Interpersonal Dependence and Efficiency of Interfirm Exchange: A Cross-national Study of Industrial Distributor – Supplier Relationships

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Abstract. A glaring hole exists between academic marketing literature and anecdotal observations on the effect of interpersonal ties for interfirm exchange. Academic marketing literature, economic perspective in particular, either frowns on or belittles the impact of interpersonal ties for interfirm exchange. In contrast, we often hear street-smart people say that it is "who you know, not what you know," that counts for the success in business. This study aims to clarify the role of interpersonal ties in interfirm exchange by examining the effect of interpersonal dependence on interfirm-level issues in industrial distributor – supplier relationships. Specifically, we propose that interpersonal dependence has differential effects on the elements of interfirm relationships (distributor dependence, trust, and commitment) and that, in return, these exchange elements have differential effects on the efficiency of interfirm exchange. The proposed hypotheses were tested with data collected through a survey of industrial distributors in the United States and Japan. The hypotheses on the effects of interpersonal dependence on interfirm relational elements received a mixed support, while the hypotheses on the effects of interfirm relational elements on the efficiency of exchange received support.

Keywords: channel relationships, personal factors, U.S.-Japan comparison

If Japanese want to get the things done, they must make a day-to-day efforts to establish firm human relationships (Yoshimura and Anderson 1996, p. 54).

Distribution channel relationships have undergone remarkable changes in the last decade. One of the most important changes is the shift of channel goals from maximizing profits from discrete transactions to building and managing interfirm relationships which enhance long-term competitive advantage (Anderson and Narus 1990; Dwyer, Schurr, and Oh 1987). Two fundamental differences exist between discrete transactions and long-term, close exchange relationships: the temporal element of the exchange and the identity of the exchange parties (Gerlach 1992). Whereas each discrete transaction occurs as an independent exchange episode, long-term exchange relationships develop over extended period of time. Accordingly, recent studies have examined how past history (Gulati 1995; Weiss and Kurland 1997) and future prospect (Heide and Miner 1992; Ganesan 1994) of the relationship influence present interactions between the exchange parties.

The second difference is concerned with the identity of the people involved in the exchange. Whereas the issue of identity is immaterial in discrete transactions because each transaction occurs between "faceless" exchange parties (Butler 1983), it becomes an important consideration because a series of exchanges occur between the same parties over an extended period of time. The relationship between supplier sales personnel and distributor purchasing manager (or representative) in industrial market is a classic example of personal relationships overlapping with formal interfirm relationships (Bradach and Eccles 1989, p. 109). Surprisingly, very little research on the role of the identity of the exchange personnel for interfirm relationships has been reported in the marketing channels literature except for conceptual recognition for the importance of personal ties for interfirm exchange (Gundlach and Achrol 1993; Weitz and Jap 1995).

Consider extant marketing channels literature on close interfirm relationships (Anderson and Narus 1990; Anderson and Weitz 1992; Gundlach, Achrol, and Mentzer 1995; Lusch and Brown 1996; Morgan and Hunt 1994). None of these empirical studies examined interpersonal factors as an antecedent of close interfirm relationships as are represented by high trust and commitment (see Dahlstrom and Nygaard 1995 and Murry and Heide 1998 for notable exceptions). Consider another major research stream in marketing channels literature, interfirm power-dependence (Geyskens et al. 1996; Kumar, Scheer, and Steenkamp 1995, 1998). Despite its long and rich tradition in marketing channels literature since early 1970's (see Frazier 1999 for a review), few previous studies have examined how dependence at the interpersonal level relates to dependence at the interfirm level (cf. Frazier 1983). This reticence on the role of interpersonal factors for interfirm relationships in marketing channels literature contrasts sharply with anecdotal observations by practitioners ("It is *who you know*, not what you know, that makes or breaks the deal") and management research (Larson 1992; Zaheer, McEvily, and Perrone 1998). This glaring gap between academic literature and realistic observations needs to be filled.

Ignoring the issue of interpersonal factors will hamper further progress in research and practice on

marketing channel management. From a theoretical standpoint, our knowledge base on interfirm relationship is likely to remain incomplete until we verify empirically the potential role of interpersonal factors for interfirm exchange relationships (Heide 1994). On the practice side, it will be infeasible to develop and manage a successful channel relationship until a channel manager has clear grasp on the role of interpersonal factors. In particular, interpersonal factors has been said to be crucial in managing distribution channel relationships in non-U.S. channel contexts such as Japan and China where interpersonal ties are said to play a key role in business transactions (Cateora and Graham 1998; Lincoln and Kalleberg 1990; Lovett, Simmons, and Kali 1999). Yet, little empirical verification and support have been reported. Despite the abundance of discussion on the importance of interpersonal factors in foreign markets and call for more research on foreign marketing channels, our knowledge on the foreign marketing channel relationships, the role of interpersonal ties in particular, is scant at best.

The study reported here aims to fill that gap by examining the impact of an interpersonal factor – personal dependence – on interfirm relationships and a subsequent efficiency of interfirm exchange. Specifically, we first examine how personal dependence between a distributor and its supplier contact person affects two major groups of marketing channel constructs: (a) distributor firm – level dependence and (b) trustworthiness of the supplier and distributor commitment. In particular, we pay special attention to differential effects of personal dependence on domestic channel relationships vis-à-vis Japanese channel relationships. Then, we examine how a distributor firm's interfirm relational factors (trust and commitment) affect economic efficiency of interfirm exchange (coordination cost savings).

The intended contribution of this study is twofold. First, the study intends to fill the gap between the academic marketing literature and realistic observations by verifying the potential role of interpersonal factors for interfirm relationships. Relatedly, the study intends to expand the scope of distribution channels literature on interfirm relationships by examining the cross-national convergence and divergence on the role of personal dependence. We conduct an empirical study in domestic channel relationships and Japanese channel relationships in an effort to solve this problem.[1]

Secondly, the study intends to enhance understanding on the effect of relational exchange as represented by distributor trust and commitment on the efficiency of exchange. Although it has been suggested that "the presence of relationship commitment and trust is central to successful relationship marketing (Morgan and Hunt 1994, p. 22), empirical evidence on the contribution of trust and commitment on the efficiency of exchange remains scarce. In this study, we examine the effects of trust and commitment on coordination cost. We would like to verify whether trust and commitment have significant and identical effects on the efficiency of exchange through this effect.

The study begins with a review of the extant literature on the role of personal ties in interfirm relationships, followed by the hypotheses that describe the links between a distributor's interpersonal dependence, interfirm relational factors, and efficiency of exchange. The method section begins with measure development, followed by description of data collection, measure validation, and statistical analysis. In the discussion section, the major findings are reviewed from theoretical and managerial perspectives, the limitation of the study are highlighted, and future research directions are suggested.

THEORETICAL BACKGROUND

Two Perspectives on the Role of Interpersonal Factors on Interfirm Relationships

Economic perspective. Neoclassical economic approach of interfirm exchange assumes that interfirm exchange behavior is affected minimally by social or personal relations (Hirschman 1982). Economic behavior is regarded as autonomous from social relationships and no impact of social structure and social relations is suggested. Therefore, the identity and past relations with individual exchange personnel are considered as irrelevant. If personal relations are ever developed between exchange parties at all, they are treated as a "frictional drag" that impedes competitive and fair transactions between the exchange parties (Granovetter 1985).

Theories under the umbrella of new institutional economics do consider personal factors in interfirm exchange. But, both transaction cost analysis and agency theory assume that people involved in a relationship are motivated by economic self-interest and will engage in opportunistic behavior (Bergen, Dutta, and Walker, Jr 1992). For example, agency theory considers the development of close ties with an agent (supplier's sales rep) and customer (distributor purchasing rep) as a potential threat to the interests of the principal (supplier firm) (Mills 1990). Indeed, firms did take steps to address these potential agency problems. It has been said that General Motors one time rotated their field sales rep every six months because of the fear that its sales rep develops close relationships with dealers and put the dealers' interest over the interests of General Motors. Consequently, research focus has been devoted to dealing with the potentially adverse consequences of agency problems due to interpersonal ties.

Sociological perspective. In contrast to the economic perspective, sociologists and anthropologists long argued that economic behavior occurs under the influence of social relations. Yet, socialized conception of how social structure or relations affect individual behavior are rather mechanical: once an individual's social class or relations is known, everything else in behavior is automatic and predictable, since they are so well socialized. Therefore, exchange parties are said to be undersocialized when portrayed as isolated, rational economic units and oversocialized when portrayed as governed exclusively by social values and norms (Granovetter 1985).[2]

Following the lead by Granovetter (1985, p. 487), we maintain that exchange parties do not behave or decide as atoms outside a social context, nor do they adhere slavishly to a script imposed by the particular social categories that they occupy. Instead, the economic exchange between firms are embedded on concrete, ongoing systems of social relations.

Embeddedness as a nexus between economic perspective and sociological perspective

We refer to a channel context in which interpersonal relations alter interfirm exchange as "embedded." In an embedded market, personal ties between buyer personnel and seller personnel bear on interfirm exchange. Unlike economic perspective or sociological perspective, the embeddedness approach to interfirm exchange threads its way between the oversocialized approach of general morality and the undersocialized one of impersonal, institutional arrangements by following and analyzing concrete patterns of social relations (Granovetter 1985). Therefore, it is the details of interpersonal ties that will affect what is found in the interfirm relationship. The concept of embeddedness has been explicitly used as a paradigm for industrial buyer behavior (Bonoma, Bagozzi, and Zaltman 1978) and has implicitly appeared as a contextual factor affecting channel dyads (Reve and Stern 1986) and salesman-customer dyads (Weitz 1981).

In distribution channel relationships, embeddedness is likely to manifest in the following fashion: Under the channel context where the interfirm relationship are not embedded in interpersonal relations, personal ties are unlikely to have any significant impact on interfirm relational issues. Operationally, personal-level dependence at a distributor firm is unlikely to be related to its firm-level dependence, trustworthiness of the supplier firm, and distributor commitment. In contrast, under the channel context where the interfirm relationship is embedded in interpersonal relations, personal ties are likely to have significant impact on interfirm relationships. Operationally, personal-level dependence at a distributor firm is likely to be related positively to firm-level dependence, trustworthiness of the supplier firm, and distributor commitment.

CONCEPTUAL FRAMEWORK AND RESEARCH HYPOTHESES

The conceptual framework consists of two building blocks: One block in which the links among the variables are invariance across different national settings, which we would call "context-excluded" relationships (Cheng 1994). In the other building block, the links among the variables are variant across different national settings, which we would call "context-embedded" relationships. We hypothesize the link between interfirm relationships and efficiency of exchange as "context-excluded" relationships and the link between personal dependence and interfirm relationships as "context-embedded" relationships. The conceptual framework is described on Figure 1.

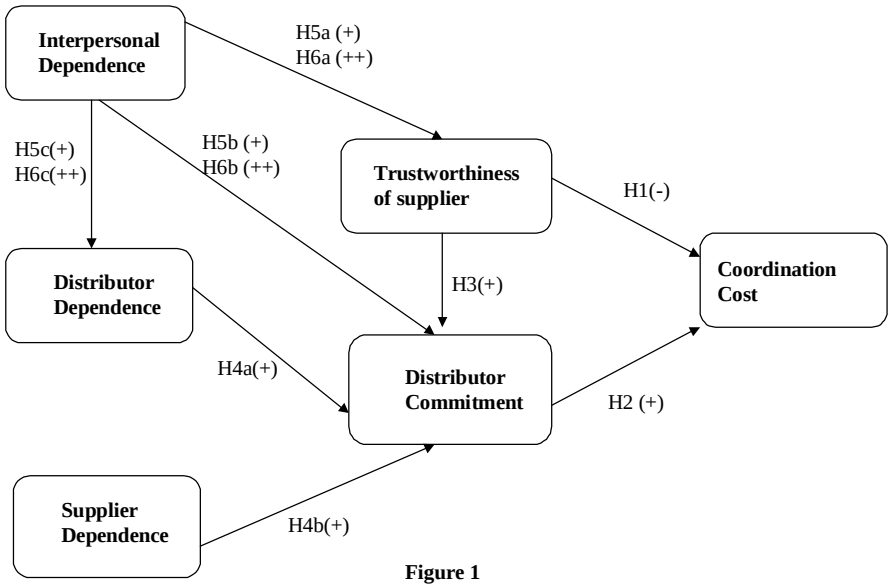

Figure 1
Interpersonal Dependence and Efficiency of Interfirm Exchange

Interfirm Relationships and Efficiency of Exchange: Cross-national Invariance

Trustworthiness of supplier and coordination cost. Among different elements of efficiency, we focus on coordination cost. Coordination cost is defined as the cost involved in communicating with the focal supplier, resolving differences, and reaching agreement with the supplier (Stewart 1995). When trustworthiness of the supplier is low because of either lack of experience or negative experience with the supplier, coordination of distribution operations with the supplier is likely to be costly for the following reasons. The distributor should pay close attention to minute details of negotiation with the supplier because the distributor is not certain about the supplier's good intentions and incentives. There is fear that the supplier may renege on its responsibilities unless they are spelled out and agreed on. The distributor is likely to make every effort to maximize its interest for each round of negotiation with the supplier because the distributor assumes that the supplier is interested in maximizing its own interest.

In contrast, coordination cost is likely to drop significantly as trustworthiness of the supplier increases. The distributor does not have to spend excessive time and energy in negotiating and resolving differences on the minute details of operation with the supplier because there is belief that the supplier will conduct its business in honest and sincere way. The distributor does not have to haggle with the supplier to maximize its interest from each round of negotiation because there is belief that the supplier is genuinely interested in securing the benefits of the distributor as well as its own.

H1: Trustworthiness of the supplier firm is associated negatively with distributor coordination cost.

Distributor commitment and coordination cost. Despite the ostensibly positive effect of commitment on channel performance, it is still unknown how commitment affects cost of coordinating channel operations. We maintain that a distributor's commitment to the relationship increases coordination cost from a distributor's point of view. That is, a distributor's own commitment is related positively to coordination cost. First, as a distributor's desire to continue and further develop the relationship increases, the distributor is likely to be more receptive to the supplier's specific policies and accommodative to the supplier's requests. In other words, the distributor will be willing to take more burden and expend its resources in aligning its operations with those of the supplier, which will increase coordination cost. Second, a committed distributor is also likely to initiate more communication with the supplier (Morgan and Hunt 1994). In addition, the distributor will make serious effort to resolve disagreements or conflicts with the supplier in an amicable and constructive way (Mohr and Nevin 1990). The time and energy spent by the distributor in this process is likely to increase significantly as the distributor engages in communications to resolve the differences in a functional and constructive way.

H2: Distributor commitment is associated positively with distributor coordination cost.

Trustworthiness of supplier and distributor commitment. Distributor commitment is likely to increase as the trustworthiness of the supplier firm increases for

the following reasons. First, when a distributor finds that the supplier is honest and fair in dealings with the distributor, the distributor believes that the supplier firm will not take unexpected actions that would result in negative outcomes for the distributor. Since commitment by definition entails vulnerability to the committed party (Morgan and Hunt 1994), a distributor's confidence in the supplier's trustworthiness will reduce the distributor's perceived uncertainty and enhance its desire to continue the relationship with the supplier. In addition, if a distributor perceives that the supplier is sincere in dealings with the distributor and generous and accommodative in interactions with the distributor, the distributor will believe that the supplier is interested in gaining not only its own benefit but also the distributor's benefit (Larson 1992), which will facilitate the distributor's motivation to further develop the relationship.

H3: Trustworthiness of the supplier firm is related positively to distributor commitment.

Distributor dependence and distributor commitment. High distributor dependence means that it is difficult for the distributor firm to replace the incumbent supplier with alternative suppliers for various reasons (Heide and John 1988; Kumar, Scheer, and Steenkamp 1995), including supplier's sales and profit contribution (El-Ansary and Stern 1972) and supplier's superior performance of channel functions (Frazier 1983). As the extent of reliance on the supplier increases, the distributor's desire to continue and further develop the relationship with the incumbent increases. It is also possible that distributor dependence is high simply because there are simply no or few other alternative suppliers. Under this situation, the distributor has no choice but to maintain the relationship with the incumbent supplier. When there is no other alternative supplier, the distributor motivation to maintain the relationship also increases and the distributor may send a signal of commitment by making short-term sacrifices and providing special help to the supplier because of its need to show goodwill to the supplier (Brown, Lusch, and Nicholson 1995). The positive effect of dependence on commitment has been supported by previous studies at both interpersonal (Jemmott, Ashby, and Lindenfeld 1989; Johnson and Rusbult 1989) and interfirm levels (Levinthal and Fichman 1988).

H4a: Distributor firm-level dependence is associated positively with distributor commitment.

While most previous studies examined a firm's own dependence and its commitment to the relationship with a supplier, the link between a firm's dependence and its partner firm's commitment has not been elucidated. We maintain that, other things being equal, supplier dependence has a positive effect on distributor commitment for the following reasons. First, under a certain level of distributor dependence, increasing levels of supplier dependence lead to higher total interdependence between a supplier and its distributor, which is found to have a positive effect on distributor commitment (Kumar, Scheer, and Steenkamp 1995). Second, other things being equal, a distributor is likely to be committed more to the relationship with a supplier that is dependent on the distributor rather than to the relationship with a supplier whose dependence is low (Kim 1999). A supplier that is highly dependent on the distributor will be more cooperative and adaptive to the distributor request and express desire to maintain the relationship. In return, a distributor is likely to be more committed to a supplier that is interested in maintaining and developing the relationship into the future than to a supplier whose dependence is low.

H4b: Other things being equal, a supplier's firm-level dependence is associated positively with distributor commitment.

Interpersonal Dependence and Interfirm Relationships: Cross-national variance

Two conflicting views have been suggested in the literature on the effect of personal-level dependence on interfirm relationships. Economic perspectives suggest that personal-level dependence will have negative impact of efficient exchange. The dependent person (distributor personnel) is vulnerable to opportunism or shirking by the exchange partner (supplier personnel). In other words, people's incentive to perform may diminish as personal dependence increases (D'Aveni and Ravenscraft 1994; Williamson 1996). On the other hand, management literature highlights the positive aspects of personal dependence for interfirm exchange. Research on boundary-spanning behavior suggests that close ties between boundary personnel should have a positive effect on interfirm exchange (Adams 1976; Salancik 1977). In particular, Frazier (1983) examined role performance of automobile manufacturers' boundary personnel and found that it is related strongly to dealer satisfaction, manufacturer's interest of dealer's welfare (as perceived by dealer), and agreement on decision strategy variables. In addition, research on "embeddedness" (Granovetter 1985) and "social context" (Gulati 1995; Hakansson and Snehota 1995) attests to the positive effect of personal dependence for interfirm exchange.

We maintain that distributor firm personnel's dependence on the supplier firm contact person has a positive effect on the distributor firm's relationship with its supplier firm for two reasons. First, the context of most previous studies using transaction cost analysis was a manufacturer's concern for dealing with its supplier (Heide and John 1990; Stump and Heide 1996) or

distributor (Anderson 1988; Weiss and Anderson 1992). Under this context, a manufacturer boundary personnel's dependence on either supplier personnel or distributor personnel may very well cause concern for being vulnerable to potential opportunism. However, personal dependence takes on a different meaning from a distributor's point of view. Dependence on supplier boundary personnel is essential source of a distributor's successful business operations. It is really the boundary personnel of a supplier firm who translate strategic concepts and operational policies of the supplier firm into action and carry them forward. Supplier boundary personnel can make a difference in dealer business by coordinating the operations of supplier and distributor and cooperating with the distributor on matters of concern (Frazier 1983).

Secondly, distributor's personal dependence takes on an even more importance in industrial distribution channel where the distributor carries multiple product lines and often competing brands under a product line (Frazier and Rody 1991). Since distributors are constrained in the amount of time they can devote to any one supplier, suppliers will vie for the distributor's time and attention. Under this condition, superior role performance of the supplier boundary spanning personnel and distributor's subsequent dependence on that person will be critical for obtaining distributor's time and attention. Therefore, we hypothesize that

H5: A distributor's personal-level dependence is associated positively with (a) trustworthiness of the supplier firm, (b) distributor commitment, and (c) distributor firm-level dependence.

The case of Japanese industrial distribution channels. Like the case of the United States, we suggest that interpersonal dependence is associated positively to interfirm relationships. We further suggest that the strength of the links between interpersonal ties and interfirm relationships is stronger in the Japanese context. That is, national culture of Japan moderates the positive link between interpersonal dependence and interfirm relationships. Numerous accounts of business relationships in Japan highlight the importance of personal ties (Batzer and Laumer 1989; Gerlag 1992; Lincoln and Kallberg 1990; Yoshimura and Anderson 1996). Previous studies found that a central theme in accounts of Japanese interfirm relationships is the close and personal relations between distributor personnel and supplier personnel. Personal, emotional ties are regarded not only as more important than abstract legal rules but also than a short-term economic advantage.

Between the partners in the distribution chain, these personal relationships find expression in regular and frequent visits by supplier personnel, generous provision of assistance and support (even with private problems), frequent exchange of gifts, and a refusal to put pressure on distributors to stepping up sales.[3] In Japan where interfirm relationships are embedded in personal relationships, personal-level dependence is considered as essential prerequisites of interfirm relationships (Herbig 1995). That is, personal-level dependence should be nurtured first to elevate the exchange to the interfirm level and develop business relationships, to relieve the fears of shirking and opportunism of the exchange partners, which makes it easier for a distributor firm to trust the supplier and commit to the relationship with the supplier at the corporate level (Bradach and Eccles 1989).

Similarly, trustworthiness of the supplier firm and commitment to the relationship in Japanese marketing channel relationships are very much dependent on the extent to which a distributor has developed personal dependence on the supplier personnel. That is, a supplier salesrep's close attention to serving the distributor needs, coupled with willingness to go extra miles for the benefit of the distributor, and distributor's personal dependence on that salesperson should come first to generate trustworthiness of the supplier firm and commitment to the relationship with the supplier. Therefore, we suggest that

H6: The positive influence of a distributor's personal-level dependence on (a) trustworthiness of the supplier firm and (b) distributor commitment, and (c) distributor firm-level dependence will be higher for Japanese distributors than for U.S. distributors.

METHOD

Empirical Study Context

Downstream channel relationships between industrial distributors and suppliers were chosen as the empirical setting. Specifically, industrial distributors of two four-digit Standard Industry Classification (SIC) codes (5084, industrial machinery/equipment, and 5085, industrial supplies) were examined. The industry classification categories in Japan, which are equivalent to the U.S. SIC codes 5084 and 5085, are machinery/instrument and industrial supplies/hardware, respectively.

Measure Development

Multi-item measures were developed for each construct by the following process: First, measure development efforts began with personal interviews with industrial distributors and suppliers in Japan. Second, two sets of measurement items, one English version and one Japanese version, were developed from the results of personal interviews and a review of prior academic empirical studies and trade publications from the United States and Japan. To enhance translation equivalence, the English version of the questionnaire was first translated into Japanese and then retranslated into English. Third, the resulting items were administered to 10 Japanese

distributors and marketing consultants through personal interviews to determine whether they would assess the items as relevant for Japanese business relationships and interpret them as was intended. Fourth, after some minor changes, the mail survey was pretested on 120 industrial distributors in the United States and 50 industrial distributors in Japan. Forty U.S. distributors and 17 Japanese distributors responded, which is a comparable response rate. After applying the measure refinement process outlined by Churchill (1995), the remaining items showed encouraging levels of reliability and unidimensionality and were included in the main survey (see Appendix).

Cost efficiency. Coordination cost is defined as the cost of communicating and negotiating with the focal supplier firm to fulfill business transactions. Coordination cost from a distributor perspective is examined. Four items (1: Needs very little time and effort – 7: Needs very much time and effort) from Dumond (1991) and Richeson, Lackey, and Starner, Jr (1995) were used in the survey. *Elements of interfirm relationships*. Two major elements of relational exchange are examined: trustworthiness of the supplier and distributor commitment. For *trustworthiness of supplier*, we focus on the *belief* aspect of trust and operationalize it as a distributor's belief about the credibility and sincerity of its supplier. Four measurement items from Ganesan's (1994) and Morgan and Hunt's (1994) work were used. *Distributor commitment* was measured using four items from Anderson and Weitz's (1992) study, including a strong sense of loyalty, willingness to invest in the relationship, and treating the relationship as a long-term alliance.

Dependence. Dependence is examined at interfirm level and interpersonal level. Dependence at the interfirm level is defined as the extent to which a firm needs to maintain a channel relationship with its exchange partner firm (Frazier 1983). Four items from Heide's (1994) and Kumar, Scheer, and Steenkamp's (1995) work were used to measure distributor firm dependence and supplier firm dependence. For both distributor firm dependence and supplier firm dependence, we focus on each firm's replaceability within the distributor's trade area (Frazier and Rody 1991; Kumar, Scheer, and Steenkamp 1995). For a distributor's personal dependence, we examine the key informant's dependence on the contact person in the supplier firm. Specifically, we used four items to gauge the importance of the contact person and reliance on that person for distributor's business. The items from Frazier (1983), Behrman and Perreault (1982), and Bush et al. (1990) were borrowed and adapted for the study context.

Sampling and Data Collection

The sampling frame for the United States was a Dun and Bradstreet mailing list. A random sample of 1000 industrial distributors was selected from the list. The sampling frame for Japan was the industrial distribution section of Nikkei Annual Corporation Reports (1996). A random sample of 418 distributors was selected from the list. Data collection began with a letter to the chosen distributors introducing the research project. A few days later, the first wave of questionnaires was sent with a cover letter. For the mail survey in Japan, a recommendation letter by a marketing professor at a highly prestigious university was enclosed to enhance the credibility of the study and the response rate. A follow-up questionnaire was sent three weeks later to those who had not responded to the original questionnaire. A postcard reminding those distributors who had not responded to the first questionnaire was sent between the two waves of questionnaire mailing.

The final response rate was 28.3% (283 out of 1000 sent) for the United States and 40.9% (171 out of 418 sent) for Japan. After eliminating some of the returned questionnaires because of either incomplete information or company-specific situations, 253 U.S. responses (116 responses from SIC code 5084 and 137 from SIC code 5085) and 140 Japanese responses (73 and 67 from SIC codes 5084 and 5085, respectively) were used for analysis.[4]

ANALYSIS AND RESULTS

The analysis begins with the calculation of descriptive statistics for summed scales. Pearson correlations between each summed scale also were calculated and are reported in Table 1. The proposed model was estimated by path analysis option of LISREL 8 and the results are reported on Table 2.

Table 1
Means, Standard Deviations, and Correlation Matrixes

	Mean		S.D.							
	U. S.	Japan	U.S.	Japan	1	2	3	4	5	6
1. Supplier dependence	4.31	5.08	1.47	1.41	1.00	*.20*	*.31*	*.42*	*.44*	*- 17*
2. Personal dependence	3.26	4.73	1.56	1.23	.12 [a]	1.00	*.21*	*.48*	*.43*	*- .21*
3. Distributor dependence	3.76	5.28	1.52	1.46	.31	.23	1.00	*.36*	*.47*	*.03*
4. Trustworthiness of supplier	5.36	5.51	1.13	1.09	.04	.06	.27	1.00	*.56*	*- 49*
5. Distributor commitment	5.35	5.59	1.23	.96	.37	.23	.53	.38	1.00	*- .21*
6. Coordination cost	2.71	3.49	1.33	1.31	.26	.22	.03	-.39	-.10	1.00

[a] The lower triangular matrix provides the correlations for the U.S. data, and the upper triangular matrix (italicized) indicates the correlations for the Japanese data.

Table 2
Model Estimation Results

Links	Hypothesized Effect	Nonstandardized Coefficient *United States*	*Japan*
H_1: Trustworthiness of supplier ➔ Coordination cost	(-)	-.53 (-6.55)[c]	-.68 (-6.77)[c]
H_2: Distributor commitment ➔ Coordination cost	(+)	.06 (.75)	.19 (1.48)[a]
H_3: Trustworthiness of supplier ➔ Distributor commitment	(+)	.30 (5.16)[c]	.25 (3.81)[c]
H_{4a}: Distributor dependence ➔ Distributor commitment	(+)	.35 (7.83)[c]	.19 (4.39)[c]
H_{4b}: Supplier dependence ➔ Distributor commitment	(+)	.17 (3.84)[c]	.12 (2.80)[c]
H_{5a}: Personal dependence ➔ Trustworthiness of supplier (U.S.)	(+)	.03 (.69)	
H_{5b}: Personal dependence ➔ Distributor commitment (U.S.)	(+)	.07 (1.66)[b]	
H_{5c}: Personal dependence ➔ Distributor dependence (U.S.)	(+)	.23 (3.41)[c]	
H_{6a}: Personal dependence ➔ Trustworthiness of supplier (Japan)	(++)		.42 (5.63)[c]
H_{6b}: Personal dependence ➔ Distributor commitment (Japan)	(++)		.12 (2.01)[b]
H_{6c}: Personal dependence ➔ Distributor dependence (Japan)	(++)		.32 (2.89)[c]

[a]: $p < .10$; [b]: $p < .05$; [c]: $p < .01$.

Interfirm relationships and efficiency of exchange. Coordination cost is associated negatively with the trustworthiness of supplier both in the United States (b = -.53, p < .01) and Japan (b = -.68, $p < .01$). Thus, H_1 is fully supported. Coordination cost is associated positively with distributor commitment in Japan (b = .19, p < .10), but not in the United States (b = .06, n.s.). Therefore, H2 is partially supported.

Relationships among interfirm-level exchange elements. Table 3 shows that trustworthiness of supplier is associated positively with distributor commitment in both the United States (b = .30, $p < .01$) and Japan (b = .25, $p < .01$), in support of H_3. Similarly, distributor commitment is associated positively with distributor dependence (b = .35, $p < .01$ in the United States; b = .19, $p < .01$ in Japan) and supplier dependence (b = .17, $p < .01$ in the United States; b = .12, $p < .01$ in Japan). Therefore, H4a and H4b are fully supported.

Personal dependence and interfirm relationships. In the United States, personal dependence is related positively to distributor dependence (b = .23, $p < .01$) and distributor commitment (b = .07, $p < .05$), although it is unrelated to trustworthiness of supplier (b = .03, n.s.). Thus, H_5 is partially supported. In contrast, personal dependence in Japan is associated positively with trustworthiness of supplier (b = .42, $p < .01$), distributor commitment (b = .12, $p < .05$), and distributor dependence (b = .32, $p < .01$), as we hypothesized. The beta coefficients of the United States and Japan were compared by Z scores to test H6. The Z scores are 4.32 (p < .01) for trustworthiness of supplier, .68 (n.s.) for distributor commitment, and .75 (n.s.) for distributor dependence. Therefore, the difference between the United States and Japan is significant only for the link between personal dependence and trustworthiness of supplier and H_6 received a limited support.

DISCUSSION

Theoretical Implications

Interpersonal dependence and interfirm relationships. The effect of personal dependence on interfirm relationships shows both cross-national convergence and divergence. In both countries, personal dependence is related positively to distributor firm-level dependence and distributor commitment. In contrast, personal-level dependence is unrelated to trustworthiness of the supplier firm in the United States, whereas it is related significantly to trustworthiness of supplier firm in Japan. Interfirm relationships in Japan are clearly inalienable (Franzen and Davis 1990) – interpersonal ties are significantly intertwined with interfirm relationships.

The analysis results also corroborate the relevance of embeddedness concept (Granovetter 1985) to accommodate the impact of social relations on interfirm exchanges. That is, the results indicate that neither economic perspective nor sociological perspective explain the effect of personal dependence on interfirm relationships adequately. Specifically, in the United States, where personal dependence is often considered independent of interfirm relational factors, it turned out to be related significantly to a distributor's firm-level dependence and commitment. For sociological perspective, none of the factors in the model seem to be institutionalized in the United States either. In Japan, economic perspective is clearly out of sync with the reality because interpersonal dependence is highly related to all three interfirm relational elements. Similarly, none of the factors in the model, including personal dependence, appear to be institutionalized in Japan because each construct shows substantial variation. In sum, it is really the extent of embeddedness - details of interpersonal ties in individual interfirm relationships - that shape interfirm relationships (Granovetter 1985).

Interfirm relationships and economic efficiency. Despite great interest in relational approach of interfirm exchange in the last decade, the effect of relationship marketing on economic performance remains ambiguous

(cf. Kalwani and Narayandas 1995; Noordewier, John, and Nevin 1990). The analysis results indicate that the elements of relationship marketing has differential effects on the economic performance, thereby suggesting the danger of making a sweeping prediction on the effect of relationship marketing on economic performance. Instead, at least for coordination cost considerations, it is necessary to specify distinctive elements of relationship marketing and examine the link between each element and economic performance separately. For example, consider industrial distributor – supplier relationships in Japan. The results suggest that trustworthiness of supplier lowers coordination cost significantly, whereas distributor commitment increases coordination cost. Collapsing supplier trustworthiness and distributor commitment together will simply blur differential effect of each element.

Managerial Implications

Interpersonal dependence and interfirm relationships. What drives a distributor's trust toward its supplier and commitment to the relationship with that supplier? Pervious studies in the United States identified various firm-level drivers of trust and commitment, and the analysis results shows that it is indeed the firm-level drivers such as distributor dependence and supplier firm trustworthiness that drive interfirm relationships. But, the analysis results also show that personal dependence increase distributor dependence and commitment. For the Japanese distributors, the analysis results suggest that personal dependence has to be developed and nurtured first to develop and practice relationship marketing in Japan. In Japan, interpersonal factors are found to contribute to the reduction of coordination cost indirectly through trustworthiness of the supplier.

Differential effects of trustworthiness of supplier and distributor commitment. The results from both the United States and Japan suggest that trustworthiness of supplier lowers a distributor's coordination cost with its focal supplier. In contrast, distributor commitment, a concept that has been highlighted as a key element of relationship marketing (Morgan and Hunt 1994), is found to have either no effect (United States sample) or increase (Japan sample) a distributor's coordination cost. Three implications emerge from these cross-national similarities and differences. First, the analysis results clearly show that trustworthiness of supplier and distributor commitment is two distinct issues, although they are related to each other. Different effects of trustworthiness of supplier and distributor commitment on coordination cost as well as different antecedents of trustworthiness of supplier and distributor commitment suggest that distributors consider them as separate issues. For a distributor's commitment to the relationship, interdependence issues are as important as trustworthiness of the focal supplier.

Second, as least for the coordination cost, distributor commitment does not help a distributor realize lower coordination cost. This result suggests the need for a distributor to be selective in developing and maintaining highly committed relationships with its suppliers. Juxtaposing this result with Japanese business practice brings forth an intriguing insight on Japanese marketing channel relationships. The positive link between distributor commitment and coordination cost at least partly explain why channel relationships in Japan tend to be more selective than those of the United States. One reason is the higher coordination cost of Japanese distributors (median = 3.50) than U.S. distributors (median = 2.50) and the positive effect of distributor commitment on coordination cost. Third, unlike distributor commitment, trustworthiness of the focal supplier lower coordination cost significantly in both the United States and Japan. This cross-national convergence indicates two things. First, although trust has mainly been considered as an attitudinal variable whose impact on economic performance is dubious, the results show clearly that trust helps a distributor reduce coordination cost, thereby saving total transaction cost. Second, this convergence indicates that building trust, at least at the interfirm level, works for foreign channel relationships as well as for domestic channel relationships. It alleviates the burden of adaptation in foreign markets, but channel managers need to pay extra attention on gaining trust of channel members in both domestic and foreign marketing channels.

Limitations and Future Research Directions

The study has two major limitations. First, the study examined only a part of total transaction cost in interfirm exchanges. Although we believe that coordination cost is the key element of transaction cost in ongoing channel relationships, transaction cost involves not just coordination cost, but other types of cost such as acquisition cost (Noordewier, John, and Nevin 1990). It is also possible that relational exchange elements have different links with other transaction cost elements. Therefore, future research needs to specify relevant cost elements for the focal channel context and examine the effect of relational exchange elements on each cost element.

Although we believe that personal dependence is the key element of interpersonal ties, it is possible that interpersonal ties have other elements such as personal-level trust (Moorman, Deshpande, and Zaltman 1993) or investment (Rusbult 1980). It is necessary for future studies to specify the domain of interpersonal ties and clarify relationships among these elements. Subsequently,

the relevant elements of interpersonal ties should be examined in conjunction with interfirm exchange elements in future research.

ENDNOTES

1. Japan was chosen as a country of comparison because (a) cross-cultural divergence is likely to be revealed more readily when domestic channel relationships are contrasted with those of Japan where personal relationships are known to play a crucial role for the success of interfirm relationships (Batzer and Laumer 1989; Nevin 1995), (b) Japan is the second largest trading partner of the United States and its distribution channel has been suggested as one of the major barriers of market access by the U. S. firms (Fahy and Taguchi 1995), and (c) very few empirical studies on the role of personal relationships in Japan has been reported despite its alleged importance in managing Japanese channel relationships (see Money 1996 for an exception).

2. Interestingly, both under-socialized and over-socialized views on economic exchange have in common a conception of exchange carried out by atomized actors. In the undersocialized account, atomization results from narrow utilitarian pursuit of self-interest; in the oversocialized one, behavioral patterns have been internalized and ongoing social relations thus have only peripheral effects on behavior.

3. Note that this statement does not mean that Japanese firms rely solely on personal relationship for business dealings. On the contrary, the business ties between manufacturer and distributor in Japan reflects business interdependence, but they are also a function of personal relationships (Czinkota and Woronoff 1986).

4. The test of results of validity check, nonresponse bias check, key informant bias check, and measurement invariance check are omitted from the text because of space limitations, but they are available from the author upon request.

APPENDIX

Measurement Items Used for the Empirical Study*

Distributor commitment (LISREL-based composite reliabilities = .88 for the United States and .86 for Japan)
How would you characterize your firm's commitment to the business relationship with the supplier firm?

1. Treating the relationship as a long-term alliance.
2. Committed to the business relationship.
3. Having a strong sense of loyalty to the partner firm.
4. Willing to make long-term investments for the partner firm.

Trustworthiness of the supplier (LISREL-based composite reliabilities = .88 for the United States and .87 for Japan)

1. We can count on this supplier to be sincere.
2. This supplier follows through on its promises.
3. I can expect this supplier to tell me the truth.
4. I believe this supplier is fair in doing business with us.

Distributor dependence (LISREL-based composite reliabilities = .81 for the United States and .75 for Japan)

1. Our total cost of switching to a competing supplier's line would be prohibitive.
2. There are other suppliers that could provide us with comparable product lines. [a, b]
3. It would be difficult for us to replace the sales and profits generated from this supplier's line.
4. My firm would suffer greatly if we lost this supplier.

Supplier dependence (LISREL-based composite reliabilities = .75 for the United States and .71 for Japan)

1. It would be difficult for this supplier to replace the sales and profits our distributorship generates.
2. In our trading area, there are other firms that could provide this supplier with comparable distribution . [a, b]
3. This supplier would suffer greatly in our trading area if it lost our distributorship.
4. In our trading area, this supplier would incur minimal costs in replacing our firm with another distributor. [a]

Personal dependence (LISREL-based composite reliabilities = .88 for the United States and .88 for Japan)

1. The support of this supplier's sales rep is crucial to our ability to sell this product line.
2. We are dependent on this rep for our business with this supplier.
3. We are relying on this rep's expertise for the sales of this product.
4. This supplier sales rep is important to our business.

Coordination cost (LISREL-based composite reliabilities = .87 for the United States and .84 for Japan)
(needs very little time and effort – needs very much time and effort)

1. Revising and modifying the terms of prior business agreements with this supplier.
2. Resolving differences between what this supplier wants and what my firm wants.
3. Reaching agreement with this supplier on business negotiation issues.
4. Communicating with this supplier (telephone calls, meeting, etc.)

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* All measurement items are anchored as Likert- type scales, ranging from strongly disagree (1) to strongly agree (7) , unless denoted otherwise.
[a] Denotes reverse-scaled items.
[b] Denotes an item that was dropped from the analysis.

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