Relational Governance and Knowledge Sharing in Supply Chains

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ABSTRACT

Sharing knowledge in a supply chain is one way to enhance strategic competitiveness. It is generally agreed that the development of close relationships facilitates knowledge sharing among supply chain partners. Relational governance is a major perspective for the maintenance of inter-organizational relationships in supply chains. The empirical literatures seldom construct the theoretical framework to illustrate the behavior of above phenomenon of inter-organizational relationship. To address the issue of governance relationships within the partnership in a supply chain and investigate factors influencing inter-organizational knowledge sharing, this study develops a conceptual model that relational risks as a mediating construct to examine the interactive effects that affect knowledge sharing and these relationships. The findings of the study provide practical insights in understanding how enhanced relational value can help enhancing inter-organizational knowledge sharing for achieving the competitive advantage of supply chains. This study found that the inclination of a company to develop relationships, called relational orientation, is positively associated with its willingness to share knowledge with partners. The study also found that relational risks between supply chain members decrease the willingness of partners to enhance their relationships with other partners for improving knowledge sharing. Firms in supply chain should reinforce their relationship collaborative behaviors and knowledge sharing in order to enhance the competitive advantage of the supply chain as a whole.

Keywords: Relational Orientation, Institution Orientation, Relational Risk, Knowledge Sharing, Structural Equation Modeling
I. Introduction

The key determinant of successful supply chains is the sharing of knowledge and learning to create and sustain competitive advantages (Crone & Roper, 2001; Panteli & Sockalingam, 2005; Li et al., 2006; Cheng et al., 2008). Companies should focus on knowledge management to facilitate effective sharing among collaborative members (Desouza, 2003). To improve supply chain coordination and product quality, firms often demand that their partners, including subcontractors or suppliers, implement common processes, which usually requires the sharing of knowledge (Cheng., 2010). Inter-organizational knowledge sharing within a supply chain has become a common practice, because it contributes vitally to sustaining the competitive advantage of the supply chain as a whole (Hunt & Nevin, 1974).

To achieve the advantages of knowledge sharing, it is strategic important to understand factors that affect the partners’ behavior of knowledge sharing. Existing research has focused on modeling all the factors under investigation as precursors or independent variables that directly affect the behaviors of knowledge sharing. These models do not consider indirect effects. In our model, we pay attention to the cooperation relationships between supply chain members.

In this study, we first examine how the relational risk of a company affects its attitude toward sharing knowledge with supply chain partners. Opportunistic behavior, encroachment and incomprehension are used to measure the relational risk to form relationships, unhealthy behaviors derived from relationships, and an imbalance of dependence of relationships, respectively. Then, we look into how relational orientation and institution orientation related factors affect the interaction between relational risk and willingness to share knowledge.

II. Literature Review

2.1 Institution Orientation

According to the literature, DiMaggio and Powell (1991) point out that ”fields only exist to the extent that they are institutionally defined.” The form of institutions, by definition, the external environment increases the power of diversity and difference on the view of strategy selection between the organization rather than isomorphism. The norm between supply chains organization is built by cooperation of the informal norms
through interaction process. This relationship type is established in the institution under the relationship style. Knowledge must be spread, transferred to show itself value through interaction (Dixon, 2000). In this process, it would be created more not only effective abut also various knowledge. Institutionalization may boost the share of knowledge through interfirm trust (Nooteboom et al., 1997; Ring & Van de Ven, 1994). It's thus hypothesized that:

Hypothesis 1: Institution orientation is positively related to knowledge sharing.

Hypothesis 2: Institution orientation is negatively related to relational risk.

2.2 Relational Orientation

This study uses widely recognized factors related to partner dependence in a supply chain, including relational proclivity and relational benefits, to determine relationship orientation. In the organizational context, relational proclivity is the advantage that accrues via inter-organizational relationships, and plays a vital role in relationship building among companies. It is the relatively stable and conscious tendency of a customer to engage with retailers of a particular product category (Wulf et al., 2001). In a supply chain, a strong relational proclivity means that a firm wants to maintain positive relationships with its partners. A high level of relational proclivity enables tasks to be shared effectively and consensus to be reached in shared decision making, while greater trust in partners enables the building of stronger inter-organizational relationships (Larson, 1992).

Connectedness is the dependence among different individuals, departments, or organizations on each other for assistance, information, commitment, or other coordination activities (Hartley & Benington, 2006). The strength or extent of connectedness affects the relationships among supply chain members, with greater interdependence resulting in a higher degree of shared understanding, which leads to a more harmonious and market-oriented relationship (Johnson & Sohi, 2001). The communication patterns between partners have been conceptualized to include productive content (Mohr et al., 1996). When these communication patterns expand to include multiple levels of the managerial hierarchy, as suggested in high levels of connectedness, the likelihood of substantive knowledge sharing or information exchange between partners increases (Johnson & Sohi, 2001).

A company will consider relational benefits when deciding whether to form partnerships with other companies. Such benefits are crucial in determining the level of
relationship commitment, and include dimensions pertaining to product profitability, customer satisfaction, and market share performance. In service relationships, customer loyalty toward a company indicates that the relational benefits provided by the company are greater than those of other companies. These benefits affect the willingness of customers to build and maintain long and positive relationships with the company (Gwinner et al., 1998).

Hypothesis 3: Relational orientation is negatively related to relational risk.

Hypothesis 4: Relational orientation is positively related to knowledge sharing.

2.3 Relational Risk

From a qualitative point of view, relational risk is a multidimensional risk, for there is no reason a priori that risk is one-dimensional (Delerue, 2005). Relational risk is defined as the consequence that there is not satisfactory cooperation among partners (Das & Teng, 2001). In this study, relational risk can be measured based on opportunistic behavior, encroachment and incomprehension between partners, among other factors.

The concept of opportunism includes a variety of potentially different behaviors (Wathne & Heide, 2000). In the original theory, it is defined as self-interest seeking with guile, leading to deceit-oriented violation of implicit or explicit promises (Williamson, 1975; Morgan & Hunt, 1994). Strategic alliances or inter-organizational cooperative arrangements are arenas for potential opportunistic behavior by partners with different sets of goals, and the inherent temporalities of alliances play significant roles in partner opportunism (Das, 2001). In inter-organizational relationships, a partner is said to be opportunistic if its behaviors are inconsistent with some prior contact or agreement (Wathne & Heide, 2000). An opportunistic partner may subvert alliance goals if it becomes necessary to achieve its own goals (Das, 2006).

The concept of encroachment between organizations comes from strategy alliance. Haspeslagh and Jemison (1991) point that take over opportunities and to first encroach partner before it is acquired. In many condition, the first steps of complete acquisition is strategy alliance with partner (Haspeslagh & Jemison, 1991). Simonin (1990) states this transparency or permeability of the organizational membrane between partners can be achieved through activity means, including the adoption of strict policies or the deployment of shielding mechanisms aimed at protecting key competencies. If protecting their core skills and proprietary technologies from strategy alliance and potential partner encroachment can avoid the happening of encroachment (Pitts & Lei,
Thus, in this study, encroachment defined the core skill for unauthorized access or mutinous behavior with partners. And then organization is mergers or acquisitions by the other.

Cooperation is based upon close interactions and the development of relationships over a long period of time. Thus, firm is familiar with partner’s habit becomes part of the "intangible" (Itami & Roehl, 1987) that make future cooperation easier to achieve (Nootbooom, 1997). If firm have been doing business for a long time with partner, they can understand most of procedures or habits each other well and self-evident. Communications are less costly under conditions of high trust because agreements are reached more quickly and easily as parties are more readily able to arrive at a meeting of the minds (Zaheer et al., 1998). It based on similar underlying assumptions, and agreements are likely to be reached more quickly. Thus, lack of understanding between partners makes collaboration result not well. It comes from a cognitive difference between partners and incomprehension (Delerue, 2004).

Hypothesis 5: Relational risk is negatively related to knowledge sharing.

III. Research Model

Figure 1 shows the conceptual model with the factors affecting knowledge sharing and one mediating factor as mediating effect to relational orientation and institution orientation on knowledge sharing. The model comprises five research hypotheses to be tested. The arrows indicate the hypothesized relationships, and the plus signs indicate negative relationships respectively.
IV. Research method

To develop the survey instrument, a pool of items was identified from the literature in order to measure the constructs of the research model. Data from a survey sample were used to assess the instrument’s validity and reliability, and to test the hypothesized relationships of the research model. All of the measures of the survey instrument were developed from the literature. The expressions of the items were adjusted, where appropriate, to the context of supply chain industry. The items measured on a seven-point Likert scale, ranging from ‘strongly disagree’ (1) to ‘strongly agree’ (7). The empirical study aims at top 2000 manufactory enterprises selected from the directories of the 2010 Chinese Credit top 2000 firms in Taiwan. The research units are manufacturers and partnerships, and two mailings of the questionnaire were distributed to the senior managers, purchasing managers or experienced managers. Raising the total response to 252, this produced a final response rate of 12.6%.

V. Research Result

Structural equation modeling (SEM) using AMOS 17 and SPSS 17 was used to analyze the hypothesized relationships of the research model. SEM aims to simultaneously examine the interrelated relationships among a set of posited constructs, each of which is measured by one or more observed items (measures). It involves the analysis of two models: a measurement (or factor analysis) and a structural model.

5.1 Assessment of the structural model

Table 1 shows the inter-correlations between the four constructs of the structural model. The overall fit of the structural model is acceptable, since all measures of fit reach an acceptable level ($\chi^2 = 370.8$, df = 194, $\alpha = 0.01$; GFI = 090; AGFI = 0.84; CFI = 0.96; NFI = 0.92; RMSEA = 0.06).

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<thead>
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<th>(A)</th>
<th>(B)</th>
<th>(C)</th>
<th>(D)</th>
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<tbody>
<tr>
<td>(A) Relational Orientation</td>
<td>0.80</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(B) Institution Orientation</td>
<td>0.477**</td>
<td>0.76</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(C) Relational Risk</td>
<td>-0.251**</td>
<td>-0.369**</td>
<td>0.76</td>
<td></td>
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<tr>
<td>(D) Knowledge Sharing</td>
<td>0.409**</td>
<td>0.492**</td>
<td>-0.399**</td>
<td>0.62</td>
</tr>
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** denote significance at $\alpha = 0.01$
5.2 Common method bias

Following the suggestion of (Podsakoff & Organ, 1986), Harmon’s one-factor test was run to ensure that common method variance did not account for our findings. Unrotated principal components analysis revealed eight factors with eigenvalues greater than 1, which accounted for 74.7% of the total variance. The first factor did not account for the majority of the variance (31.0%). As no single factor emerged that accounted for most of the variance, common method bias does not appear to be a problem in the study.

5.3 Hypotheses testing

In SEM analysis, the relationships among independent and dependent variables are assessed simultaneously via covariance analysis. Maximum Likelihood (ML) estimation is used to estimate model parameters with the covariance matrix as data input. The ML estimation method has been described as being well suited to theory testing and development (Anderson & Gerbing, 1988; Joreskog & Sorbom, 1993; Hair-Jr et al., 1998). With the exception of an institution orientation ($H1: \gamma =0.232, t =2.320, p<0.01$; $H2: \gamma = -0.218, t = -2.017, p<0.05$), all other hypothesized relationships are supported. Relational orientation ($H3: \gamma = -0.240, t = -2.376, p< 0.05$; $H4: \gamma =0.239, t = 2.597, p< 0.01$) are significantly associated with relational risk and knowledge sharing. Relational risk has a negative impact on knowledge sharing ($H5: \gamma =-0.251, t = -2.013, p< 0.05$). Overall, the model explains 16.8% of the variance in relational risk, and 29.2% in knowledge sharing.

5.4 Comparison with alternative models

This paper followed the procedure suggested by Baron & Kenny (1986) and Gelfand et al.(2009) and evaluated three models shown in Table 2. The first was the proposed model: it allowed the partial mediation of relational risk (and direct effects for knowledge sharing) while the second allowed full mediation of relational risk. The third contained only knowledge sharing without any mediating variables.

Table 2 Alternative models

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Model 1: partially mediated</th>
<th>Model 2: fully mediated</th>
<th>Model 3: all direct effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>RR ------ KS</td>
<td>-0.251*</td>
<td>-0.650***</td>
<td>-0.178*</td>
</tr>
</tbody>
</table>

Standardized path estimates
A comparison of the direct effect of institution orientation and relational orientation on knowledge sharing between Models 1 and 3 revealed that the path coefficient of institution orientation and relational orientation dropped from 0.267 and 0.269 in Model 3 (p <0.01) to 0.239 and 0.232 in Model 1 (p <0.05 and p <0.01) when the mediators were introduced into the model, revealing that relational risk partially mediated the influence of knowledge sharing. The results satisfied the conditions suggested by Baron and Kenny. Model 1 was better than Models 3 on all indices. With regard to the explanatory power, Model 2 explained the percentage of variance (38.4%). Model 3 explained 24.3% of the variance of performance. The results suggested that the partial mediation model was relatively better. Since the model fit indices were lower in Model 2 and Model 3, this paper concludes that Model 1 would be a better representation of the relationships among the constructs due to its good model fit.
VI. Discussion and Conclusions

6.1 Discussion

Conforming to the hypothesis, relational orientation has the positive influence on inter-organizational knowledge sharing. This finding is consistent with Larson (1992) and Johnson and Sohi (2001). Relational orientation can help relationship formation and leads to closer interaction between partners. Thus, the members among supply chain should ensure that value-base relationships are well defined when establishing a partnership so that relational orientation could help enhance the relationships or the future sharing of knowledge. Institution orientation is positively associated with the relationship on knowledge sharing which has been explored by literature. In Taiwan's supply chains, it plays a critical factor in knowledge sharing among organization. Institution orientation not only could help enhance the relationships but also could make organizations to build an intangible agreement. We also find that relational risk (involving opportunistic behavior, encroachment and incomprehension) is negatively associated with the relationship between relationship orientation, institution orientation and knowledge sharing, consistent with the finding. This indicates that when significant gap (cognitive differences) or distrust between parties, the degree of knowledge sharing would be restricted.

6.2 Conclusions and Future Research

It is of strategic importance for partners to understand the factors influencing the development and implementation of knowledge sharing. With the study of Taiwan’s supply chains, we have found that all the factors modeled have a significant influence on knowledge sharing. In this study, we found that the inclination of a company to develop relationships is positively associated with its willingness to enhance knowledge sharing with partners. This inclination, called relational orientation, can be measured by relational benefits, relational proclivity, and connectedness. In this study, we also found that institution orientation between supply chains members build on a norm to maintain their relationships with other partners for improving knowledge sharing. Through the interaction is familiar with each other in supply chains. When both sides in a relationship have similar cognition and goal, they tend to increase the closeness of the agreement. Intangible relational value encourages the preference to build or enhance relationships to increase knowledge sharing. We further find that relational risk
discourages the preference to build or enhance relationships and institutions to achieve knowledge sharing. In Taiwan’s supply chains, relational risks affect the exist cooperation between two parties.

In supply chains, there are some factors affect the knowledge sharing. With the study, we consider the relational risks (involving opportunistic behavior, encroachment and incomprehension) to test the result. There are not all cooperation has satisfaction results. Partnerships may have negative effectiveness when partners have inappropriate attitudes or behaviors. Over time, this phenomenon is called dark side. The dark side of organization includes mistake, misconduct, and disaster (Kerr, 2009). It make an imbalanced relationships appear between organizations. Its potential damaging effects on firm performance. Thus, a healthy relationship and institution could be built if both parties perceive relational risk to expose problems rather than arouse disputes, and make provision for them before hand in a contract (Morgan & Hunt, 1994).

This study suffers from methodological limitations typical of most empirical surveys. The data in this study consisted on manufacturing industry; the other type of industry is not within the scope of this study. Thus, some of the conclusions may not be inferred to all industries. In addition, the findings reflect the setting of Taiwan’s supply chains only. To address these inherent limitations, cross-industrial studies on various forms of supply chains would be worth conducting in order to examine industrial differences development.

Future studies could consider how knowledge sharing is affect by other orientations. There are other types of organization in supply chains. A different type orientation may restrain or not have response to relational risks (involving opportunistic behavior, encroachment and incomprehension) in this study. Another issue for further examination is the relational risk. Future theoretical and empirical research could explore whether alternative constructs affect inter-organizational relationships among relational risk, knowledge sharing creation.

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