapter.

Two different approaches are taken when specifying the measurement and structural models. Within the discussions regarding the measurement model (see chapter 7), each variable was represented by a number of scale items, or observable indicators. This was done in order to estimate the influence or relationship of each of the reflective items on the underlying variable that they purport to represent. With the structural model however, it is the relationship between the latent variables that are of interest, as opposed to the relationships between a single latent variable and its indicators. The assumption being, that in testing the relationship between latent variables in the structural model, that the measurement model presented acceptable results.

This issue of identification was a further factor for consideration. Structural model identification is related to "the inability of the proposed model to generate unique estimates" (Hair et al, 1998), and can be manifest in 1) a just identified model - the number of structural equations composing the model equals exactly the number of unknown parameters, 2) an under-identified model – the number of structural equations composing the model is less than the number of unknown parameters and 3) an over-identified model – the number of structural equations composing the model is greater than the number of unknown parameters (Kelloway, 1998). The number of parameter estimates in relation to the sample size generated is hence of great importance, where the "ideal situation" (Kelloway, 1998) is to have an over-identified model whereby there is

"more information in the data matrix than the number of parameters to be estimated" (Hair et al, 1998). Indeed recommended ratios are available in the literature with 5:1 being cited as a minimum (Bentler and Chou, 1987).

Related to this issue is that of aggregated variables (c.f. Bagozzi and Heatherton, 1994). Here, rather than utilising the pre-specified indicators and dimensions to represent the constructs of interest, "a single composite made up of the sum of the items hypothesised to measure it" (Bagozzi and Heatherton, 1994). With this approach, latent variables are no longer being used and hence measurement error would be absent. However, this "observed variable path analysis" (Kelloway, 1998) would be inappropriate within this context and hence, an estimation of the measurement error is appropriate where latent variables are measured by single item measures (Bagozzi and Heatherton, 1994). Indeed, one of the fundamental benefits of performing latent variable path analysis is the ability to incorporate measurement error calculations. In order to remedy this issue, Kelloway (1998) suggests the following formula, (1- scale reliability) multiplied by the variance of the observed score. The result of this equation presenting the error variance of the composite variable that may be fixed within the LISREL programme prior to final calculation of the model. Whilst inappropriate for all of the constructs under investigation, strategic planning and political behaviour were treated in this way.

The hypotheses represented in the structural model, present 19 parameters to be estimated against a sample size of 366. This presents a ratio of approximately 19:1, therefore model identification was not considered problematic at this stage.

6.3. Testing the structural model.

The measurement model was used as a framework for construction of the structural model presented on page 226. Given the previous discussions presented in section 6.1, consideration was made to the factors highlighted i.e. multicolinearity, assumptions and also outliers.

Within the latent variable path analysis context highlighted here the correlations between the independent variables were assessed. This analysis has been previously discussed in relation to measure development, and hence will not be replicated here.

Additionally and with reference to the above, problematic colinearity has been associated with correlations as high as 0.9 (Sharma, 1996; Hayduk, 1987). However, a problem associated with the scale or degree, of colinearity is that of "how big is big?" (Hayduk, 1987). Indeed, while 0.9 appears to be a "frequently cited" (Hayduk, 1987) value by which to infer colinearity problems, correlations as low as 0.8 have been known to make researchers feel "uncomfortable" (Hayduk, 1987), especially where none was anticipated. Here, whilst further examination of the individual measures was made, the upper 0.9 figure was largely utilised as some correlation was naturally expected between the variables investigated. No problematic colinearity was identified within the model tested.

No major violations of the normality assumption were identified within the previous analysis presented. The basis of assessment utilised was that of the Kolmogorov-Smirnov (KS) test, coupled with a visual assessment of the distributions presented. Whilst the statistically based KS test did not present any significant departures from the normality assumption, the visual inspection concluded that whilst some of the distributions

identified did display characteristics of non-normality this would not prove to be problematic due to the robustness of the SEM technique (Hoyle, 1995; Chou and Bentler, 1995; Hair et al, 1998; Kelloway, 1998).

No outliers were identified within the data set, however this was not considered as exceptional as all responses were confined to specific ranges through the Likert-style answer structure (Churchill, 2002). Hence any outlying data would have been primarily due to either data entry error, or indeed respondent error, however this was analysed thoroughly at an early stage, and hence was not considered to be a large or significant factor here.

6.3.1. Model specification.

In order to fully test the hypothesis stated in chapter two, a full path model was specified. Whilst unfamiliar, and having received criticism in the literature (Hoyle, 1995), the "general notation" (Hayduk, 1987) utilised in order to "keep track of the modelled concepts" (Hayduk, 1987) is that of the Greek alphabet. The notation utilised is summarised in table 6.1 (overleaf) for ease of reference.

Of note, the paths presented in the structural model are indicative of the relationships tested, and have been presented at the construct level in order to reduce complexity. For example, the 1) flexibility, 2) choice, 3) options and 4) implementation constructs all have a number of dimensions, consequently creating a large number of paths to be presented in a relatively small area. Additionally, the relationships presented at the construct level are indicative of those tested at the dimensional level, and hence this was not considered to be problematic in this instance.

Table 6.1: Summary of Greek notation utilised in full path analysis

Greek Notation	Representing	Comments
ξ	Exogenous variables	Independent variables
η	Endogenous	Dependent variables
ζ	Residual term (Endogenous variable)	Analogous to the error term associated with the exogenous variables
χ	Observed Indicator	This is given for reference as in the main diagram the observed indicators are not shown in order to aid the clarity of the presentation
δ	Error term	Observed indicator
γ	Relationship, or path between exogenous and endogenous variables	
β	Relationship, or path between endogenous and endogenous variables	

6.3.2. Results.

The overall results from testing the structural model are highlighted in table 6.2. Once again, the fit statistics presented, are guided by previous discussion within the measure development and descriptive analysis chapters. Additional data is provided to increase parsimony. As previously discussed, the results generated are assessed in overview as "evaluation of model fit should derive from a variety of sources and be based on several criteria that can assess a model fit from a diversity of perspectives" (Byrne, 1998). In essence, no one indicator or measure is able to completely confirm or deny the validity of a particular model. Hence, the results obtained are presented within widely published and accepted groupings of a) absolute or overall fit (Hair et al, 1998; Diamantopolos and Siguaw, 2000), b) incremental fit and c) parsimonious fit (Hair et al, 1998; Sharma,

1996). The statistics presented are subsequently explained, and examined against published guidelines (Sharma, 1996; Hair et al, 1998; Diamantopoulos and Siguaw, 2000). Subsequently nested models (Kelloway, 1998) are examined.

Table 6.2: Structural model test results

Measure of:	No.	Fit Statistic	Abbreviation	Result Achieved
Absolute or Overall Fit				
	1	Chi-squared	x^2	1157
	2	Degrees of freedom	df	513
	3	x^2 / df		2.25
	4	Expected Goodness of Fit	EGFI	0.9
	5	Relative Goodness of Fit	RGFI	0.94
	6	Root Mean Squared Error of Approximation	RMSEA	0.059
	7	Adjusted Goodness of Fit	AGFI	0.081
Incremental Fit				
	1	Incremental Fit index	IFI	0.92
	2	Comparative Fit index	CFI	0.92
Parsimonious Fit				
	1	Parsimony Goodness of Fit Index	PGFI	0.69

Generally the results obtained were considered to be excellent. The individual results are now examined further in more detail.

Measures of absolute fit

"Absolute fit measures determine the degree to which the overall model (structural and measurement models) predicts the observed covariance matrix" (Hair et al, 1998), hence being utilised largely as a comparator. The chi squared value, and the degrees of freedom presented are reasonably unrepresentative as in isolation they are meaningless. Indeed the chi squared statistic, and thereby any subsequent calculation involving it, has received much criticism in the literature due to the sensitivity it displays with regards to "sample size effects" (Hair et al, 1998), and also any departures from multivariate normality (Diamantopoulos and Siguaw, 2000). In response to this "researchers typically tend to discount the chi squared test and resort to other methods for evaluating the fit of the model to the data" (Bearden, Sharma and Teel, 1982). Regardless, the chi-squared to the degrees of freedom observed was calculated and found to be within acceptable limits i.e. < 3 and > 2 (Carmines and McIver, 1981). In response to the criticism presented, (c.f. Sharma, 1996) measures 4, 5, 6 and 7 were examined. Measures 4 and 5 were above acceptable limits i.e. 0.9 (Sharma, 1996), measure 6 was also above acceptable limits i.e. "between 0.05 and 0.08" (Diamantopoulos and Siguaw, 2000) indicating reasonable fit and measure 7 was additionally above acceptable limits i.e. 0.80 (Sharma, 1996). It was therefore concluded that the model demonstrated a high level of absolute or overall fit.

Measures of Incremental Fit

Measures of incremental fit compare "the proposed model to some baseline model, most often referred to as the null model" (Hair et al, 1998). Once again, these are comparative measures, however the statistical comparisons drawn are between the observed data and a hypothetical "single construct model with all indicators perfectly measuring the construct" (Hair et al, 1998), generated by the LISREL programme. Once again, the

incremental fit index and the comparative fit index presented acceptable results against published guidelines i.e. >0.9 (Sharma, 1996; Hair et al, 1998; Diamantopoulos and Siguaw, 2000). On examination of the results obtained, the model presented was deemed to display an acceptable level of incremental fit.

Parsimonious Fit Indicators

Parsimonious fit statistics are related to the goodness of fit statistics presented however allowances are made for model complexity. The 0.69 result presented is, once again within published and accepted limits i.e. > 0.5 (Diamantopoulos and Siguaw, 2000), as it is not "likely" (Kelloway, 1998) that the PGFI will reach the 0.9 cut-off that is utilised for many of the other fit indices. It was concluded from this result that the model displayed an acceptable level of parsimonious fit[48].

Assessment of Model Power

Whilst described further in section 6.3.6 of chapter six, an assessment of model power within multivariate analysis is generally a test of the likelihood of making a type two error i.e. not rejecting an incorrect model (Diamantopoulos and Siguaw, 2000). For the tabularised limits presented in the literature (MacCallum, Browne and Sugwara, 1996), both the test of exact fit and the test of close fit (regarded as more "realistic" Diamantopoulos and Siguaw (2000) yielded a figure > 1.00. Hence no concerns about the power of the measurement model were expressed.

Additionally, modification indices were examined. Modification indices or "Lagrange multiplier tests" (Kelloway, 1998), are a LISREL output that suggests the "minimum

[48] Of note, other parsimonious fit indices are present in the literature e.g. the normed chi square statistic (Hair et al, 1998). However this was, once again assumed to suffer from the normality and sample size related issues described earlier, and was therefore omitted here.

decrease in the model's chi-squared statistic value if a previously fixed parameter is set free and the model re-estimated" (Diamantopoulos and Siguaw, 2000). A number of modification indices were presented within the LISREL output, and were considered in relation to the expected parameter change estimated (Diamantopoulos and Siguaw, 2000). The modification indices presented were considered, and indeed tested against two main criteria, 1) substantive issues i.e. whether it made theoretical sense to do so and 2) overall impact on model fit. From the analysis conducted, no major changes were considered important. For example, a modification index was produced suggesting a new path between strategic planning and political behaviour would produce an improvement in the overall chi-squared statistic. This was tested, and caused four of the previously significant paths to present insignificant t-values, hence greatly impacting upon the overall explanatory power of the model. Additionally a chi-squared difference test (Sharma, 1996) was performed on the new chi-squared statistics in relation to the one previously specified (chi-squared = 1585.76 / d.f. = 479). The result indicated that the modified model did not represent a statistically significant better fit of the data.

In summary the model tested was seen to demonstrate extremely acceptable fit, in terms of absolute fit, incremental fit and parsimonious fit. Additionally, following model power testing and examination of modification indices, the model presented was deemed to provide the best fit to the data.

Nested Models

An additional technique recommended in the literature with regards to assessing model fit, is that of nested models (Kelloway, 1998), where "it is commonly suggested that models of interest be tested against reasonable alternative models". In essence, this test

compares theoretically similar explanations of the relationships examined and compares them. An additional or null model was also examined. The statistical test cited in the literature, for examining the differences between models is that of the chi squared difference test (Sharma, 1996; Kelloway, 1998). The results obtained are presented in table 6.2 overleaf.

In explanation of the two versions of the null model tested. The first version was based on the two performance dimensions utilised within the initial model presented in appendix 2.2, and as can be seen did not converge within the LISREL package. The second version utilised the composite factor loading techniques referred to previously in section 6.2, to produce a composite performance variable. However whilst convergence of the model took place, a statistically worse fit was identified. The output from the LISREL package is presented in the appendices cited in table 6.2.

Of the nested models that converged within the LISREL package, all exhibited statistically worse representations of the data, in comparison with the proposed model at the 0.001 level. The non-convergence of the other models tested, whilst not completely conclusive, suggests that models 4 and 5 provided no alternative statistically better representation of the data.

Table 6.2: Chi squared difference test results obtained from the nested models test[49]

Model		x^2	df	Difference in x^2	Difference in degrees of freedom	Significant at the 0.001 level **
1 (Null) ver.1		DNC				n/a
2 (Null) ver.2	Appendix 6.2	2601.25	1056	1443.52	543	**
3	Appendix 6.3	2015	826	858	313	**
4	Appendix 6.4	DNC				n/a
5	Appendix 6.5	DNC				n/a

Note: DNC represents did not converge[50].

6.4. Individual hypothesis testing.

While the fit statistics presented in table 6.2 above are useful for assessing the overall model fit, an examination of the individual hypotheses presented is of paramount importance. As previously discussed, this involved an estimation of the path coefficients between the variables of interest utilising the LISREL software package (Joreskog and Sorbom, 1999). For each of the hypothesised relationships tested a path coefficient and a t-value were produced as output. The path coefficient[51] is essentially a measure of magnitude and direction, with a "resulting change in the dependent variable from a unit change in the independent variable" (Diamantopoulos and Siguaw, 2000) being presented. However while important, only path coefficients with t-values of greater than

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[49] For d.f. greater than 100 the expression $\sqrt{2x^2} - \sqrt{(2k-1)}$ is used to obtain the z or critical value. (Sharma, 1996)

[50] In LISREL "the very fact that we are able to estimate our model is a positive sign" (Diamantopoulos and Siguaw, 2000). The inference being that within LISREL, model non-convergence, or the inability of the package to generate an output, suggests that something is fundamentally incorrect with the inputted covariance matrix. Hence the statistical result is unlikely to be significant within the confines of a chi squared difference test.

[51] Within the structural model presented these are represented by β or γ.

1.645 are considered significant at the 0.05 level, while at the 0.1 level values greater than 1.28 are acceptable (Fornell and Larker, 1981)[52]. Table 6.3 summarises the results obtained from the MLE analysis undertaken. The original structural model is also reproduced here for ease of reference.

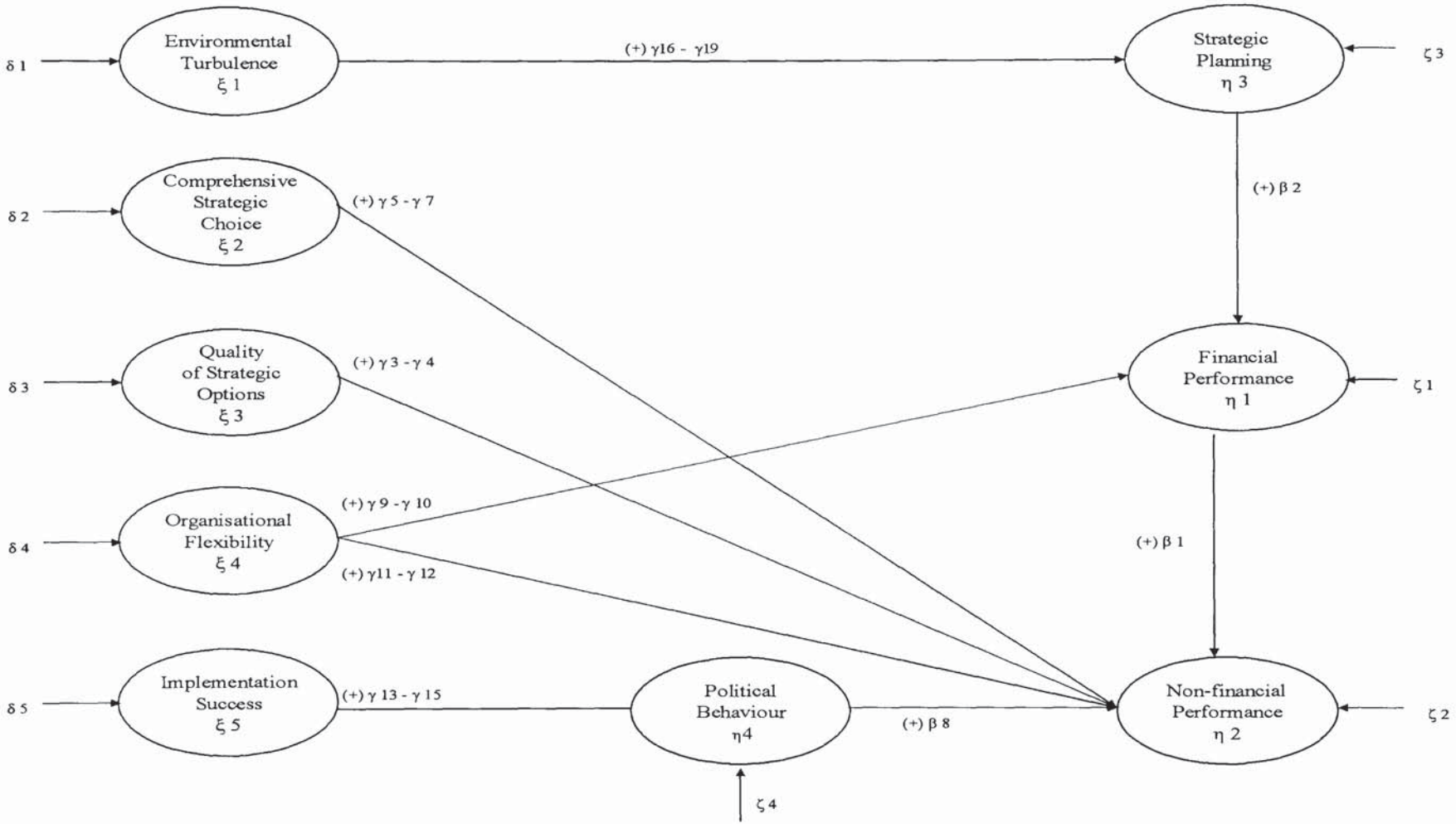
Of the original nineteen hypothesis specified, twelve were observed to present a significant result at the 5% level (one tailed), a ratio of 63%.

[52] Whilst the research is largely exploratory, the 0.1 level (t-value of 1.28) was originally considered to be acceptable when judging the results obtained. However in the table above ** signifies an acceptable result at the 5% level (one-tailed as the direction was hypothesised), and hence 1.96 was the t-value cut-off point.

Table 6.3: Results obtained from MLE analysis

Hypothesis	Path	Relationship			Hypothesised Association	Coefficient	t-value
		From	*(Dimension)*	*To*			
H1	β1	FP		NFP	+ve	0.10	1.98**
H2	β3	Strategic Planning		FP	+ve	0.12	2.14**
H3	γ4	Options	Consultation with stakeholders	NFP	+ve	0.18	2.50**
H4	γ5	Options	Logical framework	NFP	+ve	0.05	0.55
H5	γ6	Choice	Quality	NFP	+ve	-0.16	-0.62
H6	γ7	Choice	Consultation	NFP	+ve	0.13	2.16**
H7	γ8	Choice	Process	NFP	+ve	-0.11	-0.52
H8	β9	Political Behaviour		NFP	+ve	0.24	3.20**
H9	γ10	Flexibility	Operational	FP	+ve	0.31	5.33**
H10	γ11	Flexibility	Financial	FP	+ve	0.11	2.19**
H11	γ12	Flexibility	Tech.	NFP	+ve	0.28	4.25**
H12	γ13	Flexibility	Structural	NFP	+ve	0.24	4.20**
H13	γ14	Implementation	Clarity of communication / strategic direction	Political Behaviour	+ve	-0.16	-0.72
H14	γ15	Implementation	Senior management involvement	Political Behaviour	+ve	0.85	14.08**
H15	γ16	Implementation	On-going support	Political Behaviour	+ve	0.24	1.04
H16	γ17	Environmental Turbulence	Market	Strategic Planning	+ve	0.06	0.95
H17	γ18	Environmental Turbulence	Competitive	Strategic Planning	+ve	0.16	0.75
H18	γ19	Environmental Turbulence	Technological	Strategic Planning	+ve	0.18	2.97**
H19	γ20	Environmental Turbulence	Regulatory	Strategic Planning	+ve	0.27	4.59**

Figure 6.1: Structural model tested (reproduced here for ease of reference)



6.4.1. Hypotheses relating to performance.

H1: Financial performance will have a direct and positive impact on non-financial performance.

Strong support was identified for H1, with a path coefficient of 0.10 and a corresponding t-value of 1.98. Hence for the data analysed financial performance has a direct, significant and positive impact on non-financial performance.

6.4.2. Hypothesis relating to strategic planning.

H2: Strategic planning has a direct and positive effect on organisational financial performance.

Support was identified for H2, with strategic planning exhibiting a direct and positive impact on financial performance. Here a positive, significant and direct relationship was observed with a path coefficient of 0.12 and a t-value of 2.14.

6.4.3. Hypotheses relating to the quality of strategic options.

H3: In formulating their strategic options consultation with organisational stakeholders has a direct and positive effect on organisational non-financial performance.

H4: In formulating their strategic options, a logical framework of analysis has a direct and positive effect on organisational non-financial performance.

No support was identified within the data analysed to support H4, however support was identified for H3. Hence within the process of formulating strategic options, consultation

with organisational stakeholders was observed to have a direct and positive effect on organisational performance. A path coefficient of 0.18 was observed and supported by a significant t-value of 2.50.

The results presented above suggest that consultation with organisational stakeholders within the process of formulating strategic options has a significant and direct effect on non-financial performance. More specifically it appears to be of importance that the options for consideration are generally acceptable to all stakeholders, and additionally present feasible and suitable options with regards to issues of finance.

6.4.4. Hypotheses relating to comprehensive strategic choice.

H5: The quality of the strategic choice process has a direct and positive effect on organisational non-financial performance.

H6: Consultation within the strategic choice process has a direct and positive effect on organisational non-financial performance.

H7: A structured strategic choice process will have a direct and positive effect on organisational non-financial performance.

While no support for H5 or H7 was identified within the data analysis conducted, support was evident for H6. Hence consultation within the strategic choice process was found to have a direct and positive effect on organisational performance. A path coefficient of 0.13 was presented and supported by a significant t-value of 2.16[53].

[53] Where significance is indicated, the 5% (one tailed) level is referred to.

The findings outlined above, indicate that the process of choosing between the strategic options presented to senior managers has a significant and direct effect on non-financial performance. More specifically, consultation within the strategic choice process impacts significantly and directly on non-financial performance, in terms of staff satisfaction with their jobs and additionally the organisations ability to retain them.

6.4.5. Hypothesis related to political behaviour.

H8: The degree of political behaviour exhibited within an organisation has a direct and positive effect on organisational non-financial performance.

Support was identified for H8, and hence the degree of political behaviour exhibited within an organisation was seen to impact positively, directly and significantly on organisational non-financial performance. For this relationship a path coefficient of 0.24 was supported by a significant t-value of 3.20.

6.4.6. Hypotheses relating to organisational flexibility.

H9: Operational flexibility has a direct and positive effect on organisational financial performance.

H10: Financial flexibility has a direct and positive effect on organisational financial performance

H11: Technology related flexibility has a direct and positive effect on organisational non-financial performance.

H12: Structural flexibility has a direct and positive effect on organisational non-financial performance.

Support was identified from the data analysed for all of the hypothesised relationships presented above. For ease of reference the path coefficients and corresponding t-values are presented below.

Table 6.4: Path coefficients and t-values for Organisational Flexibility construct

Hypothesis	**Path**	**Relationship**			**Coefficient**	**t-value**	**Sig. 5% level**
		From	*(Dimension)*	*To*			
H9	γ 9	Flexibility	Operational	FP	0.31	5.33	**
H10	γ10	Flexibility	Financial	FP	0.11	2.19	**
H11	γ11	Flexibility	Tech.	NFP	0.28	4.25	**
H12	γ12	Flexibility	Structural	NFP	0.24	4.20	**

All dimensions of the newly formulated organisational flexibility construct had a direct, positive and significant effect on either financial or non-financial organisational performance.

Operational flexibility and financial flexibility were identified as presenting a direct, significant and positive effect on financial performance, with technology related flexibility and structural flexibility presenting a direct, significant and positive effect on non-financial performance. Operational flexibility impacts positively on financial performance in terms of the ability of the organisation to rapidly influence its outputs, and to react to changes external to the organisation. Financial flexibility was identified as exerting a direct, significant and positive effect on financial performance, in terms of the rapidity with which funding for new strategic challenges may be sourced. Additionally, a

further examination of the path coefficients presented highlights operational and financial flexibility explaining 42% of the measurement error associated with the financial performance measure. Technology related flexibility and structural flexibility presented a direct, significant and positive impact on non-financial performance. The facilitative nature of information technology is manifest here, with an organisations ability to react and adapt to change through technology being indicated as of importance. In addition to the technology related flexibility, structural flexibility also impacts on non-financial performance through an essentially facilitative role. Here a de-layering of organisational hierarchies and also a reduction in the levels of organisational bureaucracy is manifest.

6.4.7. Hypotheses relating to implementation success.

H13: Clarity in communicating strategy to the team implementing strategy will have a direct and positive impact on political behaviour.

H14: Senior management involvement in strategy implementation will have a direct and positive impact on organisational political behaviour.

H15: On-going support in strategy implementation will have a direct and positive impact on organisational political behaviour.

While no support for H13 or H15 was identified within the data analysis conducted, support was evident for H14. Hence senior management involvement within the strategic implementation process was found to have a direct and positive effect on political

behaviour. A path coefficient of 0.85 was presented and supported by a significant t-value of 14.08[54].

6.4.8. Hypotheses relating to environmental turbulence.

H16: Market environmental turbulence will have a direct and positive impact on strategic planning.

H17: Competitive environmental turbulence will have a direct and positive impact on strategic planning.

H18: Technological environmental turbulence will have a direct and positive impact on strategic planning.

H19: Regulatory environmental turbulence will have a direct and positive impact on strategic planning.

No support was identified for H16 and H17 however support was identified for H18 and H19. Hence technological and regulatory environmental turbulence were seen to have a positive, significant and direct impact on strategic planning.

Table 8.5: R^2 Values for Structural Equations (Dependent Variables)

Dependent or Endogenous Variable	R^2
Strategic Planning	0.11
Financial Performance	0.22
Non-financial Performance	0.44
Political Behaviour	0.72

[54] Where significance is indicated, the 5% (one tailed) level is referred to.

In structural equation modelling the R^2 values are analogous to the R^2 values in conventional regression analysis, and identify the amount of variance in the dependent (or endogenous) variables accounted for by the independent (or exogenous) variables. "Substantial" (Diamantopoulos and Siguaw, 2000) values within this context have been cited as being greater than 0.5 (Diamantopoulos and Siguaw, 2000), however no context is presented within this literature. Whilst further discussion of the results presented here is made in chapter seven, it is the significance of the results obtained within the context of the domain of research that is of interest here. Hence a more pragmatic stance is taken in dealing with these results initially at the individual level, and subsequently within a domain context.

6.5. Summary: Model testing.

This purpose of this chapter was to test the previously stated hypotheses through the use of latent variable structural path analysis. An overview of the technique, as well more specific issues regarding assumptions and operationalisation of the constructs of interest were also discussed. In overview, the structural model presented good overall fit statistics, with a number of interesting and significant results being obtained in relation to the previously stated hypotheses. As stated previously 63% of the original hypotheses were supported.

The next chapter will examine the relationships identified in further detail, relating the findings presented here to the current literature within the strategic planning domain. Additionally, implications for other branches of research will be examined, as well as the

managerial and organisational implications. Finally, limitations to the research presented will be examined, and an agenda for future research will be discussed.

7. DISCUSSION AND CONCLUSIONS

This chapter presents a discussion of the first study of its kind within the domain of strategic planning, and describes a simultaneous conceptual and empirical investigation of the relationship between strategic planning and performance. The insights into strategic planning and its impact on organisational performance drawn from the study, add significant statistical weight as to the positive impact of strategic planning on organisational performance. In addition to the significant contribution outlined above, further insight is presented into a) newly developed measurement scales, b) clarification of the role of non-financial performance in the strategic planning literature, c) the impact of environmental turbulence on the relationship between strategic planning and organisational performance, d) the role of political behaviour within a strategic planning context and e) the particular relevance of the methodological standpoint adopted with which to perform the study outlined. Additionally, a number of new future research opportunities within the strategic planning domain are discussed.

In order to deliver the above, the chapter is divided into five broad sections as follows. Section 7.1: for ease of reference the issues arising from the literature review presented in chapters one and two are re-stated in brief. Section 7.2: where the specific contribution of the thesis lies. Section 7.3: the individual findings will be discussed in brief in relation to the literature. Section 7.4: limitations, section 7.5: managerial implications and finally section 7.6: directions for future research.

7.1. Overview of issues arising from the literature.

The introduction and literature review presented in chapters one and two identified some problematic issues regarding previous empirical investigation of the relationship between strategic planning and performance. These were cited under three broad headings as follows, 1) conceptualisation of the dependent and independent variables, 2) methodological issues and 3) the nature of the relationship between strategic planning and performance. Whilst a more comprehensive description of the issues arising from a review of the strategic planning literature is presented in chapter two, the following summary identifies in brief, the main issues arising from over three decades of empirical research.

Addressing the above points briefly: 1) Conceptualisation of the dependent and independent variables. Whilst semantic similarities in the conceptualisations of strategic planning and performance were highlighted in the literature, on closer examination slightly different processes or procedures were investigated. Additionally little cross-disciplinary investigation was available, attempting to capitalise on contributions from other domains of research. 2) Methodological issues. A number of different methodologies were identified in the studies examining the relationship between strategic planning and performance. In analysing the data, partially due to the relatively simple relationships being investigated[55], few examples of structural equation modelling were available. Indeed, some of the studies identified relying on percentage estimation on which to draw conclusions. 3) The nature of the relationship between strategic planning and performance Whilst attempts have been made in the literature to incorporate

[55] See number 3 to follow.

contextual factors in the strategic planning and performance investigations (Eastlack and McDonald, 1970; Jones, 1982; Robinson et al, 1984) only one or possibly two contingent variables have been examined which, given the substantial amount of literature available regarding strategic planning appears remiss. More specifically at the domain level, a lack of academic development or progression towards a greater understanding of the relationship between strategic planning and organisational performance was identified.

7.2. Theoretical contribution of the study.

The study presented represents a unique and significant contribution to the strategic planning domain on two main levels, 1) the scope of the study presented and 2) the newly developed measures. In addition to these domain level contributions, a number of more incremental contributions are also argued. In the following sections the two domain level contributions will be initially highlighted, with the more incremental contributions being subsequently discussed separately. Of note, the contributions made by the study are investigated here individually to aid presentation, however it is recognised that the contributions made are not mutually exclusive, and a significant cumulative impact on the domain is argued.

7.2.1. Research scope.

The scope of the research presented provides the most significant and unique contribution. More specifically, no other study within the domain has attempted such a broad and simultaneous investigation of the relationship between strategic planning and organisational performance, including the contingent factors to this relationship. As stated previously, of the other studies identified within the domain, few attempts to investigate

more than two contingent factors affecting the strategic planning of organisations have been identified, and none were highlighted investigating the variables presented here. Possible explanations for these omissions are two-fold a) the limited scope of previous research within the domain, including a pre-occupation with the conceptualisation and re-conceptualisation of the dependent and independent variables and b) limited, and occasionally non-existent scale development regarding several central issues within the strategic planning domain.

Within the study presented, the traditionally dependent variable i.e. performance has been conceptualised and statistically tested as two-dimensional. This is new, and not been attempted previously within the domain specified, despite a number of conceptually based references to support such.

Seven independent variables have been tested within the framework specified, and whilst the application and associated benefits of the SEM methodology is further discussed in section 7.2.7, this is a large contribution to the domain. As referred to previously no other study investigating the relationship between strategic planning and performance has included seven independent variables and mapped their dimensionality onto two dependent variables.

7.2.2. Newly developed measurement scales.

A further significant contribution is made by the study presented, as in line with previously published and comprehensively tested guidelines for scale development, statistically robust measures for organisational flexibility, comprehensive strategic choice

and quality of strategic options were developed and administered. Previous normative discussions surrounding these issues were available within the strategic planning literature and within the organisational behaviour and the marketing literature, however little scale development work had previously taken place.

Again whilst argued more forcefully with chapter two, a clear gap was recognised in the literature between the prescriptive management texts, and the empirical investigations of the concepts of interest. More specifically general agreement was available in the literature regarding the components of organisational strategic planning, whereas this consensus appeared to be absent within the empirical studies identified. The quality of strategic options generated, and also the ways in which organisations choose between their options, presented areas where specific contributions to the domain could be made.

Additionally, whilst often cited as beneficial to organisational competitiveness, organisational flexibility was identified as an area where further research was required within the domain; more specifically, conceptualisation and testing in relation to the strategic planning and indeed performance of organisations.

7.2.3. Clarification of the role of non-financial performance in the strategic planning literature.

Previous research within the strategic planning domain regarding non-financial organisational performance has largely been normative and generally unexplored empirically. The absence of empirical study has been argued to be related to "the degree of difficulty associated with the measurement of the concepts involved", Greenley (1986).

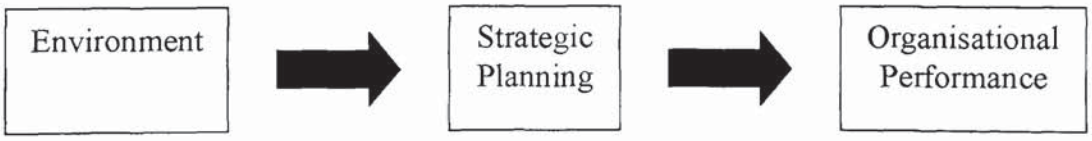
It is not argued that the definitive solution is presented here, however further insight and clarification is gained through a) an exploration of the independent variables impacting on non-financial performance and b) an examination of the temporal relationship between financial performance and non-financial performance.

More specifically and with reference to specific dimensions, 1) consultation within the strategic choice process, 2) consultation with stakeholders in choosing between options, 3) political behaviour and also 4) technological flexibility and 5) structural flexibility were all seen to impact positively, significantly and directly on organisational non-financial performance.

7.2.4. Clarification of the relationship between strategic planning, the environment and organisational performance.

In the model identified, possessing the greatest explanatory power, the environment was seen to have an "indirect effect" (Greenley, 1999) on organisational performance[56]. In the interest of clarity a brief explanation of the different tests undertaken in order to confirm this relationship is presented, followed by further discussion of the results identified.

Figure 7.1: Graphical representation of strong indirect / mediating relationship identified



[56] See figure 7.1.

An indirect effect occurs where "one variable, [environment], exerts an influence on another variable [organisational performance], but only through its impact on a third variable [strategic planning]" (Greenley, 1999).

Figure 7.1 above highlights the "indirect" (Greenley, 1999) relationship identified between environment and organisational performance. In the diagram presented strategic planning exhibits an indirect or mediating, role between the two variables.

As cited previously, debate is apparent in the strategic planning literature regarding the extent to which organisational strategy makers may exercise choice in determining an organisational future[57]. The results identified are clear, in that strategists can exercise a degree of control over their trading environment through the strategic planning they undertake. Additionally, while previous studies investigating the relationship between strategic planning and performance have included examinations of the organisational environment (Jones, 1982; Odom and Boxx, 1988; Peel and Bridge, 1988; Hopkins and Hopkins, 1997), none have treated it as being mediated by strategic planning. Indeed, a moderating effect is often cited.

In the interests of parsimony, rigour and in line with competing arguments identified in the literature, further testing was undertaken. With use of "hierarchical moderated regression analysis" (Greenley, 1999; Hair et al, 1999), the further testing cited, examined a) the moderating role of the environment in the relationship between strategic planning and performance and b) the moderating role of strategic planning in the relationship

[57] See the managerial choice versus environmental determinism debate cited in chapter two section 2.9.1.

between the environment and organisational performance; these too are graphically illustrated below.

Figure 7.2: Moderating relationship of the environment in the relationship between strategic planning and organisational performance

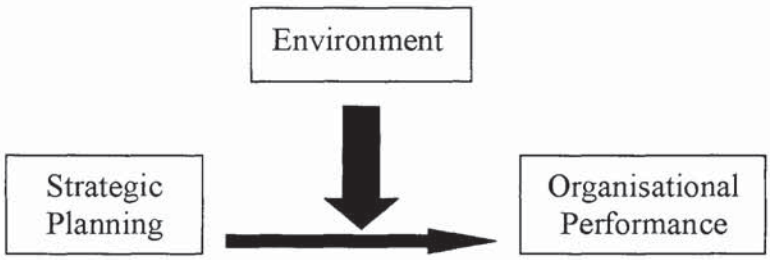


Figure 7.3: Moderating role of strategic planning in the relationship between environment and organisational performance

No significant moderating effects were identified through the tests highlighted. It should be made clear at this point, that the tests made were undertaken in order to add weight to the original hypothesised relationships, which was indeed the case.

7.2.5. Further evidence of the direct impact of strategic planning on organisational performance.

Previous empirical study investigating the relationship between strategic planning and organisational performance has presented "equivocal" (Greenley, 1994) results. More

specifically, of the studies identified and summarised in appendix 2.1, a number presented findings that suggested that no relationship existed between strategic planning and performance, with a greater number suggesting that there indeed was a relationship between strategic planning and performance. The methodological issues regarding these studies have been previously highlighted, however further and possibly more rigorous support is presented here for a positive relationship between strategic planning and organisational performance.

At a domain level, the findings presented highlight an interesting development on previous published discussions regarding the relationship between strategic planning and performance. From the arguments presented, largely within chapter two, the investigation of an essentially two construct model between strategic planning and performance appears now fruitless. However the results presented here, highlight that whilst strategic planning does indeed impact positively, significantly and directly on organisational performance, it does so within a wider framework of other conceptually related constructs. Moreover, it does so with high levels of confidence about the fit of the specified relationships investigated, and also despite the compounded impact of any possible measurement error.

7.2.6. Political behaviour in the strategy process.

Whilst largely empirically untested within a strategic planning context, previous study regarding political behaviour in organisations has lacked clarity in terms of how and where the organisational impact will be manifest. This study has clarified this relationship, suggesting that political behaviour impacts positively and significantly on the non-financial performance of organisations. Interestingly, and in addition to the above,

a very strong mediating role was observed between implementation and non-financial performance. This finding represents a significant contribution to the strategic planning domain, not only in the direct relationship identified but additionally in its inclusion within and empirical study of this kind, and also in the relationship identified with the implementation success measure utilised. This is discussed further within this chapter.

7.2.7. Methodology utilised.

Whilst argued more forcefully within the methodology, measure development and descriptive analysis chapters, the methodology adopted represents a significant contribution to the strategic planning domain. It would be an incorrect to suggest that the use of structural equation modelling, or more specifically latent variable path analysis, applied within the study presented is unique within the strategic planning domain, however the "use and reporting of SEM often have been less than ideal (Shook, Ketchen, Hult and Kacmar, 2004). However very few examples of its use were identified in chapter two, and of these, none had utilised what is arguably one of its greatest strengths i.e. the ability to simultaneously estimate multiple and inter-related dependence relationships (Hair et al, 1998).

Due to the multiple relationships investigated, the use of latent variable path analysis within this context was deemed to present another significant contribution to the domain. However, the use of the technique alone is not enough, if the rigour with which it is applied is absent (c.f Shook et al, 2004). In an extensive critique of 92 empirical journal articles, taken from the strategic management domain Shook et al (2004) examined the rigour with which SEM techniques were reported. For example in relation to reliability

assessments of the data presented, 34 studies utilised coefficient alpha, whereas 18 utilised composite reliability[58]. Additionally only three of the 92 articles examined reported both. Further comment suggests a recommended checklist that should be utilised by researchers when presenting the results of SEM within strategy research, highlighting 1) sample issues e.g. statistical power, 2) measurement issues e.g. reliability, 3) reproduceability issues e.g. name and version of the statistical package, 4) equivalent model issues and finally 5) respecification issues. All of the factors cited are addressed within the research presented. Confidence is therefore high, in terms of the contribution to the domain of the methodology employed and also the rigour with which the technique has been applied and reported.

The model tested presented excellent levels of model fit, and additionally all of the newly developed measures, whilst presenting statistically sound properties, demonstrated a significant and positive impact on the dependent variables.

7.2.8. Summary of main contributions.

As discussed above, the study presented is the first of its kind within the domain of strategic planning. No other study has simultaneously investigated the number of factors highlighted here, impacting on the strategic planning and performance relationship. As such the study presented has significantly advanced knowledge of the domain.

[58] The inference in the Shook et al, (2004) article being that "a better choice is composite reliability which draws on the standardised loadings and measurement error for each item".

Additionally and of equal significance is the position of the model presented in relation to previous normative and empirical study. In chapter two, the differences in the levels of academic consensus were discussed in relation to strategic planning, and the contingent factors impacting upon it. It was argued that within the normative literature a high degree of consensus was generally available, and that within the empirical literature a lower degree of consensus was identified. It was additionally stated that little development on the normative consensus had been undertaken within the empirical research identified, possibly contributing the many and varied conceptualisations of semantically similar planning typologies.

The study presented here closes this gap, through the development of previously unavailable measurement scales and additionally the aforementioned latent variable path analysis. No other study identified within the domain attempts this, and hence the results presented here represent a more thorough and comprehensive assessment of the true relationship between strategic planning and organisational performance than has been attempted previously.

7.3. Findings regarding the individual and direct hypothesised relationships.

In discussing the findings, the significant relationships will be the main focus, with the other non-significant relationships providing a wider discussion with additional perspective. Further comment is subsequently made regarding directions for future research

7.3.1. Comprehensive strategic choice.

A significant and positive relationship between consultation and non-financial performance was identified, additionally a non-significant relationship between the quality and process dimensions of the comprehensive strategic choice construct were noted.

A significant amount of support for consensus within the strategic choice process is found in the literature (Camillus, 1975; Lorange and Vancil, 1977; Greenley, 1986; Greenley, 1994; Rowe and Morrow, 1999). The literature cited here generally highlights the non-financial benefits that may accrue to organisations practicing strategic planning. However these normative accounts do not attempt to conceptualise or indeed measure where and how the cited non-financial benefits may be manifest within the strategic planning process. Insight into this issue is provided by the findings presented here, suggesting that within the strategic planning process, and more specifically when choosing between options, opportunities for motivating the individuals concerned are great, as are the opportunities for de-motivation. Interestingly, whether a methodical process is followed, or indeed large amount of detailed data is gathered was not a contributing factor within the study conducted. One possible explanation for this observation is that organisational decision makers assume that the data presented for analysis has a level of integrity commensurate with a methodical and detailed approach. This explanation appears somewhat naïve in light of the discussions relating to the impact of political actions on the decision making process[59].

[59] See previous discussions.

The results obtained suggest that within the strategic choice process, the *softer* consensus building, discursive activities have a significant effect on the decision-makers morale, whereas the *harder* process and data driven elements are of less importance.

7.3.2. Organisational flexibility.

The operational, financial, technological and structural dimensions of this newly developed construct all presented significant and positive relationships with both financial and non-financial performance. Operational and financial flexibility were both found to impact positively on financial performance, and technological and structural flexibility being identified as positively impacting on non-financial performance.

Operational flexibility was conceptualised within the newly developed framework, as an organisations ability to change product / service mix in line with market demand. Intuitively this appears to be a sound conclusion, as the importance of organisations to change and react to external pressure is prevalent in much of the literature previously examined[60], for example the environmental fit discussions. Additionally and somewhat unsurprisingly financial flexibility, or the ability of an organisation to raise capital from both internal and external sources, was identified as impacting upon financial performance. This is intuitively unsurprising however these results may suggest that rather than a direct relationship per se a more facilitative role is being inferred. For example, and in relation to the operational flexibility previously discussed, an organisations ability to raise finance rapidly may allow a more speedy reaction to external competitive pressure, thereby increasing overall performance in the market. Additionally,

[60] See chapter 2, section 2.10.3 specifically, but also mentioned in much of the review presented.

organisations exhibiting quite complex and detailed strategic planning or market research systems may have complete knowledge about the types of, and degree of change being exhibited within their primary markets. If however insufficient funding is available at a pivotal moment, then an organisations ability to react and change to competitive or indeed macro-environmental pressures, will be severely limited. Both operational and financial flexibility are identified here as facilitators of change, and hence a crucial determinant in an organisations financial performance.

While further discussion is available in chapter 2, section 2.10, a large amount of essentially normative support is available for the findings identified. Here an organisations ability to adapt or more specifically, the ability of organisations to manage "capricious settings" (Evans, 1991) is viewed as essential (Hill and Jones, 2001; Haperberg and Rieple, 2001; Pearce and Robinson, 2003; Wheelan and Hunger, 2004; Sanchez and Heene; 2004).

Technology related flexibility, and the positive relationship identified with non-financial performance is consistent with much of the previous discussion regarding the role of technology within organisations[61]. More specifically the ability of organisations to have access to effective and efficient information technology systems is generally viewed as facilitative, and presenting scope for enhancing organisational processes and procedures (Zahra and Covin, 1993; Tracey, Vonderembse and Lim, 1999; Kotha and Swamidass, 2000). The linkages between the facilitative role of technology and organisational factors such as 1) teamwork quality (Easley, Devaraj and Crant, 2003), 2) organisational

[61] See chapter 2 section 2.10.

functional communication (Boiney, 1998) and 4) issues of team working and learning (Lau, Wong, Chan and Law, 2001) have been widely explored within the literature. Hence, support is identified here for the hypothesised and observed facilitative role, with technology allowing individuals within organisations greater freedoms and efficiencies, thereby enhancing both job satisfaction and employee retention rates.

Structural flexibility is conceptualised here as the ability of organisations to enhance information flows and work across functional boundaries, with the findings presenting a positive and significant relationship with non-financial performance. Hence where environmental change impacts on organisations, a rapid response can be facilitated through a network-type structural arrangement, thereby reducing organisational anxieties through a reduction in inter-departmental rivalries. Additionally, employees may feel under less pressure as the organisation can flourish and react to change, without the inhibiting factors of bureaucracy and petty squabbling. Therefore the relationship identified, is consistent with previous literature regarding the positive impact of issues such as the removal of barriers to communication and the reduction on inter-departmental rivalries (Barclay, 1991).

The literature suggests, "flexibility is a complex multi-dimensional concept which is difficult to define satisfactorily" (Dreyer and Gronhaug, 2004). A contribution to this issue is demonstrated here, where firstly a statistically and psychometrically sound measure was developed confirmed. Secondly, literature based relationships between the dimensions of the newly developed measure and two performance related variable were tested. Thirdly, significant and direct relationships were observed within a multiple least

squares framework, consistent with previous literature relating to the dimensions identified.

7.3.3. Implementation success.

Of the three dimensions of implementation success originally hypothesised as impacting positively on political behaviour, only one exhibited a significant relationship. Senior management involvement with reference to factors such as 1) the use of strategy champions and leaders to guide the implementation process and 2) managers working within strategy implementation teams were seen to impact directly and significantly on political behaviour. Indeed the impact exhibited was extremely significant, and demonstrated a path coefficient of 0.85 and a t-value of 14.08.

Support is apparent in the literature for this finding, and indeed it echoes much of the discussion outlined in chapter 2, section 2.9.7, where strategy implementation was seen to exhibit the characteristics of a highly politicised process (Guth and MacMillan, 1986; Floyd and Wooldridge, 1992; Sviokla, 1996; Noble and Mokwa, 1999); with deliberate and personally biased distortions on strategy being undertaken by middle managers. In essence, the implementation of strategy and the levels of political behaviour exhibited by an organisation are positively linked, which is supported by the findings presented.

Two of the hypothesised dimensions presented no significant relationship with non-financial performance i.e. clarity of communication and on-going support. Given the previous debate this was intuitively a surprising finding. Two related explanations occur, that largely refer to the methodological underpinnings of the scale utilised to capture the

dimensions of interest. In hindsight, the two dimensions not presenting a significant relationship with non-financial performance are semantically similar to the dimension presenting a positive result. Furthermore, a senior manager that is intrinsically involved in the strategy implementation process may very well be communicating with great clarity, and would most certainly be displaying a degree of on-going involvement. Therefore some of the dimensionality of the two non-significant dimensions may be shared with the significant dimension. Interestingly, a re-examination of the statistical testing presented in the descriptive analysis chapter does not support this assertion.

An alternative viewpoint is that while the scale developed to measure implementation effectiveness exhibited statistically robust properties within the data analysis / descriptive analysis phase, the measure was initially derived from previously utilised items (Noble and Mokwa, 1999). While not considered problematic during the exploratory and confirmatory factor analyses conducted, the issue regarding the number of items deleted during the measure refinement phase[62] possibly indicated a wider issue with the underlying statistical properties of the indicators ability to capture the latent variable. This being the case, the non-significant results obtained appear less surprising. Additionally, the original publication was purely a scale development paper, and hence the construct developed had not been tested previously in this context. Hence important implications for the robustness of the scale, within the context cited here, are highlighted.

[62] See chapter four section 4.6.5

7.3.4. Political behaviour.

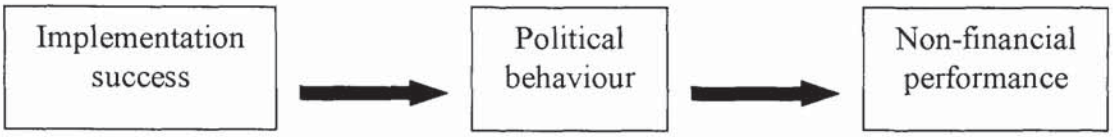
The level of political behaviour exhibited by an organisation was seen to have a significant and positive impact on organisational non-financial performance. Intuitively, and discussed further within chapter 2, political activity, or the impact of political behaviour on the organisation is often perceived as ""dirty" and a little underhand" (Lewis, 2002). However examples of the "pluralist" literature (Burrell and Morgan, 1979; Morgan, 1997), view organisations as essentially political systems where the needs of the individual are primary to those of the organisation, and as such "one does not have to be consciously cunning or deviously political to end up playing organisational politics" (Morgan, 1997). Taking this view into account then the presence of political activity within the strategy implementation process is seen, not necessarily in a negative light, indeed the presence of politics "are particularly effective for triggering and implementing the change process (Lewis, 2002). Further support for the political perspective highlighted above is present within the innovation literature (Nemeth, 1997), where political behaviour and the ability of organisations to "deviate" (Nemeth, 1997) from the norm are argued to be facilitative of a culture of innovation and consequently higher levels of overall performance and motivation.

Additionally, and with reference to the non-financial benefits of strategic planning cited within chapter two, what may be manifest here is a reflection of the involvement and discussion elements of the planning process, impacting directly on motivation and retention.

7.3.5. Relationship between implementation success and non-financial performance.

An indirect (Greenley, 1999) relationship was identified between implementation success and organisational non-financial performance. The relationship identified was mediated by political behaviour. Figure 7.4 graphically illustrates this relationship.

Figure 7.4: Relationship between implementation success and organisational non-financial performance



As previously discussed, the managerial involvement dimension significantly impacted upon political behaviour within this context, and hence this only will be referred to as being mediated. The findings suggest that increasing levels of managerial involvement will manifest themselves in increasing levels of political behaviour and hence increasing levels of non-financial performance. Intuitively, this relationship seems difficult where extremely high levels of political behaviour are manifest. This instance may prove to be a limiting factor in terms of an organisations ability to a) maintain staff motivation and loyalty i.e. they feel that any action taken is subject to debate and discussion and b) the organisations ability to respond to change i.e. organisational action is stifled through debate and discussion. Additionally a long-term effect may be that innovation is limited as new ideas are subject to high levels of scrutiny, and hence employees feel less likely to voice them.

Of note, and as in section 7.2.4, in an attempt to fully explore the data collected, moderating effects between the constructs of interest were additionally tested for i.e. political behaviour was tested as a moderating variable in the relationship between implementation success and organisational non-financial performance, through hierarchical moderated regression analysis. No significant moderating effects were identified through the tests highlighted. The model originally specified and indeed possessing the most explanatory power was validated in this case.

7.3.6. Comprehensive strategic planning.

A positive and significant relationship was identified between comprehensive strategic planning, and financial performance. More specifically, organisations engaged in high levels of activities such as 1) analysing competitor and market trends, 2) conducting internal analyses of strengths and weaknesses, 3) formulating long, medium and short-term strategies and 4) examining contingencies exhibit significantly better performance than those who do not.

Examples of studies investigating the relationship between strategic planning and organisational performance are replete in the literature, as demonstrated in appendix 2.1. However within the previous work, few demonstrate the additional insights presented in this thesis for example, 1) little evidence of tests for mediating variables, 2) few additional, and contingent relationships investigated other than the main dependent and independent variables, 3) a non-financial performance variable, 4) conceptualisations of integral factors of the planning process e.g. strategic choice and additionally a structural equation modelling analysis framework. Hence the direct, significant and positive result

identified here represents a significant development on previous research within the domain. Not only with regard to the statistical significance of the result observed but additionally and possibly more importantly, in relation to the additional avenues of further research identified.

7.3.7. Environmental turbulence.

Four dimensions of environmental turbulence i.e. competitive, market, technological and regulatory were originally conceptualised as impacting on strategic planning. Of these four dimensions, technological turbulence and regulatory turbulence were seen to impact positively and significantly on comprehensive strategic planning. Support is evident in the strategic planning literature for the relationships identified here. Indeed much of the strategic choice and environmental determinism debate (Lawrence and Lorsch, 1967; Lieberson and O' Connor, 1972; Hannan and Freeman, 1977; Pfeffer and Salancik, 1978; Thomas, 1988; McCabe, 1990; Dean Sharfman, 1996; Gopalakrishnan and Dugal, 1998) outlined in chapter 2, section 2.9.1, centres the ability of organisational managers to choose the strategic direction of an organisation when faced with environmental turbulence. The relationship identified reflects this perspective; i.e. in reacting to increased levels of environmental turbulence managers appear to be more comprehensive in their strategic planning, in an attempt to cope. Further support is presented in the positive and significant relationship identified between strategic planning and financial performance described in section 7.2.5 above[63].

[63] The result presented here is based on the original model specification, and not on the further testing that occurred regarding the moderating effects discussed in sections 7.2.4 and 7.3.5.

7.3.8. Performance and non-financial performance.

Financial performance was identified as impacting significantly and positively on non-financial performance. The result identified above appears to reflect some of the temporal debate appearing in the strategic planning literature, regarding the issue of whether the non-financial benefits of strategic planning[64], facilitate enhanced financial performance or vice versa. In this instance support is found for the latter, in that financial performance has a direct and positive impact on non-financial performance. The strategic planning literature suggests that financially successful organisations are able to allocate resources to organisational planners and planning departments (Greenley, 1994) thereby increasing morale and retention as measure here. Additionally whilst insignificant within this study, a small but positive relationship was identified between non-financial performance and financial performance, possibly reflecting the reciprocal relationship suggested by a number of other largely conceptual studies (Camillus, 1975; Lorange and Vancil, 1977; Dyson and Foster, 1980; Ramanujam and Venkatraman, 1987; Sinha, 1990; Greenley, 1994; Rowe and Morrow, 1999).

7.3.9. Strategic options.

Two dimensions of comprehensive strategic options were hypothesised to have a positive impact on non-financial performance. Consultation with stakeholders, and more specifically the methods utilised by organisations to ensure the feasibility of particular strategic options was identified as exhibiting a direct and positive impact on non-financial

[64] Non-financial benefits are cited in the literature as 1) providing clarity of direction, 2) motivation of middle managers through a sense of involvement, 3) co-ordination of organisational movement, with the involvement of individuals from outside the planning function, 4) forcing organisations to consider strategic issues, 5) providing objective facts, 6) forcing organisations to consider resource allocation issues in some depth and 7) improving organisational strategic communication and thereby attitude towards change (Camillus, 1975; Greenley, 1986; Yoo and Digman, 1987).

performance. A significant amount of literature is present in the strategic management domain regarding the importance of identifying and accounting for the behaviour of organisational stakeholders within the strategic planning process (Olian and Rynes, 1991; Greenley and Foxall, 1997; Greenley and Foxall, 1998; Harrsion and Freeman, 1999; Ahmad, O'Regan and Ghobadian, 2003). Hence support is available for the findings obtained from the data collected indicating that consultation where necessary will impact positively on non-financial performance.

Interestingly, the other hypothesised dimension of the strategic options construct i.e. a logical framework, did not exhibit a significant relationship with non-financial performance. The results here suggest that the importance of a logical framework is secondary to that of ensuring stakeholder buy-in. Unfortunately, and as previously discussed in chapter two, section 2.8, very little empirical or indeed to a large extent normative discussion, is present in the strategic management literature regarding strategic options. Alternatively, the economic and financial literature discusses the benefits of holding options, or in other words keeping organisational options open. Some of the essence of this paradigm may be manifest here, as a logical framework may restrict or stifle an organisations ability to keep its options open, in essence forcing its hand so to speak. Alternatively, consultation may allow organisational decision makers to inform stakeholders of the essence of their long-term plans, thus allowing important strategic decisions to be delayed for a period of time until further information becomes available on which to act.

7.4. Managerial implications.

The managerial implications of the study presented here fall broadly into four main areas 1) organisational flexibility, 2) investment in strategic planning, 3) involvement in strategic planning, 4) the role of political behaviour and 5) the implementation of strategy.

7.4.1. Organisational flexibility.

This newly developed scale has been demonstrated to be an important indicator of an organisations ability to respond to environmental change, and hence organisational performance. Hence in reviewing or in formulating new strategies, organisational decision makers can assess areas of inflexibility[65] within their organisation, and alter strategies accordingly. The alteration in strategy might accommodate the weakness or alternatively, if for instance technological flexibility was a particularly important factor in a specific industry, the new strategy may attempt to develop flexibility within this dimension.

The results suggest that whilst all of the dimensions of the newly developed organisational flexibility construct impact on overall organisational performance, specific types of flexibility impact on specific types of organisational performance. More specifically the dimensions labelled as Operational and Financial flexibility impact directly on financial performance, whilst the dimensions labelled Technological and Structural flexibility impact directly on non-financial performance. The inference here that those organisations that can exhibit Organisational Flexibility in the face of turbulent environmental conditions, will outperform competing organisations in the same industry not only financially, but also non-financially.

[65] Cited here as the antithesis of flexibility.

The suggestion cited above is consistent with the "textbook views of organisational change" (Larsen and Lami, 1999) offered; whereby "flexibility–rather than inertia–[is seen] as the key to organisational success" (Larsen and Lami, 1999). Hence in order to avoid organisational and more specifically "structural inertia" (Hannan and Freeman, 1984) where an organisations ability to adapt to alterations in its external environment in inhibited, managers need to constantly examine where and how organisational flexibility is manifest within their organisations and additionally enhance it[66].

Whilst addressed more specifically within section 7.6, Future Research, managers operating in different industries that exhibit different levels of environmental turbulence, may have to exhibit different types or combinations of flexibility, in order to deliver and overall positive impact on the outcome variable, in this case performance.

7.4.2. Strategic planning: general issues regarding practice

From the results presented here, organisations practicing formalised strategic planning can be confident that any investment made in terms of time or manpower will reap financial dividends. More specifically, those organisations with a comprehensive strategic planning process whereby objectives are set, internal and external analysis conducted, strategic

[66] Worthy of note is that the concept of structural inertia cited here (and taken largely from the strategic management literature) is deemed similar in essence to the concept of "core rigidities" (Leonard-Barton, 1992) cited in the Marketing literature. Here, a gap between the demands of an organisations external environment and organisational core capabilities is referred to as follows, "Values, skills managerial systems and technical systems that served the company well in the past and may still be wholly appropriate for some projects or parts of projects, are experienced by others as core rigidities-inappropriate sets of knowledge. Core rigidities are the flipside of core capabilities. They are not neutral; these deeply embedded knowledge sets actively create problems. While core rigidities are more problematic for projects that are deliberately designed to create new non-traditional capabilities, rigidities can effect all projects-even those that are reasonably congruent with current core capabilities" (Leonard-Barton, 1992).

options are generated and sifted, and the subsequent strategies implemented in the appropriate way can be confident in their ability to perform financially.

Whilst within the results presented, market and competitive turbulence were identified as not being mediated by the strategic planning process, a strong and significant result was presented for the ability of strategic planning to combat the impact of technological and regulatory turbulence on the organisation. Hence managers operating in industries where the impact of regulatory and technological change is great, should attempt to employ a comprehensive strategic planning process in order to cope with the levels of change exhibited by these two factors. The inference here, that those organisations having the ability to do this will financially outperform those without such abilities.

Intuitively, managers or indeed organisations competing in turbulent environments may perceive the time dedicated to developing strategic plans as wasted, or possibly an inefficient use of valuable time. The results suggest that those organisations who adopt this approach will not perform as well as those who dedicate time to setting objectives, collecting data, sifting the strategic options presented and implementing them in a rigorous manner; in other words planning strategically.

A training issue is also inferred by the results presented. As the importance of a comprehensive strategic planning process is demonstrable from the results obtained, then organisational decision makers and indeed strategists should be at the very least, be familiar with the theoretical basis of what constitutes a comprehensive strategic plan. This given, then the respective organisational protagonists may take a view on whether their

organisation plans comprehensively, or not. On-going and subsequent alterations may then take place in order to bring the organisational strategic planning process into line with a theoretical template. Whilst the strategic overview is important for the senior executives making these judgements and also instigating the strategic changes discussed, the junior executives / staff who will be responsible for the provision of information, or indeed the operationalisation of a particular strategy, must understand their role within the over all process. This idea is further developed in the next section.

7.4.3. Involvement in strategic planning.

The results suggest that benefits can accrue to organisations involving other than just senior managers within the strategic planning process. By widening participation, organisations impact directly on staff retention and morale issues and in essence, increase motivation levels. In doing this however a further dilemma is posed for the organisation i.e. how many people should organisations involve in the strategic planning process, and from where in the organisation? Unfortunately further research is required in order to address this question specifically, however on reflection, a favourable attitude to widening participation is recommended. A subsequent danger of adopting this paradigm within organisations traditionally adopting a top down approach to strategic planning is that of management by committee. The possibility exists for too many people become involved in the strategy formulation and decision-making process, as incrementally more and more people representing different organisational interest groups are consulted. As a result organisational decision-making becomes slow and unwieldy, and unable to react to changes in the competitive environment. Typically, by the time the organisation has drafted a response to environmental change, it is either too late and hence has lost any

advantage or indeed had lost the opportunity to respond to a competitive threat. Alternatively after passing through the many aforementioned interest groups, the resultant strategy has been so severely diluted as to be largely ineffective.

7.4.4. The role of political behaviour.

Many organisations attempt to reduce, or indeed eliminate the levels of deviation from the dominant and accepted norms. This is done through a variety of measures including both formal and informal processes and procedures. It is argued here that this behaviour will impact negatively on employee motivation and ultimately retention. To extend the debate with reference to the aforementioned innovation literature (Nemeth, 1997), organisational creativity can be affected negatively. Whilst it would be unworkable for organisations to engage in copious levels of in-fighting and petty squabbling, some political activity, and with it dissention and argument should be encouraged. Individuals challenging the norm, whilst unlikely to be welcomed with open arms, should be viewed by senior management as a necessary problem that may promote alternative and divergent discussion that otherwise would be lost. In many ways, the dissenter or the norm challengers are engaging in a less formalised version of devils advocacy or indeed dialectic enquiry, which in many organisations is actively encouraged.

Organisations wishing to explore this further, may wish to firstly employ an external agency through which anonymity is guaranteed to the participants. By adopting this approach workers will fell able to express their alternative viewpoints without fear of reprisals for the senior managers. The assumption here, that the alternative perspectives in question are solely from individuals who would be classified as non-management.

Organisations wishing to exploit the benefits of discussions challenging the dominant managerial paradigm should concentrate on creating conditions in which they may flourish.

7.4.5 The Implementation of strategy.

Formulated plans are likely to fall short of the objective set if not implemented in a structured and efficient manner (Drucker, 1974; Bourgeois and Brodwin, 1984; Noble and Mokwa, 1999; Thompson, 2001). Whilst largely intuitive, significant support is presented by the results highlighted that stress the importance of the involvement of management strategy implementation. In many ways the results exhibited here lend further weight to the observations discussed in section 7.4.3 above. More specifically, strategy, the results suggest, is not the preserve of senior managers who essentially decide on what is best for the organisation and lead by dictate. It is not enough for a well formulated strategy to be left to its own devices, so to speak, any more than it is acceptable for strategy to be decided solely by senior management. Senior managers / managers have to take an active and positive role, in ensuring that the essence of a particular strategy is not only operationalised, but also delivers the expected outcomes.

7.5. Limitations.

Whilst issues regarding methodological and theoretical limitations have largely been addressed within the relevant chapter headings, further limitations are examined here.

7.5.1. Specification error.

Strategic planning has been operationalised within this thesis as an essentially linear process, based upon a significant amount of previous empirical and normative discussion within the domain. This stance was taken for a number of reasons[67], however it is recognised that this is but one stance, and therefore one conceptualisation of the strategy making process and the constituent elements. The research undertaken deliberately confined the strategy-making paradigm, in order to achieve a degree of clarity. Indeed in examining the extensive and diverse perspectives on strategy making discussed in the literature, it is argued here that no one research study could possibly attempt to examine inclusively all of the different perspectives available. Hence an exploratory approach was adopted and applied here in order to reduce the levels of complexity identified within the literature. Further discussion of this is presented in the next section regarding construct validity.

7.5.2. Validity assessment.

Four types of validity are discussed here with regard to the research undertaken and the conclusions drawn, these are 1) Statistical conclusion validity i.e. whether statistical inference of covariance between variables is justified 2) Internal validity i.e. whether an observed covariation should be considered a causal relationship, 3) construct validity i.e. whether the operational variables used to observe covariation can be interpreted in terms of theoretical constructs and 4) External validity i.e. whether the observed causal relationship can be generalised in different contexts (Calder et al, 1982).

[67] See measure development and descriptive analysis chapters for further discussion.

Both significant and non-significant relationships have been identified and discussed within this thesis. However the main discussion surrounds the impact and implications of the statistically significant relationships, generally at the 95% confidence level. Hence statistical conclusion validity is deemed satisfactory in this instance.

Internal validity, while discussed at some length in chapters four, five and six, refers to the ability of researchers to confidently "attribute the effect that was observed to the experimental variable, and not to other factors" (Churchill, 2002). The observed R^2 values for the final model[68] were initially regarded as being lower than expected. However, when taken in context the study presented is of an exploratory as opposed to a confirmatory nature and as such, the results obtained were regarded as unproblematic and indeed not representative of a problem with internal validity.

Construct validity will not be examined in detail here, as significant debate is present within previous chapters[69], and has been deemed satisfactory through rigorous scale development and validation.

External validity or the extent to which the findings presented may be generalised in different contexts is problematic as only one context is presented here. In response to this issue however the literature is supportive and suggests that a) it is unnecessary (Calder et al, 1991) and b) of little concern where the researchers' interest is mainly theoretical (Cook and Campbell, 1979). Whilst these citations validate, to a large extent, the results

[68] See chapter six section 6.4.8
[69] For further debate on construct validity see chapters four, five and six.

presented, it is recognised that further empirical investigation is required to make a more rigorous assessment of external validity.

7.5.3. Data collection.

Two main issues relating to the data collection methods employed will be examined here, 1) issues of causality and 2) issues relating to common method variance.

Whilst both qualitative and quantitative methods were employed in the data gathering process, the emphasis on cross-sectional research does present specific issues. Cross-sectional research, or more specifically in this case the mail survey method, present benefits to the data collection process, such as the removal of interviewer bias. However cross sectional data collection can not provide insight into the issues of causality (Baumgartner and Homburg, 1996). Tentative conclusions are available to the researcher regarding associations amongst the variables of interest however additional theoretical support is required for a meaningful discussion regarding the hypothesised direction of causality (Hayduk, 1987; Kelloway, 1998; Hair et al, 1998). Within the study presented, the case for using a cross sectional methodology has been argued vociferously, however the need for longitudinal research to further explore issues of causality is acknowledged as a possible limiting factor to the conclusions drawn from the results presented.

The literature suggests that common method variance (Lindell and Whitney, 2001) may occur in data collection where respondents views (or responses) to "their internal states, are collected at the same time as their reports of their past behaviour relating to those internal states" (Lindell and Whitney, 2001). In essence, where a technique such as survey

response is employed the possibility arises that the relationships, or correlations, between the variables of interest are inflated artifactually so to speak. Whilst the impact of common method variance has been argued to be significant (Feldman and Lynch, 1988) and remedies for the mitigation of its effects cited (Williams, Cote and Buckley, 1989; Mitchell, 1985; Millsap, 1990), strong evidence is nevertheless available in the literature to suggest that despite this, "the MV [method variance] problem is not so severe but does require further study" (Crampton and Wagner, 1994; Harrison, McLauglin and Coalter, 1996). Hence within the research presented here, the theoretical impact of common method variance is acknowledged, however its potential impact is not deemed to present a significant inhibitor to the interpretation of the results presented. In addition to the debate presented here, the previously described results regarding discriminant and convergent reliability suggest that common method variance in not a problem.

7.6. Directions for future research.

As cited earlier, in addition to the significant contribution of this thesis to the strategic planning domain, a number of interesting and new areas of future research have been presented. This section will examine future research opportunities in relation to 1) newly developed measures, 2) previously utilised and adapted measures, 3) domain level discussions and 4) social desirability bias.

7.6.1. Newly developed measures: Future research.

Various properties were demonstrated by the newly developed constructs i.e. organisational flexibility, strategic choice and quality of strategic options. Various and distinct results were presented by the respective constructs, through the measure

development procedure. Indeed different numbers of items were deleted, different reliabilities presented, different inter-item correlations were identified and so forth. Further testing of the aforementioned constructs in different contexts is hence recommended, whereby further evidence of construct reliability, validity and also stability would subsequently be available (c.f. DeVellis, 2003). Additionally, replication of the relationships identified would present further evidence of causality, a problem commonly associated with cross-sectional research (Churchill, 2002). The further testing cited should include quantitative methodologies, presenting further insight into the constructs in question. Through this, further and possibly alternative dimensionality may be explored.

A suggested example of further research utilising the newly developed measures, is that of profiling organisations in different environments against the types of organisational flexibility identified. Indeed, profiling of organisations against the newly developed organisational flexibility construct will be required, in order to further develop the practical implications of the newly developed measure. This profiling should take the form of presenting typologies of flexibility exhibited by organisations in different environmental settings. As a precursor to some of this work, appendix 7.1 presents some initial development analysis. The analysis presented highlights the statistically different flexibility profiles exhibited by the organisations within the respective samples, suggesting that further study of this type is warranted[70]. In essence, organisations performing well in highly turbulent environments exhibit different flexibility, in terms of

[70] No further comment is made here other than the organisations sample exhibited statistically significant and different profiles of flexibility. Hence the data presented here is highlighted within the further research heading, and not within the wider analysis section. The comparison was undertaken on a sample of a) 50 relatively high performing organisations in high turbulence environments and b) 50 relatively low performing organisations in low turbulence environments.

the specified dimensions, than low performing organisations in low turbulence environments

7.6.2. Previously developed measures: Future research.

The research outlined in this thesis presented and utilised a new approach to the measurement of the non-financial performance dependent variable. While all necessary precautions were made in order to statistically ensure the robustness of the measure utilised, further research might further develop this idea incorporating additional qualitative analysis.

7.6.3. Domain level: Further research into strategic planning.

The on-going debate relating to the empirical investigation of the relationship between strategic planning and performance is worthy of further discussion. The argument presented in chapter two suggests that further dichotomous empirical investigations of the relationship between strategic planning and performance will not deliver the domain level academic progression required. Further exploration of the domain within this context would no doubt generate additional and possibly insightful comment on the relationship concerned. However the contribution may be small and insignificant at the domain level. Indeed a situation can be envisaged, where the debate between those advocating a positive relationship between strategic planning and performance, and those advocating a negative or indeed no relationship becomes a somewhat moot point.

A deeper understanding of the process of strategic planning, and its constituent elements is required, in addition to the impact on the organisations undertaking it. How and where

this impact manifests itself may be at a much deeper level than purely the balance sheet. Additionally, the on-going insistence in the literature that strategic planning is a process should be examined further. For example, and to play devils advocate for the moment, if an organisation demonstrates high levels of a particular type of flexibility within a particular environment, then will the organisation in question require a detailed and comprehensive strategic planning process? Possibly not, however some awareness of the external, or competitive environment will be required at some point, and hence strategic planning or at the very least an element of it, is present.

7.6.4. Social desirability bias in organisational research.

Social desirability bias may distort the responses given to a piece of social research if "an individual is strongly motivated to present herself or himself in a way that society regards as positive" (DeVellis, 2003). Indicators of the degree of social desirability exhibited by respondents in survey research are present in the literature (Crowne and Marlowe, 1960; Anastasi, 1968; Straham and Gerbasi, 1972; Reynolds, 1982), however whilst inclusion was originally considered, it was discounted for a number of reasons. 1) The questionnaire had developed to a sufficient length, as indicated by the qualitative interviews to inhibit further scale, or item inclusion. Additionally it was feared that further lengthening of the data collection instrument, would impact on the response rate and hence the extent of the data available for analysis, regarding the constructs of interest. 2) Anonymity and also, a guarantee of complete confidentiality were communicated to the respondents to the survey. On this basis, no gain or "positive" (DeVellis, 2003) outcome would be conveyed to the respondent engaging in response distorting behaviour. 3) Where items within administered scales correlate highly with social desirability indices, then

deletion of the offending item is recommended (Spector, 1992). The recommendation may prove to be problematic, where the number of scale items is originally low, in essence lowering reliability and also the overall variance captured by the measure (c.f. Kline, 2000). 4) The responses presented are largely reflective of the organisational strategic planning process, and not the individual respondent hence, in absence of any ethical responses the issue of social desirability does not necessarily arise within this context.

Whilst discounted within the bounds of this study for the numerous reasons cited above, further study might wish to investigate this issue further, possibly in an attempt to further increase parsimony.

7.6.3. Additional discussion.

While the literature review presented in chapter two was an inclusive as possible, a very large amount of literature exists regarding organisations and the factors impacting on the strategic planning process. Much of this was discounted initially due to a need for clarity, and indeed, to a large extent brevity in relation to the chosen data collection methodology. It is recognised however that the research study, and the findings presented here are not all-inclusive, and indeed were not designed to be as insight, as opposed to confirmation, was sought.

The above discussion regarding future research is illustrated in appendix 7.2, for ease of reference. Whilst temporal order is suggested by the illustration, it is recognised that

within theory development certain rapid and immediate change can occur with publication of new literature, which may impact on the plans presented here.

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APPENDICES FOR CHAPTER 2

APPENDIX 2.1

Appendix 2.1: Summary of empirical investigations of the strategic planning and performance relationship.

Author	Year	Definition of Planning	Performance Measures	How measured?	Other factors?	Timescale of Study	Instrument
Ansoff et al	1970	Planners / non-planners	Quantitative:13 largely investor based	Self report		Cross sectional	Mailed q'nairre
Fulmer & Rue	1974	Impoverished, Primary, Pro-forma, Progressive.	Quantitative: Sales growth, earnings growth, Earnings/sales, earnings / total capital	Self report		Cross sectional	Mailed q'nairre
Grinyer & Norburn	1975	Typology chosen from list of 4, from formal and regular to informal and irregular	Quantitative: Size, profitability, growth, performance	Structured interviews	Perception Desire for change Info.flow		Q'nairre
Karger & Malik	1975	Formal integrated long range planning	Quantitative: 13 efficiency / investor based measures	Self report		Cross sectional	Mailed q'nairre
Burt	1978	Planning quality: Formal / non-formal	Quantitaive: ROI	Self report		Cross sectional	Mailed q'nairre
Kallman & Shapiro	1978	Commitment to Strategic planning	Quantitative: Gross revenue	Self report		Cross sectional	Mailed q'nairre
Wood & Laforge	1979	Formal Planning	Quantitative: Growth in net income & return on owners investment	Self report		Cross sectional	Mailed q'nairre
Kudla	1980	Planning / non-planning firms	Quantitative: investor measures	Self report + CAPM model		Cross sectional	Mailed q'nairre
Leontiades & Tezel	1980	Formal Planning quality	Quantitative: EPS, ROA, PE ratio, Sales growth	Self report		Cross sectional	Mailed q'nairre
Sapp & Seiler	1981	Non-planners, beginning planners, intermediate & sophisticated	Deposit growth, capital to total risk assest, total capital / total risk assets, total interest / total loans	Self report		Cross sectional	Mailed q'nairre
Robinson & Littlejohn	1981	Systematic Planning	Quantitative: sales , PBT, owner compensation, employees	Self report		Cross sectional	Mailed q'nairre
Jones	1982	Planners & Non-planners	Quantitative: return on assets	Self report	Environment	Cross sectional	Mailed q'nairre
Woodburn	1984	Formaility Approach Expenditure on	Quantitative: Profitability Growth Rate	Self report	Governance Profiling factors	Cross sectional	Mailed q'nairre

Fredrickson & Mitchell	1984	Comprehensiveness	Quantitative: Average ROA % change in gross sales	Interviews: Structured + Unstruct-ured	Level of integration of strategy	Cross sectional	Structured questions + choice from list
Welsh	1984	Plan / non plan	Quantitaive:Share price	Self report		Cross sectional	Mailed q'nairre
Robinson et al	1984	Planning Intensity	Quantitative: sales , PBT, owner compensation, employees	Self report	Stage of organisational development	Cross sectional	Mailed q'nairre
Ackelsberg & Arlow	1985	Formalised planning: Goal setting, forecasting, process. Plan / non plan	Quantitative: Sales Change Profit Change	Self report		Cross sectional	Mailed q'nairre
Sexton & Van Auken	1985	Degree of strategic planning	Quantitative: Sales profit levels (both forecast & achieved over a 2yr period)	Interviews		Longit-undinal	Interview
Rhyne	1986	Planning effort: Planning openess Planning horizon	Quantitative: ROE	Self report	Industry effects	Longit-undinal	Mailed q'nairre
Bracker, Keats & Pearson	1986	Planning sophistication	Quantitative: Estimates of 5yr - revenue growth, owner compensation, cost / revenue ratio	Self report		Cross sectional	Mailed q'nairre
Pearce, Robbins & Robinson	1987	Planning formality	Quanitative: ROA, ROS, Sales growth. Qualitative: Overall performance	Self report		Cross sectional	Mailed q'nairre
Caeldries & Van Dierdonck	1988	Typology of 4-stage development (Formality)	Qualitative: Mangerial satisfaction	Self report		Cross-sectional	Possibly mailed q'nairre
Bracker, Keats & Pearson	1988	Sophistication: Structured Structured op-erational Unstructured	Quantitative: Growth: Revenue/ income, / present value / firm / CEO compensation	Self report	Entrepeneur orientation	Cross-sectional	Mailed q'nairre
Robinson & Pearce	1988	Planning sophistication	Quantitative: Sales, ROS, ROA Qualitative: Overall performance	Self report	Compeitive method / tactics	Cross-sectional	Mailed q'nairre
Odom & Boxx	1988	Planning sophistication	Size and Growth	Self report	Environment	Cross-sectional	Mailed q'nairre
Powell	1992	Formal strategic planning	Quantitative and qualitative assessment of 3 year profitability	Self report	CEO locus of control	Cross-sectional	Mailed q'nairre

Lyles et al	1993	Formality/ Sophistication	Qualitative: Options pursued Growth of sales / ROE / ROA	Self report	Strategy options	Cross-sectional	Mailed q'nairre
Baker, Adams & Davis	1993	Written plans	Qualitative: enhancement of internal factors e.g) motivation/ control Profitability	Self report	No	Cross-sectional	Mailed q'nairre
McKiernan & Morris	1994	BJM (see paper above for ref)	Quantitaive: Sales growth, Profit margin, ROCE, ROSE, employee productivity	Self report	Planning Consequneces	Cross-sectional	Mailed q'nairre
Pekar & Abraham	1995	Sophisticated/ Unsophisticated	Quantiative: 1 financial (ROI)	Self report	No	Cross-sectional	Mail q'nairre
Hopkins & Hopkins	1997	Intensity	Quantitative: 3 financial measures, (Net Income/ ROE/ Deposit Growth)	Self report	Managerial Environment Organisational	Cross-sectional	Mail q'nairre
Peel & Bridge	1998	Detail. "Low" planners "High" planners	Qualitative: Profitability / "Success"	Self report	Capital budgeting Environment Competition	Cross-sectional	Mailed q'nairre
Phillips, Davies & Moutinho	1999	Sophistication	Quantitative: Effectiveness Efficiency(ROI / Margin) Adaptability	Self report	None reported	Cross-sectional	Mailed q'nairre
Glaister & Falshaw	1999	Formality	Qualitative: views on importance / efficacy	Self report	No	Cross-sectional	Mailed q'nairre
Rogers, Miller & Judge	1999	Process	Quantitative: ROA / ROE / Loan Growth	Self report	Strategy "type" Defender / Prospector	Cross-sectional	Mailed q'nairre
Hahn	1999	Sophistication	Quantitaive: ROE & ROA	Self report	Implementation	Cross-sectional	Mailed q'nairre
Andersen	2000	Formalised	Qualitative: ROA / Sales growth	Self report	Autonomous actions	Cross-sectional	Mailed q'nairre
Desai	2000	Media announ-cements about organisational philospohy reg-arding planning	Quantitative: Stock/share price	Observation	No	Two weeks	Obser-vation
Phillips	2000	Sophistication/ thoroughness	Quantitative: Effectiveness Efficiency (ROI / Margin) Adaptability	Self report	Financial planning interface	Cross-sectional	Mailed q'nairre

O'Regan & Ghobadian	2002	Formality	Qualitative: "growth"/"financial performance" and "achievement of objectives"	Self report	Implementation barriers	Cross-sectional	Mail q'nairre

Author	Pilot study Evidence	Country	Respondent Profile	Main Sample	Company Size	Result
Ansoff et al	No	US	Executives	93 Manuf.	Not reported	+ve
Fulmer & Rue	No	US	Executive	386 multi	Not reported	No evidence to support +ve
Grinyer & Norburn	No	US	Executives	91 resps. 21 firms	Multi	No evidence to support +ve
Karger & Malik	Yes	US	CEO	90 Multi	Sales >$50Mn <$500Mn	+ve
Burt	No	Austral-ia	Senior managers	14 retail	>5 outlets Sales >$1Mn	+ve
Kallman & Shapiro	No	US	Not evident	385 transport	Mixed Large: >$30 Mn, Medium:	Neither -ve or +ve
Wood & Laforge	Yes	US	Officers	41 banks	Not reported	+ve
Kudla	No	US	Not evident	328	"Large"	Neither -ve or +ve
Leontiades & Tezel	No	US	CEO & Chief corporate planner	61 "Fortune 500"	Not reported	No evidence to support +ve
Sapp & Seiler	No	US	Not reported	302 Banks	>$10mn in assets	+ve
Robinson & Littlejohn	No	US	Owner	67 multi	Small >$2.7mn	+ve
Jones	No	US	Owner	69 multi	Small	+ve
Woodburn	Yes	South Africa	Not evident	518 Multi	Not reported	Mostly +ve
Fredrickson & Mitchell	No	US	Execs. Include Ceo	27 Forest Products	Not reported	-ve
Welsh	No	US	CEO	123 Multi	Not reported	+ve

Robinson et al	No	US	Owner	51 Multi	Small <50 emps. >$3Mn sales per annum	+ve
Ackelsberg & Arlow	No	US	Not evident	135 Multi	"Small"	Mixed results
Sexton & Van Auken	No	US	Owners	357/278 Multi	"Small"	+ve
Rhyne	No	US	Senior Mgrs. (Not evident)	89 Multi	Fortune 1000	+ve
Bracker, Keats & Pearson	No	US	Owners	188 Dry cleaning	Small <$400K sales per annum	+ve
Pearce, Robbins & Robinson	No	US	CEO	97 Manuf.	<500 emps.	+ve
Caeldries & Van Dierdonck	No	Belgium	Not evident	124 Multi	Not reported	Mostly +ve
Bracker, Keats & Pearson	Some	US	CEO	73 Electronic	Av: 71 emps.	+ve
Robinson & Pearce	No	US	CEO	97 Manuf.	Average: $32.1Mn sales & 278 emps.	+ve
Odom & Boxx	Yes	US	Pastors	175 churches	>150 attendance / week	+ve
Powell	No	US	CEO	113 furniture & dresses	Not reported	+ve & -ve
Lyles et al	Yes	US	Owners	188 Multi	Small: <500 emps.	+ve
Baker, Adams & Davis	No	US	CEO	194 Multi	Not reported	+ve
McKiernan & Morris	No	UK	CEO	1380 Multi	<500 emps.	Neither -ve or +ve
Pekar & Abraham	No	US	CEO / Pres. Chief Planning officer	102 Multi	Not reported	+ve
Hopkins & Hopkins	No	US	CEO	112 Banks	Not reported	+ve

Peel & Bridge	No	UK	Managing Directors	150 Manufa-cturing	Small(10-99) & medium (100-499) emps.	+ve
Phillips, Davies & Moutinho	Yes	UK	Hotel General Managers	100 Hotel	Av. Turn. £2.82Mn	+ve
Glaister & Falshaw	No	UK	CEO Chairman MD	113 Manufa-cturing & Service	Large: Av. 7120 emps.	+ve
Rogers, Miller & Judge	Yes	US	CEO	157 Banks	Not reported	Mostly +ve
Hahn	No	US	Senior execs.	93 Banks	Assests <$10Mn > $1.5 Bn	No evidence to support +ve
Andersen	Yes	US	Managers	230 Multi	Not reported	+ve
Desai	No	US	N/a	30 Multi	Listed / not reprted	+ve
Phillips	Yes	UK	Hotel General Managers	100 Hotels	Av. Turn. £2.82Mn	+ve
O'Regan & Ghobadian	No	UK	Not given	194 Multi	Small/ medium (250 or less)	Neither -ve or +ve

Studies utilising either meta-analysis or summary techniques in order to explore the relationship between strategic planning and organisational performance.

Armstrong	1982
Shrader, Taylor & Dalton	1984
Greenley	1986
Capon, Farley &Hoenig	1990
Boyd	1991
Armstrong	1991
Schwenk & Schrader	1993
Greenley	1994
Miller & Cardinal	1994
Bowman & Helfat	2001

APPENDIX 2.2

Described sample (taken from original study)	*Author/s*	*Year*
Mixed sample	Karger and Malik	1975
	Pekar and Abraham	1995
	Welsh	1984
	Baker, Adams and Davis	1993
	Eastlack and McDonald	1970
	Rhyne	1986
	Grinyer and Norburn	1975
	Kudla	1980
	Herold	1972
	Woodburn	1984
	Caeldries & van Dierdonck	1988
	Andersen	2000
	McKiernan & Morris	1994
	O'Regan & Ghobadian	2002
	Desai	2000
	Denning and Lehr	1972
	Fulmer and Rue	1974
	Shuman	1974
	Lyles et al	1993
	Sexton and van Auken	1985
	Robinson and Littlejohn	1981
	Leontiades and Tezel	1980
	Unni	1981
	Jones	1969
	Robinson et al	1984
	Ackelsberg and Arlow	1985
	Powell	1992
Banks	Hopkins and Hopkins	1997
	Rogers, Miller and Judge	1999
	Sapp and Seiler	1981
	Hahn	1999
	Wood and Laforge	1979
	Rosenbloom and Tripuraneni	1985
Manufacturing	Robinson and Pearce	1988
	Ansoff et al	1970
	Pearce, Robbins and Robinson	1987
	Peel and Bridge	1998
	Glaister and Falshaw	1999
Electronic	Bracker, Keats and Pearson.	1988
Retail	Burt.	1978
"Small" companies	Ackelsberg and Arlow.	1985
Motor freight	Kallman and Shapiro.	1978
Industrial	Fulmer and Rue	1974
Hotels	Phillips	2000
	Phillips, Davies & Moutinho	1999
Forest Products	Fredrickson and Mitchell	1984
Dry Cleaning	Bracker, Keats and Pearson	1986
Students	Segev	1986
Churches	Odom and Boxx	1988
Credit Unions	Jenster and Overstreet	1990

APPENDIX 2.3

Summary of normative options literature

	Suitability	Feasibility	Acceptability
Johnson & Scholes	**	**	**
Haberberg and Rieple	**	**	**
Finlay	**	**	**
Mintzberg et al	**	**	**
Johnson & Scholes	**	**	**
Lynch	**	**	**

** signifies that agreement with the main headings suggested by Johnson and Scholes (2003) is present.

The definitions presented by Johnson and Scholes (2003) are presented below for reference:

SUITABILITY: Concerned with whether a strategy addresses the circumstances in which an organisation is operating – the strategic position.

a) Exploiting opportunities in the environment and avoiding threats.
b) Capitalising on organisational strengths and avoiding weaknesses.
c) Addressing expectations.

ACCEPTABILITY: Concerned with the expected performance outcomes of a strategy.

FEASIBILITY: Concerned with whether an organisation has the resources and competencies to deliver a strategy.

a) Financial
b) Resource feasibility

APPENDIX 2.4

Hypothesis	Relationship			Hypothesised Association
	From	*(Dimension)*	*To*	
H1	FP		NFP	+ve
H2	NFP		FP	+ve
H3	Strategic Planning		FP	+ve
H4	Options	Suitability	NFP	+ve
H5	Options	Feasibility	NFP	+ve
H6	Options	Acceptability	NFP	+ve
H7	Choice	Quality	NFP	+ve
H8	Choice	Consultation	NFP	+ve
H9	Choice	Process	NFP	+ve
H10	Political Behaviour		NFP	+ve
H11	Flexibility	Operational	FP	+ve
H12	Flexibility	Financial	FP	+ve
H13	Flexibility	Human resources	FP	+ve
H14	Flexibility	Human resources	NFP	+ve
H15	Flexibility	Tech.	NFP	+ve
H16	Flexibility	Structural	NFP	+ve
H17	Implementation	Communication	Political Behaviour	+ve
H18	Implementation	Leadership Involvement	Political Behaviour	+ve
H19	Implementation	On-going control	Political Behaviour	+ve
H20	Implementation	Structural issues	Political Behaviour	+ve
H21	Implementation	Resource allocation	Political Behaviour	+ve
H22	Environmental Turbulence	Market	Strategic Planning	+ve
H23	Environmental Turbulence	Competitive	Strategic Planning	+ve
H24	Environmental Turbulence	Technological	Strategic Planning	+ve
H25	Environmental Turbulence	Regulatory	Strategic Planning	+ve

APPENDICES FOR CHAPTER 3

APPENDIX 3.1

Organisational flexibility - item pool

BOLD indicates items that were retained.

Original Item pool	Structural	I.T.	Human Resources	Financial	Operational
Rapidly change production with market demand					
Rapidly increase production					
Rapidly decrease production					
Rapidly change our product mix as market demand changes					
Rapidly employ new production technologies					
Rapidly adapt to changes in demand					
Rapidly develop and introduce new products *into* production					
Rapidly re-engineer our time to market					
Ability to be operationally flexible					
Rapidly move resources with the production process					
Ability to train multi-skilled staff					
Rapidly motivate staff					
Communication of long-term benefits of change					
Ability to recruit good staff					
Ability to motivate and retain good staff					
Ability to alter working patterns					
Engender trust in union representation					
Ability to be flexible with our human resources					
Ability to quickly induct new recruits in to the culture					
Budget for technological obsolescence					

Original Item pool	Structural	I.T.	Human Resources	Financial	Operational
Ability to add / reduce computing capacity					
Rapidly finance new technology requirement					
Ability to be flexible with our I.T. resources					
Capacity to be open-minded about new technology					
Ability to create cross-functional work teams					
Ability to create a facilitative structure					
Ability to process and act on market information					
Ability to welcome change					
Ability to communicate between departments					
Allocation of resources for research and development					
Ability to reduce bureaucracy					
Capacity to minimise form filling					
Capacity to empower employees					
Ability to be structurally flexible					
Anticipation of capacity requirements					
Ability to effectively plan capacity needs					
Ability to utilise spare capacity					
Fund change from within the organisation					
Ability to manage close relationships financial shareholders					
Ability to operate an "up to date" computer system					
Train staff in the latest technology					
Ability to maintain an adaptable computer system					
Gain additional funding from outside the organisation					

Original Item pool	Structural	I.T.	Human Resources	Financial	Operational
Ability to be financially flexible					
Ability to fund new ventures rapidly					

APPENDIX 3.2

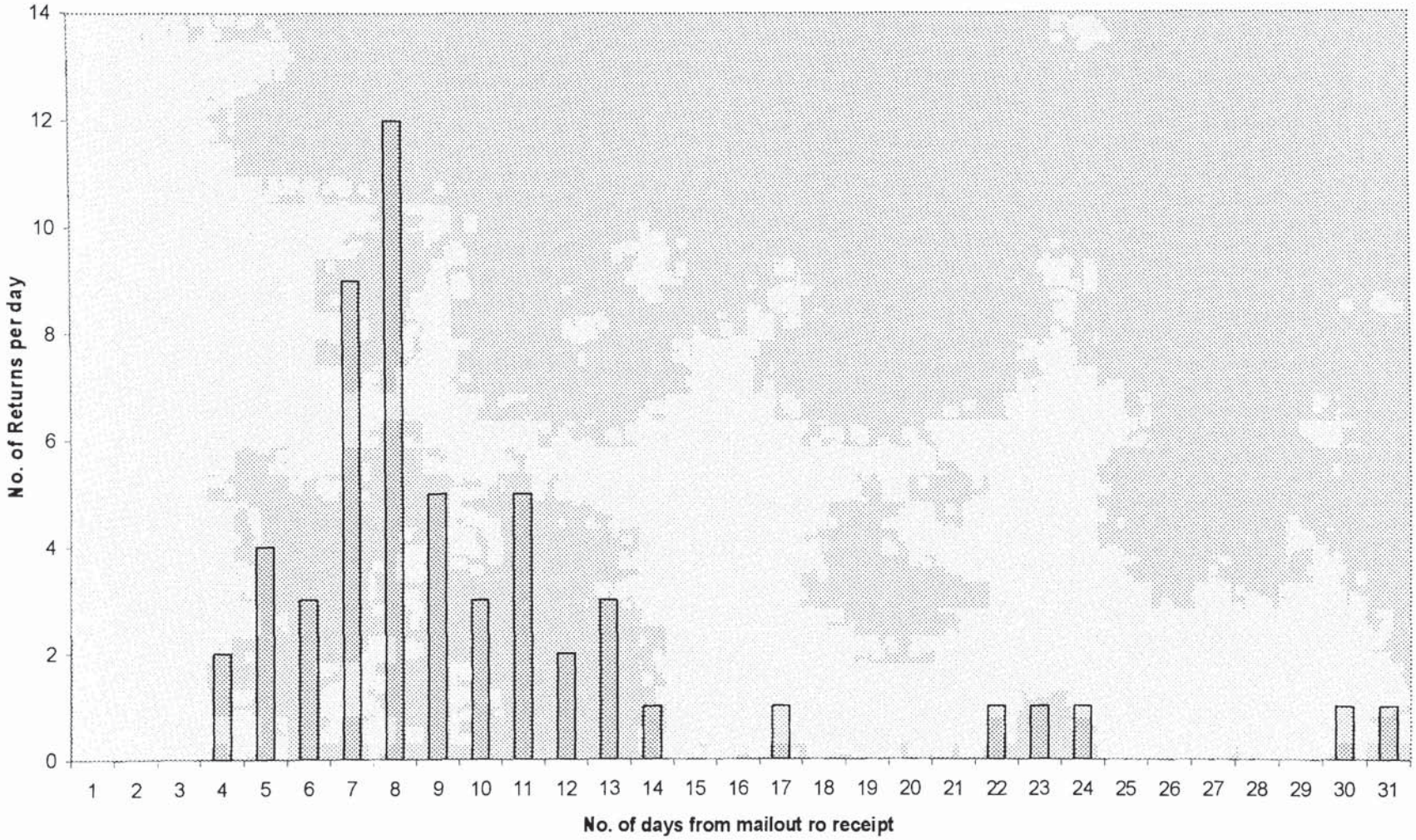
		Summary of protocol comment.	Example quote.
Overall	Format / Design	The format and layout of the questionnaire was generally liked, however two respondents suggested a clearer layout in terms of space per constuct.	"Looks good". "Why not have these (constructs) on separate pages. It might clear things up a bit".
	Layout	One comment suggested that the questionnaire was a little "cramped" and hence more space required per construct.	"Seems a little cramped in places, like you've crammed things in... especially the implementation stuff".
	Sequence of questions	No major amendments suggested other than moving the performance question towards the end. Also, due to the length of the implementation scale, one respondent suggested that it was moved towards the end of the questionnaire, in order to not "put people off".	"I wouldn't ask about performance so early. Its a touchy subject". "Leave the implementation stuff until the end. It's a lengthy one that, and you might find one or two people who'll bin it (the questionnaire) if they see it early on".
Construct Specific	Strategic Planning	An interesting omission as to the level of strategy was highlighted here, and incorporated into the final questionnaire. Additionally "trend analysis" was broken in to 4 areas, due to clarity problems.	"There's no reference to the level of strategy. You know like corporate level, business level etc". "What does trend analysis mean?"
	Environmental turbulence	No comment.	
	Quality of strategic options	No comment.	
	Comprehensive strategic choice	No comment.	
	Flexibility		"Oooh that's interesting. Flexibility isn't something we talk about a lot, but I suppose that if you're good at these things then you could react better".
	Political behaviour		"Huh (laughs) so true". "I know what you mean".
	Performance	No comment.	
	Implementation success	Items pertaining to structural change and financial factors were incorporated into the final scale.	"No a lot about structure in here. What if you have to rearrange things?" "I'm not being funny, but I may have to finance change, you haven't really mentioned any financial factors here".

APPENDIX 3.3

Construct	**Evidence from exploratory analysis**	**Comment / Action taken**
Environmental Turbulence	Two separate questions / scales were used to capture environmental turbulence. Cadogan et al (2002) originally separated regulatory turbulence out from the original Kohli and Jaworski (1993) measures due to "possible bias". This was done by utilising the 7-point scale, administered in the pilot study. Exploratory analysis of the scale items indicated significant polarisation of responses at either "very low impact" or the "very high impact". Indicating that the 7-point scale was unnecessary.	The regulatory turbulence scale (Dwyer and Welsh, 1995), was incorporated into the original Kohli and Jaworski (1993) measure, utilisng a 5-point scale. Minimal rewording was necessary in order to achieve this.
Strategic Planning	Item 4 "Market analysis", exhibited a large negative skew.	Wording was changed to more reflect the other "analysis" questions in items 1 and 2
	Item 10 "Annual objectives" large positive skew.	Confusion possibly exists with the other references to different strategic levels. Confusion possibly with short-term action plans. References to the timescale of the levels of strategy highlighted were made.
	Item 12 "Exploration of contingencies". Large negative skew.	Possibly due to misunderstanding / question wording vague. Question expanded and given a more analytical meaning. "Exploration"- possibly be confused with research and development
Organisational Flexibility		No changes highlighted as necessary / made.
Quality of strategic options	Items 5 /7 /8 /13 exhibited extremely skewed distributions of responses	Some minor wording changes due to large negative / positive skews
Comprehensive strategic choice		Some minor wording changes due to large negative / positive skews
Political behaviour		No major changes
Performance		No major changes
Implementation		Some problems were exhibited with factors such as reliability, and factor loadings. However at this stage the relatively small sample size was attributed to these issues. Some minor wording amendments were made.

APPENDIX 3.4

Response Pattern for Pretest Questionnaire Returns



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AS ORIGINAL

APPENDIX 3.5

ASTON
BUSINESS SCHOOL

Dear (name inserted from merged word file),

Strategic Planning in the 21st Century

I am a PhD student at Aston Business School, and I am writing to request your participation in my PhD research. The research is an investigation into **strategic planning** in UK companies.

I do appreciate that your time is most valuable, and have therefore designed the questionnaire so that it should not take long to complete. All of the questions concern your personal views about the ways in which your organisation conducts its strategic planning, so you will not need to search out further information. It is your opinions that I am interested in, but if there is a more appropriate member of your senior management team who is perhaps closer to your strategic planning process, then I would be most grateful if you could pass it on to them. Every completed questionnaire will be entered into a prize draw, and the first twenty answers drawn out will receive a Parker fountain pen.

The study is designed to examine the way in which your organisation approaches strategic planning, against the backdrop of your particular trading conditions. Some companies operate in a number of markets, if this is the case please select **one main market** and answer the questions for that market only.

All information provided will be treated in the strictest confidence and no analysis will be conducted on individual organisations. You do not need to identify yourself or your company on the completed questionnaire. As anonymity is guaranteed, please be as frank and as objective as possible. When you have completed the questionnaire please return it in the reply paid envelope provided. If you could do this by **the 26th of April 2002** I would be most grateful.

I will of course, be happy to provide you with a summary report of the results. If you would like to receive such a copy, please attach a business card or email me at ruddjm@aston.ac.uk. I would expect that my initial findings will be available by June 2002.

Your help is integral to the completion of my studies, and therefore I can assure you that any help you can provide will be greatly appreciated.

Yours sincerely

APPENDIX 3.6

Section 1: The competitive environment

Question 1: The following statements have been made by CEO's / Senior Managers about the **main market** in which they operate. Relating these statements to the **main market or industry** in which you operate, how closely do they describe your views?
Please write, in the box provided, the number that is closest to your opinion. If you have no opinion, or do not know, please indicate this by writing an "X".

Strongly Disagree	*Disagree*	*Neither Agree nor Disagree*	*Agree*	*Strongly Agree*	*No Opinion or Don't Know*
1	2	3	4	5	X

Our customers preferences change frequently over time	
New customers tend to have product related needs that are different to those of our existing customers	
Our customers tend to look for new products all the time	
One hears of a new competitive move almost every day	
In our main market there are many "promotion wars"	
In our main market aggressive selling is the norm	
Technological changes provide big opportunities in our main market	
Technology in our industry is changing rapidly	
A large number of new product ideas have been made possible through technological breakthroughs in our industry	
Government product standards have a high impact on our business	
Government pricing regulations have a high impact on our business	
Environmental protection laws have a high impact on our business	
Regulation by trade association has a high impact on our business	
Health and safety legislation has a high impact on our business	
Employment law has a high impact on our business	

Section 2: Strategic planning in your organisation

Question 1: Senior managers have provided the items listed below as being "typical" of strategic planning.
Strategic planning is defined here as "the process of systematically and rigorously formulating, implementing and controlling strategy through formally documenting organisational expectations".
Using the scale provided, please indicate the level of emphasis placed on each dimension of strategic planning in your organisation.

No Emphasis	*Very small amount of emphasis*	*Small amount of Emphasis*	*Moderate amount of emphasis*	*Strong emphasis*	*Very Strong emphasis*
1	2	3	4	5	6

Mission Statement	☐
Analysis of competitor trends	☐
Analysis of supplier trends	☐
Analysis of market trends	☐
Internal analysis e.g. your businesses strengths and weaknesses	☐
Long term, corporate level strategies e.g. What business / industry should we be in?	☐
Medium term, business level strategies e.g. How are we to compete?	☐
Short term, functional level strategies e.g. marketing, operations, purchasing.	☐
Concern for barriers to strategy implementation	☐
Analysis of contingencies e.g. what happens if "x" occurs, what will we do?	☐
On-going evaluation and control	☐

Question 2: The following statements have been made about the strategic options generated by the strategic planning process.
Strategic options are defined here as being "a number of possible courses of strategic action that are open to an organisation, practicing strategic planning".
With your organisation in mind, please indicate a number from the scale provided, in order to express your view. If you have no opinion, or do not know, please indicate this by writing an "X".

Strongly Disagree	*Disagree*	*Neither Agree nor Disagree*	*Agree*	*Strongly Agree*	*No Opinion or Don't Know*
1	2	3	4	5	X

The options generated for consideration by the strategic planning process.....

Build upon organisational strengths	☐
Overcome organisational weaknesses	☐
Overcome threats to the organisation	☐
Capitalise on opportunities in the market	☐
Provide a match between organisational resources and the environment	☐
Require additional organisational resources	☐
Are generally suitable for our organisation	☐
Can be put into effect through detailed action plans	☐
Can be rapidly financed either internally or externally	☐
Suggest attainable changes in non-financial organisational resources e.g. employees	☐
Are generally feasible	☐
Are acceptable to all stakeholders	☐
Are more acceptable to management than non-management	☐
Have varying levels of risk	☐
Have no extremely high risks	☐
Balance risk and return	☐

Question 3: The following statements have been made about the way in which senior managers choose between the strategic options available to them.
With your organisation in mind, please indicate a number from the scale provided, in order to express your view. If you have no opinion, or do not know, please indicate this by writing an "X".

Strongly Disagree	*Disagree*	*Neither Agree nor Disagree*	*Agree*	*Strongly Agree*	*No Opinion or Don't Know*
1	2	3	4	5	X

"In order for our organisation to effectively choose between the options available to us, the following are important"……

A large amount of information is analysed	☐
Detailed information is gathered	☐
Information is reliable	☐
Inter-departmental discussion	☐
No *one* person decides "on their own"	☐
Consensus	☐
Analysis tools / management models i.e. "gut feel" is less important	☐
A consideration of the future effects of a particular strategy	☐
A clear understanding of what is expected of the strategy e.g. benchmarks / objectives	☐
A distinct process is followed	☐
A methodical approach is taken	☐
Decision making is deliberate	☐

Section 3. Adapting to change

Question 1: The following statements have been made about certain characteristics that organisations exhibit, in order to be flexible and remain competitive over time.
Using the scale provided please indicate how you feel that your organisation performs in ***relation to its competitors****. If you have no opinion, or do not know, please indicate this by writing an "X".*

Much worse	*Worse*	*The same*	*Better*	*Much better*	*No opinion / Don't know*
1	2	3	4	5	X

Ability to rapidly change production with market demand	☐
Ability to rapidly change our product mix as market demand changes	☐
Ability to rapidly develop and introduce new products into production	☐
Ability to be operationally flexible	☐
Ability to train multi-skilled staff	☐
Ability to recruit good staff	☐
Ability to alter working patterns	☐
Ability to be flexible with our human resources	☐
Ability to operate an up to date computer system	☐
Ability to maintain an adaptable computer system	☐
Ability to add / reduce computing capacity	☐
Ability to be flexible with our I.T. resources	☐
Ability to process and act on market information	☐
Ability to communicate between departments	☐
Ability to reduce bureaucracy (e.g. form filling / strict lines of communication)	☐
Ability to be structurally flexible	☐
Ability to fund organisational changes from within the organisation	☐
Ability to gain additional funding from outside the organisation	☐
Ability to be financially flexible	☐

Question 5: Politics in organisations have also been seen to affect strategic decisions.
Organisational politics is defined as "those activities within an organisation to acquire, develop, and use power and other resources to obtain a preferred outcome in a situation where there is uncertainty about choices".
Below, managers have made a number of statements about how strategic decisions are made within groups.
Using the scales provided please indicate your views regarding the following statements, in the context of your organisation. If you have no opinion, or do not know, please indicate this by writing an "X".

Strongly Disagree	*Disagree*	*Neither Agree nor Disagree*	*Agree*	*Strongly Agree*	*No Opinion or Don't Know*
1	2	3	4	5	X

Strategic decisions are made to serve group members own goals, and not those of the organisation	☐
Strategic decisions are made with full knowledge of group members interests and preferences in the decision	☐
Strategic decisions are affected by the use of power and influence	☐
Strategic decisions are affected by negotiation and compromise	☐
Strategic decisions are made through a totally rational process	☐
Status is irrelevant when strategic decisions are debated	☐

Section 4: Performance

Question 1: In your last financial year, how well did your company perform against its main competitors? The following criteria should be rated against your main competitors.
*Using the scale provided please indicate your **relative performance** in the box provided. If you have no opinion, or do not know, please indicate this by writing an "X".*

Much worse	*Worse*	*The same*	*Better*	*Much better*	*No opinion / Don't know*
1	2	3	4	5	X

Profit growth	☐	Levels of customer satisfaction achieved	☐
Sales growth	☐	Levels of customer loyalty achieved	☐
Market share	☐	Levels of employee satisfaction with their jobs	☐
New product success rate	☐	Levels of employee retention	☐

Section 5: Strategy Implementation

Question 1: The statements listed below have been made by managers about the ways in which individual strategic options once selected, are implemented.
Strategy implementation here is concerned with the translation of strategy into organisational action.
Using the scales provided below, please indicate how closely these match your views, in the context of your organisation. If you have no opinion, or do not know, please indicate this by writing an "X".

Strongly Disagree	*Disagree*	*Neither Agree nor Disagree*	*Agree*	*Strongly Agree*	*No Opinion or Don't Know*
1	2	3	4	5	X

Clear communications of the goals and the purpose of strategies, are given to the teams implementing them ☐

It is important that the teams implementing new strategies have a clear understanding of the goals and purposes behind them ☐

All managers are fully aware of the strategic direction of this organisation. ☐

Strategies have senior management champions that guide them through implementation. ☐

Strategies lack true leaders in the company ☐

It is clear who is responsible for each strategy ☐

It is important for the organisation as a whole to understand and support new strategies ☐

Individual work groups can occasionally feel alone in trying to implement a strategy successfully ☐

Strategies generally receive high levels of "buy-in" ☐

Senior managers work together with the relevant managers to decide how to implement strategies successfully ☐

The first managers hear of a strategy is when they are asked to implement it ☐

Senior managers are open to managers suggestions after strategy implementation has begun ☐

Once strategies are implemented they tend to be forgotten ☐

Strategies are monitored and altered where necessary ☐

If a strategy fails to meet expectations then it is important to re-think try again ☐

Organisational structure may need to be adjusted in line with new strategies ☐

Organisational structure is generally examined when new strategies are implemented	☐
New strategies have to compete for resources with existing strategies	☐
New strategies will have all the necessary resources to allow them succeed	☐
New strategies may have special resource requirements that are examined prior to implementation	☐

Thank you once again for taking the time to answer the answers here. The information that you provide will be of great help to my research and to my PhD.

Please make any comments about the questionnaire in the space provided below.

Comments...

APPENDIX 3.7

STRATEGIC PLANNING IN THE 21ST CENTURY

Hello my name is John Rudd and, as part of my PhD research at Aston University, I have recently sent out a number of questionnaires entitled "Strategic Planning in the 21st Century".

If you have filled one in and sent it back then I would like to take this opportunity to thank you, as your support is vital to the success of the project – SORRY for bothering you.

If you have not received the questionnaire, or would like another copy, could I ask you to contact me on either ruddjm@aston.ac.uk or 0121 359 3611 (ext.5050). I will be only too pleased to send one out.

Thanking you in advance for you support – Best Regards, JOHN RUDD.

APPENDICES FOR CHAPTER 4

APPENDIX 4.1

Confirmatory Output for factor structure of previously utilised measures (183 cases)

Measure	**Environment**	**Performance**	**Politics**	**Planning**	**Implementation**
Goodness of Fit Index **(GFI)**	0.94	0.97	0.96	0.84	0.93
Standardised Root Mean Square Residual **(Std. RMR)**	0.055	0.055	0.044	0.083	0.045
Comparitive Fit Index **(CFI)**	0.96	0.97	0.93	0.76	0.94
Root Mean Square Error of Approximation **(RMSEA)**	0.061	0.13	0.13	0.14	0.056
Critical **N**	167.78	142.77	123.27	66.36	154.67

Value obtained does not meet published criteria (Diamantopoulos and Siguaw, 2000).

Further LISREL output, which is substantial, was analysed, and a decision was made to move on from this stage of analysis with the factor structure as stated. This decision was made based on a number of factors including, 1) the data indicating a poor fit was in the minority, 2) the analysis was being conducted on previously published measures and 3) subsequent tests would be made in the data.

APPENDIX 4.2

Histogram obtained from data relating to Environmental Turbulence

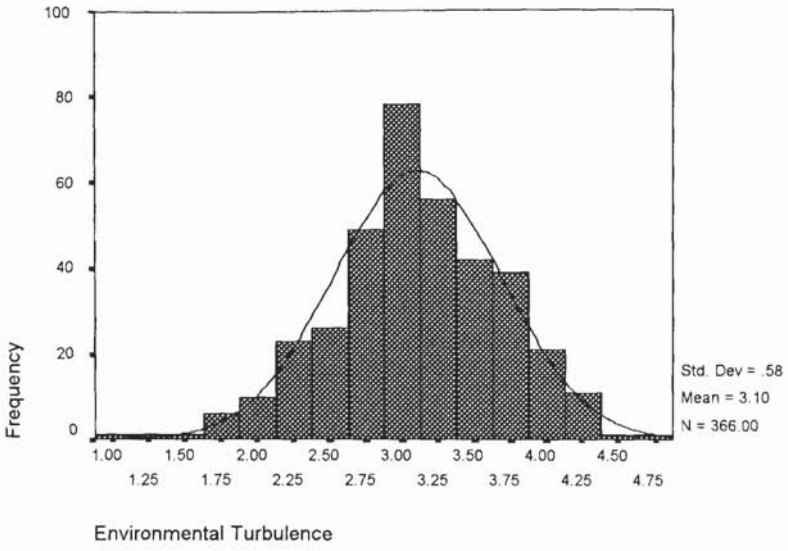


Table 4.12: Test statistics for Environmental Turbulence

Test Statistic	Output
Kolmogorov-Smirnov value	0.893
Significance (99%)	.402

The graphical and statistical tests demonstrated no departure from normality, or significant problems with skewness or kurtosis was identified. Hence the scale designed to measure Environmental Turbulence was deemed appropriate for use in hypothesis testing with structural equation modelling.

Histogram obtained from data relating to Organisational Performance

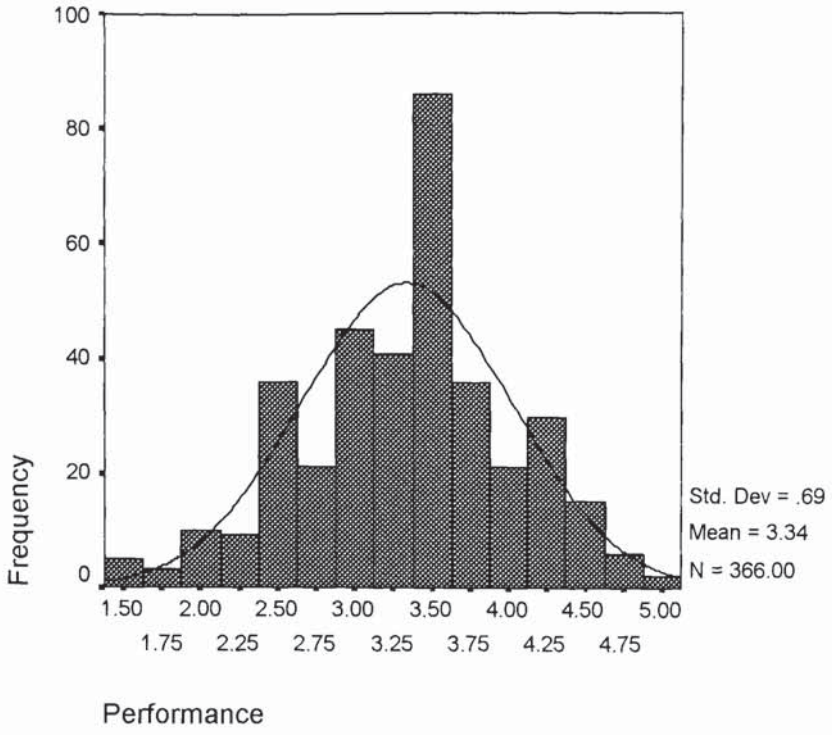


Table 4.13: Test statistics for Performance measure

Test Statistic	Value
Kolmogorov-Smirnov value	1.776
Significance (99%)	0.004

The graphical and statistical tests demonstrated no departure from normality, or significant problems with skewness or kurtosis. Hence the scale designed to measure Performance was deemed appropriate for use in hypothesis testing with structural equation modelling.

Histogram obtained from data relating to Political Behaviour

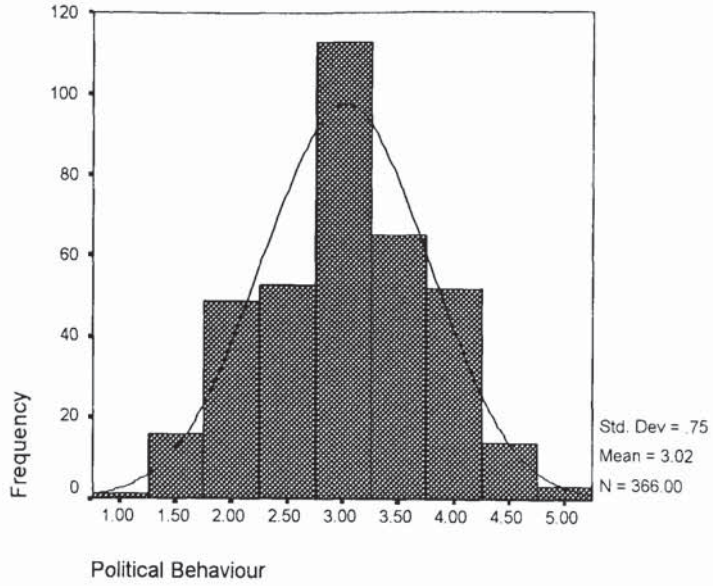


Table 4.14: Test statistics for Political Behaviour

Test Statistic	Value
Kolmogorov-Smirnov value	1.303
Significance (99%)	0.067

The graphical and statistical tests demonstrated no departure from normality, or significant problems with skewness or kurtosis. Hence the scale designed to measure Political Behaviour was deemed appropriate for use in hypothesis testing with structural equation modelling.

Histogram obtained from data relating to Comprehensive Strategic Planning

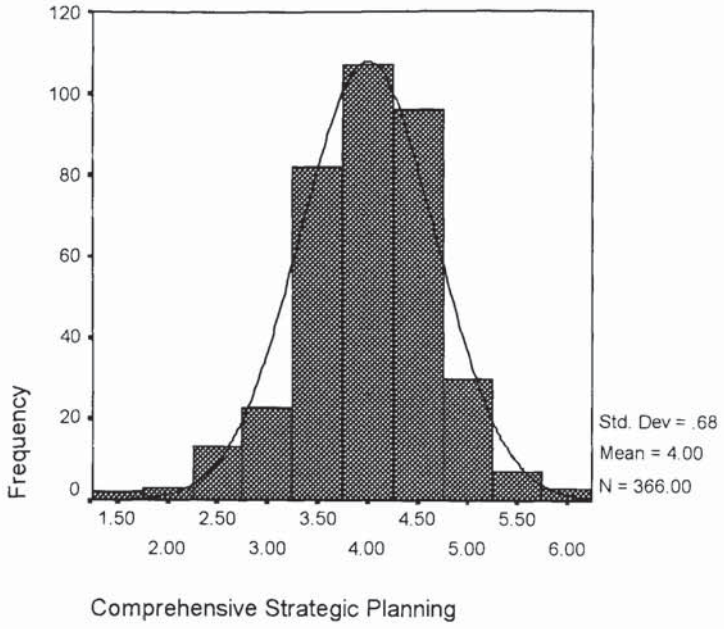


Table 4.15: Test Statistics for Comprehensive Strategic Planning

Test Statistic	Value
Kolmogorov-Smirnov value	1.575
Significance (99%)	0.014

The graphical and statistical tests demonstrated no departure from normality, or significant problems with skewness or kurtosis. Hence the scale designed to measure Comprehensive Strategic Planning was deemed appropriate for use in hypothesis testing with structural equation modelling.

Histogram obtained from data relating to Implementation success

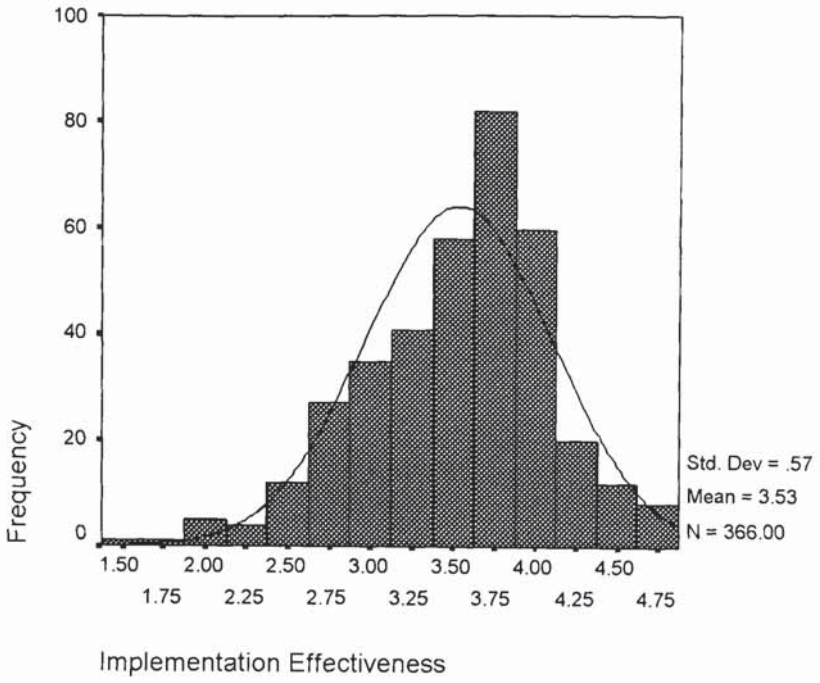


Table 4.16: Test statistics for Implementation success

Test Statistic	Value
Kolmogorov-Smirnov value	1.823
Significance (99%)	0.03

The graphical representation of the data presented a visual positive skew, the statistical tests demonstrated no departure from normality, or significant problems with skewness or kurtosis. Hence the scale designed to measure Implementation success was deemed appropriate for use in hypothesis testing with structural equation modelling.

APPENDICES FOR CHAPTER 5

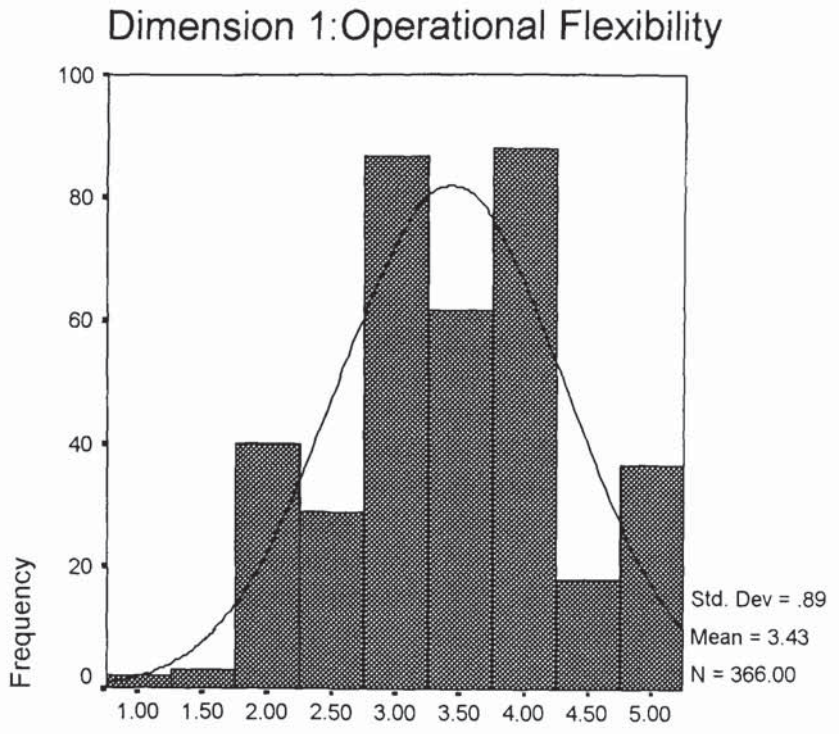
APPENDIX 5.1

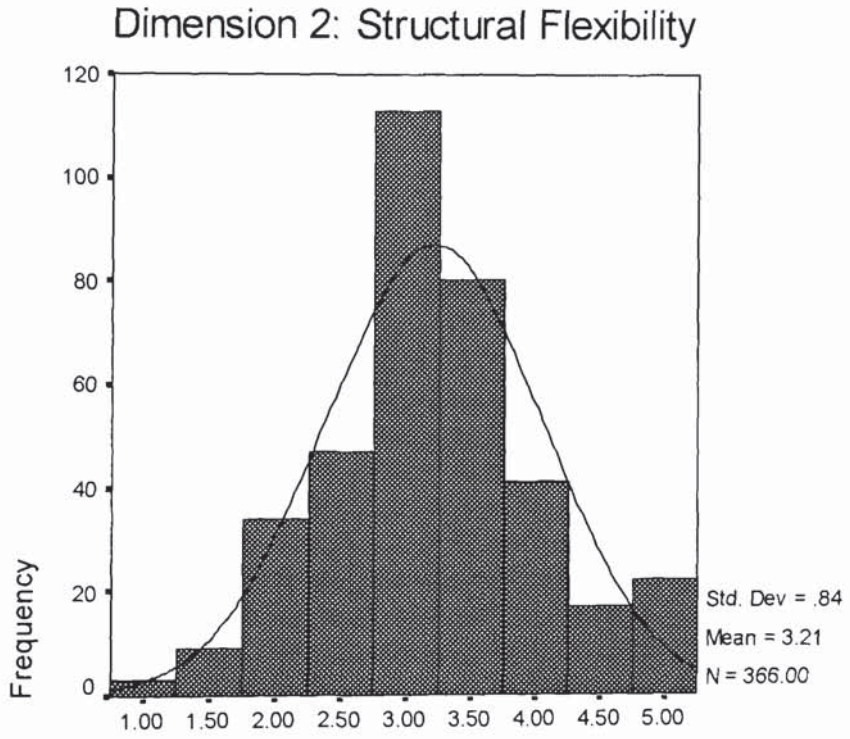
	Measure in full	*Abbreviation*	*Acceptable Range*	*Comments*
Absolute Fit				
	Root mean squared error of approximation	RMSEA	<0.05 good fit 0.05<>0.08 reasonable fit 0.08<>0.10 mediocre fit >0.10 poor fit	"Generally regarded as the most informative fit index" Diamantopoulos and Siguaw (2000)
	Root mean squared residual	RMR	As above	The square root of the mean of the squared discrepancies between the implied and observed convariance matrices
	Standardised root mean squared residual	Standardised RMR	As above	A summary measure of standardised residuals
	Goodness of fit index	GFI	>0.9 generally regarded as acceptable fit	Indicates the amount of variances and covariances accounted for by the proposed model
	Non-centrality Parameter	NCP	Comparator	LISREL provides a confidence interval if the discrepancy between the estimated model and the population
Comparative fit				
	Adjusted Goodness of fit index	AGFI	>0.9 generally regarded as acceptable fit	An extension of GFI, to incorporate the degrees of freedom for the proposed model to the degrees of freedom for the null model.
	Normed fit index	NFI	No absolute measure but generally >0.9 is regarded as acceptable	Relative comparison of the proposed model to the normed model
	Non-normed fit index	NNFI	>0.9 indicating a good fit	
	Expected cross validation index	ECVI	Comparator	Based on the covariance matrix, this estimates the goodness of fit that the estimated model would achieve in another sample of the same size.
	Comparative fit index	CFI	>0.9 indicating a good fit	

Parsimonious fit	Relative fit index	RFI	As above	
	Akaike's information criteria	AIC	Comparator	As with the ECVI, but attempts to account for model parsimony by taking into account the number of estimated parameters
	Consistent Akaike's information criteria	CAIC	Comparator	As with the ECVI, but incorporates as assessment of sample size effects
	Pasimonious normed fit index	PNFI	Comparator. Generally differences of between 0.06 and 0.09 are indicative of substantial model differences	Modification of the NFI, and takes into account the degrees of freedom used in achieving a level of fit.
	Parsimony of fit index	PGFI	>0.5 acceptable. Higher values approaching 1.0 indicate higher levels of parsimony	Adjusts the GFI to account for model complexity
	Normed Chi squared		<1.0 model overfitted >1.0<2.0 accepatble >1.0 >5.0 model needs improvement	Has been shown to be unreliable, and impacted upon by sample size.

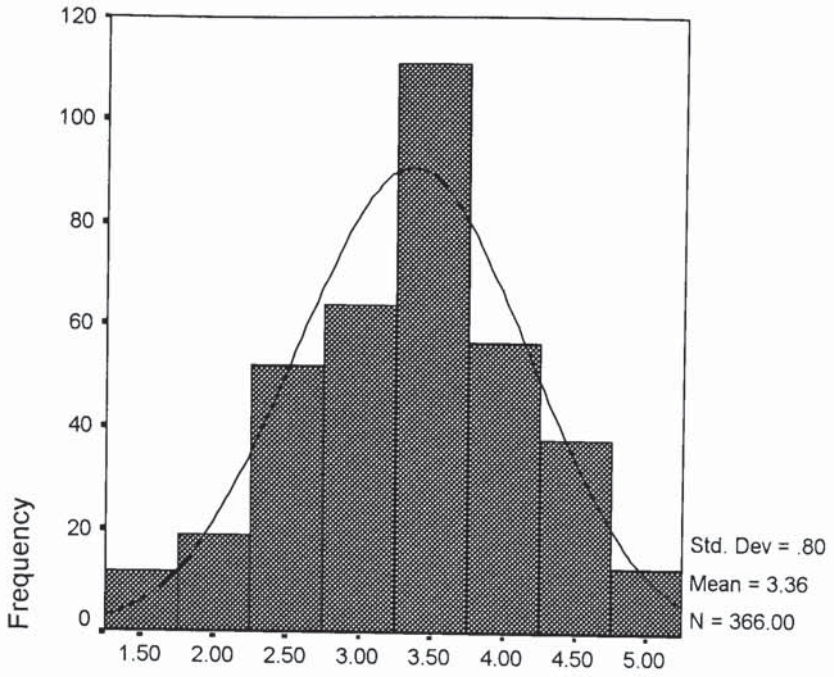
APPENDIX 5.2

Summary statistics for Organisational Flexibility

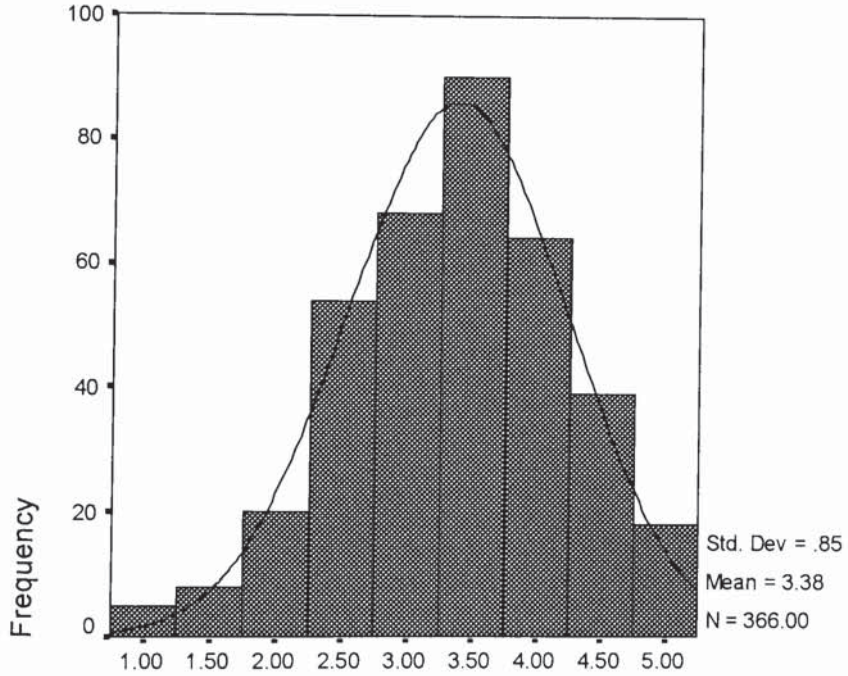




Dimension 3: Technology Based Flexibility



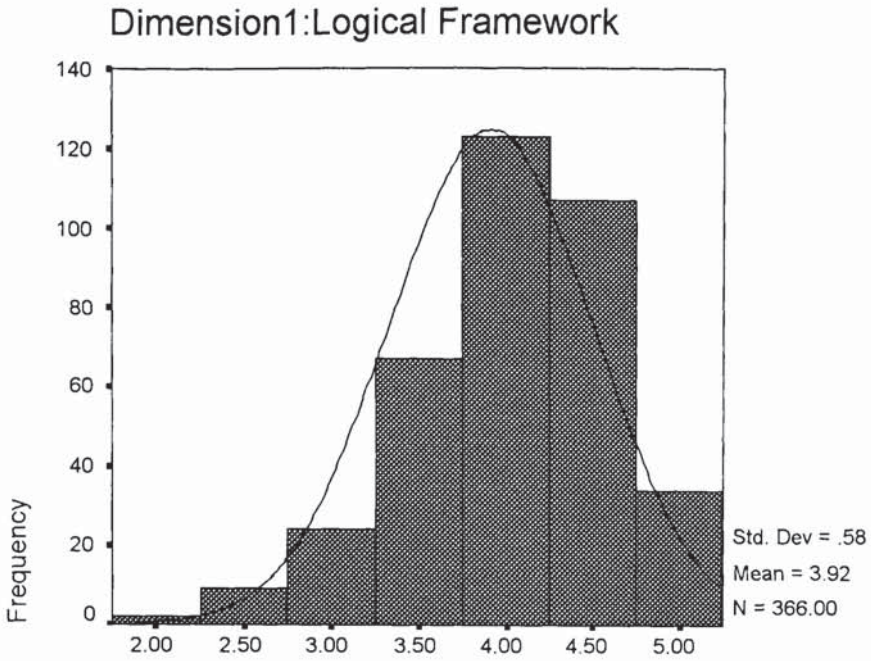
Dimension 4: Financial Flexibility

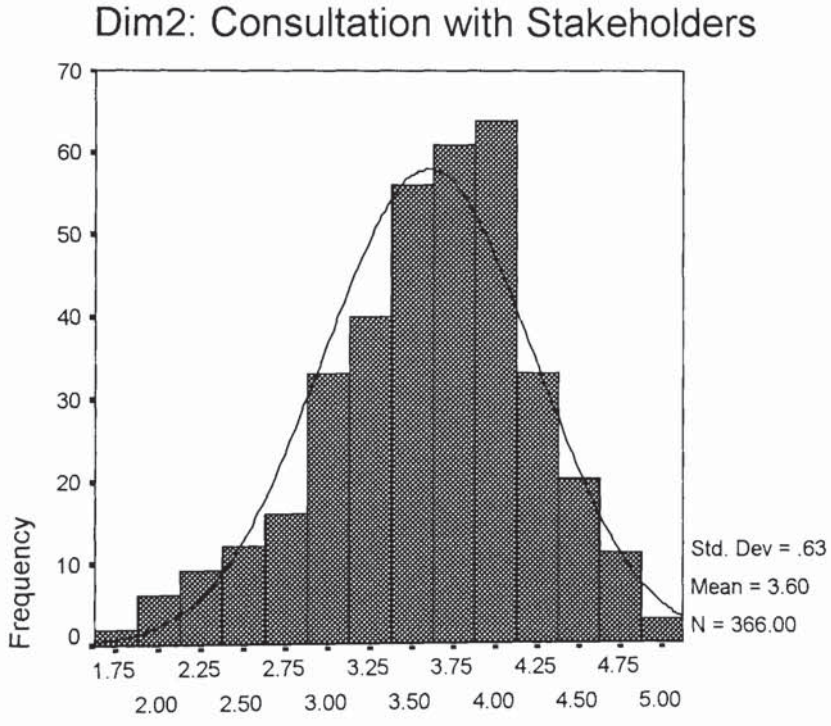


		Operational	Structural	Tech.	Financial
N	Valid	366	366	366	366
	Missing	0	0	0	0
Skewness		-.061	.163	-.149	-.268
Std. Error of Skewness		.128	.128	.128	.128
Kurtosis		-.493	.015	-.288	-.071
Std. Error of Kurtosis		.254	.254	.254	.254

APPENDIX 5.3

Summary statistics for Quality of Strategic Options

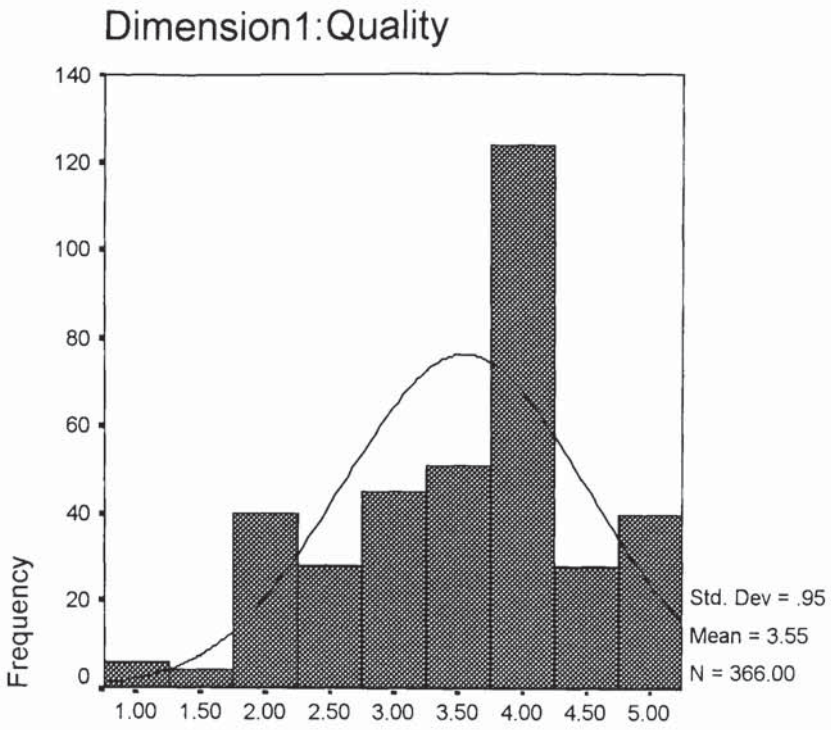


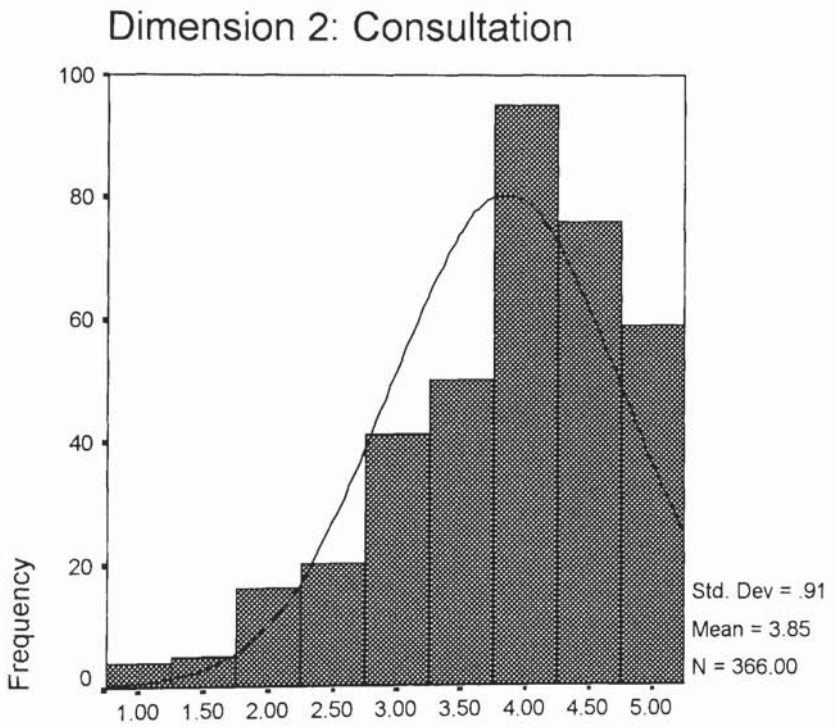


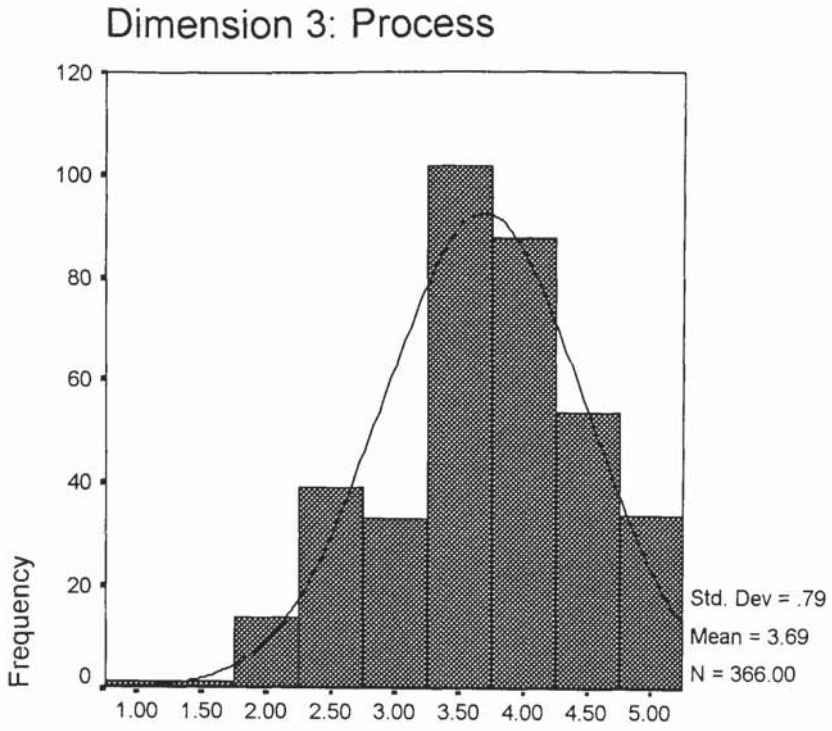
		Logical Framework	Consultation with Stakeholders
N	Valid	366	366
	Missing	0	0
Skewness		-.643	-.451
Std. Error of Skewness		.128	.128
Kurtosis		.698	.098
Std. Error of Kurtosis		.254	.254

APPENDIX 5.4

Summary statistics for Comprehensive Strategic Choice.







		Quality	Consultation	Process
N	Valid	366	366	366
	Missing	0	0	0
Skewness		-.513	-.827	-.420
Std. Error of Skewness		.128	.128	.128
Kurtosis		-.333	.320	-.040
Std. Error of Kurtosis		.254	.254	.254

Visually dimensions two and three caused some concern, however no real issue regarding normality was found from the statistical output examined.

APPENDIX 5.5

Hypothesis	Relationship			Hypothesised Association
	From	*(Dimension)*	*To*	
H1	FP		NFP	+ve
H2	NFP		FP	+ve
H3	Strategic Planning		FP	+ve
H4	Options	Consultation with stakeholders	NFP	+ve
H5	Options	Logical framework	NFP	+ve
H6	Choice	Quality	NFP	+ve
H7	Choice	Consultation	NFP	+ve
H8	Choice	Process	NFP	+ve
H9	Political Behaviour		NFP	+ve
H10	Flexibility	Operational	FP	+ve
H11	Flexibility	Financial	FP	+ve
H12	Flexibility	Tech.	NFP	+ve
H13	Flexibility	Structural	NFP	+ve
H14	Implementation	Clarity of communication / strategic direction	Political Behaviour	+ve
H15	Implementation	Senior management involvement	Political Behaviour	+ve
H16	Implementation	On-going support	Political Behaviour	+ve
H17	Environmental Turbulence	Market	Strategic Planning	+ve
H18	Environmental Turbulence	Competitive	Strategic Planning	+ve
H19	Environmental Turbulence	Technological	Strategic Planning	+ve
H20	Environmental Turbulence	Regulatory	Strategic Planning	+ve

APPENDICES FOR CHAPTER 6

APPENDIX 6.1

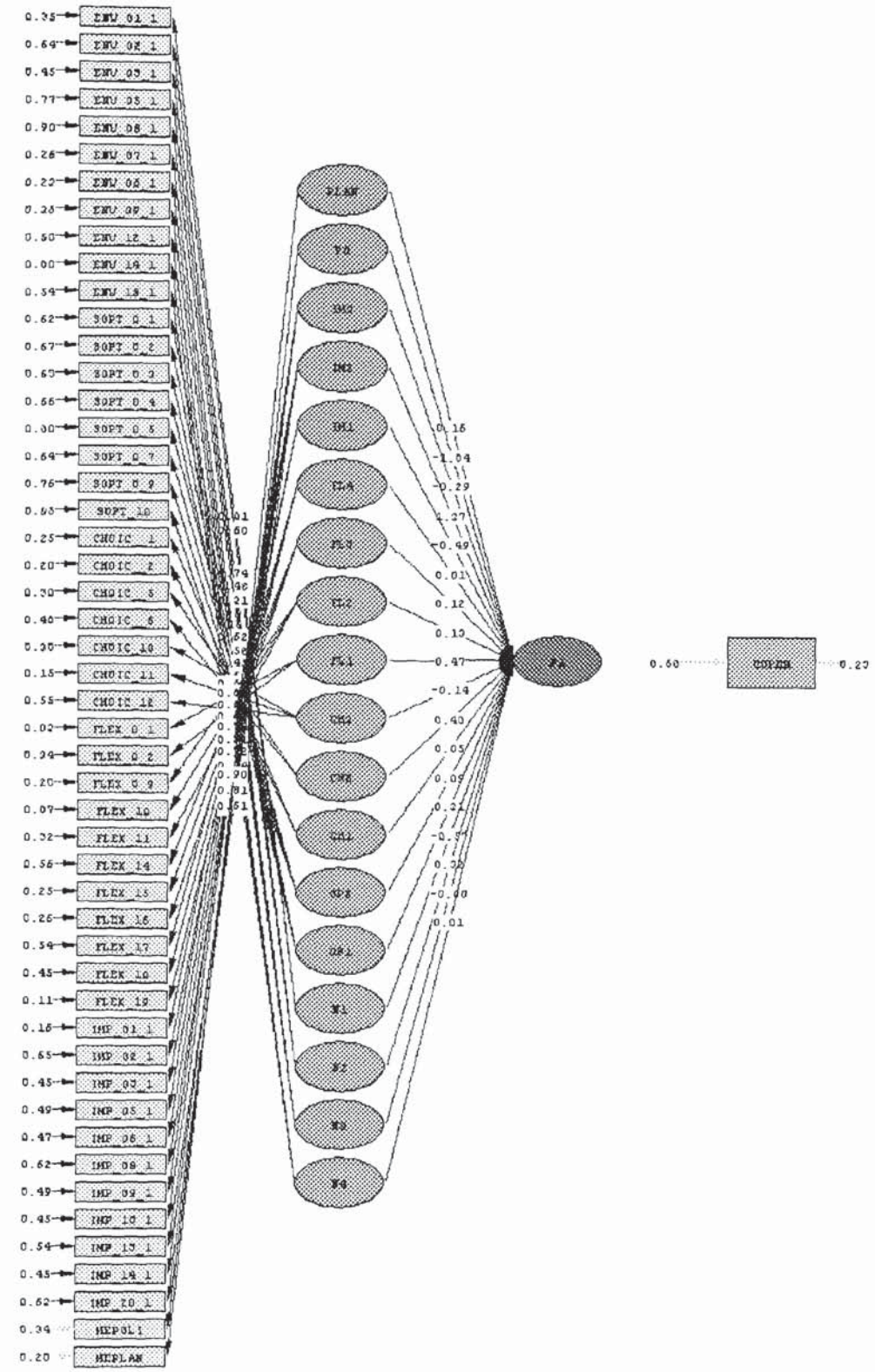
PAGE

NUMBERING

AS ORIGINAL

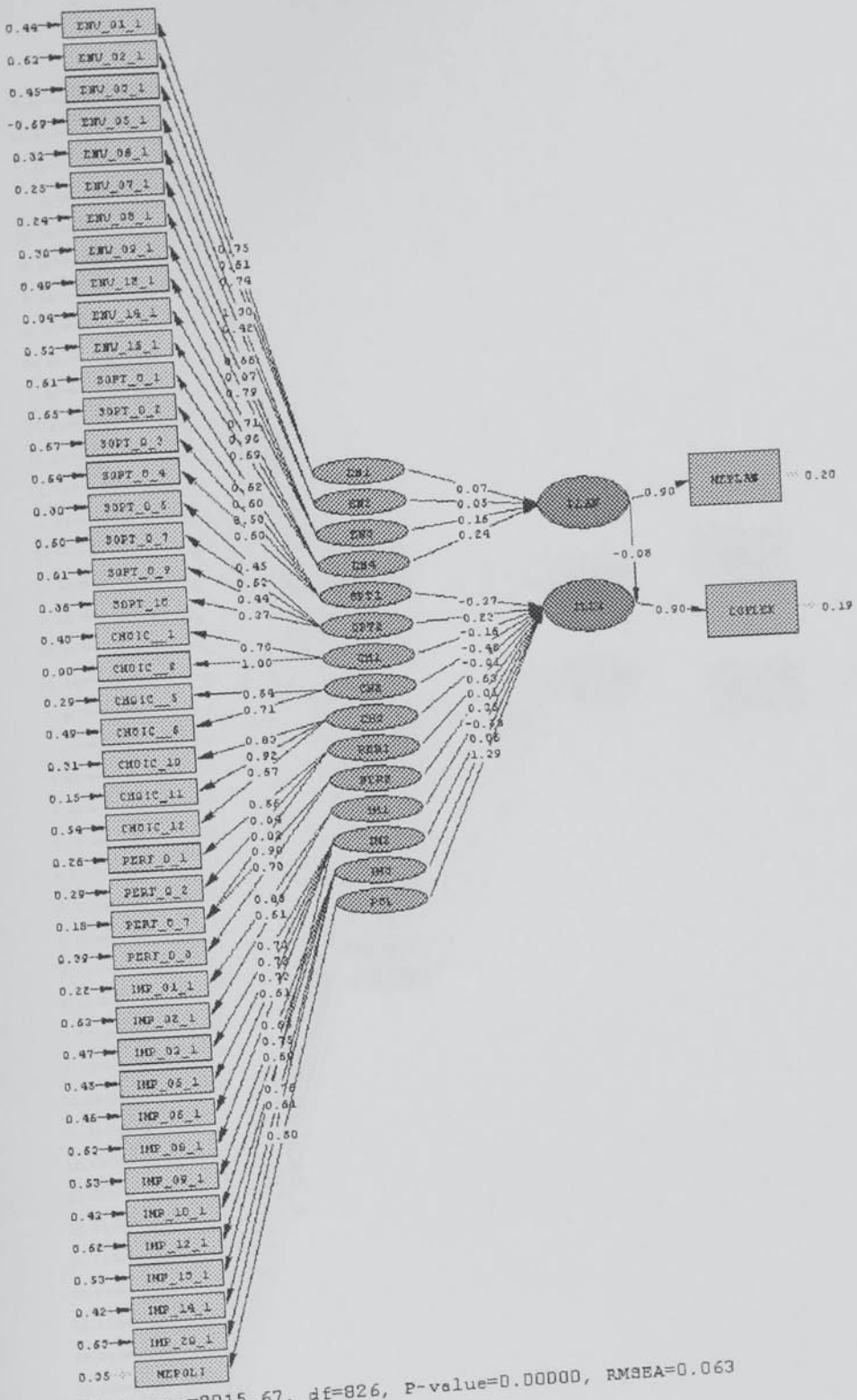
Hypothesis	Path	Relationship			Hypothesised Association
		From	*(Dimension)*	*To*	
H1	β1	FP		NFP	+ve
H2	β2	NFP		FP	+ve
H3	β3	Strategic Planning		FP	+ve
H4	γ4	Options	Consultation with stakeholders	NFP	+ve
H5	γ5	Options	Logical framework	NFP	+ve
H6	γ6	Choice	Quality	NFP	+ve
H7	γ7	Choice	Consultation	NFP	+ve
H8	γ8	Choice	Process	NFP	+ve
H9	β9	Political Behaviour		NFP	+ve
H10	γ10	Flexibility	Operational	FP	+ve
H11	γ11	Flexibility	Financial	FP	+ve
H12	γ1	Flexibility	Tech.	NFP	+ve
H13	γ13	Flexibility	Structural	NFP	+ve
H14	γ14	Implementation	Clarity of communication / strategic direction	Political Behaviour	+ve
H15	γ15	Implementation	Senior management involvement	Political Behaviour	+ve
H16	γ16	Implementation	On-going support	Political Behaviour	+ve
H17	γ17	Environmental Turbulence	Market	Strategic Planning	+ve
H18	γ18	Environmental Turbulence	Competitive	Strategic Planning	+ve
H19	γ19	Environmental Turbulence	Technological	Strategic Planning	+ve
H20	γ20	Environmental Turbulence	Regulatory	Strategic Planning	+ve

APPENDIX 6.2

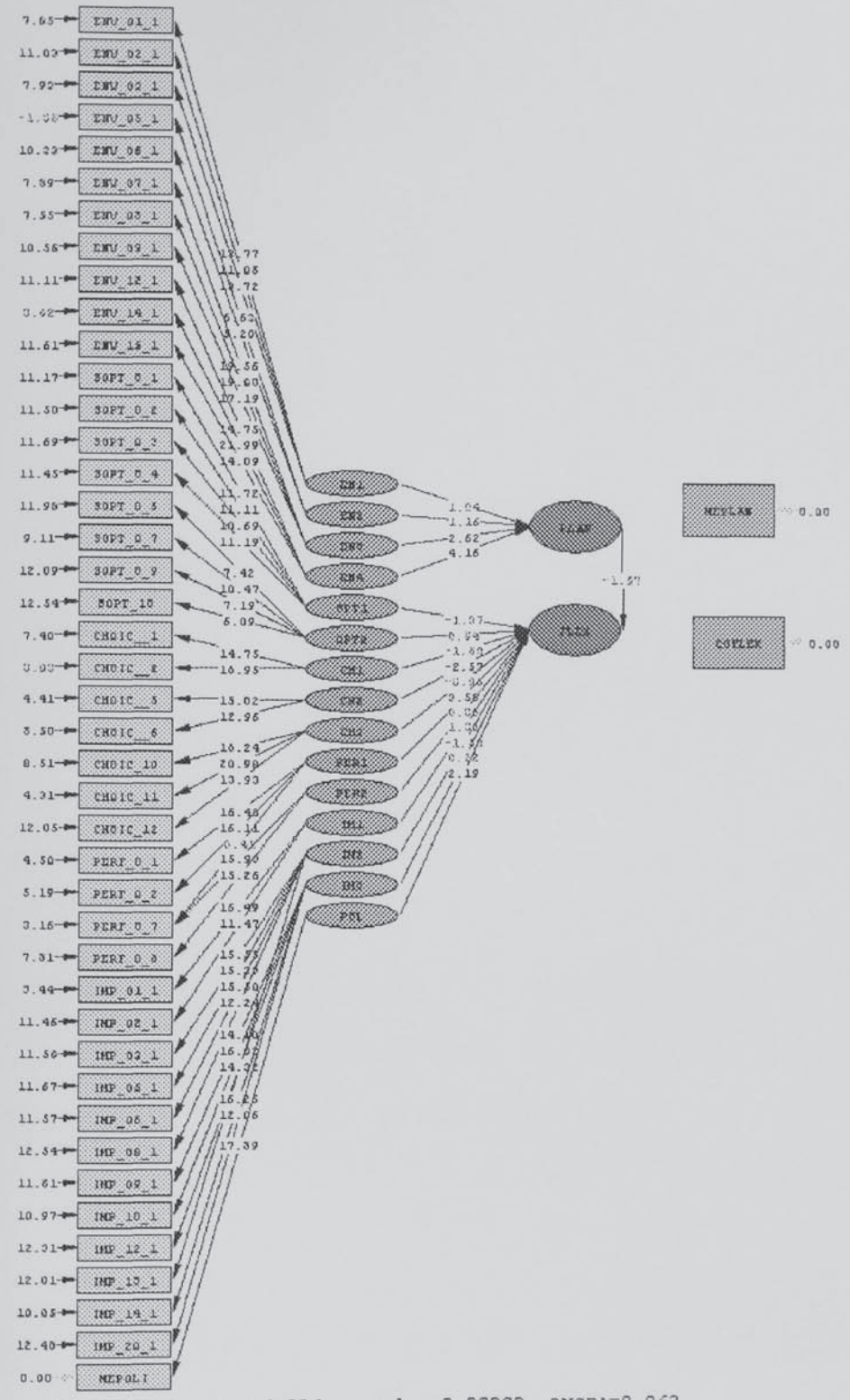


Chi-Square=2601.25, df=1056, P-value=0.00000, RMSEA=0.063

APPENDIX 6.3

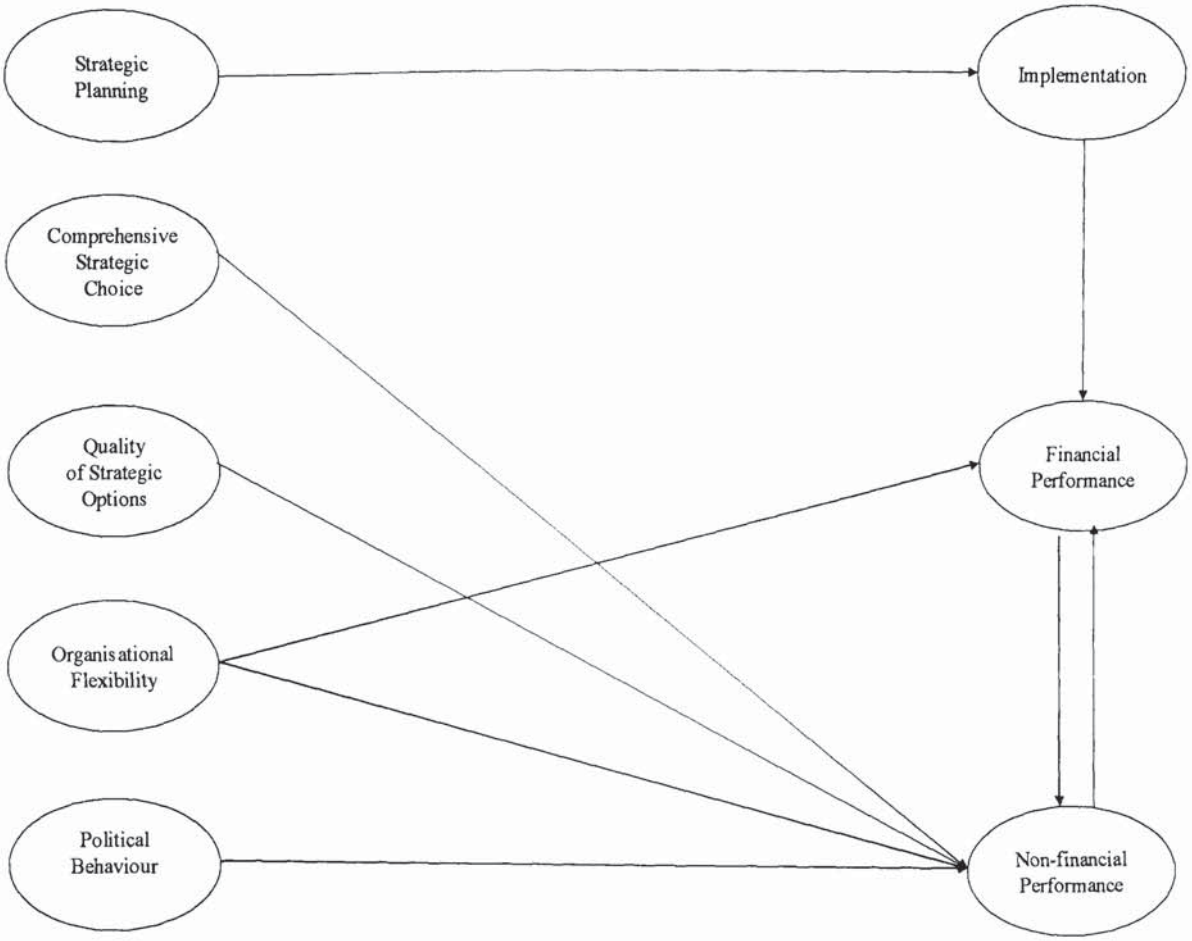


Chi-Square=2015.67, df=826, P-value=0.00000, RMSEA=0.063

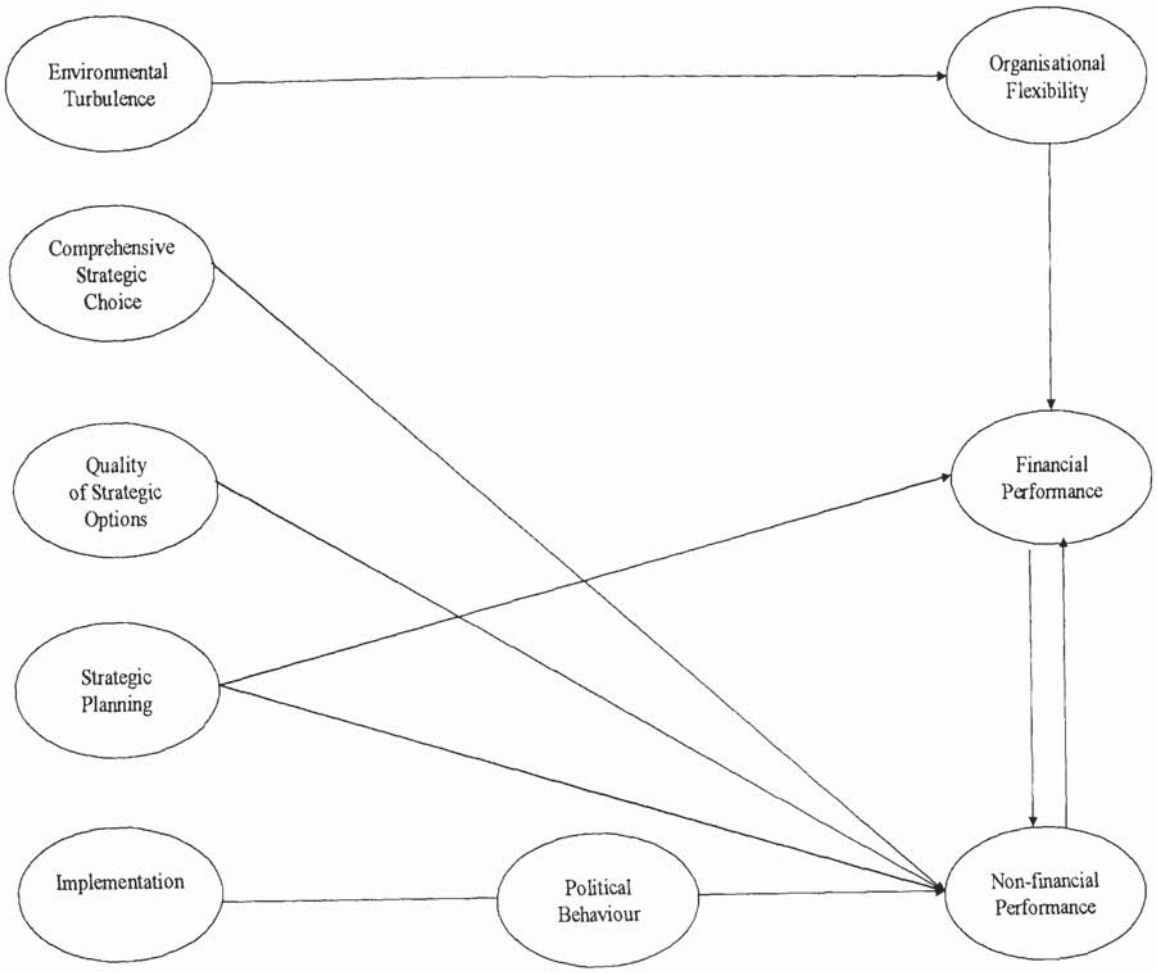


Chi-Square=2015.67, df=826, P-value=0.00000, RMSEA=0.063

APPENDIX 6.4


Strategic Planning
Implementation
Comprehensive Strategic Choice
Quality of Strategic Options
Financial Performance
Organisational Flexibility
Political Behaviour
Non-financial Performance

APPENDIX 6.5


Environmental Turbulence
Organisational Flexibility
Comprehensive Strategic Choice
Quality of Strategic Options
Financial Performance
Strategic Planning
Implementation
Political Behaviour
Non-financial Performance

PAGE

NUMBERING

AS ORIGINAL

APPENDICES FOR CHAPTER 7

APPENDIX 7.1

Organisational flexibility: Comparison of organisations in a) highly turbulent environments exhibiting high performance and b) low turbulence environments and low levels of performance.

Group Statistics

	CODE	N	Mean	Std. Deviation	Std. Error Mean
COFL1	1.00	50	3.6700	.89562	.12666
	2.00	50	3.2300	.95410	.13493
COFL2	1.00	50	3.3000	.81996	.11596
	2.00	50	3.0637	.76791	.10860
COFL3	1.00	50	3.6733	.73305	.10367
	2.00	50	3.2454	.81491	.11525
COFL4	1.00	50	3.7116	.86029	.12166
	2.00	50	3.1722	.72586	.10265

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
COFL1	Equal variances assumed	.249	.619	2.378	98	.019	.4400	.18506	.07274	.80726
	Equal variances not assumed			2.378	97.611	.019	.4400	.18506	.07273	.80727
COFL2	Equal variances assumed	.145	.704	1.487	98	.140	.2363	.15887	-.07901	.55154
	Equal variances not assumed			1.487	97.581	.140	.2363	.15887	-.07903	.55156
COFL3	Equal variances assumed	.538	.465	2.761	98	.007	.4280	.15501	.12036	.73559
	Equal variances not assumed			2.761	96.922	.007	.4280	.15501	.12032	.73564
COFL4	Equal variances assumed	1.212	.274	3.389	98	.001	.5394	.15918	.22352	.85531
	Equal variances not assumed			3.389	95.301	.001	.5394	.15918	.22341	.85542

Significantly different profiles of organisational flexibility exist between category "a" organisations (above) and category "b" organisations.

APPENDIX 7.2

Illustration of future research direction.

1) Publication of results obtained within the thesis. Further development work expected following reviewers comments.

1) Replication and further confirmation of newly developed measures. Possible priority to organisational flexibility
2) Confirmatory testing of relationships identified.
3) Collaboration with other researchers investigating similar areas.
4) Explore opportunities to internationalise the work presented.
5) Further development work on newly measures utilised.

1) Further development of the domain level discussions regarding the strategic planning and performance interface