

Cohen, J. F.

## Article

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# Environmental uncertainty and managerial attitude: Effects on strategic planning, non-strategic decision-making and organisational performance

J.F. Cohen\*

Information Systems, School of Economic and Business Sciences  
University of the Witwatersrand, Private Bag X3, Wits 2050, Republic of South Africa  
jasonc@isys.wits.ac.za

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The strategic management literature has been attempting to confirm the validity of strategic planning as a managerial activity for the past 30 years. Results, however, have been confusing and contradictory and have done little to advance the cause of strategic planning as a rational approach to strategy formulation. In order to better understand the nature of the planning-performance relationship, this paper developed and tested a structural model linking perceived environmental uncertainty, and managerial attitude, to strategic planning, non-strategic decision-making and organisational performance. Data was collected from over 140 respondents and results revealed that managerial attitude, rather than perceived uncertainty in both the task and general environments, is the largest determinant of the emphasis placed on strategic planning activities. The validity of strategic planning was confirmed as it was significantly and positively related to performance, while non-strategic decision-making had negative performance implications.

\*To whom all correspondence should be addressed.

## Introduction

Performance improvement lies at the heart of management research (Venkatraman & Ramanujam, 1986: 801). To this end, the strategic management literature has predominantly focused on two aspects of strategy, the *content* of an organisation's strategy that leads to performance and the *process* by which the strategies of successful companies are formulated. In particular, strategy process researchers have devoted much attention to examining whether strategic planning as a rational analytical approach to strategy formulation is a valuable management activity. One important question that these researchers have been determined to answer is whether the amount of strategic planning a firm conducts is in any way related to performance. It has been suggested that well over 40 empirical studies have examined the performance consequences of formal strategic planning (Powell, 1992). Powell, however, urges strategy scholars not to abandon the planning-performance line of enquiry. He points to the significance the relationship bears on strategic management research and the need to account for the contradictory findings plaguing prior studies. In addition, Ansoff (1984) has also called for new effort to be afforded the planning performance relationship because it is only with enough repetition across contexts that the 'coincidence argument' will be countered. The importance of strategic planning for South African companies has been noted in the popular press (see for example Flack, 2000). However, discussions remain anecdotal and little empirical evidence of the value of strategic planning in South Africa is available. It remains vital, therefore, that the effects of managerial action on performance continue to be examined.

This study develops and tests a structural model proposing that the emphasis placed by firms on strategic planning activities directly affects organisational performance. In addition the effect of non-strategic (short term and efficiency oriented) decision-making on performance is examined. It is further proposed that strategic planning and non-strategic decision-making depend firstly, on conditions in the external business environment (environmental uncertainty) and secondly, on managerial attitude toward strategic planning as a valid approach to strategy formulation.

The first section of this paper discusses the strategic planning concept and prior research on the planning-performance relationship is reviewed. The second section of the paper provides the theoretical background for this study and for the development of the structural model. The third part of the paper describes the methodology underlying the empirical component of the paper and the partial least squares approach for the estimation of the model's parameters. The fourth section presents the results of the research and a discussion of the findings. Finally the research is concluded and suggestions for future research are outlined.

## Strategic Planning and Performance

Ansoff, along with Chandler and Andrews, is considered to be the founding father of strategic management and it was his focus on the process of strategy formulation that promoted the cause of strategic planning (Rumelt, Schendel & Teece, 1994). Strategic planning, as a concept, emerged in the 1950s, when organisations began to be concerned

about the 'maintenance of a productive and viable relationship' between themselves and the environment. This became known as the 'strategic problem' (Ansoff & Hayes, 1976: 1-2). The available management techniques of the time, however, were inadequate for dealing with the strategic problem and firms were, therefore, forced to develop new management approaches (Ansoff, Declerck & Hayes, 1976). Steering the company by financial controls was no longer sufficient (Gray, 1991), while long range planning was also proving inadequate (Tregoe & Tobia, 1991). These techniques were based on extrapolation of the past, lacked the generation and analysis of alternatives (Ansoff *et al.*, 1976: 39), and did not answer fundamental strategic questions about the organisation's product/market environment (Tregoe & Tobia, 1991: 15). The design and planning schools (see Mintzberg, 1990; Mintzberg & Lampel, 1999) became the chief proponents of strategic planning as a rational approach to strategy formulation. These schools contend that strategy formulation must take place *a priori*. This is necessary because management is unsure about the future and it would be dangerous to act otherwise (Ansoff, 1991). The worth of strategic planning was measured by the extent to which it helped key decision makers think and act strategically (Bryson, 1998), and the extent to which it could increase the firm's likelihood of achieving its desired result (David, 1995). Rational, analytical, purposeful strategy formulation based on the strategic planning concept became the new doctrine for managers the world over and became the dominant prescriptive teaching of the strategic management discipline.

It was only natural, therefore, for strategic management scholars to attempt to link the activities and characteristics of the strategic planning process to firm performance in an empirical sense. Such attempts to test the relationship between strategic planning and organisational performance began in the 1970s (see Rumelt *et al.*, 1994), and has become one of the most extensively researched areas in strategic management (Ramanujam, Venkatraman & Camillus, 1986). Early studies began by simply comparing the performance of formal and informal planners (see for example Herold, 1972), while later studies began to relate various dimensions and characteristics of the planning process to performance (see for example Ramanujam & Venkatraman, 1987). However, despite the enormous research effort devoted to the relationship, the results are 'fragmented and contradictory' (Ramanujam *et al.*, 1986: 347). Sinha (1990) describes prior planning-performance research as identifying positive relationships, no relationships and negative relationships. Positive planning-performance relationships have been reported in Bracker, Keats and Pearson (1988), Capon, Farley and Hulbert (1994), and Karger and Parnell (1996). Yet, Greenley (1986:108) was unable to substantiate the 'advantages and intrinsic value' of strategic planning. McKiernan and Morris (1994) found that planning was not associated with performance. Stanwick and Pleshko (1995:192) concluded that planning has a 'minimal impact' on the performance of an organisation, while Rue and Ibrahim (1998) found that planning sophistication was associated with growth in sales but not return on investment. Others have indicated that the relationship between planning and performance remains an 'open and debatable question' (Ramanujam & Venkatraman,

1987: 453), and a source of significant embarrassment to the strategic management discipline until properly understood (Powell, 1992).

Thus after over 20 years of research the effect of strategic planning on performance is still unclear and the 'true relationship' (Boyd, 1991:353), that exists between planning and performance remains elusive. Consistent support for the position that strategic planning activities are valuable is still lacking and it is only through continued and rigorous investigation of the planning performance relationship that a conclusion might be reached. While some are offering up 'extensive measurement problems' (Boyd, 1991) and 'conceptual shortcomings' (Ramanujam *et al.*, 1986) of prior research as explanations for the contradictory findings of planning-performance studies, others e.g. Powell (1994), consider contingency variables mostly responsible for the apparent contradictions. Thus, contingency theorists have set out to identify possible factors that may be responsible for moderating the planning-performance relationship. This has lead researchers to examine the moderating effects of factors such as firm structure, size, capital intensity, strategic orientation, industry and environment on the planning-performance relationship (see Andersen, 2000; Brews & Hunt, 1999; Dess, Lumpkin & Covin, 1997; Goll & Rasheed, 1997; Hart & Banbury, 1994; Miller & Cardinal, 1994; and Veliyath & Shortell, 1993 for recent examples of such studies). The objective of these contingency studies has been to determine the conditions under which strategic planning is able to contribute to performance. This study, however, takes a different approach in order to offer a complementary perspective. It makes use of a path analytic framework in order to study the relationships between strategic planning, non-strategic decision-making and performance as well as addressing the question of what compels firms to adopt particular approaches toward strategic planning. This approach has been considered useful in improving understanding of the nature of the planning-performance relationship (see Hopkins & Hopkins, 1997; and Nwachukwu, 1995 as examples).

## Theoretical background

### Strategic planning

The first objective of this study is to empirically examine the relationship between strategic planning and organisational performance. Despite the inconsistent findings that have been reported in prior planning-performance studies, as McKiernan and Morris (1994) suggest, there remain strong theoretical reasons for a positive relationship to exist between strategic planning and organisational performance. Numerous authors still contend that strategic planning, by nature, encourages firms to think strategically about long-term issues rather than focus on operational details (Shwenk & Shrader, 1993). Furthermore, it provides a structured approach to the identification and evaluation of strategic alternatives (Shwenk & Shrader, 1993), allows organisational resources to be utilised for maximum benefit (Drohan, 1997) and leads to greater consistency of focus, exploitation of organisational skills

and coordination of organisational work efforts (Drago, 1998). Thus the amount of strategic planning a firm conducts should positively affect its performance (Miller & Cardinal, 1994). Furthermore, it has been suggested that the performance consequences of planning can be better understood by considering that the benefits of strategic planning are a product of the emphasis placed on various strategic planning activities (Hopkins & Hopkins, 1997), or so called 'planning items' (Boyd & Reunning-Elliott, 1998). Thus it is hypothesized that:

Hypothesis 1: Emphasis placed on strategic planning activities has a direct effect on performance improvement.

At the height of strategic planning's popularity, those organisations not embracing strategic planning were severely chided for basing their futures on 'a series of ad-hoc short term decisions' (Houlden, 1986). Recently, however, a disturbing 'backward trend' has begun to emerge: managers may be abandoning strategic planning.

Expressing concern and frustration over strategic management's current paradigm (see Andrews, 1993; Clarke & Clegg, 1998; Franklin, 1998a, 1998b; Lowendahl & Revang, 1998), faced with no alternative, and in the absence of a consistent and useful alternate paradigm (Pralad & Hamel, 1994), managers have begun to grasp at temporary 'actionable' (Porter, 1996: 75) solutions. Rather than future-oriented, directional strategic planning, they are concentrating on short-term decision-making, incremental improvement, management for efficiency, TQM, benchmarking, and business process re-engineering. Porter (1996) describes these concepts as seductive because they are 'concrete' and therefore enticing to managers constantly under pressure to deliver. Porter (1996) insists these concepts be recognised for their non-strategic characteristics, where the emphasis is placed on doing things right rather than doing the right things (Clarke & Clegg, 1998: 239). This problem was recognised as far back as the late 1980s when Mitroff and Mohrman (1987) noted how increasingly common it was becoming for firms to focus on short-term problems and loose sight of long range objectives. Unfortunately, however these organisations are moving further from viable competitive positions and losing the inherent ability to formulate strategy and to think strategically (Porter, 1996). A short-term operational focus is thus strategically dangerous. Any company focusing on short-term solutions sends a message to its competitors that it lacks confidence in its ability to invent objectives and direct itself towards achieving them (Hamel & Prahalad, 1989). Moreover, it has been suggested that businesses flourish when they exist a clear sense of direction (Larsen, Tonge & Ito, 1998) and that current performance not only reflects past strategic choices (Day, 1998); but also lack thereof. It follows that:

Hypothesis 2: Managerial preoccupation with non-strategic decision-making has an inverse effect on performance improvement.

## Organisational environment

The second objective of this study is to examine possible antecedents or determinants of the strategy making process. The determinants of strategic planning have come under increasing scrutiny in recent years (see for example Drago, 1998; Grinyer, Al-Bazzaz & Yasai-Ardekani, 1986; Kukalis, 1991; Yasai-Ardekani & Haug, 1997). Despite considering organisational size, structure, capital intensity, organisational complexity and strategic orientation as important determinants of the strategic planning process, the effects of the organisational environment on strategy making have been gaining increasing attention, yet remain unclear (see Brews & Hunt, 1999; Hopkins & Hopkins, 1997; Matthews & Scott, 1995).

Both the 'industry structure' and the 'organization field' models of environmental analysis (see Lenz & Engledow, 1986), suggest that two components or dimensions of the environment exist. Both models suggest that an organisation's environment is best defined by a 'hierarchy' of levels. The first is the general environment (Bourgeois, 1980), consisting of broad trends, external forces and events that impact upon industry conditions. The second is the task (Bourgeois, 1980) or industry (Porter, 1985) environment, which consists of all entities with whom the organization interacts and whose actions directly affect organizational goal attainment (Bourgeois, 1980). Because 'the field of strategic management focuses on managerial choices within environmental contexts' (Prescott, 1986:334), the ever-changing general and task environments have become important concepts that are altering strategic management theory and practice (Lowendahl & Revang, 1998). Numerous scholars have noted the effects of the external organisational environment. Prahalad and Hamel (1994), for example, outlined ten 'major catalysts' driving the search for a new strategic approach to the management of organisations. These 'catalysts' are environmental factors impacting upon the organisation and are responsible, in their opinion, for the obsolescence of current strategy models. Ansoff (1991: 455) also describes how the environment of many firms has, since the 1940s, become progressively 'more and more turbulent, unpredictable, and surprising'.

## Environmental uncertainty and strategic planning

Many authors contended that it was under conditions of environmental pressure that strategic planning could come to the fore. Supported by the information uncertainty perspective (Swamidass & Newell, 1987:514), these authors contended that environmental pressures increased the need for information gathering and therefore strategic planning. This concept is evident both in the prescriptive literature (e.g. Ansoff, 1984) and in empirical studies such as those of Miller and Friesen (1983) who indicated that firms facing constant changes in their environments would rely on strategic planning as a means to counter the resulting unpredictability. Similarly other studies have hypothesized that large amounts of strategic planning would be needed to enable firms to cope with changing, unpredictable conditions and highly turbulent environments (e.g. Hopkins & Hopkins, 1997; Miller & Cardinal, 1994). This perspective views the reduction of uncertainty through

access to high quality information as one of the principal aims of strategic planning (Fuller, 1996).

Yet it has also been suggested that environmental changes make information needed in the strategic planning process quickly obsolete (Bourgeois & Eisenhardt, 1988: 816). A growing number of authors, therefore, have begun to suggest that the amount of strategic planning firm's conduct actually decreases in the face of environmental pressures. Heene (1997) and Sanchez (1997), for example, separately discuss and reflect on their earlier collaborative research into the firm as an 'open system'. They found that in the face of ambiguity or complexity firms were inclined to adjust their products or operations rather than strategy. Their findings suggest that due to continued environmental pressure organisations tend toward a pre-occupation with operational and short-term adjustments and longer term strategic issues are neglected. In times of uncertainty, therefore, formal strategic planning may be the first management activity to go. Others contend that rapidly changing environments create the potential for poor strategic judgements to be made. Organisations, therefore, are prone to avoiding such mistakes by delaying strategic decision-making processes (Bourgeois & Eisenhardt, 1988), and attempting to get away with dealing with threats without strategy due to 'slack resources' (Snow & Hambrick, 1980: 531). Matthews and Scott (1995) have similarly contended that in threatening environments future orientation can give way to a preoccupation with immediate survival. In other words firms are by necessity more concerned with their current state than achieving a desired future state (Matthews & Scott, 1995). Idenburg (1993:132) states that in today's organisational environment the survival of the firm is often at risk and 'then it is a case of sink or swim and it is too late for strategy development.' Hamel and Prahalad (1998) have also indicated that when unpredictable and turbulent change comes to an industry, little or no clarity about industry structure and customer preferences results and the task of strategy formulation becomes rather difficult. Thus, in the boardrooms of today, faced with environments that are more dynamic, competitive and unpredictable than ever before (Camillus, 1996), it is suggested that management may be turning attention away from purposeful and deliberate strategy formulation toward a preoccupation with operational and short-term issues.

It may appear paradoxical that the importance of strategic management lies in its ability to provide a framework for dealing with escalating environmental uncertainty, yet reports of short-terminism in the face of environmental uncertainty seem to be increasingly common (see for example de Kare Silver, 1997; Porter, 1996). Hypothesizing that the strategic planning process is conducted with less rigour during such a period may seem absurd. However, the literature remains divided, and the issue of corporate survival seems to outweigh the theoretical ideal upon which the strategic management concept is founded. The seemingly endless demands of daily operational issues afford managers little time or energy to devote to strategic planning activities and the future direction of the firm dangerously begins to take a back seat to the needs of the short term. Thus it is hypothesized that:

Hypothesis 3: Uncertainty<sup>1)</sup> in the general environment has an inverse effect on the emphasis placed on strategic planning activities.

Hypothesis 4: Uncertainty in the task environment has an inverse effect on the emphasis placed on strategic planning activities.

Hypothesis 5: Uncertainty in the general environment has a direct effect on managerial preoccupation with non-strategic decision-making.

Hypothesis 6: Uncertainty in the task environment has a direct effect on managerial preoccupation with non-strategic decision-making.

### Managerial attitude

The literature suggests that the organisational environment may not be the only predictor of strategic planning behaviour. It has been argued that management's history and belief system will influence their approach to strategy formulation (Davis & Devinney, 1997). Thus managerial factors need to become important variables in strategic management research.

In particular, organisation theory has noted that the study of 'attitude' can be powerful in understanding organisational behaviour (Scott & Mitchell, 1976). Scott and Mitchell (1976:136) defined attitude as 'a predisposition to respond in a favorable or unfavorable way' and as 'positive or negative feelings about the contents of our physical and cognitive environment' (ibid:151). Attitude is thus related to behaviour, and attitude to strategic planning predisposes and organisation to behave in a particular way toward it. This study considers management attitude toward strategic planning as an important predictor of the emphasis placed on strategic planning activities and of non-strategic decision-making.

The attitude-behaviour relationship has long been explored in disciplines such as organization theory, psychology, and human and social behaviour. Attitude-behaviour concepts have also found their way into the marketing literature, which explores the relationships between consumer attitude and behaviour, and the human resources literature exploring, for example, relationships between employee attitude and

<sup>1)</sup>This study concerns itself with examining state uncertainty or perceived environmental uncertainty. State uncertainty refers to an inability to understand or predict the future state of the environment. This can be due to changes in the environment or a lack of understanding regarding relationships amongst the components of that environment. State uncertainty is the most common type of uncertainty studied and is often referred to as perceived environmental uncertainty (Buchko, 1994; Matthews & Scott, 1995). In prior studies, perceived environmental uncertainty has been associated with the concepts of predictability (e.g. Swamidass & Newell, 1987; Ireland, Hitt, Bettis & De Porras, 1987), stability (e.g. Drago, 1998) and understanding (e.g. Matthews & Scott, 1995). The relevance of perceived environmental uncertainty to strategy making has been well argued and it has been suggested that managers' perceptions of the environment are a critical component of the strategy making process (see Bourgeois, 1980).

job performance. The study of attitude has yet to find its way into the strategic management discipline, and very little empirical research exists on the effects of attitude on the strategy making behaviour of organisations. Strategic management scholars have tended to ignore attitude, instead focusing attention on broad discussions of belief systems, frames of reference and culture (see for example Davis & Devinney, 1997; Lewis, Morkel, Hubbard, Davenport & Stockport, 1999; Thompson & Strickland, 1999).

While many theories may be postulated on how managerial attitude toward strategic planning is formed or acquired, it is logical and intuitive to suggest that prior experience, the observation of management teams in competing organisations, knowledge of normative planning guidelines, and the influence of management consultants, all play a large role. In addition, the influence of external information sources may also play a role in determining management attitude toward strategic planning. Attacks on strategic planning are clearly evident in the writings of numerous respected and well-cited management scholars and gurus. For example, Quinn contends that organisations 'should not' and 'do not' follow highly formalized approaches to strategy formulation because such approaches have not traditionally produced the real strategies of organisations (Quinn, 1980; Quinn, 1989; Quinn 1996; Quinn 1998). Mintzberg (1987: 74) stated 'show me managers who think they can rely on formal planning to create their strategies, and I'll show you managers who lack intimate knowledge of their businesses or the creativity to do something with it.' Mintzberg also indicated that strategic planning does not produce the strategies needed by organisations to prosper in uncertain environments (Mintzberg, 1990) and is 'incompatible' with strategy making (Mintzberg, 1994). Hamel and Prahalad (1989) have gone so far as to suggest that a 'good strategy' could never be planned for. Managers have thus been taught to believe that strategic planning has little or no value (Mintzberg, 1987; Mintzberg, 1994), beliefs which in turn influence their attitudes (Ajzen, 1980). It follows that:

**Hypothesis 7:** A positive attitude toward formal strategic planning has a direct effect on the emphasis placed on strategic planning activities.

**Hypothesis 8:** A positive attitude toward formal strategic planning has an inverse effect on managerial preoccupation with non-strategic decision-making.

### Structural model

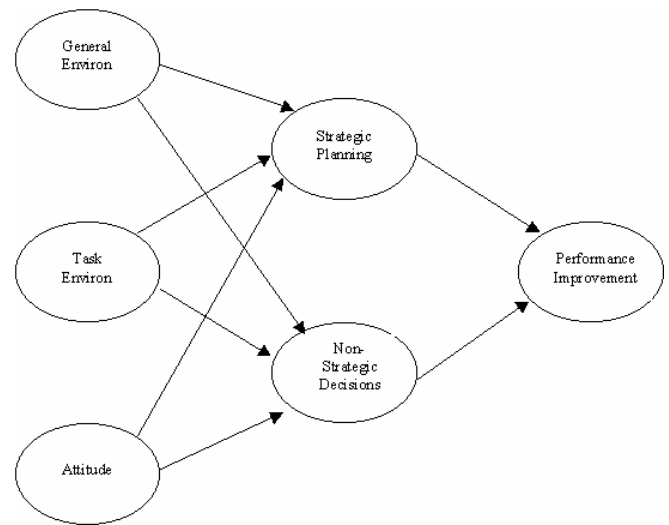
The relationships hypothesized above can be depicted schematically as a structural model (Figure 1). The arrows in the model denote hypothesized relationships and indicate the impact of one latent construct on another.

## Research Design

### Measures

A five-point scale was used to measure environmental uncertainty. Based on the literature reviewed, uncertainty was measured as the inability to understand or predict the future state of the environment due to 3 elements in the

general environment and 5 elements in the task environment.



**Figure 1: Research model (arrows represent hypothesized relationships)**

Management's attitude toward formal strategic planning was measured by a single scale item asking respondents to indicate the extent to which they agreed with the statement that their 'true' strategy rarely emerged out of their formal strategic planning process (reverse scored).

Strategic planning emphasis was measured on a 5 point scale by asking respondents to indicate the emphasis placed on seven strategic planning activities over the past 2 year period (1 = very low emphasis – 5 = very high emphasis). Perhaps the most important study supporting such a unidimensional measure of strategic planning was the recent study of Boyd and Reuning-Elliott (1998). They wanted to address the problem of inconsistency in the prior use of the strategic planning construct. Their study aimed at developing and validating a measure of strategic planning using data obtained from two independent samples. Their results indicate that strategic planning could be reliably measured as a unidimensional construct. In addition, in order to take into account the long held belief that strategic planning only 'pays off' after a period of time, respondents were required to indicate the emphasis, which they had placed on the various strategic planning activities over the past two years.

Non-strategic decision-making was measured by two items. Most of our decisions aim to solve immediate problems or crises, most of our decisions focus on gaining operational efficiencies (strongly disagree to strongly agree).

Performance improvement was measured by asking respondents to indicate, on a 5-point scale, the extent to which their performance had improved over the past two years with respect to 6 financial, market oriented and operational measures of performance. This concept of self-reporting has been considered acceptable by others (e.g. Bourgeois & Eisenhardt, 1988; Conant, Mokwa & Varadarajan, 1990; Powell, 1994). Conant *et al.* (1990: 375)

justified the use of self reporting by indicating that 'management assessments are generally quite consistent with objective performance measures', while Dess and Robinson (1984) describes such measures as both reliable and useful. Moreover, as indicated by Powell (1994), the perception of executives regarding their firm's performance should be respected as an important dependent variable in and of itself.

Face validity of the survey instrument was established through an initial pilot study involving CEOs, strategy consultants and academics. Table 1 lists the studies constructs and measures.

**Table 1: Constructs and measures**

<b>General Environment</b>	
Gen1	Economic forces and restructuring
Gen2	Political change and government policies
Gen3	Socio-cultural transformation
<b>Task Environment</b>	
Task1	Global competition
Task2	Industry competition
Task3	Customers
Task4	Suppliers and sources of labour
Task5	Overall business climate
<b>Managerial Attitude Toward Strategic Planning</b>	
Attit	Our true strategy rarely emerges out of our formal strategic planning process
<b>Emphasis Placed on Strategic Planning Activities</b>	
SP1	Development of mission statement
SP2	Corporate appraisal
SP3	Assessing external environment
SP4	Competitor analysis
SP5	Setting long-term goals
SP6	Identifying distinctive / core competencies
SP7	Identifying potential competitive advantages
<b>Non-Strategic Decision-making</b>	
Non1	Most of our decisions aim to solve immediate problems or crises
Non2	Most of our decisions focus on gaining operational efficiencies
<b>Performance Improvement</b>	
Perf1	Sales growth
Perf2	Profitability relative to competitors
Perf3	Cash flow generating ability
Perf4	Market share
Perf5	Competitive position
Perf6	Operational efficiency

## Sample

The sampling frame included public companies listed on the Johannesburg Stock Exchange's financial, industrial, venture capital and development capital sectors. Excluded from the sampling frame were companies based in foreign countries, and holding and investment companies with no substantial operations of their own. Data collection took place over a 3 month period in late 2000 and formed part of the refinement of measures and constructs for a larger doctoral study. Respondents were senior executives within each company, typically the executive chairman or chief executive officer. Due to the diversified nature of many of

South Africa's public companies, respondents were asked to answer all questions with respect to their organisation's largest revenue contributing division.

Of the questionnaires mailed out to the CEO, executive chairman or senior executive of 455 listed public companies, 151 responses were received for a response rate of 33%. This is a reasonably high response rate given the senior nature of the respondents. Questionnaires with missing data were eliminated, yielding 141 useable responses. Respondent characteristics are described in Tables 2 and 3.

T-tests for response bias revealed no significant differences between on-time respondents and late respondents, used as surrogates for non-respondents (see Armstrong & Overton, 1977).

**Table 2: Respondents by industry**

Manufacturing and Wholesale	31
Financial services, banking, insurance and assurance	29
Telecommunications, IT, media	21
Healthcare, service, hotels and leisure, transport, education	17
Retail	16
Non-mining, chemicals, oils and construction	11
Other*	16
Total	141

\* Other includes venture and development capital companies

**Table 3: Respondents by job title**

CEO / MD	81
Executive Chairman	7
Executive Director / Director of Finance	40
Other <sup>#</sup>	13
Total	141

<sup>#</sup> Other includes directors of strategic planning and group strategy development, general managers of operations and finance

## Partial least squares

In order to assess the hypothesized structural model (Figure 1) and its associated measurement model, the partial least squares approach to structural equation modeling was employed (see Wold, 1985). Partial least squares, or PLS, is a second generation multivariate technique gaining increasing popularity in management research as an alternative to more common maximum likelihood estimation (MLE) approaches to structural equation modeling such as LISREL. The objective of PLS analysis is to explain variance in the endogenous constructs and not to replicate the observed covariance matrix, as is the case with LISREL (Staples, Hulland & Higgins, 1998). Because the estimation of the model's parameters is accomplished using ordinary least squares techniques (Barclay, Higgins & Thompson, 1995), PLS can be used to overcome the problem of research data's frequent inability to meet the requirements of MLE (Fornell & Bookstein, 1982). PLS makes no assumptions about population or scale of measurement and there are no distributional requirements (Fornell &

Bookstein, 1982: 443). Distribution only becomes an issue when testing the statistical significance of the paths (Barclay *et al.*, 1995). For a detailed discussion of the relative merits of both LISREL and PLS see Fornell and Bookstein (1982).

### Measurement model

The measurement model represents the relationships between the latent constructs and their indicators. These indicators are the observed or manifest variables. One major benefit of PLS over other SEM techniques such as LISREL, EQS or AMOS is that it allows both formative and reflective indicators to be used in a model (Fornell & Bookstein, 1982: 441). The first decision that any researcher using PLS must make is whether or not the constructs should be modeled in the formative or reflective mode (Falk & Miller, 1992; Fornell & Bookstein, 1982; Hulland, 1999). The reflective mode views the construct as an underlying factor that gives rise to the observed indicators (Fornell & Bookstein, 1982: 441). The variables are thus a function of (reflect) the construct (Barclay *et al.*, 1995). This is the mode that most researchers are familiar with. The formative mode, on the other hand, 'is used for a construct that is modeled as explanatory combinations of its indicators' (Lee, 1997: 70), the construct is thus a function of (formed by) the variables (Barclay *et al.*, 1995). The general and task environmental uncertainty constructs are conceptualised as being explained by their indicators rather than causing them and are thus modeled in the formative mode. In other words, environmental uncertainty is not viewed as impacting upon its indicators but rather the indicators themselves form the environmental uncertainty construct. In addition there is no assumption that these indicators are correlated with one another (Chin, 1998: ix). All other constructs are modeled in a reflective mode.

### Reliability and validity of the measurement model

Individual item reliability is established by examining the loadings of each reflective measure on its construct. It is generally accepted that loadings should be greater than 0.55 in order for the indicator to be retained (Falk & Miller, 1992: 79).

It is also common practice to establish scale reliability by calculating Fornell and Larcker's (1981) measure of internal consistency. Internal consistency measures should be above 0.7 and are given by the following formula, where  $\lambda$  is the loading of an indicator on its construct:

$$\text{Internal consistency} = \frac{(\sum \lambda)^2}{(\sum \lambda)^2 + \sum (1 - \lambda^2)}$$

In addition, Cronbach alpha, a test for composite reliability is calculated and should be above 0.6 (Hair, Anderson, Tatham & Black, 1998: 80). Cronbach alphas have also been suggested as acceptable tests for convergent validity (Hulland, 1999:199). However, it is more common to establish convergent validity of a construct, modeled in the reflective mode, through an examination of the average variance extracted (AVE). AVE describes the amount of 'shared' variance among the indicators for a construct i.e.

the amount of variance in the indicators 'accounted for' by the construct. A high AVE occurs when the indicators are truly representative of the construct and should exceed 0.5, reflecting that the construct explains more than 50% of the variance in the observed measures (Hair *et al.*, 1998:612) i.e. the majority of variance is not due to error (Cool, Dierickx & Jemison, 1989:514). AVE is given by the following formula, where  $\lambda$  is the loading of an indicator on its construct:

$$\text{AVE} = \frac{\sum \lambda^2}{\sum \lambda^2 + \sum (1 - \lambda^2)}$$

Discriminant validity, which ensures that scale items measure distinct concepts, is established by ensuring that the variance shared between two constructs is less than the variance shared between a construct and its indicators (Hulland, 1999:199). This is achieved by examining the square root of a construct's average variance extracted, which should be greater than the correlation between that construct and other constructs in the model (Hulland, 1999: 200).

It must be noted that formative indicators need not demonstrate high internal consistency or composite reliability (Chin, 1998:ix). Hulland (1999:202) also suggests that discussions of reliability and validity for formative indicators are 'less relevant'.

Lohmöller's LVPLS program for use with MS-DOS (PLS-PC) was used to implement the PLS algorithm. It relies on the correlation matrix among the observed or manifest variables as input (Appendix A).

### Empirical results

Initially, two strategic planning items did not load highly, namely development of mission and corporate appraisal. Thus suggesting that the items should be dropped. However, a low AVE for this construct also suggests that the construct may possibly exist of more than one factor. Thus, the issue of multidimensionality of the construct could not be ruled out. An exploratory factor analysis revealed that the strategic planning construct consisted of two factors. However, since no theoretical basis for considering the two factors could be found, it was decided to drop the offending indicators and the resultant AVE of 0.45 was considered close enough to 0.5 to be considered acceptable. The performance item relating to efficiency was also dropped from the model in subsequent tests due to its low loading. All remaining indicators had loadings which exceeded 0.55 (Falk & Miller, 1992) or were close enough to be considered acceptable. In addition, most indicators had loadings which exceeded the more conservative 0.707 (Barclay *et al.*, 1995).

It must be noted that when an indicator is dropped it does not imply that the indicator is a poor measure of the construct in all cases, but merely that in this sample the indicators are not reflective of the construct under analysis.

Scale reliability, convergent and discriminant validity were also established. Cronbach alpha's all exceeded 0.6 and



AVEs were acceptable. Table 4 presents results of the test of the measurement model.

**Table 4: Tests of the measurement model**

Construct and Indicators	Loading/Weight <sup>a</sup>	Error Variance <sup>b</sup>	Internal Consistency <sup>c</sup>	Composite Reliability <sup>d</sup>	Convergent Validity <sup>e</sup>	Discriminant Validity <sup>f</sup>
<b>General Environment</b>			<b>0,71</b>	<b>0,65</b>	<b>N/A</b>	<b>N/A</b>
Gen1	0,80 (0,94)	0,12				
Gen2	0,40 (0,68)	0,53				
Gen3	-0,08 (0,34)	0,89				
<b>Task Environment</b>			<b>0,57</b>	<b>0,82</b>	<b>N/A</b>	<b>N/A</b>
Task1	0,08 (0,34)	0,89				
Task2	-0,27 (0,17)	0,97				
Task3	0,61 (0,75)	0,43				
Task4	0,91 (0,74)	0,45				
Task5	-0,53 (0,22)	0,95				
<b>Managerial Attitude</b>			<b>N/A</b>	<b>N/A</b>	<b>1,00</b>	<b>1,00</b>
Attit	1,00	0,0				
<b>Strategic Planning</b>			<b>0,80</b>	<b>0,70</b>	<b>0,45</b>	<b>0,68</b>
SP3	0,50	0,75				
SP4	0,66	0,56				
SP5	0,75	0,44				
SP6	0,67	0,55				
SP7	0,76	0,43				
<b>Non-Strategic Decision-making</b>			<b>0,84</b>	<b>0,62</b>	<b>0,73</b>	<b>0,85</b>
Non1	0,87	0,25				
Non2	0,84	0,30				
<b>Performance</b>			<b>0,89</b>	<b>0,84</b>	<b>0,61</b>	<b>0,78</b>
Perf1	0,74	0,45				
Perf2	0,77	0,40				
Perf3	0,69	0,53				
Perf4	0,86	0,27				
Perf5	0,83	0,31				

a Loadings, similar to loadings in a principal components analysis, are reported for reflective indicators, while weights, similar to regression weights, are reported for formative indicators (loadings in brackets).

b Error variance or residuals on the observed indicators (represents amount of variance not accounted for by the variables predictors).

c Internal consistency, reported for all constructs but has limited relevance for constructs modeled in the formative mode.

d Cronbach alpha a test for composite reliability, reported for all constructs but has limited relevance for constructs modeled in the formative mode.

e Average Variance Extracted (AVE), reported for reflective constructs only.

f Square root of the AVE, reported for reflective constructs only.

Once the measurement model is considered acceptable, the path coefficients in the structural model are assessed. Path coefficients in PLS are standardized regression coefficients (Staples *et al.*, 1998). In order to ensure that path coefficients are statistically significant a jackknifing technique (Fornell & Barclay, 1986) is used to estimate standard errors for calculating t-values. This requires raw data rather than the correlation matrix to be used as input. Table 5 and Figure 2 present results of the test of the structural model.

The paths linking general and task environmental uncertainty constructs to strategic planning were not found to be significant (see Table 5). All other path coefficients in the model are significant at the  $p < 0.001$  level. It is possible, however, for a path to be statistically significant but not substantively significant. A path coefficient of 0,05 or a

more conservative 0,10 is reflective of substantive significance (see Compeau & Higgins, 1995:201). Thus in addition to their statistical significance the paths in the model are substantively significant as well. The statistical significance of the paths attests to the *explanatory power* of the model (Staples *et al.*, 1998).

The overall fit of the structural model is evaluated by examining the squared multiple correlations or  $R^2$  on the endogenous latent constructs. The size of the  $R^2$  on the endogenous constructs determines the *predictive power* of the structural model. The  $R^2$  represents the variance accounted for or explained in the dependent constructs and should be at least 0,10 (Falk & Miller, 1992), in order to ensure that the interpretation of the path coefficients is meaningful. The above model explained 11% of the variance in strategic planning emphasis, 16% of the variance

in non-strategic decision-making and 15% of the variance in firm performance. Thus the predictive power of the model is considered adequate. Another method for determining model fit involves examining the correlation between the variance of the observed and latent variables *not* accounted for by the model relationships. This is given by the RMS COV (E,U) coefficient in the PLS output (Falk & Miller, 1992). This coefficient should be as close to zero as possible for a model that perfectly describes the relationships between the constructs, while a value of 0.20 or more is evidence of an inadequate model (Falk & Miller, 1992). The model has an RMS COV (E,U) of 0.06 further suggesting that the model fits the data adequately.

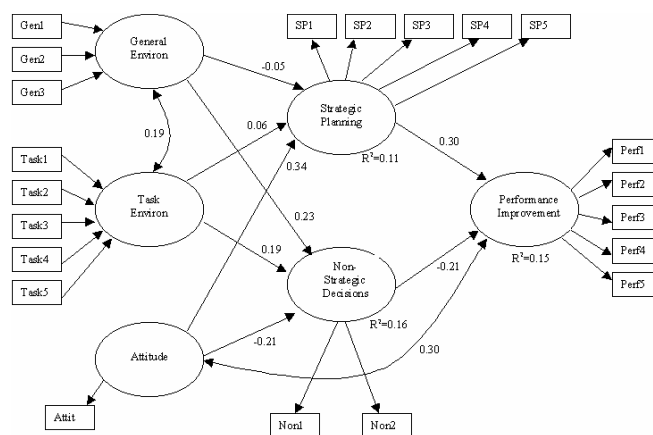


Figure 2: PLS results for structural model

Table 5: PLS estimates of the structural model

Relationship	Hypothesis	Expected Sign	Path Coefficient	t value <sup>a</sup> (df = 20) <sup>b</sup>
General Environment → Strategic Planning	3	-	-0,05	-1,730
General Environment → Non-Strategic Decision-making	5	+	0,23	6,990*
Task Environment → Strategic Planning	4	-	0,06	1,935
Task Environment → Non-Strategic Decision-making	6	+	0,19	4,822*
Attitude → Strategic Planning	7	+	0,34	11,111*
Attitude → Non-Strategic Decision-making	8	-	-0,21	-7,094*
Strategic Planning → Performance	1	+	0,30	11,070*
Non-Strategic Decision-making → Performance	2	-	-0,21	-8,677*

a t value calculated as path coefficient / standard error

b jackknifing procedure calculates standard errors (with sign alignment of the individual parameters) approximately t-distributed with n-1 degrees of freedom, where n is the number of partitions or subsamples used in the jackknifing procedure (Barclay *et. al.*, 1995). 5% or 7 observations were omitted for subsample analysis resulting in 21 partitions.

\* significant at the 0,001 level

## Discussion

The purpose of this study was to examine the relationships existing between organizational environment, managerial attitude, strategic planning, and non-strategic decision-making and to gain further insight into their effects on performance. The research model is depicted in Figure 2. Six of the eight hypothesized paths in the model were found to be both statistically and substantively significant. However, hypotheses 3 and 4 dealing with the effects of perceived environmental uncertainty on the emphasis placed on strategic planning were not supported.

The quality of response received in this study was very encouraging. The collective experience and senior nature of the respondents, and the fact that these respondents represent some of South Africa's leading and most influential organizations, provides additional confidence in the validity and appropriateness of these results.

### Strategic planning

Despite this studies proposition that strategic planning emphasis decreased in times of uncertainty, the relationships between uncertainty in the general environment and strategic planning and uncertainty in the task environment

and strategic planning were insignificant. Therefore, a surprising finding of this study is that despite the long held belief that strategic planning activities are associated with environmental conditions, managerial attitude to formal planning, appears to play a more important role in explaining the emphasis placed on strategic planning activities. Thus as found elsewhere (e.g. Hopkins & Hopkins, 1997) and contrary to most current theories, a managerial rather than environmental factor emerged as a more influential determinant of strategic planning behaviour. Moreover, the results support the direct effect of strategic planning on firm performance. This result generally confirms previous research studies that have found a positive planning-performance relationship to exist and thus adds support for the value of strategic planning as a managerial activity.

### Non-strategic decision-making

Managerial attitude was found to be a strong determinant of non-strategic decision-making. Results confirm that those firms with negative attitudes toward strategic planning tend to preoccupy themselves with decisions revolving around short term needs and operational issues. Yet perceptions of uncertainty in the general and task environments also appear to play a large role in today's organisational preoccupation

with non-strategic decisions. Interestingly though, it is the general environment that plagues organisations most in South Africa. Thus failure to plan adequately for the long term survival and well being of the their organisations is a symptom of the political, social and economic uncertainty perceived by South African companies. The effects of uncertainty caused by competition and the general business climate are also forcing organisations into an unhealthy preoccupation with the short term.

Moreover, the findings shed light on the dangers of a preoccupation with non-strategic decision-making, thus providing empirical support for Porter's (1996) argument against the non-sustainability of performance derived from concentrating on the operational domain. Short-term solutions are useful if seen as incremental steps in achieving long-term objectives but cannot be seen as developing the potential to create, adapt, change, survive and prosper in the future. Just as long-term goals cannot sacrifice short-term needs (Cogliandro, 1996), so too must firms guard against solely focusing on short-term problems and loosing sight of the need to plan the overall organisational objective.

The above findings also have some practical implications for firms intent on improving performance. A preoccupation with gaining operating efficiencies and short-term solutions to problems are not sufficient to ensure that performance improves over time. Performance improves only when a clear sense of direction exists, when sufficient attention is placed on developing long-term plans, identifying competencies and pursuing sources of advantage. Even in the short time span of 2 years, on which this study concentrated, the effects of planning on performance were evident.

## Conclusion

Improving organisational performance in a competitive and uncertain environment is the greatest challenge set before today's executive team. This objective creates a number of managerial challenges and in particular insists upon the pursuit of only valid managerial activities. This study developed and tested a PLS model linking environment and managerial attitude to strategic planning, non-strategic decision-making and performance. Overall, the results obtained in this study indicate that strategic planning is both a valid and worthwhile endeavour. Those firms who consistently emphasize the various strategic planning activities should expect to find significant performance improvements. Those firms who continue to rely on short-term decisions and focus on improvements only in the operational domain will find themselves quickly loosing profitability, market share, cash generating ability and competitive position. Surprisingly, managerial attitude emerged as a much stronger determinant of the emphasis placed on strategic planning activities than perceptions of environmental uncertainty. This study has hopefully contributed to the development of much needed strategic management theory that is grounded in strong empirical evidence. Yet, much work remains. Future research studies could be designed so as to consider both moderating and antecedent variables in a study of the planning-performance relationship. Future research should also begin to more fully

examine managerial attitudes and beliefs as determinants of strategic planning and other managerial activities. This study was limited in its examination of managerial attitude choosing to rely on a single scale item only. Therefore, enormous potential exists for future studies to extend this examination to include multiple constructs, dimensions and measures of managerial contingencies. In addition, although the research results were promising, a large amount of the variance in strategy making behaviour was left unexplained. Future research would thus do well to continue identifying determinants of strategy making behaviour that are capable of explaining greater amounts of variance. The strong evidence, suggesting the dangers of a preoccupation with non-strategic decision-making, points to the need for more research comparing the effects of strategic, tactical and operational decision-making on the performance of South African firms.

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Appendix A Correlation Matrix of Observed Variables

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Gen1 (1)	1.00																							
Gen2 (2)	392	1.00																						
Gen3 (3)	286	457	1.00																					
Task1 (4)	249	41	185	1.00																				
Task2 (5)	307	200	306	704	1.00																			
Task3 (6)	140	345	324	284	235	1.00																		
Task4 (7)	312	282	184	538	548	451	1.00																	
Task5 (8)	344	315	357	408	487	425	643	1.00																
Attr1 (9)	6	-28	57	-229	-192	-74	-126	49	1.00															
SP1 (10)	-144	-58	-57	26	3	-24	-107	-178	-89	1.00														
SP2 (11)	34	43	-58	-46	-167	-6	-67	45	-45	241	1.00													
SP3 (12)	-14	-84	-8	-40	-12	38	-19	96	141	-45	201	1.00												
SP4 (13)	-37	-9	82	52	-11	80	-48	-49	233	129	281	380	1.00											
SP5 (14)	-117	-63	-110	-148	-215	-143	-147	-208	288	337	244	214	284	1.00										
SP6 (15)	48	37	5	-115	-145	32	-38	23	138	21	151	288	198	383	1.00									
SP7 (16)	14	3	42	-87	-108	-46	55	-35	248	164	191	199	306	446	521	1.00								
Non1 (17)	226	180	17	53	12	151	164	54	-191	-132	10	-99	-141	-167	-101	-12	1.00							
Non2 (18)	200	129	139	105	71	194	174	45	-216	-4	8	-33	31	-125	-17	56	452	1.00						
Perf1 (19)	-58	-10	30	-154	-83	8	-152	-194	316	122	17	32	160	247	102	133	-159	-163	1.00					
Perf2 (20)	-87	-2	-89	-176	-71	-9	-131	-225	116	-156	-211	96	152	107	122	121	-114	-131	443	1.00				
Perf3 (21)	-36	-51	-89	-158	-124	61	-93	-173	169	-32	6	46	293	138	147	35	-238	-154	393	577	1.00			
Perf4 (22)	-26	19	66	-177	-139	-18	-139	-111	285	-80	-49	39	208	301	266	248	-214	-92	561	559	396	1.00		
Perf5 (23)	-110	-122	-43	-83	-93	65	-90	-112	232	-104	-149	106	184	180	207	237	-192	-157	506	561	383	719	1.00	
Perf6 (24)	55	72	121	-16	61	59	-33	14	-47	-150	35	152	263	-100	119	40	-149	81	116	295	267	256	256	1.00