"Environmental Uncertainty and Interfirm Controls: The Moderating Effect of Honesty"

Junhong Min, Kyuseop Kwak, Jaeil Lee

a. Department of Marketing at Michigan Technological University
b. Discipline Group University of Technology Sydney
c. Department of Clothing and Textiles at Hanyang University

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Environmental Uncertainty and Interfirm Controls: The Moderating Effect of Honesty

This study investigates the moderating effect of honesty on the level of interfirm control in uncertain environments. Exchange parties relay information on markets and performance, with which they may or not be honest, and sometimes face uncertainty regarding the market and the supply of products. In this study, honesty was revealed to be a crucial factor for buyers who need to develop a flexible relationship with a supplier in an uncertain situation. Buyers who trust the honesty of their supplier may have an advantage when adapting to uncertain environments by relying on the norm of flexibility. The honest supplier gives its buyer a perception that the supplier will not take advantage of the uncertain environment for its benefit. The buyer therefore can adapt to an uncertain environment by depending on flexibility.

Key Words: Honesty, Flexibility, Environmental Uncertainty

In the relationship between a buyer and its supplier, a buyer facing an uncertain environment needs to take control of the situation to minimize the environmental uncertainty. The question here is what type of control mechanism(s) the buyer needs to utilize in order to improve the relationship with its supplier in an uncertain environment.

Trust in the interfirm relationship is important in the buyer-supplier relationship (Dwyer, Shurr and Oh 1987). It is key because it determines the exchange parties’ actions and affects interfirm outcomes (Poppo, Zhou and Ryu 2008).

Although there is extensive literature on control mechanisms (e.g., Ryu and Eyuboglu 2007; Heide 1994), several gaps remain in the knowledge base. First, although there are several theoretical discussions on the dimensions of trust, such as credibility or benevolence (Doney and Cannon 1997; Ganesan 1994), the effect of honesty on interfirm control has rarely been studied. Honesty is defined as the extent to which an exchange party provides truthful information to its partner (Mayer, Davis and Shoorman 1995). Because information may be known to one party and not the other, it allows one party to exert control over the exchange partner. Indeed, the issue of the exchange of honest information may be a critical factor affecting interfirm control, and the honesty of both partners may be relevant in establishing mutual trust.

Secondly, existing studies on environmental uncertainty have their own limitations in regard to the influence of social contexts on a firm’s choice of control mechanism. Thus, the existing literature does not explain why two firms from environments with the same level of uncertainty rely on different types of control mechanisms. For instance, some firms use flexible relationships with their partners in uncertain environments, while some rely on more rigid procedures.

We hope to contribute to the existing literature by testing the effect of honesty on interfirm relationships in an uncertain environment and the control mechanisms that the exchange parties utilize. In this study, we inquired about the honesty of one exchange party and then tested the moderating effects of honesty on the level of interfirm control in uncertain environments. Honesty regarding information on markets or past performance of the exchange parties was of principle interest. The exchange parties then reported expected behaviors in the event of facing an uncertain supply of products. We observed that honesty is a relevant factor affecting the exchange party’s control mechanisms in uncertain environments. The theoretical framework is presented in FIGURE 1, and the moderating effect is briefly discussed.

Theoretical Background and Hypotheses

Trust: Honesty

In the exchange relationship, there is a possibility that an exchange party might face negative results when its ex
change partner does not fulfill its promised actions. Thus, an exchange party’s trust in its partner becomes an important issue for the interfirm relationship. Trust refers to an exchange party’s willingness to rely on an exchange partner whose behavior is not under its control (Swan, Trawick and Silva 1985). Trust involves a party’s voluntary dependence on its partner and the belief that its partner will not perform actions that produce negative outcomes (Madhavan and Grover 1998). Trust is, therefore, a manufacturer’s belief that the supplier will perform actions that will result in positive outcomes for the trusting party.

A buyer who expects timely delivery of parts from its supplier might be in trouble in the case that the supplier fails to deliver the parts on time. When a buyer faces uncertain environments, such as an unstable supply of components or volatile part prices, the buyer is vulnerable due to the lack of relevant information on the prices or the availability of the parts. If the buyer feels certain about purchasing the parts, trust might not be necessary because complete knowledge about the parts is attainable (Moorman, Zaltman and Deshpande 1992). Thus, environmental uncertainty generates a condition in which inter-organizational trust is important.

The “trust” that is discussed here reflects one distinct dimension: honesty. Honesty is the extent to which an exchange party believes that its partner provides truthful information (Mayer, Davis and Shohrman 1995). Both parties are involved in an honest information exchange, as the first party needs to provide accurate information and the second party needs to trust that the information is accurate (Moorman, Zaltman and Deshpande 1992).

Honesty is particularly important in dealing with environmental uncertainty. Uncertain environments can cause exchange parties to behave in an opportunistic manner (Chiles and McMackin 1996). For example, opportunistic behaviors include withholding or distorting market information, avoiding responsibilities, cheating, and other subtle forms of dishonest behaviors (Williamson 1985).

Honesty contains the notion of vulnerability of the trustor to the trustee (Coleman 1990). However, honesty alone cannot be used to take control of a relationship with a supplier. Trust, in its definition, is a unilateral belief, so an exchange party’s belief in its partner’s honesty cannot control the supplier’s performance. Therefore, in this study, honesty was viewed as a moderating mechanism, not a control mechanism, in interfirm relationships.

**Control Mechanisms:**
Researchers have identified two main types of organizational governance in which exchange partners may relate to one another: unilateral and bilateral governance (Heide 1994). Bilateral governance is when both exchange parties collaboratively make decisions, while unilateral governance is when one party makes decisions and forces its exchange partner to comply (Weitz and Jap 1995). Therefore, the distinction between the two is whether both exchange parties participate in interfirm decision making.

Monitoring, a form of unilateral governance, involves measuring output or performance of the exchange partner (Celly and Frazier 1996). Monitoring reduces information asymmetry between exchanges by revealing the degree to which the supplier has complied with terms previously agreed upon (Balakrishnan and Koza 1993; Lal 1990). Thus, monitoring enhances the exchange party’s ability to detect the partner’s opportunistic behavior (Stump and Heide 1996), and therefore provides good unilateral governance.

Some researchers (e.g., Ghoshal and Moran 1996; Ouchi 1979) argue that unilateral governance creates negative feelings for the entity, which consequently increases the propensity to behave opportunistically. Negative feelings, however, do not necessarily lead to opportunistic behavior, unless a certain condition is met. Rather, opportunistic behavior is brought about by information asymmetry (Klein, Frazier and Roth 1990).

Bilateral governance is based on a supplier-customer
relationship that identifies which forms of behavior are desirable or undesirable (Heide 1994). Exchange parties that rely on bilateral governance mutually adjust to environmental changes (Noordewier, John and Nevin 1990). Thus, bilateral governance fosters the establishment of relational norms, which stimulate the parties to seek mutual benefits (Lusch and Brown 1996).

Relational norms establish and regulate proper and acceptable behavior of a buyer and its supplier (Macneil 1980). Often they set limits by tacit understanding within which an individual party may seek alternative ways to achieve their goals. Relational norms act within a governance structure that influences both parties to behave in ways that foster achievement of shared goals.

This study considers the mutual expectation of flexibility as a logical indication of the level at which a governance structure is characterized by relational norms. The norm of flexibility involves the expectation that both parties will be willing to make adaptations to changing circumstances without resorting to a series of new contracts and renegotiations (Young, Sapienza and Baumer 2003).

Environmental Uncertainty and Controls

Exchange parties face many sources of environmental uncertainty in the relationship with their channel partners (Scott 1992). They feel uncertain when the relevant contingencies are too numerous or unpredictable to be specified (Stump and Heide 1996). This uncertain environment makes it difficult for a manufacturer to make accurate predictions about the state of the environment (Frazier and Antia 1995; Jaworski 1988; Achrol and Stern 1988).

Environmental uncertainty allows each exchange party to take advantage of the uncertain situation for its own interest (Klein, Frazier and Roth 1990). For instance, when a buyer is not sure about whether they will be able to acquire components on time because of a volatile supply of the components in the market, the buyer needs to take control over its supplier to assure that they can obtain the components.

A supplier’s honest information to the manufacturer contributes to the development of the interfirm relationship (Mayer, Davis and Shoorman 1995). When a party does not trust the honesty of its partner, it is difficult for the party to behave flexibly because the party does not believe the information the partner provides. Thus, when a manufacturer bestows low honesty upon its supplier, it encourages the manufacturer to instill a high level of control over the supplier in order to prevent opportunistic behaviors in an uncertain environment. Therefore, a manufacturer could control its supplier through checking the supplier’s inventory level, production process, or monitoring the output of the exchange partner. Thus, the first hypothesis is:

H1: When a buyer’s perceived honesty is low, there is no relationship between environmental uncertainty and the buyer’s propensity for flexibility with the supplier.

A party that faces some difficulty in making decisions in an uncertain environment needs a certain degree of flexibility from its partner to mitigate this difficulty. For instance, when there is an unexpected short supply of component parts, the buyer needs to show flexibility regarding the supply of parts from the supplier. Thus, flexibility is an appropriate governance mechanism for dealing with environmental uncertainty.

An honest supplier allows its manufacturer to reduce flexibility over the supplier. When a buyer trusts that its supplier is honest, the buyer does not need to worry about being taken advantage of by its supplier. For example, the honest supplier will not inflate the price of a part in the situation of unpredictable demand. Therefore, the manufacturer’s belief in the supplier’s honesty reduces the perceived risks associated with the supplier’s self-interest-seeking behavior in uncertain environments. In uncertain environments, behaviors of pure self-interest can exacerbate the uncertainty for other parties, so the decreased risk of selfish behavior reduces the manufacturer’s need to rely on flexibility with its supplier.

H2: When a buyer’s perceived honesty is higher, there is a positive relationship between environmental uncertainty and a buyer’s propensity for flexibility over the supplier.

Methodology

Context

The context chosen for this study is the relationship between a manufacturer and its major supplier. The major supplier is the one from which the informant’s company made the largest amount of purchases during the past year. This major supplier served as the referent for all questions in our mail survey. The above setting was selected because the major supplier was the one with whom the manufacturer was likely to have the most intense interactions and the opportunity to exercise interfirm control.

Sample

The manufacturers in this study were selected randomly from a Dun and Bradstreet mailing list. We used the SIC codes from 3011 to 3999, which was expected to eliminate industry-specific influences on interfirm control mechanisms.

As this research is about buyers’ reliance on the level of control in each control mechanism, we chose the heads of purchasing departments of the manufacturing companies as key informants. Purchasing managers have a close relationship with suppliers and have thorough knowledge about their main suppliers and the environments suppliers face. Thus, they are relevant for this research.

A total of 680 questionnaires were mailed to manufacturers; 660 were delivered, and 20 questionnaires went undelivered. Of those delivered, 138 were completed and returned for a response rate of 20.90%. All returned questionnaires were reviewed for completeness. One questionnaire with numerous missing answers was dropped from the...
sample. The remaining 137 questionnaires were used in the analysis.

**Procedure**

Each purchasing manager in our sample was mailed 1) a questionnaire, 2) a cover letter with a request to complete the enclosed questionnaire, and 3) a postage-paid return envelope. Two weeks after the first mailing, a second mailing was conducted.

A total of 680 questionnaires were mailed to purchase managers and 21 questionnaires went undelivered. Of the 659 delivered questionnaires, 176 were completed and returned for a response rate of 26.70%. All returned questionnaires were reviewed for completeness. Two questionnaires with numerous missing answers were dropped from the sample. The remaining 174 questionnaires were used in our analysis.

**Non-response Bias**

Corporate Affiliations Plus (2010) was used for gathering secondary data on the company’s characteristics for both responding and non-responding firms. Comparisons across demographics such as firm size, location, the numbers of employees and total sales produced no significant differences (i.e., p > 0.55 for sales volume). Response rates across industry groups were measured and found not to differ. These results indicate that non-response bias was not a concern in this study.

**Measure Development**

To develop the measures for this study, we gathered existing measures for our constructs from the literature. We conducted in-depth interviews with purchasing managers to check the relevance of the items developed. The wording of the items was revised based on the inputs from the interviews. All items used a 7-point Likert scale where 1 meant “strongly disagree” and 7 meant “strongly agree”.

Honesty was assessed through four items. The scale for honesty addressed the partner’s trustworthy information provision, honesty in dealing with the company, the level of confidence that the supplier tells the truth, and the provision of honest information. The items for honesty were adopted from Eyuboglu, Ryu and Tellefsen (2003).

The measurement scale for environmental uncertainty mainly captured the manufacturer's perception of uncertainty in several aspects of the supplied parts and components: price, production, availability, and provision of the supplied product (Noordewier, John and Nevin 1990). The norm of flexibility was defined as the expectation of willingness to make adaptations as circumstances change (Heide and John 1992). This research revised the scale of Heide and John (1992) and measured the existence of the expectation of flexible behavior in response to the partner’s request. The scale for Monitoring assesses a buyer’s monitoring ability over various supplier decisions (Noordewier, John and Nevin 1990).

**TABLE 1**

<table>
<thead>
<tr>
<th>Construct Measurement Summary:</th>
<th>Reliability</th>
<th>SFL</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Environmental uncertainty</strong></td>
<td>0.73</td>
<td></td>
</tr>
<tr>
<td>Availability of a major product in the market is highly uncertain.</td>
<td>0.75</td>
<td></td>
</tr>
<tr>
<td>Uncertainty in the production of a major product is a real problem in the market.</td>
<td>0.75</td>
<td></td>
</tr>
<tr>
<td>The supply of a major product is not stable.</td>
<td>0.66</td>
<td></td>
</tr>
<tr>
<td>The price of a major product in the market is volatile.</td>
<td>*</td>
<td></td>
</tr>
<tr>
<td><strong>Honesty</strong></td>
<td>0.85</td>
<td></td>
</tr>
<tr>
<td>The supplier always provides trustworthy information to our company.</td>
<td>0.84</td>
<td></td>
</tr>
<tr>
<td>The supplier is honest in dealing with our company.</td>
<td>0.89</td>
<td></td>
</tr>
<tr>
<td>Our company feels confident that the supplier is always telling the truth.</td>
<td>0.75</td>
<td></td>
</tr>
<tr>
<td>The supplier always provides honest information.</td>
<td>0.68</td>
<td></td>
</tr>
<tr>
<td><strong>Flexibility</strong></td>
<td>0.85</td>
<td></td>
</tr>
<tr>
<td>Both your company and the supplier expect that each company will be flexible to the other company’s request for changes.</td>
<td>0.72</td>
<td></td>
</tr>
<tr>
<td>Both your company and the supplier expect to be able to make any adjustments necessary to cope with changing circumstances.</td>
<td>0.77</td>
<td></td>
</tr>
<tr>
<td>When an unexpected situation arises, both your company and the supplier would prefer to amend your agreement rather than hold each other to the original terms.</td>
<td>0.80</td>
<td></td>
</tr>
</tbody>
</table>

Fit statistics: $2 (32) = 40.08$ (P = 0.12), GFI = 0.92, CFI = 0.94, IFI = 0.90, RMSEA = 0.051
**Construct validity**

Because each variable was measured with multiple items, each variable was subjected to a scale development and purification procedure. Ill-fitting items were dropped on the basis of item-total correlations and the subsequent reduced sets of items were subjected to confirmatory factor analysis. Then, reliability analyses were run for each construct to see if all the measures demonstrated a satisfactory coefficient reliability.

Next, we tested convergent validity. Some of the items with low loadings with intended factors were removed from the scales. Among the four items for environmental uncertainty, “price uncertainty” was deleted. This item diminishes internal consistency and showed very few loadings to the latent variable of environmental uncertainty. After deleting the item, an acceptable fit of factor model for the three latent variables—honesty, environmental uncertainty, and flexibility—adequately fit the data. (Fit statistics: $2 (32) = 40.08 \ (P = 0.12), \text{GFI} = 0.92, \text{CFI} = 0.94, \text{IFI} = 0.90, \text{RMSEA} = 0.051$).

All of the factor loadings were highly significant ($p < 0.05$), which indicates the unidimensionality of the measures (Anderson and Gerbing 1988). We also tested reliability to see if all the measures demonstrated satisfactory coefficient reliability. All of the reliabilities of the constructs were above 0.70 (between 0.77 and 0.90); thus, these measures demonstrate adequate convergent validity and reliability.

We tested the discriminant validity of all 3 latent constructs through 2 difference tests. All of the constructs were tested in pairs (3 tests altogether) if the restricted model (in which the correlation was fixed as one) was significantly worse than the freely estimated model (in which the correlation was estimated freely). All the 2 differences were highly significant, which shows the evidence for discriminant validity (Anderson and Gerbing 1988). The results of CFA such as the goodness-of-fit index, factor loading, and reliability are reported in TABLE 1.

**Control variables:** The length of relationship between a manufacturer and its major supplier was included in testing hypotheses. It was prudent to control for this variable because the development of the norm of flexibility could be influenced by relationship length (Gundlach and Achrol 1993). The relationship length indicated the period that a purchasing manager has been in business with the major supplier.

### Analysis and Results

**Tests of Hypotheses**

We used multiple regression to test the hypotheses. The variable in the regression model for hypotheses 1 and 4 included environmental uncertainty, honesty, and flexibility. The variance inflation factors were well below the cutoff of 10, which suggests that multicollinearity was not a problem. We divided the respondents into two groups: one for high honesty ($> 0.475$) and one for low honesty ($< 0.475$). Flexibility $= b_0 + b_1 \text{Environmental Uncertainty} + b_2 \text{Length of Relationship}$

**TABLE 2**

<table>
<thead>
<tr>
<th>Correlation Matrix</th>
<th>Uncertainty</th>
<th>Honesty</th>
<th>Flexibility</th>
<th>Length of Relationship</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uncertainty</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Honesty</td>
<td>-0.08</td>
<td>1.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flexibility</td>
<td>-0.10</td>
<td>0.10</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>Length of relationship</td>
<td>0.02</td>
<td>0.03</td>
<td>0.06</td>
<td>1.00</td>
</tr>
</tbody>
</table>

| Mean     | 4.71 | 5.04 | 4.89 | 8.45 |
| Sdev     | 1.45 | 1.11 | 1.08 | 4.12 |

**TABLE 3**

<table>
<thead>
<tr>
<th>Regression Analysis for Hypotheses 1 &amp; 2</th>
<th>High Honesty Group</th>
<th>Low Honesty Group</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>t</td>
</tr>
<tr>
<td>Constant</td>
<td></td>
<td>2.16</td>
</tr>
<tr>
<td>Uncertainty</td>
<td>0.35</td>
<td>2.45</td>
</tr>
<tr>
<td>Length</td>
<td>0.06</td>
<td>0.82</td>
</tr>
</tbody>
</table>

* Adjusted $R^2 = 0.141$  
* Adjusted $R^2 = 0.007$

a: accept at $p < 0.05$ (1-tailed test)
relationship for 2 groups (high and low honesty groups).

The results in TABLE 3 show that the effect of environmental uncertainty on flexibility in the low honesty group was not significant (t = -1.02, p > 0.05) for H1. In contrast, in the high honesty group, the effect of environmental uncertainty on flexibility was significant and positive (t = 2.45, p < 0.05). These results support H1 and H2 (see TABLE 3).

Discussion

Theoretical Implications

A buyer in an exchange relationship with its supplier develops a social relationship with the partner because they constantly interact with each other. Through the interactions between a buyer and its supplier, social factors such as conflict, power, and honesty emerge. These social factors are critical factors that affect the exchange relationship (Frazier 1983).

In this study, honesty is a crucial factor for buyers who need to develop flexible relationships in uncertain situations. Buyers who trust the honesty of their suppliers may have the advantage of adapting to uncertain environments by relying on the norm of flexibility. The honest supplier gives its buyer the perception that the supplier will not take advantage of the uncertain environment for its benefit. The buyer therefore can adapt to an uncertain environment with the dependence of flexibility.

The results of this study are consistent with an empirical study that attempted to explain the relational contract theory with a behavioral approach. The main argument of relational contract theory is that buyers in uncertain environments are likely to produce better results by relying on cooperative bilateral control (Cannon, Achrol and Gundlach 2000). Because bilateral control is the way buyers and sellers should behave for mutual benefit (Heide and John 1992), relational norms are good mechanisms to deal with environmental uncertainty.

The question is when and how buyers can rely on relational norms. Because environmental uncertainty causes an informational asymmetry between a buyer and its supplier, the better-informed party might be tempted to engage in opportunistic behaviors in uncertain environments (i.e., Pavlou, Liang and Xue 2007). This study shows that honest information from an exchange partner may allow an exchange party to feel confidence about the partner and to rely on bilateral control such as the norm of flexibility.

Managerial Implications

Trusting an exchange partner for honesty is therefore a valuable economic asset on which exchange parties can rely when facing uncertain environments. Buyers should consider the honesty of their suppliers and decide whether to use a flexible mechanism. For instance, when buyers face an uncertain supply of parts, a flexible response from its supplier is very important for the buyer who needs to obtain parts in time. Because monitoring the supplier’s on-time deliveries incurs costs, buyers should find another way to achieve their goal that does not incur extra costs. Developing a relationship with an honest supplier is a good way to achieve this goal. Because a buyer can believe a supplier that provides honest information, the buyer can rely on the supplier’s flexible supply to deal with an uncertain supply of parts.

Because a buyer without the norm of flexibility forces its supplier to maintain a certain level of inventory, there is not much room for the supplier to make its own decisions. Therefore, a supplier cannot flexibly respond to rapidly changing environments. For instance, when a buyer forces its supplier to change an order, the supplier may be very reluctant to respond to the request due to the lack of autonomy. Therefore, buyers should find a way to develop an honest relationship with their supplier.

Limitations and Future Study

Although this study focuses on the critical role of honesty in the relationship between environmental uncertainty and interfirm flexibility, it did not empirically measure other key relationship variables. Buyers facing uncertain environments have several options regarding control mechanisms. For instance, when a buyer faces an uncertain environment, it can choose to use coercive methods such as monitoring the supplier or vertical control over the suppliers. Therefore, future research should investigate the moderating role of honesty in the relationship between environmental uncertainty and monitoring or vertical control.

Researchers may direct future research toward the investigation of the influence of honesty on the firm’s flexibility over its exchange partner when it has power over the partner. Because a buyer with power may use its power to get what it wants from its supplier, the use of a bilateral control mechanism such as flexibility may not be an attractive option. Thus, it is interesting to see how a buyer with power in a relationship with an honest supplier deals with environmental uncertainty.

REFERENCES


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