Strategic Orientation, Environmental Uncertainty and Organisational Effectiveness: A Test of Information Scope as a Mediator

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ABSTRACT

This research investigates whether the importance of information scope for decision making mediates the relations between dimensions of strategic orientation, perceived environmental uncertainty (PEU) and organisational effectiveness in the retail pharmacy industry. Data from a survey of NSW pharmacies was analysed using structural equation modelling. The results provide only mixed support for the hypotheses tested. In particular, the direct organisational benefits and mediating role of broad scope information were disconfirmed and information scope was not found to assist with PEU. However, two dimensions of strategic orientation – product-market development and market scope – were positively associated with information scope.

Keywords: information systems, uncertainty, strategic orientation, pharmacies.

INTRODUCTION

Information scope refers to the breadth of information from the management accounting and information systems (MAIS) and is considered to be externally focused, quantified and future-orientated (Chenhall and Morris, 1986). This present study considers whether information scope mediates the relations between PEU, dimensions of strategic orientation and organisational effectiveness in the context of the retail pharmacy industry. The industry currently faces a number of strategic opportunities and threats that make it an interesting case study for examining the effects of broadening the information used in decision-making and its linkages with adopted strategic orientations and levels of uncertainty perceived by the owner/manager. Currently, the industry is partially regulated with State government regulations related to ownership and geographic dispersion of pharmacies and Federal government laws restricting price competition for medicines subsidised under the Pharmaceutical Benefits Scheme (PBS). However, continuation of this status is uncertain due to pressures from free trade arrangements, competition policy reform, on-line pharmaceutical services and the interest of large supermarkets in gaining a share of the market in prescription drugs. Front-shop (non-dispensary) retail activities represent an area of potential growth for pharmacies but
this puts them in direct competition with supermarket chains and other providers of similar products and services. Banner group membership is a further avenue for opportunities, with banner groups providing ‘brand’ positioning and a variety of business development services.

LITERATURE REVIEW

The Link between PEU and Information Scope

PEU has been defined as a ‘strategic-level variable pertaining to top management’s perceptions of uncertainties in the external environment’ (Tymon et al., 1998, p. 23). The term ‘uncertainty’ in PEU has been defined by Milliken (1987, p. 136) as ‘an individual’s perceived inability to predict something accurately’. In uncertain environments, planning is made difficult due to the unpredictability of future events and more information is needed to help managers understand situations and make decisions (Chenhall & Morris, 1986; Mia, 1993). Since the environment is the source of uncertainty, additional information about that environment is required (Chenhall & Morris, 1986). It follows that this information is likely to be externally based, future-oriented and, since uncertainty may reduce the ability to quantify the environment and its effects on the organisation, qualitative (Ewusi-Mensah, 1981).

Despite this, in smaller firms, such as the majority of retail pharmacies, lack of resources may mean that broad scope information is not sought out to deal with uncertainty and instead owner/managers may rely on intuition and heuristics (Simon, 1987) so that ‘satisficing’ is the more normal mode of decision making in these firms. Also, as Gordon and Miller (1976) have suggested, highly centralised power can make information overload a potential problem, so that intuition is relied upon more often, rather than seeking out broad scope information. However, there is strong empirical evidence in a manufacturing firm context to suggest that greater PEU is associated with greater importance and usefulness of information scope in making organisational decisions (Gordon & Narayanan, 1984; Chenhall & Morris, 1986; Chong & Chong, 1997; Mangaliso, 1995; Mia, 1993), thus suggesting the following hypothesis:
H$_1$: Information scope is positively associated with PEU.

**Links between Dimensions of Strategic Orientation and Information Scope**

There has been burgeoning interest in the link between strategy and MAIS in recent years (Kald, Nilsson & Rapp, 2000; Langfield-Smith, 1997) and it has been proposed that firms need to align their MAIS with their strategy in order to achieve competitive advantage (e.g. Dent, 1990; Kald et al., 2000; Kaplan & Norton, 1992; Simons, 1987). Studies of strategy and information scope have all conceptualised strategy using Miles and Snow’s (1978) typology (Abernethy & Guthrie, 1994; Boulianne, 2002; Chong & Chong, 1997; Joiner & Wilkinson, 2000). The present study also relies on this typology, focusing on the dimensions of strategic orientation implicit within Miles and Snow’s (1978) theory. These dimensions are product-market development, focus on efficiency, market scope and futurity (Doty et al., 1993), each being relevant to the description of Miles and Snow’s (1978) prospectors, defenders and analysers.

*Product-market development* closely matches Venkatraman’s (1989) proactiveness dimension of strategic orientation and reflects continuous search for opportunities and experimentation with responses to environmental changes. Interpretation of Miles and Snow’s (1978) theory deems orientation towards product-market development as the most distinguishing feature amongst the three ideal types of prospectors, analysers and defenders (Segev, 1989). There is some evidence to suggest that broad scope information is most relevant to prospectors (Chong and Chong 1997; Simons’ 1987; Guilding 1999), who emphasise product-market development. For pharmacies, this information might be related to new products and services on offer in the market or being developed by suppliers and competitors, as well as potential future developments and predictions related to customer needs.

H$_{2a}$: Information scope is positively associated with product-market development.

*Focus on efficiency* reflects an emphasis on the development of efficient operations that enable lower cost positioning within the market (Porter, 1980) and is manifested in timely provision of goods and
services along with the provision of low cost products and services (Doty et al., 1993). This dimension of strategic orientation is not expected to be linked with the importance of information scope, since a focus on efficiency is likely to rely heavily on quantitative information related to costs. Therefore, no relation between information scope and focus on efficiency is hypothesised.

**Futurity** concerns the notion of organisational preparedness for, and positioning in, future environmental situations (Morgan & Strong, 1997) and is manifested in an emphasis on formal, detailed forecasting and planning (Doty et al., 1993). It is therefore expected to be positively associated with information scope through the need for *ex ante* information for planning and other decision purposes (Gordon & Miller, 1976) as well as examining potential future opportunities and threats. This information will be externally-based and include non-financial elements.

**H₂b:** Information scope is positively associated with futurity.

**Market scope** refers to the breadth of product and service provision (Segev, 1989), as well as heterogeneity in customers and geographic area of operation (Besanko, Dranove & Shanley, 2000; Dess & Davis, 1984). Organisations oriented towards a broad market scope increase the complexity of their business environment through some combination of a diversity of customers, a broader range of products and perhaps a wider geographic coverage. This suggests that a broader range of external information would be required. For example, Guilding and Cravens (2000) have found broad market coverage to be associated with use of a variety of strategic management accounting techniques, many of which would require broad scope information as inputs.

**H₂c:** Information scope is positively associated with market scope.

**Consequences for Organisational Effectiveness**

The literature suggests a mediating role for MAIS between contextual (or contingency) variables such as strategy or PEU and organisational effectiveness (Otley, 1980; Fisher, 1995; Tyman et al., 1998;
Moores and Chenhall, 1994). Information scope, as part of the MAIS, is similarly expected to have a role in transforming strategies and uncertainties into more informed decisions that, in turn, lead to improved performance. In committing to a strategy and facing decisions relating to the implementation of that strategy, information will take on greater importance for facilitating the decision making process. The more appropriate this information is to the decision, the better decisions should be, leading to improved organisational effectiveness. Evidence certainly suggests a positive link between information scope and organisational or strategic business unit effectiveness (Abernethy & Guthrie, 1994; Boulianne, 2002; Chong & Chong, 1997) and there is also support for a mediating role of information scope in relation to PEU and strategy (Chong & Chong, 1997). In order for information scope to have a mediating role, PEU and dimensions of strategic orientation must be associated with organisational effectiveness. Greater uncertainty about the external environment is thought to lead to lower organisational performance in the absence of any mechanisms to absorb that uncertainty (Burns and Stalker, 1961; Thompson, 1967; Jauch and Kraft, 1986) and empirical evidence generally supports this proposition (Gerloff, Muir and Bodensteiner, 1991). There is also evidence to support associations between dimensions of strategic orientation and performance (Venkatraman 1989; Morgan and Strong, 2003; Ketchen et al., 1993; Chaganti et al., 1989). Altogether the evidence suggests that:

H₃a: The association between PEU and organisational effectiveness is indirect, operating through information scope.

H₃b: The associations between dimensions of strategic orientation (product-market development, futurity and market scope) and organisational effectiveness are indirect, operating through information scope.

Figure 1 summarises the hypothesised model tested in this study. Associations between the contingent variables and organisational effectiveness, with the exception of focus on efficiency, are expected to decrease as a result of the mediating effect of information scope and so are shown in the diagram as dotted lines. Formal hypotheses were stated only for the links that relate to information scope but a
greater focus on efficiency, as suggested above, is expected to be linked to higher organisational effectiveness. Directions of associations between the contingent variables are not asserted and are only specified in terms of covariance. Associations between focus on efficiency, futurity and product market development were suggested by Venkatraman’s (1989) study of dimensions of strategic orientation but market scope is not expected to be associated with the other dimensions because, theoretically, any level of market scope could be chosen to combine with a high or low emphasis on product-market development, futurity and focus on efficiency. This is suggested by Porter’s (1980) work and supported by empirical studies (Dess & Davis, 1984; Miller, 1988). The literature on relations between PEU and the dimensions of strategic orientation is somewhat conflicting but suggests PEU may be associated with focus on efficiency, futurity and product-market development (Chong & Chong, 1997; Govindarajan, 1988; Miles & Snow, 1978; Miller, Dröge & Toulouse, 1988; Tan & Litschert, 1994). Based on Miller’s (1988) study, PEU and market scope are not expected to be associated.

Figure 1: The Hypothesised Mediation Model

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1 Chong and Chong’s (1997) mediation model included a link from strategy to PEU. A causal direction is not asserted in the present research because the literature about the direction of such a link is ambiguous. For example, in contrast to Chong and Chong (1997), Tyman, Stout and Shaw (1998) argue that PEU affects strategy, while others suggest bi-directional causality (Jauch & Kraft, 1986; Miller, Dröge & Toulouse, 1988).
METHOD

The sample used to test the hypothesised model was composed of owner/managers of retail pharmacy businesses in New South Wales (NSW), Australia. The population frame was developed from an extract of the Register of Pharmacies for NSW, which was provided by the Pharmacy Board of NSW. The extract was used to identify ownership networks resulting in the unit of analysis being discrete retail pharmacy business networks. A total of 1340 such businesses were identified and surveyed. One owner from each pharmacy ‘network’ was chosen at random to be the informant for that pharmacy business.

The first contact with informants was through a mailed “prenotice letter” (Dillman, 2000, p. 156). Just over a week later, the questionnaires were mailed to informants, along with a reply paid envelope and a cover letter advising informants that the questionnaire was given an A1 approval rating by the Pharmacy Guild of Australia. This, along with an offer for a summary of results, was expected to improve response rate. Telephone follow-up began two weeks later, with 300 contacts made.
Of the 1340 questionnaires sent out, three were undeliverable, managers that were not owners returned eighteen, owners not involved in managing the business returned ten and a manager representing a friendly society returned one. The latter three groups were excluded from analysis. Four questionnaires were returned after analysis had begun, so were not included, and four were unusable due to a large proportion of missing data. Analysis was based on a total of 242 useable questionnaires. Based on an ineligibility rate estimated using the above information and known ineligibles from follow-up, the adjusted sample size was 1186, giving a useable response rate of 20.4%.

The possibility of non-response bias was assessed by: (1) trend analysis, statistically comparing early and late respondents; and (2) comparison with secondary data sources, specifically the NSW state averages from the 2001 Guild Digest (Pharmacy Guild of Australia, 2001), which is an annual financial performance survey of retail pharmacies. No significant differences were detected in trend analysis and the sample compared well to Guild Digest data.

The average age of respondent owner/managers was 49 years. Around half were sole owners of their pharmacy business and 35% had one partner. Most of the businesses consisted of a single pharmacy outlet (81%). The average business had 7.8 full-time equivalent employees, with the average per outlet being 5.6 such employees. Average business sales were $2.72 million but there was considerable skew in this data, ranging from $420,000 to $22 million. On a per outlet basis, average sales were $1.94 million, with a $6.67 million maximum. The average annual growth in sales over the previous three years was 10.5% and front shop (non-dispensary) sales represented a third of total sales on average.

All measures were based on existing instruments, with minor changes based on exploratory research, industry participant and academic review, and pre-tests to ensure relevance to the industry under study. PEU was measured using a modified version of Govindarajan’s (1984) instrument. One item, ‘labour union actions’, was excluded as exploratory research indicated it was not relevant to the industry under study. One item, ‘financial/capital market’, was added to ensure this potential source of uncertainty included in Miles and Snow’s (1978) instrument was covered. Dimensions of strategic
orientation were measured using the instrument employed and tested by Doty et al. (1993) and replicated for one or more dimensions by other studies (Chattopadhyay, Glick & Huber, 2001; Vorhies & Harker, 2000). Realised rather than intended strategy is the focus. Modification to the original instrument involved adding an item to each of the futurity and market scope dimensions in order to improve reliability. The item added to the futurity measure was related to doing detailed planning before taking any action. The item added to the market scope measure tapped geographic scope (Chaganti et al., 1989; Dess & Davis, 1984; Kean, Niemeyer & Miller, 1996) and all items on this measure were reverse scored prior to data analysis because high raw scores represented market focus rather than scope. Information scope was measured using the six scope items from Chenhall and Morris (1986). Respondents were asked to indicate the importance of information to their business decision making. Organisational effectiveness was measured using a modified version of Govindarajan’s (1984) instrument, taking into consideration changes by the original developer in a later version of the instrument (Govindarajan, 1988).

RESULTS

Structural equation modelling (SEM) was used to test the hypothesised model depicted earlier in Figure 1. A full measurement and structural model was too large to estimate given the available sample size so confirmatory factor analysis (CFA) was used to test a measurement model for each construct separately (Jöreskog, 1993). Composite variables were then created and used in the structural model with their measurement properties fixed (Baumgartner & Homburg, 1996; Hair et al., 1998; Loehlin, 1998). Goodness-of-fit for both measurement and structural models was assessed using several fit indices. The significance of the chi-square statistic was considered but, following recommendations in the literature, was not used as the sole basis for determining model fit (Bollen & Long, 1993, p. 6). Other fit indices considered were: (1) the goodness-of-fit index (GFI), (2) the Tucker-Lewis index (TLI), (3) the root mean square error of approximation (RMSEA) and (4) the standardised root mean square residual (SRMR). Levels for each of these indices representing adequate fit are 0.90 or greater for the GFI, 0.95 or greater for the TLI, 0.10 or less for the RMSEA.
and 0.05 or less for the SRMR (Byrne, 2001; Hair et al., 1998; Kaplan, 2000). Maximum likelihood estimation was employed.

**Measure Validation**

Measures were validated by demonstrating their adequacy in terms of unidimensionality, reliability, convergent validity and discriminant validity (Dunn, Seaker & Waller, 1994; Garver & Mentzer, 1999; Ping, 2004). A split-sample strategy was employed to facilitate cross-validation if the hypothesised measurement model did not fit the data and required modification. The full sample of 242 cases was randomly split into two and all initially hypothesised models were tested using Sample A (n = 120). All modified models were tested using Sample B (n = 122). Estimates, reliabilities and validity testing for each accepted measurement model are reported based on the full sample (n = 242). Table 1 provides measures of overall fit for each of the final measurement models. PEU and organisational effectiveness were modelled as second-order factors. Consideration of the fit indices reported in Table 1 indicates that most meet the levels noted earlier in this section as representing adequate fit.

<table>
<thead>
<tr>
<th>Measurement Model</th>
<th>$\chi^2$</th>
<th>df</th>
<th>p</th>
<th>GFI</th>
<th>TLI</th>
<th>RMSEA</th>
<th>SRMR</th>
<th>Composite Reliability</th>
</tr>
</thead>
<tbody>
<tr>
<td>PEU</td>
<td>18.0</td>
<td>9</td>
<td>.04</td>
<td>.98</td>
<td>.95</td>
<td>.06</td>
<td>.04</td>
<td>.73</td>
</tr>
<tr>
<td>Product-market development</td>
<td>3.3</td>
<td>1</td>
<td>.07</td>
<td>.99</td>
<td>.96</td>
<td>.10</td>
<td>.03</td>
<td>.86</td>
</tr>
<tr>
<td>Focus on Efficiency</td>
<td>.16</td>
<td>1</td>
<td>.69</td>
<td>1.00</td>
<td>1.00</td>
<td>.00</td>
<td>.00</td>
<td>.77</td>
</tr>
<tr>
<td>Market Scope</td>
<td>.01</td>
<td>1</td>
<td>.92</td>
<td>1.00</td>
<td>1.00</td>
<td>.00</td>
<td>.00</td>
<td>.88</td>
</tr>
<tr>
<td>Futurity</td>
<td>.01</td>
<td>1</td>
<td>.94</td>
<td>1.00</td>
<td>1.00</td>
<td>.00</td>
<td>.00</td>
<td>.83</td>
</tr>
<tr>
<td>Information Scope</td>
<td>2.7</td>
<td>2</td>
<td>.26</td>
<td>1.00</td>
<td>.99</td>
<td>.04</td>
<td>.02</td>
<td>.85</td>
</tr>
<tr>
<td>Organisational Effectiveness</td>
<td>56.2</td>
<td>27</td>
<td>&lt;.01</td>
<td>.96</td>
<td>.96</td>
<td>.07</td>
<td>.05</td>
<td>.86</td>
</tr>
</tbody>
</table>

Unidimensionality was indicated by overall model fit and by significant loadings for each indicator on the relevant construct (Dunn et al., 1994; Gerbing & Anderson, 1988). The significant indicator
loadings also provided evidence of the convergent validity of the individual items making up the measure (Anderson & Gerbing, 1988). Discriminant validity was examined by chi-square difference tests (Anderson & Gerbing, 1988). All difference tests were significant \( p < 0.001 \), indicating that all constructs exhibited discriminant validity. The composite reliability for each construct (shown in Table 1) was above acceptable limits.

**Structural Model Testing**

Composite variables were created using factor scores, with the confirmatory factor analysis indicator loadings used to weight items in the composite. Each composite measure was then standardised and specified, with measurement its measurement properties fixed, as a single indicator of a latent variable represented in the hypothesised structural model. In addition to effectively reducing the necessary sample size, the use of composites in this manner has the added benefit of fixing the measurement properties of the model so that findings regarding structural relations can be unambiguously interpreted (Ping, 2004) with ‘distractions from the measurement model’ eliminated (Loehlin, 1998, p. 199).

The overall model fit indices suggested a well-fitting model \( (\chi^2 = 5.4, \text{df} = 5, p = 0.36; \text{GFI} = 0.99; \text{TLI} = 0.99; \text{RMSEA} = 0.02; \text{SRMR} = 0.04) \). Altogether PEU and the dimensions of strategic orientation explained 15% of the variance in information scope and the model explained 43% of the variance in organisational effectiveness. With a well-fitting model established, hypotheses were tested using the structural parameter estimates from the model, presented in Table 2.

Table 2: Structural Model Parameter Estimates
<table>
<thead>
<tr>
<th>Path</th>
<th>Unstandardised estimatea</th>
<th>Critical Ratio</th>
<th>( p ) (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PEU → Information Scope</td>
<td>-0.02</td>
<td>-0.27</td>
<td>0.787</td>
</tr>
<tr>
<td>Product-Market Development → Information Scope</td>
<td>0.25</td>
<td>2.59</td>
<td>0.010</td>
</tr>
<tr>
<td>Futurity → Information Scope</td>
<td>0.12</td>
<td>1.21</td>
<td>0.226</td>
</tr>
<tr>
<td>Market Scope → Information Scope</td>
<td>0.19</td>
<td>2.70</td>
<td>0.007</td>
</tr>
<tr>
<td>Focus on Efficiency → Organisational Effectiveness</td>
<td>0.22</td>
<td>2.66</td>
<td>0.008</td>
</tr>
<tr>
<td>Futurity → Organisational Effectiveness</td>
<td>0.14</td>
<td>1.63</td>
<td>0.102</td>
</tr>
<tr>
<td>Product-Market Development → Organisational Effectiveness</td>
<td>0.21</td>
<td>2.29</td>
<td>0.022</td>
</tr>
<tr>
<td>Market Scope → Organisational Effectiveness</td>
<td>0.21</td>
<td>3.41</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>PEU → Organisational Effectiveness</td>
<td>-0.23</td>
<td>-3.07</td>
<td>0.002</td>
</tr>
<tr>
<td>Information Scope → Organisational Effectiveness</td>
<td>0.08</td>
<td>1.21</td>
<td>0.228</td>
</tr>
</tbody>
</table>

* Unstandardised estimates are equal to standardised estimates to within three decimal places because composite variables were standardised.

There was no support for \( H_1 \) because, as indicated in the first line of Table 2, the path from PEU to information scope was not significant. This suggests there is no association between information scope and PEU. There was also no support for \( H_{2b} \), because although the path from futurity to information scope was positive as hypothesised, it was not significant. This suggests there is no association between information scope and futurity.

Hypothesis \( H_{2a} \) was supported, with the path from product-market development to information scope being positive and significant (\( p = 0.01 \)), indicating that greater orientation towards a product-market development strategy was associated with increasing importance of broad scope information for decision-making. There was also support for \( H_{2c} \), with the path from market scope to information scope being positive and significant (\( p < 0.01 \)), indicating that a broader market scope was associated with greater importance of broad scope information for decision-making.
It is also noted that the model’s standardised residual covariances provided no indication that an association between focus on efficiency and information scope should have been estimated. Thus earlier discussion suggesting that there was no theoretical reason to expect a link between these variables was supported by the data.

Turning now to the explanation of organisational effectiveness, the model estimates provided no support for the mediation hypotheses H₃a and H₃b because the path between information scope and organisational effectiveness, although positive as expected, was not significant (see Table 2, last line). Therefore, because the latter link in the indirect chain of causality (information scope to organisational effectiveness) could not be confirmed, there could be no support for any of the mediation hypotheses. This becomes clear upon examination of an effects decomposition based on the standardised model, shown in Table 3. This table indicates that the bivariate correlation between the latent variables information scope and organisational effectiveness \( (r = 0.31) \) was largely spurious (the standardised spurious effect being 0.23). Essentially all of the effects of PEU and the dimensions of strategic orientation on organisational effectiveness were direct or spurious (unanalysed in the case of these exogenous variables) rather than indirect through information scope. Thus it can be concluded that there is no support for the mediation hypotheses H₃a and H₃b because the associations between PEU, product-market development, futurity and market scope, on the one hand, and organisational effectiveness on the other do not operate through information scope.

Table 3: Decomposition of Standardised Effects on Organisational Effectiveness
DISCUSSION AND CONCLUSIONS

The results provide mixed support for the hypotheses tested in this study. While the product-market development and market scope dimensions of strategic orientation were positively associated with information scope, suggestions in the literature about the direct organisational benefits and mediating role of broad scope information were disconfirmed in the retail pharmacy context. So, while it would appear that pharmacy owner/managers pursuing such orientations consider broad scope information important for supporting their decisions, they do not appear to be doing so in a way that provides direct benefits. This is in contrast to their owner/manager peers in manufacturing firms, where previous studies have found support for a mediating role for information scope (Chong and Chong 1997; Mia 1993) perhaps reflecting the more competitive nature of those other industries. The threats facing the retail pharmacy industry in recent years may not yet have translated into effective incorporation of broad scope information into systems and processes.
Most of the previous evidence relating PEU and information scope, as well as the theory underlying, relates to a large firm context. This study found no evidence of a link between PEU and information scope and suggests that, in the context of small firms with relatively few employees, information and task workloads may be concentrated in such a way that information overload is reached at a much earlier stage than in large firms so that greater PEU simply generates overload, which drives decision making toward intuition. Decision makers are limited by their capabilities, attitudes and available resources, including less than perfect information (Simon, 1955) and in larger firms they may have access to greater organisational resources such as specialist advice, more timely information from broad-based systems and pooling of resources during group decision-making. These factors could potentially lead to more and better quality broad scope information being effectively incorporated into the decision making process. Furthermore, in a large organisation information may be required to demonstrate intended rationality and legitimise decisions, even if those decisions relied initially on intuition. (See, for example, Vandenbosch (1999), who discusses the literature associated with uses of management information and provides evidence of the importance of using information for legitimising decisions.) Furthermore, some managers make no attempt to reduce uncertainty (Jauch & Kraft, 1986) and instead either ignore uncertainty or attribute it to factors outside of their control. Neither response involves seeking information but managers who are required to justify their positions to others (as in larger firms) may be less able to assume away or ignore uncertainty.

The results of this research indicate the need for rethinking and investigating causal relations between concepts in theoretical models of MAIS. For example, the causal sequences suggested by models such as that presented by Tyman, Stout and Shaw (1998) were not supported by this research for information scope. Although clearly a cross-sectional study such as this cannot provide proof on the issue of causation, the findings are ‘suggestive’ (Pedhazur, 1982, p. 579) of different causal linkages. Instead of strategies influencing the importance of information for decision making, the causal direction may be reversed or perhaps reciprocal. For example, Simons (1995) suggests that interactive control systems can ‘encourage new ideas and experimentation’ (p. 92) and ‘provoke the emergence of new initiatives and strategies’ (p. 180), suggesting that such control systems ‘should be considered as
an important input to strategy formation’ (Simons, 1990, p. 138). Interactive control systems will often make use of broad scope information, since their main purpose is ‘to focus organisational attention on strategic uncertainties’ (Simons, 1995, p. 180), thus suggesting a reversed causal direction to that tested here. Simons (1990) also presents the relation as reciprocal, explaining how management’s strategic vision highlights strategic uncertainties that determine the important information on which to focus. The control system providing this information is then chosen for interactive use, signalling what is important, stimulating learning and creating new strategic ideas. Following this line of reasoning, information important to managers in their decision making may therefore influence and perhaps improve their strategic ideas as well as their implementation of those ideas, thus improving organisational effectiveness. These issues should be considered in future research.

Finally, the results of this study have implications for owner/managers of retail pharmacies and for organisations interested in the effectiveness of those businesses. Firstly, the supported hypotheses suggest that where an innovative and proactive orientation or a greater breadth of product and service provision is being pursued, broad scope information may be helpful for managerial decision making in this industry. This kind of information is often provided by banner groups (intermediaries in the retail pharmacy value chain, often referred to as business ‘brands’, that include, for example, ‘Soul Pattinson’ and ‘chemworld’), other large suppliers, government and professional associations. Secondly, the pursuit of certain strategic orientations may improve business performance. Owner/managers could pursue efficiencies and attempt to increase the breadth of their product and service range as well as their market in terms of geographic and customer range (while working within the limits of regulation – at least for the time being). Thirdly, because PEU was negatively associated with organisational effectiveness, the results suggest that high PEU should not be ignored.
REFERENCES


