PERFORMANCE IMPLICATION OF COOPERATIVE NORMS

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ABSTRACT

This study investigates the effects of cooperative norms on exchange outcomes. We maintain that cooperative norms affect exchange outcomes by establishing the structure mechanisms of buyer-supplier relationship, such as operational linkages and information linkages. An empirical examination in the setting of buyer-supplier relationships reveals that (1) cooperative norms influence information linkages, which in turn impact the magnitude of operational linkage, and (2) information linkages and operational linkage mutually affect each other. The study further reveals that cooperative norms and information linkages do not directly influence supplier performance. Instead, they affect supplier performance by enhancing the level of operational linkages. The results also indicate that supplier performance increases buyer satisfaction.

Key Words: buyer-seller relationship, cooperative norms, inter-organizational governance, structural mechanisms

Introduction

The fundamental question that this research addresses is, with cooperative norms between them, how a buyer-supplier dyad could develop appropriate interorganizational structural mechanisms so as to achieve superior exchange outcomes. Researchers have recently turned their attention to cooperative norms between two parties, which are advocated as a major governance mechanism in a buyer-supplier relationship, and could have considerable impact on exchange outcomes (Cannon et al., 2000; Heide and John, 1992; Kreps, 1990; Peteraf and Shanley, 1997). The importance of such norms lies in the fact that companies are increasingly adopting cooperation-oriented supply chain management practices, such as just-in-time (JIT), supplier development, and joint planning. These practices generally require extensive cooperation and coordination between supply chain members, and thus cooperative norms become essential to their success. Prior Research generally implies that cooperative norms have indirect effects on exchange outcomes through various structural interfirm mechanisms (e.g., Heide and John, 1992; Min and Mentzer, 2004; Peteraf and Shanley, 1997). However, three questions remain unclear in the literature: (1) what are those structural mechanisms; (2) do the structural mechanisms interact with each other?; and (3) to what extent such structural mechanisms mediate the relationship between cooperative norms and exchange outcomes. To address these issues, we identify two prominent structural mechanisms in this paper, namely, operational and information linkages, and test their mediating effects. We also examine the interaction between the two structural mechanisms.
Theoretical Foundations

On basis of the paradigm “norms – structural mechanisms-outcomes”, we propose the theoretical model in Figure 1. The basic rationale behind the model is that relational outcomes are determined by interfirm structural mechanisms, which in turn, are influenced by the cooperative norms between two exchange partners. A detailed explanation of the model and the development of the hypotheses are presented as follows.

Cooperative Norms

Cooperative norms are defined as expectations related to cooperative behaviors shared and pursued by different parties (Heide and John 1990, Uzzi, 1996, 1997). Such norms essentially prescribe stewardship behaviors that serve to enhance the well-being of the relationship (Macneil 1980). Cooperative norms enable organizations to mitigate exchange hazards associated with specific bilateral asset investments, difficult performance measurement requirements, and associated uncertainties (Poppo and Zenger 2002).

Structural Mechanisms of Buyer-supplier Relationship

The term “structure” pertains to the inter-organizational framework that supports transactions and coordination between two parties. Such a framework consists of operational linkage and information linkages that enable companies to implement their inter-organizational strategy and cope with environmental uncertainty. The strength of these linkages reflects the extent to which two parties have aligned their business process and integrate with each other. As such, they are regarded as structural mechanisms that facilitate business performance and lead to satisfaction of trading partners. Specifically, operational linkage refers to the extent to which systems, routines, and procedures between two parties are established to facilitate operations (Cannon and Perreault 1999). Such linkages enable companies to define each party’s role in the transactions, thus allowing them to readily handle every day transactions between two parties, coordinate joint actions, and resolve their difference. Another structural mechanism, information linkages, is defined as the extent to which collaborative and bidirectional communication has been conducted between two parties. Such communication serves as “glue that holds together a channel of distribution” (Mohr and Nevin, 1990, p. 36).

Cooperative Norms and Structural Mechanisms

Prior studies have revealed that cooperative norms facilitate information exchange between two parties. For example, Reilly and Diangelo (1990) posit that normative expectations encouraging open flows of information can significantly influence communication activities. Mohr and Sohi (1995) maintain that when cooperative norms, such as those involving information sharing exist, both trading partners in a dyadic relationship have an incentive for more frequent contact with each other, and they are likely to participate in exchanges of information on a very active basis. Therefore, it is hypothesized that:

**H1: Cooperative norms positively affect information linkages.**

The establishment of cooperative norms can facilitate operational linkages. Heide and John (1992) propose that, in a buyer-supplier relationship, norms prescribe behaviors “directed toward maintaining the system or relationship as a whole and curtailing behavior promoting the goals of the individual parties” (p. 35). They contend that norms help in assuring a company that relinquishing control to the other party will not create undue levels of vulnerability. Note that establishing operational linkages, such as interfirn routine and systems, inevitably leads to
relinquishment of decision controls by the parties. Thus, the presence of cooperative norms is critical in this case. Accordingly, it is hypothesized that:

**H2: Cooperative norms positively affect operational linkages.**

We further argue that a reciprocal relationship exists between the two structural mechanisms. First, as noted above, operational linkages establish routines and systems that allow two parties to closely coordinate their efforts with each other. Arguably, information exchange is essential to the establishment of such routines and systems. For example, a buyer and a supplier may wish to develop a system to coordinate their new product development efforts. Apparently, without frequent, and bidirectional exchange of information related to product design and specifications, such a system cannot be established. Hence, we advance that:

**H3: Information linkages positively affect operational linkages.**

Second, operational linkages require the participants to establish procedures, systems, and routines, in order to adequately facilitate operations (Cannon and Perreault 1999). Such systems, procedures, and routines define the roles of both parties in their various business transactions (Cannon and Perreault 1999, Heide 1994), thus enabling them to effectively conduct day-to-day operations and associated interactions, inclusive of those involving information exchanges. Therefore, it is hypothesized that:

**H4: Operational linkages positively affect information linkages.**

**Performance Implications of Cooperative Norms**

In this study, we examine the impacts of cooperative norms on two key indicators of exchange outcomes: supplier performance and buyer satisfaction. Our core assumption is that cooperative norms influence exchange outcomes by facilitating operational and information linkages. The rational for this argument is that the purpose of cooperative norms is to **structure** an economically efficient relationship (Heide and John, 1992). As such, we maintain that cooperative norms facilitate an efficient relationship between two parties by establishing structural mechanisms. Presumably, such a relationship could result in improved performance. Accordingly, we posit that structural mechanisms such as operational and information linkages impose direct effects on supplier performance. Specifically, effective information linkages could improve communication quality, enhance trading partner commitment and coordination, share knowledge of processes and alternatives, and contribute to supplier development activities (Carr and Pearson 1999, Krause 1999, Mohr and Nevin 1990, Monczka et al. 1998), resulting in supplier performance advancement. Similarly, strong operational linkages allow firms to work closely with each other to create mutual benefits (Carr and Pearson 1999, Zaheer and Venkatraman 1995). By maintaining close working relationships, companies are in a position to initiate successful joint actions and become increasingly responsive to problems, thereby improving performance. Therefore, it is hypothesized that:

**H5: Information linkages positively influence supplier performance.**

**H6: Operational linkages positively influence supplier performance.**

Prior studies indicate that satisfaction will move upward when performance is improved. For example, Anderson and Narus (1990) show that, in a distributor/ manufacturer relationship, the distributor (buyer)’s assessment of the results of the relationship is positively related to its satisfaction. In the setting of international buyer-supplier relationships, Carter (2000) finds a significant, positive association between buyer perception of supplier performance and buyer satisfaction. Essentially, desired outcomes obtained from a supplier increase the buyer’s
perception of compatibility with the supplier, which subsequently results in satisfaction with the supplier (Anderson and Narus, 1990). Therefore, it is hypothesized that:

**H7: Supplier performance positively influences buyer satisfaction.**

Hypotheses 1 to 7 suggest that cooperative norms affect operational and information linkages, which subsequently influence supplier performance and buyer satisfaction. An important remaining issue is whether such norms exert direct impacts on the outcomes. We argue that cooperative norms do not directly affect supplier performance. Essentially, cooperative norms are expectations held by two parties. Such expectations could only enhance performance when they motivate trading partners to engage in developing close relationships. Merely having such an expectation, however, does not affect performance by itself. Similarly, buyer’s satisfaction with supplier is a reflection of its assessment of the value that it receives from the supplier (Day and Crask, 2000). Cooperative norms will not create value for the buyer if they do not enhance supplier’s performance. In other words, they do not have a direct effect on buyer satisfaction. Therefore, it is hypothesized that:

**H8: Cooperative norms do not have direct influence on supplier performance.**

**H9: Cooperative norms do not have direct influence on buyer satisfaction.**

**Research Methodology**

*Sampling and Data Collection*

To test the cited hypotheses, we examined selected buyer-supplier relationships in the context of manufacturing firms located in China. A sample of 1,320 firms was randomly selected from a sampling frame consisting of a list of all manufacturing firms belonging to four-digit Chinese Industrial Classification (CIC) codes 1311 ~ 4290. We collaborated with a marketing investigation firm to operationalize the survey through a series of on-site personal interviews, in an endeavor to obtain reliable information relating to emerging economies. Informants were initially contacted by telephone, in an attempt to solicit their cooperation. Among the 1,320 firms selected as target samples, the potential informants of 302 firms could not be reached. Among the other 1018 firms, 674 refused to cooperate. The remaining 344 firms agreed to participate in the research and were successfully interviewed on-site by employees of the investigation firm, who administered the questionnaire. In the ensuing process, the informants were initially requested to select one major supplier with whom the company did the largest volume of business, and then to respond to the survey questions concerning their exchanges with the chosen supplier. After eliminating surveys with excessive missing data and lower levels of confidence, we obtained 278 completed responses, representing an effective response rate of 27% (278 out of 1018 firms).

*Instrumental Variables*

Our research model specifies a reciprocal relationship between operational linkages and information linkages. Thus it is regarded as a non-recursive casual model. In order to test such a model, instrumental variables need to be added as predictors of these two constructs to achieve model identification (Berry, 1984). In the current study, we identify seven variables that could influence the extent of operational linkages and information linkages, based on transaction cost analysis (TCA) and resource dependence (RD) theory. Specifically, the variables affecting operational linkages include supply alternative, supply importance, transaction specific investment, and supply complexity. The variables affecting information linkages include transaction specific investment, supply complexity, environmental uncertainty, length of relationship, and transaction frequency. These variables also serve as control variables for our...
model. We discuss these variables and their relationships with operational linkages and information linkages in detail in Appendix 1.

Measures
All of the measures used in the survey, which embodied multiple items, were adapted from established studies. Two researchers who were educated both in China and in the U.S. translated all of the measures with back translation processes to ensure conceptual equivalence (Hoskisson et al. 2000). The source, scale, and validity assessments of the scale items appear in the Appendix 2.

Validation of Measurement
Adequacy of the multi-item scales in capturing their constructs was assessed using three confirmatory models: one for the cooperative norms and two structural mechanisms, one for exchange outcomes, and one for the instrumental variables. The measurement models are tested on the full dataset by using the EQS 6.1 program. Of the 39 original items included in the three measurement model, 36 are retained during this process. As shown in Appendix 2, the goodness-of-fit indices suggest an excellent model fit for all the three models. All the items have a large, significant loading (>0.5) on their designated constructs. In addition, as shown in Appendix 2, the Cronbach’s Alpha of all these constructs is larger than the cutting point of 0.7, except supplier performance (0.69). Thus, the reliability of the constructs is deemed adequate (Nunnally 1978). We evaluate convergent validity by computing average variance extracted (AVE) for each of the constructs. As presented in Appendix 2, all the AVEs exceed the recommended minimum level of 0.5, indicating the convergent validity of the constructs (Fornell and Larcker 1981). To test discriminant validity of the constructs, we conduct a chi-square difference test by collapsing each pair of the constructs into a single construct model and comparing its fit with that of a two-construct model (Anderson and Gerbing 1988). In each case, the two-construct model shows a statistically significant better fit than the single-construct model, indicating discriminate validity. The means, standard deviations, and correlations of the constructs are present in Table 1.

Data Analysis and Results
We test our hypotheses 1 to 7 by using the EQS path analysis (Bentler, 1995). The fit indices indicate satisfactory model fit for the path analysis model: Chi square with 22 degree of freedom = 93 (P = 0.00; Ratio of Chi-square to degree of freedom = 4.2), CFI = 0.90, IFI = 0.90, GFI = 0.95 and RMR = 0.04. The results of our estimate are presented in Figure 1. To test our Hypotheses 8 and 9, two additional paths are added to the model: one from cooperative norms to supplier performance, one from cooperative norms to buyer’s satisfaction. The model is tested again. The fit indices do not improve after the two paths are added: Chi square with 20 degree of freedom = 93 (P = 0.00; Ratio of Chi-square to degree of freedom = 4.7), CFI = 0.89, IFI = 0.90, GFI = 0.95 and RMR = 0.04. Furthermore, the two newly added paths are found non-significant. Thus, Hypotheses 8 and 9 are supported.

Figure 1. The result of path analysis testing hypotheses 1-7
Discussion

Our study contributes to the literature of relational governance in several ways. First, we identify two prominent components of structural mechanisms between buyer and supplier, namely operational linkages and information linkages. We reveal that cooperative norms affect exchange outcomes by enhancing the two linkages. This finding provides support to prior studies, which imply cooperative norms affect outcomes via various structural mechanisms but do not empirically test such relationships (e.g., Heide and John, 1992; Min and Mentzer, 2004). Furthermore, our study reveals that there exist interactions between the two structural mechanisms. While the positive effect of information linkages on operational linkages is not surprising, the negative effect of operational linkages on information linkages should be interpreted with caution. This result does not mean high level of operational linkages is detrimental to communication. Instead, it suggests that, operational linkages are not necessarily a prerequisite for information linkages. Indeed, in a relationship with relatively weak operational linkages, collaborative communication is the major means of coordination between two parties, thus the need for information linkages could be stronger (Mohr et al., 1996). In contrast, when strong operational linkages exist, trading partners may yield to each other’s demand, and relinquishing decision-making autonomy (Mohr et al., 1996). As such, the operational linkages themselves become a critical coordination mechanism, and the importance of information linkages thus decreases. In this sense, operational linkages could negatively affect information linkages.
The most surprising finding of our study is that information linkages do not have a significant direct impact on supplier performance. The results appear to contradict the findings of many previous studies, which typically suggest positive linkage between communication and outcomes (e.g., Mohr et al. 1996, Mohr and Sohi 1995, Monczka et al. 1998). Nevertheless, our results show that a path from information linkages to operational linkages to supplier performance, and to buyer satisfaction. Thus, information linkages could indeed enhance supplier performance through the aforementioned mechanism. The non-significant relationship between the information linkages and supplier performance shows the limit of such linkages. Specifically, this result is consistent with findings of Kulp et al. (2004), in which they demonstrate that solely sharing information does not improve manufacturer performance beyond allowing firms to earn average industry profit margin. In contrast, integrated information sharing efforts, such as collaborative planning, collaboration on new products and services, and collaboration on reversed logistics, are found directly and positively related to manufacturer’s margins and stockout levels. Similarly, our study shows that information linkages could not enhance supply performance without operational linkages. Therefore, it is not surprising that solely exchanging information does not have significant impact on supplier performance.

Finally, our research further indicates that relational norms do not directly influence performance outcomes; instead, they exert impacts by enhancing operational linkages and information linkages. The results strongly support Heide and John’s (1992) contention that the purpose of relational norms is to formulate an economically efficient relationship. Thus, the direct link between relational norms and performance in prior studies (e.g., Cannon et al. 2000) needs to be further expanded to reflect the supporting role of relational norms.

REFERENCES


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Tables and appendixes are available upon request from Shaohan Cai