Business relationships and perceived environmental uncertainty: should I stay or should I go now?

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ABSTRACT

This paper investigates the association between perceived environmental uncertainty (PEU) and instrumental, affective and normative commitment, testing the null hypotheses that there is no significant association between PEU and the three components of commitment. The results indicate that there is a negative direct association between instrumental and normative commitment and PEU but no significant direct association between affective commitment and PEU (however there is a strong indirect effect). The conclusions drawn are that feelings of attachment, obligation and perceived need (affective, normative and instrumental commitment respectively) dissipate in environments perceived to be turbulent. Implications for the management of business-to-business relationships are canvassed.

Keywords: perceived environmental uncertainty; PEU; commitment; channels

INTRODUCTION

Perceived environmental uncertainty and commitment represent salient concepts that have received significant scholarly attention. They have been shown to influence firm behaviour; performance and market structures. However their relationship has never been investigated even though it is both logical that one should exist and significant given our attempts to understand firm and market behaviour.

In essence it would appear reasonable to argue that the level of PEU will influence commitment within dyadic and network relationships in ways similar to interdependence and power relationships. As such an understanding of the PEU / commitment relationship is likely to provide insight that will
inform both a conceptual understanding of market structures and the development of tactical and strategic responses by firms seeking to build and manage business relationships.

LITERATURE REVIEW

Perceived environmental uncertainty (PEU) is a prominent concept in many seminal organisational theories (for example, Burns and Stalker 1961; Lawrence and Lorsch 1967; Miles and Snow 1978; Thompson 1967) and has been considered in a range of other business-related fields such as strategic management, information systems, accounting, and auditing. It has been defined as a “strategic-level variable pertaining to top management’s perceptions of uncertainties in the external environment” (Tymon, Stout, and Shaw 1998, p. 23), with the term uncertainty being defined by Milliken (1987, p. 136) as “an individual’s perceived inability to predict something accurately”. It is also noted that the firm’s external environment is specifically identified as the source of uncertainty, with the internal environment excluded from the concept’s domain (Daft, Sormunen, and Parks 1988; Milliken 1987; Tymon, Stout, and Shaw 1998). Outside institutions or forces within the firm’s task environment are included, these being most likely to have significant or direct impacts on the firm, with examples being customers, competitors, suppliers of materials and capital, and regulatory groups (Miles and Snow 1978; Thompson 1967; Narayanan and Nath 1993).

Although environmental uncertainty can be alternatively characterised as an objective and perceptual concept (Jauch and Kraft 1986; Milliken 1987), it has been argued that objective uncertainty in the environment may not directly impact on decisions and operations within an organisation because decision makers stand between the objective environment and the organisation’s activities and strategic choices (Ford and Schellenberg 1982). Therefore, it is how these decision makers perceive the environment and its uncertainties that determines managerial response (Jauch and Kraft 1986; Sawyerr 1993), with Tan and Litschert (1994, p. 6) arguing that “only factors that participants perceive can enter into their strategy formulation behaviour”. Therefore, researchers have focussed on perceived environmental uncertainty.
Commitment evolved as a focal concept in the organisational behaviour literature with seminal work defining organisational commitment as ‘an active relationship with the organisation such that individuals are willing to give something of themselves in order to contribute to the organization’s wellbeing’ (Mowday, 1979, p. 23). Mowday et al. (1979) developed a single construct to measure organisational commitment using fifteen items in a measure titled the Organizational Commitment Questionnaire (OCQ). This scale was found reliable across several populations by Mowday et al and in a replication using a shortened OCQ scale (Kalleberg & Reve, 1992).

Subsequently, a series of articles developed and refined commitment both conceptually and operationally within the context of organisational behaviour (Allen & Meyer, 1990; Meyer, Allen & Gellatly, 1990; Meyer, Allen & Smith, 1993; Meyer, 1997). This culminated most recently in a meta-analysis finding that there are three forms of commitment; continuance, affective and normative; which are related yet distinguishable both in conceptual terms and on the basis of their associations with antecedents and outcomes (Meyer, Stanley, Herscovitch & Topolnytsky, 2002). Allen and Meyer (1990, p.1) describe the affective component as referring to employees’ emotional attachment to, identification with, and involvement in, the organization; the continuance component as referring to the costs that employees associate with leaving the organization; and the normative component as ‘referring to employees’ feelings of obligation to remain with the organization.

In the marketing literature, Morgan and Hunt (1994) provided what was to become a widely cited study into commitment within the business-to-business context using a one component model. In this study commitment was defined as ‘an exchange partner believing that an ongoing relationship with another is so important as to warrant maximum efforts at maintaining it’ (p.23), with a similarity being identified between this definition and one used in a prior study investigating inter and intra business relationships (Moorman, Zaltman & Deshpande, 1992).

Other researchers have suggested however that marketing literature should be evolving toward adoption of a multi-component model of commitment (Kim & Frazier, 1997). For example, two component models in business-to-business settings have been utilised (Geyskens, Steenkamp &
Scheer, 1996; Gilliland & Bello, 2002; Brown, Lusch & Nicholson, 1995) and most recently a three component model conceptually aligned to the three component model developed in the organisational behaviour literature (Kelly, 2004). In this paper a three component model is adopted given that current arguments indicate that this is the most conceptually sound configuration.

An investigation of the association between PEU and commitment will add to our understanding of the structural and social bonds that act as antecedents to commitment, joining previously identified antecedents such as power (Kumar, Scheer & Steenkamp, 1995b; Mohr, Fisher & Nevin, 1996), idiosyncratic investments (Gundlach et al., 1995), relationship importance (Heide & John, 1990), interdependence (Ganesan, 1994; Lusch & Brown, 1996), relationship length (Heide & John, 1990) and trust (Morgan & Hunt, 1994). It is also an association that would appear logical given that commitment is often a response to market conditions that positions firms in relationships and networks that facilitate access to resources and capabilities. The association also warrants investigation given that understanding its nature will add to our ability to predict firm responses to variable market conditions and facilitate the development of tactics and strategies by firms engaged in the development and management of relationships and networks. Therefore this study tests the null hypothesis:

\( H_0: \) There is no significant association between PEU and the three components of commitment (instrumental, affective and normative).

**METHOD**

Data for this study was collected from owner/managers of community pharmacy businesses in New South Wales (NSW), Australia. Community pharmacies are independent retailers owned and operated by registered pharmacists or, in a limited number of cases that were excluded from analysis in this study, friendly societies and private hospitals. While the ownership structure and some aspects of their competitive environment are regulated by Federal and State Government laws, community pharmacies are becoming more business oriented as margins are squeezed and alternative competitors
are entering, or pressing to enter, the market. Community pharmacies represent the only channel through which prescription mediation can be sold to the general public, but they provide a range of other “front shop” goods and services.

The community pharmacy industry was chosen for this research because: (1) it is made up predominately of small firms, mainly due to government regulation that limits the number of pharmacies that can be owned by any one pharmacist to three; and (2) while pharmacies are generally owned by independent owner/operators, business relationships with suppliers can range from highly integrated to very loose, thus providing an appropriate setting for studying commitment in business relationships. Community pharmacy firms can effectively enter highly integrated business relationships by closely aligning themselves with “banner groups”. These are intermediaries in the retail pharmaceutical value chain that facilitate physical delivery of goods and services to community pharmacists from pharmaceutical manufacturers, pharmaceutical wholesalers and other suppliers. Notably, many banner groups are also owned by wholesalers, ‘muddying’ channel relationships in the industry. Banner groups also provide a range of training and support services to community pharmacies and are often referred to as brands given that many support the development and positioning of branded community pharmacies.

In-depth interviews and pre-testing were undertaken prior to the main survey. In-depth interviews were conducted with two representatives from pharmaceutical banner groups and two community pharmacists. This phase of the research enabled information to be gathered on industry-specific terminology, important external environment sectors, and dyad views on the business relationships and commitment to them. A draft questionnaire was then pre-tested with six community pharmacists and eight senior academics. Community pharmacists initially completed the survey with the researchers present so that any queries or problems could be discussed in detail and alterations made as required.

For the main survey, a 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 community 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. A pre-contact letter outlining the study was posted to them, followed a week later by the questionnaire.

In total, 268 useable questionnaires formed the basis of the data set analysed. Based on an ineligibility rate estimated using return information and known eligibles from a telephone follow-up involving 300 potential respondents, the adjusted sample size was calculated to be 1186, giving a useable response rate of 23 percent.\(^1\) Analysis for non-response bias included comparison of early and late respondents and comparison with the NSW state averages from the 2001 Guild Digest (Pharmacy Guild of Australia 2001), which is an annual financial performance survey of community pharmacies. No non-response bias was indicated.

The average age of respondent owner/managers was 49 years. Around half were sole owners of their pharmacy business and 35 percent had one partner. Most of the businesses consisted of a single pharmacy outlet (81 percent). 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 percent and front shop (non-dispensary) sales represented a third of total sales on average.

Measures of commitment and PEU 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. The measures are detailed in the Appendix.

\(^1\) Uncontrollable factors affecting response rate were several. It was discovered during follow-up that the survey was in competition with 3 other surveys and coincided with completion of both accreditation requirements and GST returns (BAS).
RESULTS

Analysis of data involved two stages. First, confirmatory factor analysis (CFA) was used to test a measurement model for each construct separately (Jöreskog 1993). Second, a structural model was used to test the study’s hypothesis. 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 and Long 1993). Other fit indices considered were: (1) the goodness-of-fit index (GFI), (2) the comparative fit index (CFI), and (3) the root mean square error of approximation (RMSEA). Levels for each of these indices representing adequate fit are 0.90 or greater for the GFI, 0.95 or greater for the CFI, and 0.10 or less for the RMSEA (Byrne 2001; Hair, et al. 1998; Kaplan 2000). Maximum likelihood estimation was employed.

Confirmatory Factor Analysis

A split sample strategy was employed to enable cross-validation where measurement models needed modification. Thus all initially hypothesised models were tested using half of the sample and modified models were tested using the hold-out sample. The modified PEU model was a second-order factor model, with two first-order factors: market environment and institutional environment.2 The accepted measurement model fit indices and reliabilities are shown in Table 1 and indicate adequate fit and reliability. Convergent validity of the constructs was indicated by all regression coefficients between indicators and latent factors being significant at $p < .001$ (Anderson and Gerbing 1988). Discriminant validity for the commitment measures was indicated by chi-square difference tests of nested models (Kline 1998; Anderson and Gerbing 1988), AVE’s greater than the squared correlation between pairs of factors (Fornell and Larcker 1981), and consideration of the correlation between factors (Kline 1998).

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2 Details of the analysis of this model can be found in Harrison (2003).
Table 1: Fit indices and Reliabilities for all Measures

<table>
<thead>
<tr>
<th>Construct</th>
<th>$\chi^2$ (df)</th>
<th>$p$</th>
<th>GFI</th>
<th>CFI</th>
<th>RMSEA</th>
<th>Reliability$^a$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instrumental Commitment</td>
<td>.588(1)</td>
<td>.443</td>
<td>1.00</td>
<td>1.00</td>
<td>&lt;.01</td>
<td>.82</td>
</tr>
<tr>
<td>Affective commitment</td>
<td>.004(1)</td>
<td>.952</td>
<td>1.00</td>
<td>1.00</td>
<td>&lt;.01</td>
<td>.88</td>
</tr>
<tr>
<td>Normative commitment</td>
<td>.229(1)</td>
<td>.633</td>
<td>1.00</td>
<td>1.00</td>
<td>&lt;.01</td>
<td>.84</td>
</tr>
<tr>
<td>PEU</td>
<td>18.0(9)</td>
<td>.035</td>
<td>.98</td>
<td>.97</td>
<td>.06</td>
<td>.73$^b$</td>
</tr>
</tbody>
</table>

$^a$ Latent variable reliabilities (Hair, et al. 1998).

$^b$ The reliability for the second-order factor was calculated using the loadings and measurement error variances of the first-order factors on the second-order factor. The reliabilities for the first-order factors were 0.72 for market environment and 0.68 for institutional environment.

**Structural Model Testing**

The hypothesis to be tested using structural equation modelling was that there would be a relationship between PEU and commitment, specifically instrumental, normative, and affective commitment. Therefore, the structural model was specified such that each commitment latent variable was explained by the second-order PEU latent variable. In addition, a path leading from normative to affective commitment was also specified. The reasoning leading to the inclusion of this path has its basis in the social psychology literature, which indicates that values are an antecedent of attitudes (Rokeach 1972; Zimbardo, Ebbesen, and Christina 1977; Kahle 1984; Bohner and Wanke 2002). It was therefore considered that conceptualisation of normative commitment as a felt obligation driven by internalisation or involvement predicated on congruence between values (O’Reilly III and Chatman 1986; Brown, Lusch, and Nicholson 1995) would be an antecedent to affective commitment, which is conceptualised as an attachment to, identification with, and involvement in a relationship (Meyer, et al. 2002) based on a desire for affiliation (O’Reilly III and Chatman 1986; Brown, Lusch, and Nicholson 1995). The path diagram is shown, along with standardised parameter estimates, in Figure 1.
The overall model fit indices suggested a well-fitting model ($\chi^2 = 163, \text{df} = 84, p < 0.01; \text{GFI} = 0.93; \text{CFI} = 0.96; \text{RMSEA} = 0.05$). Although the chi-square statistic was significant, this is likely with large samples, particularly beyond 200 cases (Kline 1998), and the ratio of the chi-square to the degrees of freedom, at 1.9, was below the recommended acceptable maximum of three (Kline 1998). There were no unreasonable estimates.

The parameter estimate for the path between PEU and instrumental commitment was negative and statistically significant (standardised path coefficient $= -0.24; p = 0.01$). The parameter estimate for the path between PEU and normative commitment was also negative and statistically significant (standardised path coefficient $= -0.38; p < 0.001$). Thus, the study’s hypothesis was supported with respect to both instrumental and normative commitment. With both coefficients negative, the results indicate that greater perceived uncertainty is associated with lower instrumental and normative commitment.

The situation with respect to affective commitment was more complex. The path coefficient between PEU and affective commitment indicated a negative effect but was not significant at below the 0.05 level (standardised path coefficient $= -0.12, p = 0.09$). Thus the model indicates that there is no direct association between PEU and affective commitment. However, decomposition of the standardised effects on affective commitment resulted in a standardised indirect effect of PEU on affective commitment of -0.30. This suggests that PEU has a moderate indirect effect on affective commitment through its effect on normative commitment. This finding provides support for the hypothesis in relation to affective commitment but indicates a more complex association; that is, normative commitment acts as a mediator, intervening in the association between PEU and affective commitment.

Figure 1: Structural Model with Standardised Path Coefficients
DISCUSSION AND CONCLUSIONS

The results demonstrate a significant negative relationship between PEU and the three components of commitment. The association with instrumental and normative commitment is direct. The one between PEU and affective commitment is indirect and appears to be a strong demonstration of a mediator effect. Therefore the results provide evidence that PEU is an antecedent of commitment and a determinant of structural bonding that will affect market structures and exchange relationships. Hence the null hypotheses are rejected.

The primary conclusion drawn from these findings is that relationships and networks will become more fractious in environments where there are increased perceptions of uncertainty, with firms in such environments more prepared to look beyond current relationships to secure competencies and market position. This reduction in commitment in response to PEU can be explained in part by consideration of the three components of commitment evident in Figure 1.

Instrumental commitment (otherwise identified as continuance or calculative commitment), is driven by perceived rewards or punishments (Brown et al., 1995). In an environment where there is greater PEU firms may have greater difficulty ascertaining the relative rewards and punishments that could
accrue from staying within a given relationship or switching to an alternative. This could be the result of difficulty in determining what the future competitive landscape might look like and an associated difficulty in securing information that can help in such prediction. As such firms may be more inclined to look to alternatives. For practitioners seeking to maintain and develop relationships, understanding this response could lead to the development of tactics that aim to ensure that partners see that there are distinct benefits to be derived that help manage environmental uncertainty and perhaps future-proof their business and its development.

Normative commitment is defined as an attachment driven by felt obligation (Meyer et al., 2002) predicated on congruence between values (O'Reilly III & Chatman, 1986; Brown et al., 1995). When PEU is relatively high it is particularly likely that obligations based on past relationships and benefits will become less important as a basis for continued commitment. This is evident in the results with a standardised coefficient of -.38. It is likely that this reflects the need for business relationships to be continually renewed and provide benefits that are valued by a given firm both now and as a basis for future success. In a turbulent environment where the future of a market and a firm’s position in it becomes unclear, the importance of an obligation based on past experience and even shared values becomes less important to a number of participants in a given market.

Affective commitment is driven by an emotional attachment (Meyer et al., 2002) and is apparent in the scale items as an attachment where the relationship provides the committed party with an identity; or at least a partial identity. As such it is reasonable that there is no significant direct relationship between PEU and affective commitment given that the committed party may be less inclined to dispense with a sense of identity, even in turbulent environments. However the indirect association indicates that identity is driven in part by a sense of obligation (normative commitment impacting on affective commitment) and that this effect dissipates as PEU increases. In essence when PEU is high firms may begin to question the value and veracity of their identity which is manifest as a reduction in affective commitment.
The implications of these findings are significant. They provide evidence of an additional external antecedent of commitment, a concept which has become central to understanding inter-firm relationships. In doing so it has provided evidence that rather than run to a ‘safe harbour’ in turbulent environments, firms are more likely to be less committed to existing partners. As a consequence it can be concluded that increased PEU will see firms switch allegiance more often and be more prepared to seek out multiple relationships as they aim to build competencies that maintain or improve their competitiveness.

The findings also suggest that PEU will have a moderating effect on previously identified antecedents of commitment such as power, idiosyncratic investments, interdependence, trust and conflict. This supposition is based on the overarching nature of PEU as a concept that reflects the general external environment in which firms and markets operate and the likely impact that this will have on the range of recognised concepts that affect inter-firm relationships.

For practitioners the implications stem from the impact that PEU has on commitment, with the notable complication being that PEU is a relative concept that is felt by the various agents in a market to a varying extent. As such a supplier may benefit by maintaining a watching brief on PEU within a given channel and consider altering the offer to either manage PEU and/or maintain commitment within selected channels. Notably this type of proactive management of markets may provide a given supplier with a competitive advantage over those who are less agile in responding to changes in market sentiment.

REFERENCES


**APPENDIX**

*Table A1: Scale items showing modifications*

<table>
<thead>
<tr>
<th>Construct</th>
<th>Items</th>
<th>Source</th>
</tr>
</thead>
</table>
| **Instrumental commitment** | Changing banner group now would be too disruptive for our business, so we continue to work with this one (IC1)  
   Even if we wanted to shift business away from our banner group we wouldn’t because our losses would be significant (IC2)  
   We need to keep working with this banner group since leaving would create hardship for our business (IC3) | Adapted from Gilliland and Bello (2002), with reference to Meyer and Allen (1984) |
| **Normative commitment**   | Our attachment to our banner group is mainly based on the similarity of our values (NC1)  
   The reason we prefer our banner group to others is because of what it stands for, its values (NC2)  
   During the past year, our business’s values and those of our banner group have become more similar (NC3)  
   What our banner group stands for is important to us (NC4)  
   If our banner group’s values were different, we would not be as attached to them (NC5) | Adapted from Brown, Lusch, and Nicholson (1995), who used the terminology ‘identification’ and ‘internalisation’ rather than affective and normative commitment |
| **Affective commitment**   | We talk up our banner group, to friends and acquaintances, as a great organisation to be associated with (AC1) | Adapted from Brown, Lusch, and Nicholson (1995), who used the terminology ‘identification’ and ‘internalisation’ rather than affective and normative commitment |
We feel that our banner group views us as being an important ‘team member’, rather than just being another retailer (AC2)
We are proud to tell others that we are associated with our banner group (AC3)

<table>
<thead>
<tr>
<th>Perceived environmental uncertainty&lt;sup&gt;c&lt;/sup&gt;</th>
<th>Technology&lt;sup&gt;d&lt;/sup&gt; (PEU1)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Competitors’ actions (PEU2)</td>
</tr>
<tr>
<td></td>
<td>Market demand (PEU3)</td>
</tr>
<tr>
<td></td>
<td>Product attributes (PEU4)</td>
</tr>
<tr>
<td></td>
<td>Product availability from wholesalers&lt;sup&gt;d&lt;/sup&gt; (PEU5)</td>
</tr>
<tr>
<td></td>
<td>Wholesalers’ prices (PEU6)</td>
</tr>
<tr>
<td></td>
<td>Government regulation (PEU7)</td>
</tr>
<tr>
<td></td>
<td>Financial/capital market (PEU8)</td>
</tr>
</tbody>
</table>

Adapted from Govindarajan (1984) and Miles and Snow (1978)

<sup>a</sup> The following instruction was given to respondents at the beginning of the survey: The term banner group used throughout the survey refers to the banner group with whom you are affiliated or, if you have no affiliation, the wholesaler from whom you buy the majority of product. If you have more than one affiliation, answer with reference to the first group mentioned in question 3.

<sup>b</sup> A seven point Likert scale was used with endpoints anchored: 1 = strongly disagree and 7 = strongly agree.

<sup>c</sup> The question preceding these items was “How predictable is each of the following areas of your business environment?” A seven point scale was used with endpoints anchored: 1 = very unpredictable and 7 = very predictable. Scores were reversed prior to data analysis so that a high score represented high PEU.

<sup>d</sup> Items deleted from the final scale following modification.