Strategic planning and performance: Extending the debate

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Abstract

This article extends the debate regarding the relationship between strategic planning and performance. It addresses criticism of previous empirical studies that have largely investigated direct and bi-variate relationships, producing equivocal results. The current study investigates the mediating effects of four types of flexibility on the strategic planning and performance relationship. Flexibility is defined as the extent to which new and alternative decisions are generated and considered in strategic planning, allowing for positive organizational change and adaptation to environmental turbulence. Through investigating simultaneous equations in a structural equation model, we find that two types of flexibility mediate the relationship between strategic planning and financial performance, while the other two types mediate the relationship between strategic planning and non-financial performance. The results are new empirical insights that have not been previously reported.

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Keywords: Strategic planning; Performance; Flexibility

1. Introduction

While there is empirical support for a positive association between strategic planning and performance (Rhyne, 1986; Miller and Cardinal, 1994; Brews and Hunt, 1999; Andersen, 2000; Delmar and Shane, 2003), there is also evidence suggesting that no such relationship exists (Shrader et al., 1984; Pearce et al., 1987). This dichotomy has hindered the development of this important research domain (Boyd, 1991; Greenley, 1994; Hahn and Powers, 1999). The empirical studies investigating a direct relationship between strategic planning and performance have attracted criticisms, including the use of a bi-variate methodology. While this relationship is of importance to organizations practicing strategic planning, the critics suggest that other factors will impact on the relationship between strategic planning and performance (Schwenk and Shrader, 1993; Meilich and Marcus, 1999).

Theory predicts that successful organizations will anticipate and address environmental turbulence through strategic planning (Miller and Cardinal, 1994; Rogers et al., 1999). It also predicts that they will demonstrate flexibility in strategically planning decision options about how they will adapt when the environment changes, in a preparatory or "ex-ante" state (Evans, 1991; p 77). Through flexibility organizations are better prepared to cope with environmental turbulence, enhancing the influence of their strategic planning on performance. Although strategic planning, the notion of the flexibility and performance have received much attention in the strategic management literature, to date there have been no empirical investigations of their simultaneous relationships; somewhat compounded by a lack of conceptual clarity surrounding the notion of flexibility (Dreyer and Gronhaug, 2004; Worren et al., 2002; Ebben and Johnson, 2005). This is at odds with their importance in the literature (Rapert et al., 2002; Dreyer and Gronhaug, 2004), and is a major gap in understanding.

In this article we contribute to understanding the strategic planning and performance relationship, by addressing the criticisms of the previous bi-variate empirical studies. We empirically investigate the mediating effects of flexibility on the strategic planning and performance relationship, through analyzing simultaneous relationships in a structural equation...
model, which is novel research in this domain. Also, this study renews investigative attention of the relationship between strategic planning and performance, which is central to the strategic management paradigm.

2. Theory development

Despite nearly forty years of empirical study (Ansoff, 1965; Delmar and Shane, 2003), evidence regarding the relationship between strategic planning and performance has been criticized as equivocal (Pearce et al., 1987; Mintzberg, 1994; Grant, 2003). Indeed, a prominent and on-going debate in the literature surrounds the efficacy of formalized strategic planning versus non-formalized strategic planning (Ansoff, 1965; Andrews, 1971; Mintzberg, 1990, 1994). Advocates of non-formalized strategic planning suggest that formalized strategic planning is rigid and flexible (Quinn, 1980; Mintzberg, 1994), whereas advocates of formalized strategic planning suggest that non-formalized strategic planning is without structure, and hence direction (Steiner, 1979). Despite this claim, proponents of non-formal strategy development suggest that the planning school, residing in a largely formal approach to planning, is “an important branch of the literature” (Mintzberg and Lampel, 1999; p22), and that “scholars and consultants should continue to probe” into this paradigm (Mintzberg and Lampel, 1999; p29).

Criticism regarding empirical studies investigating the relationship between strategic planning and performance has focused on three main criticisms: 1) they have been restricted to bi-variate investigations of varying conceptualizations of strategic planning and performance, 2) there is little evidence of researchers addressing mediating variables, and 3) they have been limited to financial measures of performance (Boyd, 1991; Greenley, 1994; Miller and Cardinal, 1994; Capon et al., 1994; Brews and Hunt, 1999). Given the fundamental importance of strategic planning to the strategic management literature, the slow development of theory in this domain is unusual and has hindered advancement. A further methodological issue relating to the latter is the method of analysis used in previous studies. Comparison of statistical means (O’Regan and Ghobadian, 2002), comparison of percentages (Kallman and Shapiro, 1978) and regression (Andersen, 2000) have all been used. Whilst these techniques were appropriate for the studies cited, none have utilized the benefits of structural equation modeling, or more specifically, latent variable path analysis. This method has three main strengths. First, the ability to estimate multiple and interrelated dependence relationships, second, the ability to incorporate unobserved concepts within these relationships, and third the estimation of measurement error (Hair et al., 1998). In the current study we build on the planning school and respond to these criticisms of the strategic planning and performance studies.

2.1. Flexibility

Flexibility is the extent to which new and alternative decisions are generated and considered in strategic planning, allowing positive organizational change and adaptation to environmental turbulence (Combe and Greenley, 2004; Evans, 1991; Fiegenbaum and Karnani, 1991; Grewal and Tansuhaj, 2001). Despite the intuitive appeal of flexibility, it suffers from two main problems, 1) semantic issues, whereby “the use of the word flexibility is ubiquitous, yet it is not always clear what is meant by the term” (Evans, 1991, p. 73), and 2) no empirical development or testing within a strategic planning context, as the literature states that, “flexibility as a competitive goal still lacks clear and accurate definition” (Aranda, 2003, p. 1403). Much of the theoretical discussion regarding the notion of flexibility is divided into four main types; operational flexibility (Tang and Tikoo, 1999), financial flexibility (Mensah and Werner, 2003), structural flexibility (Harris and Ruefli, 2000) and technological flexibility (Adler, 1988; Harris, 2002). However, an assessment of their respective impact on performance in a strategic planning context is absent from the literature.

Organizations, through strategic planning, anticipate environmental turbulence and allocate resources accordingly. By being flexible alternative decision options are generated and considered, which may be deployed as and when particular opportunities or threats arise within the environment. As this process occurs prior to the impact of turbulence, flexibility in the organization is anticipatory and preparatory in nature (Evans, 1991). Hence, flexible organizations will adapt rapidly to environmental change as it occurs, through the exploitation of the appropriate alternative decision options generated in their strategic plans, giving a potentially valuable route to superior performance. The flexibility exhibited by an organization in dealing with environmental turbulence can therefore be strategically planned. In essence flexibility is a consequence of strategic planning, and therefore an important mediator of the relationship between strategic planning and performance. Hence, inconclusive findings cited within the strategic planning and performance literature are unsurprising, given the predicted mediating influence of flexibility.

2.2. Theoretical model

In order to address these criticisms, a model of strategic planning, flexibility and performance is proposed in Fig. 1 for empirical testing. Four types of flexibility exert mediating influences on the strategic planning and performance relationship. The conceptual development of the model and theorized relationships are discussed in the following sections. Of specific note are the dependent variables, financial and non-financial performance. The financial “pre-occupation” (Ramanujam and Venkatraman, 1987, p. 454) of the studies examining the relationship between strategic planning and performance has been highlighted above. A criticism is that financially based assessments of performance are “no longer sufficient to manage organizations competing in modern markets” (Kennerly and Neely, 2003, p. 214), and that further development is required. Non-financial measures of performance, or those performance measures not directly contributing to financial performance, are argued for in the strategic planning literature, based on morale and retention-based factors relating to involvement in the planning process (Greenley, 1983, 1986). Little empirical development has occurred, possibly due to measurement difficulties (Greenley, 1994). In order to address this, the theoretical model presented
in Fig. 1 has two dimensions of performance, financial and non-financial.

2.2.1. Operational flexibility
Operational flexibility is organizational ability to rapidly adjust market offerings, product/service mix and production capacity. Organizations able to do this in light of environmental pressures perform relatively better than competitors that do not (Tang and Tikoo, 1999; Jack and Raturi, 2002; Aranda, 2003). The performance benefits relate to financial efficiencies generated by matching demand and operational scheduling. As such, overcapacity is minimized in periods of slow demand and correspondingly, the organization can respond in a timely manner to increases in demand. However, in large to medium sized manufacturing organizations that generally produce on a large scale with significant lead-times, this may not be simple. Organizations willing to reap the benefits of operational flexibility must strategically plan resources in order to maximize financial benefits. In previous studies, the measures used to capture performance have been financially based, with no attempt to capture non-financial performance. Hence, in the absence of empirical support regarding non-financial performance, the following hypotheses are specified.

H1a. Strategic planning has a direct and positive impact on operational flexibility.

H1b. Operational flexibility has a direct and positive impact on financial performance.

H1c. Operational flexibility mediates the relationship between strategic planning and financial performance.

2.2.2. Financial flexibility
Financial flexibility is organizational ability to rapidly gain access to, and deploy financial resources. Empirical evidence suggests that organizations possessing this ability perform better than those that do not (Tan and Peng, 2003; Mensah and Werner, 2003). The notion has significant intuitive appeal, with organizations able to rapidly access and deploy funds outperforming than those that cannot (Billet and Garfinkel, 2004). Additionally, organizations planning these resource investments and preparing the organization for rapid change will facilitate a positive impact on performance (Greenley and Oktemgil, 1998). Indeed, organizations strategically planning for financial flexibility are likely to avoid the inefficient and unproductive financial resource allocations of competitors that do not plan this flexibility (Trigeorgis, 1993). As such, strategic planning will have a positive impact on financial flexibility that in turn will impact on financial performance.

H2a. Strategic planning has a direct and positive impact on financial flexibility.

H2b. Financial flexibility has a direct and positive impact on financial performance.

H2c. Financial flexibility mediates the relationship between strategic planning and financial performance.
2.2.3. Structural flexibility

Structural flexibility is organizational ability to rapidly restructure (Huber, 1990). The literature shows that organizations able to rapidly alter structural design, in line with competitive pressures, perform well (Naehm et al., 2003). In large to medium sized organizations this would be manifest in a flattened/de-layered structure, effective communication across departments and reduced bureaucracy. Studies have shown that some bureaucracy in organizations is facilitative (Adler and Borys, 1996; Adler et al., 1999), hence a reduction in bureaucracy to an appropriate level is proposed, rather than complete removal. Strategic planning allows organizations to anticipate change and create strategic options for that change. Organizations planning structural flexibility are likely to benefit in terms of enhanced financial performance. The literature suggests that organizations undertaking structural alterations in an ordered and well planned manner are likely to have less employee-related problems (e.g. morale and retention issues), than those organizations that undertake change in an ad-hoc and unplanned fashion (Adler et al., 1999; DiPaola and Hoy, 2001; Ahmed and Rafiq, 2003). However, the effects of such benefits are facilitative in nature, and are likely to be lagged, directly impacting on non-financial performance, as opposed to financial performance.

**H3a.** Strategic planning has a direct and positive impact on structural flexibility.

**H3b.** Structural flexibility has a direct and positive impact on non-financial performance.

**H3c.** Structural flexibility mediates the relationship between strategic planning and non-financial performance.

2.2.4. Technological flexibility

Technological flexibility is defined as organizational ability to alter technological capacity in line with competitive requirements (Miller, 2002). More specifically, organizations operating outmoded technology, or organizations operating very specific software, possess little scope or opportunity for change. The facilitative importance of technology to strategic plans is highlighted in the literature (Tracey et al., 1999; Kotha and Swamidass, 2000; Morgan, 2004; Andersen, 2005), and organizations strategically planning technological flexibility will perform better than those competitors that do not. Importantly, the literature suggests that technology has an extremely facilitative impact on the employees that use it (Barley, 1986; Zuboff, 1988), through helping managers to cope with uncertainty and to make more effective strategic responses (Mandal et al., 1998; Miller, 2002; Andersen, 2005). This essentially non-financial impact is an immediate effect for the users of the technology. The financial benefit for the organization is likely to manifest itself later. Hence, strategic planning will have a positive impact on technological flexibility that in turn, will have a positive impact on non-financial performance. This notion is specified within the theoretical model presented in Fig. 1, as the direct performance impact of technological flexibility is on non-financial performance, with an indirect impact on financial performance.

**H4a.** Strategic planning has a direct and positive impact technological flexibility.

**H4b.** Technological flexibility has a direct and positive impact on non-financial performance.

**H4c.** Technological flexibility mediates the relationship between strategic planning and non-financial performance.

Although a relationship between non-financial performance and financial performance is conceptually specified in the literature (Chakravarthy, 1986; Greenley, 1994), empirical evidence is scarce and equivocal (Markoczy, 2001). This notion is based on consensus building through strategic planning (Dess and Oringer, 1987; Lyles, 2001; Armstrong, 1982; Markoczy, 2001), whereby the setting of organizational goals and objectives is achieved by managers who are not exclusively derived from the top management team; creating strategic consensus among managers through a shared set of organizational priorities (Floyd and Wooldridge, 1992). By being more inclusive within this consensus building process, the literature suggests that organizations reap an immediate non-financial performance benefit regarding factors such as job satisfaction, job involvement, commitment, trust and well-being (Edwards, 1991; Kristof, 1996; Barney and Arikan, 2001). The theoretical model suggests that organizations that are planning strategically for both structural and technological flexibility are likely to reap non-financial performance benefits, as previously discussed. These organizations are likely to have well motivated employees, and are likely to better retain staff than organizations that do not. Hence a direct effect from non-financial performance to financial performance is specified in the theoretical model.

**H5.** Non-financial performance will exert a direct and positive impact on financial performance.

3. Research design and methodology

3.1. Measures used

Previously tested and validated measures were used to capture the constructs of strategic planning (Boyd and Reuning-Elliot, 1998), and financial and non-financial performance (Greenley, 1983; Chakravarthy, 1986; Thomas, 1988; Cadogan et al., 2002). Perceptual responses were gauged using Likert-style responses on five and seven-point scales. Subjective assessments of financial and non-financial performance were used, consistent with established practice in strategy research (Brews and Hunt, 1999; Andersen, 2000; Morgan and Strong, 2003). The literature suggests a high degree of correlation between perceptual and objective measures of organizational performance (Venkatraman and Ramanujam, 1986; Dess and Robinson, 1984; Murray et al., 2005), and hence confidence in their use was high. Following protocols and a pre-test (Diamantopoulos et al., 1994), adaptations to these scales were made in line with established procedures (Spector, 1992; DeVellis, 2003). No face validity issues were identified. The scales are listed in Appendix 1.
3.2. Flexibility: development of the measures

Following a review of the literature, no appropriate scales were identified for the four types of flexibility, and therefore measures were developed in line with established scale development procedures (Spector, 1992; DeVellis, 2003). As discussed earlier, four types of flexibility were identified, 1) structural flexibility, 2) operational flexibility, 3) technological flexibility, and 4) financial flexibility. Academic and practitioner sources created a large pool of items for each type, which were subsequently purified. Of note, during the scale development process, participant senior managers highlighted a difference between technology involved in day to day manufacturing operations, and the software/infrastructure. It was important to clearly separate these two areas and therefore consistent with these comments, operational technology was captured by operational flexibility, the ability to alter product mix/output, and technological flexibility captured software/infrastructure related technology. Based on data from the pre-test sample, both exploratory and confirmatory factor analyses were undertaken on the measures. In the interests of parsimony and rigor, a split-sample methodology (Kelloway, 1998) was adopted in order to confirm the factor structure obtained from initial factor rotations (Hair et al., 1998). No problematic factor loadings, cross-loadings or issues with face validity were observed, and therefore confidence in their use was high.

Based on data from the pre-test, and prior to administering the main survey, the chosen scales for strategic planning, financial and non-financial performance were examined regarding issues of dimensionality, reliability and validity (Churchill, 2002; DeVellis, 2003). No problematic statistics were identified, and hence confidence in their use in the main survey was high. Further discussion of measurement testing is presented in Section 4.

3.3. Questionnaire administration

A cross-sectional approach was adopted, consistent with previous empirical studies of the relationship between strategic planning and performance (Hopkins and Hopkins, 1997; Hahn and Powers, 1999; O’Regan and Ghobadian, 2002, Tanriverdi and Venkatraman, 2005). Prior to the administration of the main survey, a two-stage pre-test was undertaken, again in-line with established recommendations (Churchill, 1979), including protocols (Diamantopoulos et al., 1994) and a pre-test mail survey. No statistical or semantic issues were identified, and hence 2300 questionnaires were administered to a database of large to medium sized UK manufacturing organizations. Size and sectoral influence were controlled for by limiting the sample data to medium/large manufacturing organizations. CEOs, Managing Directors and General Managers were targeted as key respondents because of their perspective on strategy, their extensive knowledge of their respective organizations and their access to relevant information (Tan and Tan, 2005; Tuominen et al., 2004). In an attempt to increase the response rate the covering letter asked recipients to pass on the questionnaire to the most senior strategist in their organizations (Leontiades and Tezel, 1980). Additionally, organizations not responsible for their strategic planning, for example a branch organization, were asked not to return the questionnaire. By including these instructions it was felt that appropriate respondents would be sampled. Respondents were ensured of the confidentiality and anonymity of their responses and, in line with established procedures, reminder postcards were sent seven days after mailing the survey (Dillman, 2000). As an additional check for data quality, respondents were asked to indicate the size of their organizations on a scale from 1, less than fifty employees, to 7, more than 5000 employees. Surveys where respondents had indicated less than fifty employees in their organizations were excluded from the final sample.

As a cross-sectional, single respondent approach was used to collect data, common method variance was controlled for by
Table 3
Structural model: standardized path coefficients and t-values

<table>
<thead>
<tr>
<th>Hypotheses</th>
<th>Path specified:</th>
<th>Standardized path coefficients</th>
<th>t-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1 supported</td>
<td>Strategic planning → Operational flexibility</td>
<td>0.16</td>
<td>2.66*</td>
</tr>
<tr>
<td></td>
<td>Operational flexibility → Financial performance</td>
<td>0.31</td>
<td>5.12*</td>
</tr>
<tr>
<td>H2 supported</td>
<td>Strategic planning → Financial flexibility</td>
<td>0.12</td>
<td>1.94**</td>
</tr>
<tr>
<td></td>
<td>Financial flexibility → Financial performance</td>
<td>0.26</td>
<td>4.59*</td>
</tr>
<tr>
<td>H3 supported</td>
<td>Strategic planning → Structural flexibility</td>
<td>0.15</td>
<td>2.57*</td>
</tr>
<tr>
<td></td>
<td>Structural flexibility → Non-financial flexibility</td>
<td>0.16</td>
<td>2.98*</td>
</tr>
<tr>
<td>H4 supported</td>
<td>Strategic planning → Technological flexibility</td>
<td>0.23</td>
<td>3.61*</td>
</tr>
<tr>
<td></td>
<td>Technological flexibility → Non-financial flexibility</td>
<td>0.49</td>
<td>7.65*</td>
</tr>
<tr>
<td>H5 unsupported</td>
<td>Non-financial performance → Financial performance</td>
<td>0.12</td>
<td>1.29</td>
</tr>
</tbody>
</table>

Key: *significant result 0.01 level/**significant result 0.05 level.

4. Results

This section is divided into three parts. First, the results of the measurement testing, second the results of the model testing, and third the results of testing for the mediating effects.

4.1. Measurement testing

All measures were assessed for reliability, convergent validity and discriminant validity (Andersen and Gerbing, 1988). Reliability was assessed through Cronbach’s Alpha (Cronbach, 1951) and composite reliability (Fornell and Larcker, 1981). All measures were above recommended limits of 0.60 and 0.50 respectively. Convergent validity was assessed through an examination of the average variance extracted (AVE), whereby values greater than 0.50 are considered to demonstrate convergent validity (Chin, 1998). All measures were found be above the 0.50 threshold. Discriminant validity was assessed after Fornell and Larcker (1981), where AVE should exceed the sum of the measures squared correlations. Summary statistics, including the measures of reliability and validity are provided in Table 2.

The results suggest that the theoretical model (Fig. 1) is a good representation of the data collected. Additionally, all but one of the paths featured strong, positive and significant values (Steenkamp and Van Trijp, 1991). Standardized path values and t-values for the structural model are summarized in Table 3.

4.2. Model testing

The hypotheses and model (Fig. 1) were tested with structural equation modeling in LISREL 8.50 (Jöreskog and Sörbom, 2001), using latent path analysis; cited as the most comprehensive and flexible method of multivariate analysis (Hoyle, 1995). The results of the testing were assessed against widely published and recognized criteria (Hair et al., 1998; Diamantopoulos and Siguaw, 2000). Measures of Absolute fit ($\chi^2 = 483.02; df = 112$), Goodness of fit (GFI = 0.90), Incremental fit (IFI = 0.92) and Parsimonious fit (PGFI = 0.63), were, within acceptable limits for theory development purposes, and no issues with modification indices were identified. The results suggest that the theoretical model (Fig. 1) is a good representation of the data collected. Additionally, all but one of the paths featured strong, positive and significant values (Steenkamp and Van Trijp, 1991). Standardized path values and t-values for the structural model are summarized in Table 3.

A competing model was also tested, to further examine the validity and robustness of the theoretical model (Kelloway,
Baron and Kenny (1986) suggest that in order to (1) the independent and mediator variables on the dependent variable, and (2) the impact of the independent variable on the mediator variable, and (3) the impact of the mediator variable on the dependent variable. We therefore used an SEM approach. Due to structural equation modeling (SEM) in order to incorporate measurement error. The competing model demonstrated inferior fit and comparative criteria compared to the theoretical model. The results are summarized in Table 4. The comparative criteria used were the expected cross validation index (ECVI), the Akaike’s information criteria (AIC) and the consistent version of AIC, adjusted for sample size effects (CAIC).

When examining competing models lower values of the comparative criteria are desirable (Diamantopoulos and Siguaw, 2000). Indeed, the competing model demonstrated higher comparative criteria and lower fit statistics than the theoretical model, further validating the theoretical model and providing evidence of its robustness. Therefore, the hypothesized relationships H1a, H1b, H2a, H2b, H3a, H3b, H4a and H4b are supported, but H5 was not supported.

### 4.3. Mediating effects testing

Additional testing of the hypothesized mediator effects was undertaken after Baron and Kenny (1986). Originally cited as a regression technique, Baron and Kenny (1986) advocate structural equation modeling (SEM) in order to incorporate measurement error. We therefore used an SEM approach. Due to model complexity, a three stage procedure was adopted for each of the mediated hypotheses i.e. hypotheses H1c, H2c, H3c and H4c. This procedure estimated 1) the impact of the independent variable on the mediator variable, 2) the impact of the independent variable on the dependent variable, and 3) the impact of both the independent and mediator variables on the dependent variable. Baron and Kenny (1986) suggest that in order to identify mediation, a) the independent variable must affect the mediator, b) the independent variable must affect the dependent variable, and c) the mediator must affect the dependent variable. Also, if these conditions hold in the predicted direction, the effect of the independent variable on the dependent variable must be less in the third test than in the second. The results of mediation testing are presented in Table 5.

<table>
<thead>
<tr>
<th>Flexibility type</th>
<th>Condition 1</th>
<th>Condition 2</th>
<th>Condition 3</th>
</tr>
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<tbody>
<tr>
<td>Path co-efficient</td>
<td>t-value</td>
<td>Path co-efficient</td>
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</tr>
<tr>
<td>Operational</td>
<td>0.10</td>
<td>1.90**</td>
<td>0.20</td>
</tr>
<tr>
<td>Financial</td>
<td>0.13</td>
<td>2.14*</td>
<td>0.20</td>
</tr>
<tr>
<td>Structural</td>
<td>0.18</td>
<td>2.82*</td>
<td>0.23</td>
</tr>
<tr>
<td>Technological</td>
<td>0.08</td>
<td>1.34</td>
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1998). The competing model stated that performance drives strategic planning, that in turn impacts on flexibility. Here we posit that successful organizations can allocate the necessary resources to strategic planning, hence facilitating flexibility through effective and well resourced strategic planning. The competing model demonstrated inferior fit and comparative criteria compared to the theoretical model. The results are summarized in Table 4. The comparative criteria used were the expected cross validation index (ECVI), the Akaike’s information criteria (AIC) and the consistent version of AIC, adjusted for sample size effects (CAIC).

When examining competing models lower values of the comparative criteria are desirable (Diamantopoulos and Siguaw, 2000). Indeed, the competing model demonstrated higher comparative criteria and lower fit statistics than the theoretical model, further validating the theoretical model and providing evidence of its robustness. Therefore, the hypothesized relationships H1a, H1b, H2a, H2b, H3a, H3b, H4a and H4b are supported, but H5 was not supported.

### 5. Discussion

This article has extended the debate about strategic planning and performance, and has renewed empirical investigation in this domain. This was done by addressing the criticisms of the previous empirical studies that had investigated a direct relationship between strategic planning and performance. Through the investigation of simultaneous equations in a structural equation model, we find that flexibility mediates the relationship between strategic planning and performance. Both operational and financial flexibility mediate the influence of strategic planning on financial performance, while structural and technological flexibility mediate its influence on non-financial performance. These are new insights that have not been empirically investigated in the literature.

In previous studies of strategic planning and performance, where generally a bi-variate method for addressing the strategic planning and performance relationship has been used, the results have been equivocal and inconclusive. These mediation effects from the four types of flexibility are an explanation for these equivocal results, suggesting that a bi-variate method is not appropriate. Mediation in the current model means that the impact of strategic planning on performance happens through flexibility, in that flexibility is an influence that facilitates the impact of strategic planning on performance. Hence, without flexibility as a mediating variable in the model, the actual relationship between strategic planning and performance is unlikely to be demonstrated.

There are several implications of these results for both theory and managers. Although strategic planning is a process for anticipating environmental turbulence, the logical sequential process often prescribed in the literature, is not enough to influence performance. Flexibility in decisions is needed to change operational issues, such as products and services or their production, and to change financial issues, such as capital and gearing, in order to impact on financial performance. Similarly, flexibility in decisions is needed to change structural issues,
such as managerial style and expertise, and to change technological issues, such as production technology and software, in order to impact on non-financial performance. The results suggest that the influence of strategic planning is more effective when such changes are made. While financial performance is improved through operational and financial flexibility, and non-financial performance is improved through structural and technological flexibility, the results found no relationship between non-financial performance and financial performance. Hence managers focusing on structural and technological flexibility will see improvements in employee morale and retention, but not in financial returns. Managers seeking purely financial returns should focus on operational and financial flexibility and not structural and technological.

Appropriate flexibility will, however, be necessary for effective mediation. Implications here are that managers will firstly be able to anticipate environmental turbulence over the period of the strategic plan, and will also be able to monitor change over this period. Second, flexibility requires managerial ability to generate appropriate alternative decision options with respect to operations, finance, structure and technology, in advance of when environmental turbulence is likely to arise over the period of the strategic plan. Flexibility requires managers to be in a preparatory or ex-ante state. Third, to be flexible managers must be willing to consider these decision options, some of which may entail unfamiliar decisions and risk, as and when there is environmental turbulence and opportunities and threats arise. Fourth, managers must be willing to take appropriate decisions about changing their operations, finance, structure or technology, in order to pursue the necessary flexibility to impact on their performance. Fifth, managers must have capabilities to exploit planned flexibility, by ensuring that operational, financial, structural and technological changes are effective in allowing the company to adapt to new opportunities and threats. Finally, managers must implement necessary and important change effectively and efficiently, in order to realize the anticipated benefits of planned change (Naveh et al., 2006) The consequences of such adaptations could, of course, be far reaching, having major impact on product/service offerings in the market place, major changes to financial gearing, major changes to the management of the company, and consequences for competitive advantage and the next round of strategic planning.

The above implications suggest several directions for future research. Clearly most of the above implications could be investigated to pursue further understanding of how the process of flexibility works together with strategic planning to impact on performance. Some of these issues could be incorporated into the model for further latent path analysis, but some may be antecedents to strategic planning, which in turn may influence the effectiveness of strategic planning.

6. Limitations

The limitations of the study are now discussed. A cross-sectional approach to data collection has inherent limitations, and while the issue of common method variance has been discussed under questionnaire administration, generalizability of the results is now addressed. While the rationale for the research design is sound, any claims of generalizability of the results would be false. The results are statistically sound, and present interesting theoretical and practical insight with a specific national and industrial context. Further empirical testing must take place in order to claim any generalizability of the findings.

Causality is a further issue with the SEM approach used to test the theoretical model. While association, isolation and directionality are cited as three conditions constituting a causal relationship (Bollen, 1989), SEM satisfies only the association and isolation criteria clearly. However, as theoretical support is available for the direction of causality presented in the theoretical model, causality is assumed (Kelloway, 1998; Hair et al., 1998).

Appendix 1. Measures used

<table>
<thead>
<tr>
<th>Flexibility: operational, financial, structural and technological</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type</strong></td>
</tr>
<tr>
<td>----------</td>
</tr>
<tr>
<td>Operational flexibility</td>
</tr>
<tr>
<td>Financial flexibility</td>
</tr>
<tr>
<td>Structural flexibility</td>
</tr>
<tr>
<td>Technological flexibility</td>
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<tr>
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</tr>
</tbody>
</table>

Strategic planning (adapted from Boyd and Reuning-Elliot, 1998)

<table>
<thead>
<tr>
<th>Scale item</th>
<th><strong>Item</strong></th>
<th><strong>Scale Cronbach</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mission statement</td>
<td>0.84</td>
</tr>
<tr>
<td></td>
<td>Analysis of competitor trends</td>
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</tr>
<tr>
<td></td>
<td>Analysis of supplier trends</td>
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</tr>
<tr>
<td></td>
<td>Analysis of market trends</td>
<td>0.72</td>
</tr>
<tr>
<td></td>
<td>Internal analysis</td>
<td>0.62 0.81</td>
</tr>
<tr>
<td></td>
<td>Long term, corporate level strategies</td>
<td>0.67</td>
</tr>
<tr>
<td></td>
<td>Medium term, business level strategies</td>
<td>0.70</td>
</tr>
<tr>
<td></td>
<td>Short term, functional level strategies</td>
<td>0.50</td>
</tr>
<tr>
<td></td>
<td>barriers to strategy implementation</td>
<td>0.61</td>
</tr>
<tr>
<td></td>
<td>Analysis of contingencies</td>
<td>0.69</td>
</tr>
<tr>
<td></td>
<td>On-going evaluation and control</td>
<td>0.73</td>
</tr>
</tbody>
</table>
Financial and non-financial performance (adapted from Thomas, 1988; Cadogan et al., 2002)

<table>
<thead>
<tr>
<th>Financial performance</th>
<th>Item</th>
<th>Scale Cronbach</th>
</tr>
</thead>
<tbody>
<tr>
<td>scale item</td>
<td>α</td>
<td>α</td>
</tr>
<tr>
<td>Profit growth</td>
<td>0.81</td>
<td></td>
</tr>
<tr>
<td>Sales growth</td>
<td>0.94</td>
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<tr>
<td>Market share</td>
<td>0.89</td>
<td>0.85</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Non-financial performance</th>
<th>Item</th>
<th>Scale Cronbach</th>
</tr>
</thead>
<tbody>
<tr>
<td>scale item</td>
<td>α</td>
<td>α</td>
</tr>
<tr>
<td>Employee satisfaction</td>
<td>0.89</td>
<td></td>
</tr>
<tr>
<td>Employee retention</td>
<td>0.91</td>
<td>0.78</td>
</tr>
</tbody>
</table>

References

Barley SR. Technology as an occasion for structuring: evidence from observations of CT scanners and the social order of radiology departments. Adm Sci Q 1986;31:78–108.


