

Modelling Distributor Firm and Manufacturer Firm Working Relationships

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Abstract

Past research has characterized business relationships using perceptual and sentiment constructs. This research has relied on an underlying assumption that 'structure', in the form of channel role, is more likely to explain firm behaviour in relationships than 'strategy' or any other formulation. A re-examination of the literature throws doubt on this assumption. An empirical study is used to explore an alternate hypothesis, with differentiated local models of distributor and manufacturing firms' working relationships being found using a clusterwise regression technique. The results suggest that inter-firm cooperation is more effective than a self-centred approach to achieving relationship performance. In addition the results suggest that relationship 'strategy' is more important than 'structure' in modelling working relationships. Finally, directions for further research and management implications are considered.

Keywords: management model, cooperation, dyad, exchange structure, strategy

Introduction

Many attempts have been made to examine models of working business relationships in the past 25 years. However, in almost all cases the assumption has been that a general model should be developed on the basis of firms sampled according to a specific role in an exchange structure. For example, Morgan and Hunt (1994) sampled tyre retailers with regard to their relationship with a supplier, while others have sampled and modelled distributors and manufacturers separately (cf Anderson and Narus 1990; Heide and John 1990). An alternate formulation is that differentiated local models might be developed based on groups of firms regardless of their role within the channel.

Developing models of inter-firm working relations on the basis of sampling constrained by a role, or roles, in a distribution channel assumes that exchange structure is a main determinant of firm behaviour. The alternate view is that strategy shapes firm behaviour and that structure is somewhat less important (Child 1972; Hamel and Prahalad 1989; Mintzberg and Quinn 1996). This paper examines the literature on modelling of working relationships and argues for a clusterwise regression approach to develop local management models. Next an empirical study of manufacturer and distributor firms is examined to develop local management models. These are then analysed in groups and also according to channel role. Finally, directions for future research and management implications are discussed.

Literature Review

Past research examining working relationships between business partners has relied substantially on sentiment and perceptual constructs. Sentiment constructs measure the affective elements of inter-firm interaction. For example, the indicators for 'commitment' and 'trust' in Morgan and Hunt's (1994) study are based on affective beliefs by respondents from

one firm concerning the nature of working relations with another firm. Application of these constructs implies that inter-firm interaction is a human matter and that the processes of the working relationship are best explained by human attribution of meaning.

A similar argument applies to perceptual constructs, which may be distinguished from objective constructs in that they tend to measure meaning from within the mental framework of the respondent, rather than the theoretical and methodological framework of the researcher. For example in the Morgan and Hunt (1994) study, 'functional conflict' represents an attribution by a respondent concerning an inter-firm process, while 'intensity to leave' is a respondent's attribution of a firm level intention. These perceptual constructs are clearly different to the construct of 'dyad sales' operationalized by Mohr and Spekman (1994). Here the respondent's perception is less important, for sales resulting from the action of the two partner firms is measured against an economic framework and within a specific theoretical exchange framework imposed by the researcher.

The use of perceptual and sentiment constructs to characterize working relationships has led to interesting results. John and Reve (1982), in comparing the responses of key informants from both sides of business relationships, found that data concerning the functional aspects of the working relationship was reliably reported. However, this was not the case for perceptual constructs such as goal compatibility, domain consensus and evaluation of accomplishment, or for sentiment constructs such as norms of exchange. In a similar fashion Heide and John (1992), using dyad data of manufacturer and distributor firms, found that inter-firm correlation on constructs was not strong. Perceptual constructs such as buyer control and buyer-specific assets were reported across the dyads with correlations of 0.26 and 0.33 respectively, while the sentiment construct of relational norms was correlated at 0.50 across the dyads. Similarly, Eliashberg and Michie (1984) found that perceptions of conflict were substantially different across a franchiser-franchisee relationship. Together, these results strongly imply that firms in distributor-manufacturer associations have different perspectives of their working relationship and further that it is not necessarily channel role that shapes respondents attributions.

That respondents in firms will have different attributions of perceptual and sentiment constructs across a dyad is also expected theoretically (Håkansson and Snehota 1995; Håkansson and Snehota 1998; Halinen 1998; Medlin 2003).

However, the study by Anderson and Narus (1990) displays a mixed outcome. First, substantially similar constructs and associations between constructs are found on both sides of a distributor-manufacturer working relationship. Second, not all constructs are necessarily active on both sides. This last result fits the theoretical and empirical results discussed above.

That substantially similar constructs and paths were found in the Anderson and Narus (1990) study deserves close attention. While three paths and their parameters were found to be statistically invariant, the parameters are different in size indicating variation in importance. Second, while the paths for 'communication' to 'cooperation' and 'cooperation' to 'trust' were duplicated, there was a significant difference in parameters across samples. According to Anderson and Narus (1990) this is likely to be a result of differences in operationalization of constructs across samples. However, as the constructs are measured using exactly the same indicators with only two words changed per indicator (ie firm and manufacturer or company and firm) to reflect sampling of distributor and manufacturer it is difficult to sustain the

argument that the difference is a result of operationalization. Rather the differences are likely to be a result of sampling only.

Given that sampling appears to influence the degree to which constructs are active it maybe more effective to elaborate models of working relations by using a different basis for separating cases for analysis. Specifically, rather than using channel role as a theoretical basis for separating data for analysis, it may be better to apply segmentation techniques.

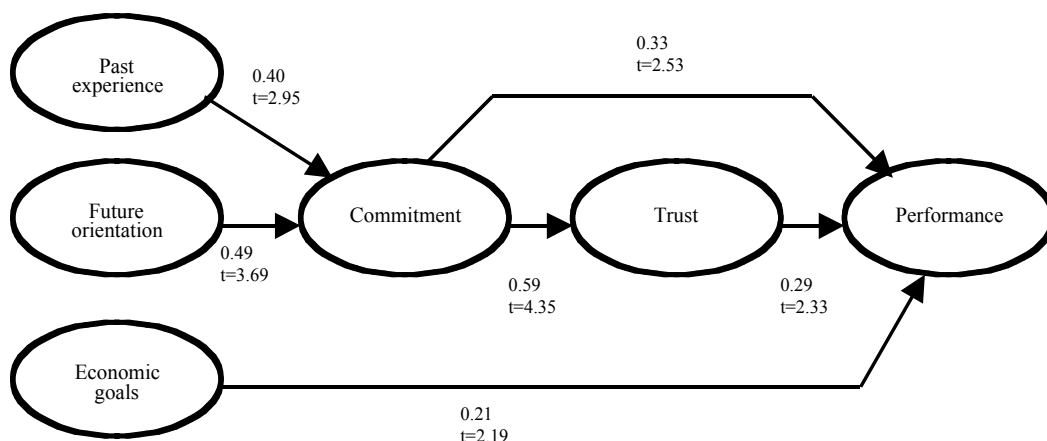
The next section examines this hypothesis by building local firm working relationship models using a clusterwise segmentation technique.

Empirical Study

Data from 100 firms representing 50 dyads was collected from the business software industry in Australia, Malaysia, Singapore and New Zealand. The firms represented manufacturers and distributors involved in working relationships, with continuous adaptation of software by the distributor for a final business client. This study reports the same data as Medlin (Forthcoming), however here the element of the research is the firm rather than a relationship.

To find the different local models of working relationships clusterwise regression was used to segment the data, regardless of channel role or dyad membership. Clusterwise regression relies on a ‘global’ model that explains associations between independent and a dependent variable. This is an important strength of the clusterwise regression technique, as the associations between dependent and independent variables provide an external criterion to the segmentation analysis (Aurifeille and Medlin 2005). For the purposes of this paper a previously published global model is employed (see figure one) (Medlin et al. 2005). This global model, based on a partial sub-sample of 83 firms, has an acceptable fit (squared correlation coefficient: $R^2 = 0.40$, root mean square error of approximation: $RMSEA = 0.049$).

Figure 1: Global Model Explaining Relationship Performance



GLIMMIX version 3.0 software (Wedel 2002) was used to perform the clusterwise regression. The software finds local models that exist as sub-sets of the global model and have varying parameters on the independent variables (Wedel 2002). The constraint of the global

model means the number of local models can be inferred from the data, using information statistics such as AIC, BIC, CAIC or MAIC (Wedel and Kamakura 1999). A five-segment solution was selected, based on minimizing Bozdogan's (1987) CAIC information criterion (Wedel 2002). However, GLIMMIX allocates cases to a model on a probabilistic manner (Wedel and Kamakura 1999), so for further analysis it is better to attribute cases to the model of highest probability (Aurifeille 2000). There are some problems in hardening cases to one model, for some firms are allocated rather evenly to models (eg with probabilities such as 0.4779 and 0.5221). Removing cases from analysis when there is less than 60% probability of attribution to a class eliminates this problem (Medlin Forthcoming). This resulted in removal of eight cases. The hardened solution of the five management models explaining relationship performance is presented in table one and characterized using multiple regression analysis. While the sample size results in problems with the ratio of cases to independent variables; the sum of squared errors is reduced from 1145.825 in the global model, to 93.398 in the hardened five-model solution.

Table 1: Five Model Hardened Solution

	Independent Variable	Coefficient	T value	Characterization
Model One (42 cases)	Experience	0.294	3.432	Balanced cooperative approach
	Future orientation	0.643	3.599	
	Goal	0.635	7.343	
	Commitment	0.544	6.991	
Model Two (14 cases)	Experience	0.531	3.704	Future oriented and based on past experience, but not committed
	Future orientation	3.378	8.908	
	Commitment	-0.970	-7.07	
Model Three (9 cases)	Future orientation	-1.025	-11.890	Commitment, and heavily reliant on trust
	Commitment	0.281	3.099	
	Trust	0.826	12.942	
Model Four (10 cases)	Experience	-1.110	-16.690	Low on past experience, and heavily reliant on commitment
	Commitment	1.491	33.691	
Model Five (17 cases)	Experience	-0.080	-4.267	Firm goal oriented and heavily reliant on commitment, but not trusting
	Goal	0.207	13.198	
	Commitment	1.232	48.933	
	Trust	-0.257	-14.279	

As these local management models for achieving 'relationship performance' consist of more or less active constructs with different modality (ie positive or negative coefficients) it is useful to characterize them descriptively as in table one. Essentially, models one, three and four are cooperative in nature; while models two and five describe self-centred behaviour by firms. Thus, cooperative models appear to dominate in this sample (61 firms, ie 66%). Analysis of variance by cooperative versus self-centred local management models found a significant association, with cooperative models providing greater relationship performance ($p=0.03$).

A comparison of local models by channel role shows distributors over represented within the self-centred models (see table two), with Cramér's V test being significant ($p= 0.047$). As distributors can generally choose between a number of manufacturers, while manufacturers require a long-term relationship to achieve successful product adaptation for final customers this result is not unexpected.

Table 2: Numbers of Cooperative and Self-centred Local Management Model by Manufacturer and Distributor Role

Model	Cooperative (1, 3, 4)	Self-centred (2, 5)
Manufacturers	35	11
Distributors	26	20
Total firms	61	31

The results of this empirical study show that developing working management models based on channel role limits the depth of understanding of the dynamics of distributor-manufacturer relationships. Limiting model analysis by grouping firms according to roles within an exchange structure (ie distributor-manufacturer roles) assumes that structure is more important than firm strategy (ie intent). The results presented here show that structure does have some impact on the ways distributors behave within this sample. In a contrary view, however, the strong manifestation of cooperative working models and their importance in achieving relationship performance demonstrate that strategy is generally more important than structure in this sample of firms.

Future Research

The idea of grouping firms for analysis according to local models constrained by a global model offers substantial opportunity for future research. Such an approach does not assume that exchange structure determines firm behaviour.

There are many avenues for future research based on alternative sampling techniques and clusterwise regression (Aurifeille and Medlin 2005). This suggests broadening and refining the constructs used to describe local management working models. Constructs that more effectively capture the many different modes of inter-firm interaction are required. For example, constructs that summarize opportunistic behaviour and variations between long and short-term cooperative strategy can considerably enrich our understanding and classification of firm behaviours.

A second area of future research involves dyadic studies and more complex network studies that analyse the management models of pairs of firms and groupings of firms, so that an understanding can be gained of the effects of interaction between management models (Medlin Forthcoming). In this way it is possible to begin to approach an understanding of the dynamic aspects of business relationships and networks.

Management Implications

While it seems self-evident that relationship performance is associated with firms that display cooperative working management models, it is important to note that this is generally so regardless of the firm's channel role. Likewise, while it is self-evident that firms following their own self-interest achieve lower relationship performance, again it does not follow from the firm's channel role. This suggests a firm's role in a channel is not necessarily a strong determinant of relationship strategy. This result supports more recent theoretical work (Håkansson and Snehota 1995), which suggests that firms are involved in a vastly more complex environment than the simple opposition of roles portrayed in a manufacturer-distributor structure.

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