

# DETERMINANTS OF INTERNATIONAL OUTSOURCING AND PERFORMANCE: A RELATIONAL EXCHANGE PERSPECTIVE

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## **Abstract**

*Prescriptive discussions regarding international outsourcing abound, but there are few previously proposed models of the antecedents leading to such sourcing. This empirical study utilizes the relational exchange framework proposed by Dwyer, Schurr and Oh (1987) and builds a conceptual model of the firm's use of international outsourcing within the context of relational exchange. The model concentrates on the aspects of relational exchange that are crucial antecedents to successful international outsourcing and empirically demonstrates how both economic and social factors have their influence. The resulting model demonstrates how cooperation, rather than competition, leads to successful international outsourcing.*

**Keywords:** Offshoring, Outsourcing, Relational Exchange, Vendor Relations, Buyer-Supplier Relationships

## **1. Introduction**

Though international outsourcing is an important phenomenon, it has received relatively little research attention. International outsourcing refers to the coordinated, international acquisition of resources (goods, services, etc.) from a set of suppliers. Coordinating the acquisition of resources has received less attention than efforts to reduce the cost of each transaction. Essentially, international outsourcing has often been characterized in the literature as an assortment of international market transactions and has often been studied within the framework of transaction cost analysis.

In this study, international outsourcing involves only inter-firm (between firms) exchanges and is examined within the framework of relational exchange. Relational exchange implies a long-term relationship between customers and suppliers. The emphasis is on reducing the long-term cost of outputs rather than concentrating on short-term cost reductions. As competition has increased and cost has become more important, more firms have gravitated toward international outsourcing. As a result, it has become increasingly important to understand what leads to successful international outsourcing. Success may be defined differently by each firm, but at least one goal is universal: lower costs.

Applying Dunning's (1980, 1988) eclectic paradigm, no one sourcing location possesses all of the advantages needed for manufactured products. Each country location has its own set of comparative advantages. Some locations are endowed with greater access to needed raw materials, and other locations have capital and labor advantages. Still others possess certain transportation advantages, such as access to waterways, roads and airports or perhaps simply the proximity of the location to the market to be served. The different location advantages of different countries will likely lead firms to

diversify their sourcing portfolios. Firms will source from locations that best meet the needs of and provide the greatest advantages to each element in their value chains.

Given the costs of switching (negotiation, quality control, etc.), firms often seek long-term relationships with suppliers (Frazier, Spekman and O'Neal 1988; Buchanan 1992; Ganesan 1994) rather than rely on the market. Though lower costs abroad may encourage firms to explore short-term international outsourcing possibilities, our interest is in examining international outsourcing strategy that is founded on a long-term commitment to a limited set of suitable suppliers. There are many factors that encourage longer term relationships with overseas suppliers, such as switching costs, the need to satisfy local content requirements which necessitate sourcing from a country in order to gain access to the market in that country (Monczka and Giunipero 1984) or information flows such as the need for current market intelligence regarding product or process innovations. The purpose here is to propose a model that captures the important elements of a relational exchange which leads to successful international outsourcing.

The influence of long-term relationships built on mutual trust and cooperation, exhibited by firms from Asia and Europe, has facilitated a shift in sourcing perspectives. The efficiencies of the far eastern systems have encouraged many U.S. firms to adopt similar approaches to channel relationships, especially when sourcing from East Asia or Europe. Since cooperative relationships have become more important, the factors that lead to cooperative relational exchanges are also important. As stated in prior research: "The lack of attention to antecedent conditions and processes for buyer-seller exchange relationships is a serious omission in the development of marketing knowledge" (Dwyer, Schurr and Oh 1987:11).

## **2. Theory and Hypotheses**

A framework to aid in understanding and studying the processes and conditions of relational exchanges was suggested by Dwyer, Schurr and Oh (1987) [hereafter referred to as DSO]. They conceptualized relationship development as being composed of five components: Awareness, Exploration, Expansion, Commitment and Dissolution. This framework offers a comprehensive format for understanding the broader issue of relational exchange. The following section details the DSO framework as adapted in this study to understand what leads to success in international outsourcing.

### **2.1 Awareness and Exploration**

Awareness deals with the conditions which enable one firm to become aware of the existence of the other. While transaction cost analysis (the means of reducing cost given a one-time exchange with another firm) may be performed when the firm originally decides to outsource some of the factors of production, such analysis does not consider why there is variance in the degree to which firms pursue international prospects. Therefore, awareness in the realm of international outsourcing must include some dimension of a firm which makes it consider international opportunities.

Both the decision to export and to import require a certain measure of international astuteness within the firm. The capability and decision to consider international sources is linked to the international competencies of the firm's employees. As managers within the firm have less international competence they will be less likely to consider international outsourcing opportunities, whereas a firm with international expertise will be more likely to recognize the opportunities to move from domestic to international outsourcing (Monczka and Trent 1991). Thus, for any firm, the first requirement is expected to be international competence.

Exploration is concerned with the activities by which new relationships are forged and purchases are made. Monczka and Giunipero (1984) found that firms' international competence led to the use of

foreign suppliers. Since international competence increases the likelihood of using foreign suppliers via awareness, it should also increase the degree of usage of foreign suppliers via exploration. Thus, the first hypothesis is as follows:

- H<sub>1</sub>: The level of international competence within a firm is positively related to the level of foreign supplier usage.

As a firm uses a high level of foreign suppliers, international outsourcing is affected by communication. It is through communication that the two parties come to know what is expected and what is required and are thus able to reduce uncertainty. Communication is a critical element in creating integration (the inter-firm cooperative efforts). As a global firm uses more foreign suppliers the need for communication will increase; however, there are potential difficulties in communicating, and such difficulties can have an impact on the exchange process. Those firms with a smaller degree of foreign supplier usage are likely to experience less difficulty communicating, due to the smaller absolute volume of communications and cultural adaptation, relative to those which utilize foreign suppliers extensively.

Communication, however, does not occur in isolation. It is strongly influenced by each firm's ability to communicate effectively and to make appropriate assumptions about the other party. With regard to foreign suppliers this necessitates some degree of international competence in areas of language and culture. Firms with greater international competence should have less communication difficulty due to increased language competence and cultural understanding as well as established procedures for dealing with international partners. Thus, the links are hypothesized as follows:

- H<sub>2</sub>: The difficulty of communication is positively related to the degree of foreign supplier usage.
- H<sub>3</sub>: The difficulty of communication is negatively related to the level of international competence within the firm.

Trust is critical in the development of an effective long-term relationship. Trust cannot be developed without information to assess that which is to be trusted. Communication provides the medium by which information is exchanged or shared. Over time, successful communication will help to foster process-based trust (Zucker 1986). In the early stages of the relationship, considerable communication will be necessary to ensure that both parties understand the other's expectations. Communication will be used to assess compliance in the absence of trust. However, difficulty in communicating will hamper the development of trust; difficulties may lead to misunderstandings and the appearance of noncompliance. This leads to the fourth hypothesis which deals with trust and communication difficulty:

- H<sub>4</sub>: The amount of trust is negatively related to the difficulty of communication between the firms.

## **2.2 Expansion**

Expansion includes the growth of the relationship from mere probing to information exchange. In essence, the firm develops a sense of continuity in the exchange relationship. As a result, the firm is willing to begin disclosing more firm-specific and valuable information. Information exchange intensity involves allowing a selected set of suppliers to access sensitive information and, therefore, depends upon a certain level of communication and trust. As previously mentioned awareness of culture plays a role in communication. The need for context could influence the decision to increase or decrease the intensity of information exchange (Griffith and Myers 2005), but it is not operationalized in this study since the current focus is on international sourcing in a broader view and

not specific to particular countries. Communication is fundamental to increased exchange between firms (Mohr and Nevin 1990). Trust will be a critical factor in the extent to which the exchange occurs because the information exchanged is of a sensitive nature. As trust increases, firms will feel more comfortable revealing sensitive information such as costs, schedules, etc. (Zaheer and Venkatraman 1995). They will feel secure that confidentiality will be maintained. These arguments suggest the following two hypotheses:

- H<sub>5</sub>: The intensity of information exchange is negatively related to the amount of communication difficulty.
- H<sub>6</sub>: The intensity of information exchange is positively related to the level of trust between the firms.

Continuity refers to the continuous use of a supplier rather than alternating between suppliers or maintaining only short-term relationships. Continuity marks the real shift from market transactions to relational exchange. At this juncture, the firm decides to maintain its contact with a supplier and increases its commitment to establish a long-term relationship with the supplier. Continuity is a necessary outgrowth of the rigorous nature of securing foreign suppliers relative to domestic suppliers.

One aspect of continuity is the degree of ease with which a firm can replace a particular supplier. The more a firm relies on foreign suppliers, the more resources it has committed to its foreign supplier relationships and the more hardship it will suffer if forced to replace a foreign supplier for any reason other than a lower cost alternative. This creates a bond of dependence which is necessary to the development of the relationship. Since relations with foreign firms are likely to take longer to develop than those with domestic firms, there would be a larger cost associated with dissolution of the relationship. Thus, the use of foreign suppliers will lead to greater dependence.

The search for replacement suppliers is necessarily linked to the skills and abilities of the firm's personnel. As a firm increases its international exposure, its search time and costs should be reduced due to the increased knowledge and experience base which it has acquired. Once again international competence comes into play, and it will augment or attenuate the search process. Firms with greater international competence should find it easier to secure replacement suppliers than will their less competent counterparts. Competent firms will have second-tier suppliers available to answer shortages caused by the loss of first-tier suppliers. Thus a firm which has made more use of foreign suppliers may have an advantage in replacing one, if lost. This leads to the following two hypotheses:

- H<sub>7</sub>: The degree of continuity (or the difficulty to replace a supplier) is positively related to the usage of foreign suppliers.
- H<sub>8</sub>: The degree of continuity is negatively related to the level of international competence of the firm.

From a relational exchange perspective, as information exchange intensity increases, the two firms will cooperate and integrate their related tasks. Such task integration is likely to be highly inefficient in the absence of timely information. It should be necessary for significant information exchange to take place prior to attempting integration. Once integration of tasks has begun, the boundaries of the firms will blur and information ought to flow more readily.

Furthermore, task integration represents both a commitment by both firms and a dependence

between the two firms. Dependence and commitment imply that there must be some continuity in the relationship. Continuity leads to joint action (Heide and John 1990). Thus, the following relationships are hypothesized:

H<sub>9</sub>: The degree of task integration is positively related to the intensity of information exchange.

H<sub>10</sub>: The degree of task integration is positively related to the continuity of the relationship.

### 2.3 Commitment

Commitment, as described in the DSO framework, refers to both parties being satisfied with the relationship, the relationship having durability over time and both parties engaging resources to maintain the relationship. The notion of satisfaction is strongly related to the outcome of the relationship. In the buyer-seller relationship, the outcome takes the form of either an augmentation of firm performance or an attenuation of it. Performance, in this case, will be tied to the product improvements which are attributable directly to the efforts of the sourcing function. Performance, as it relates to the outsourcing function, is associated with lower invoice (i.e. sale price), possession (e.g. holding and storage) and acquisition (e.g. search and transportation) costs and higher input quality. Relational exchanges lead to lower costs and reduced uncertainty (Dion and Banting 1988). Furthermore, relational exchanges were found to shorten response times, improve product quality and lead to new technology awareness which enhanced innovativeness (Frazier, Spekman and O'Neal 1988). Thus, there is a posited relationship between the firm's task integration and outsourcing performance as follows:

H<sub>11</sub>: Outsourcing performance is positively related to the degree of task integration between the firms.

If the relationship has durability over time and both parties are engaging resources to maintain the relationship, then the members are working together as if they were essentially a single entity which is the predicted outcome of a successful relational exchange. Once a firm has reached the point of task integration with more than one of its suppliers worldwide, it will be able to increase the coordination of its resource acquisition efforts and will shift from market transactions toward greater use of relational exchanges. The impetus for the shift comes from a number of advantages which accrue to the firm via its relational exchanges with its foreign suppliers. The firm will likely be encouraged by its cost savings and avoidance of price, supply and legal uncertainties, while maintaining its autonomy. As the firm realizes the benefits of its task integration with its suppliers, it is expected to increase that form of activity. Therefore, the relationship between task integration and international outsourcing is posited as follows:

H<sub>12</sub>: International outsourcing is positively related to the degree of task integration between the firm and its suppliers.

### 3. Model

Hypotheses 1 through 12 combine to create the model of international outsourcing depicted in Figure 1. This model proposes the relational conditions by which firms implement international outsourcing. The firm must adopt an international view to create an awareness of its options. These options are explored through initial exchanges that allow the firm to solidify selected relationships. These selected relationships are accompanied by an increased level of integration with the suppliers as the firm becomes more dependent on the relationships. This wholistic model captures the processes

associated with relationship building which lead to successful international outsourcing. It is a departure from the traditional view of adversarial channel relationships and purely economic channel decisions. Furthermore, it is a model of the upstream channel relationships which are so often overlooked.

#### **4. Methodology**

##### **4.1 Sample**

The sample for this study came from the National Association of Purchasing Management (NAPM). The Center for Advanced Purchasing Studies identified the members of the NAPM which were part of the international outsourcing interest group. The initial list included 720 individuals. The sample was then restricted to the U.S.-based members for simplicity in data collection and to examine specifically the relationships between U.S.-based firms and their offshore vendors. Verifying the address and the actual involvement of the firm in international outsourcing activities resulted in a final sample of 635 respondents.

Data were collected by means of a mailed questionnaire. After removing the incomplete questionnaires, the total of usable questionnaires was 222, for a final response rate of 35 percent.

##### **4.2 Measures**

Measurement development was based on conceptual definitions, prior research (the IMP Group 1982) and measurement purification procedures. Several pre-study interviews were conducted with purchasing managers to refine scale items and identify items that were inconsistently interpreted. We developed the final measures through examining item interconnections and factor analysis. The final measurement items are reported in Appendix I.

*International Competence* is related to a firm's ability to determine both foreign risks and opportunities. Firms must determine location advantages and switching costs, and should have some knowledge of foreign countries, languages and cultures. International competence was composed of variables relating to foreign exchange risk management, country risk assessment, and international logistics and procedures management. The specific skill of language competence did not appear in the final factor.

*Foreign Supplier Usage* is measured by the degree of foreign supplier usage relative to the degree of domestic supplier usage.

*Communication Difficulty* is the difficulty encountered in attempting to interact and convey meaning. Using this definition, communication was measured with regard to the difficulty that the two firms have when attempting to communicate with each other. The construct includes both operational and cultural difficulties.

*Trust* is conceptualized as the ability to believe that the trusted other will consider your interests. This construct contains attributes of openness, confidence and overt trust.

*Information Exchange Intensity* deals with the exchange of company specific, and often very sensitive, information. After purification, the remaining items include information on production, inventory and delivery.

*Continuity* refers to the speed with which a firm could replace a lost supplier. The measures include meeting current needs with remaining suppliers, and identifying, qualifying and developing a

relationship with a new supplier.

*Task Integration* consists of measures of the joint activities between firms. It includes both their cooperation and, more importantly, their coordination.

*Outsourcing Performance* deals with the items which the sourcing function uses to enhance the product through lower costs, to improve the financial stature of the firm, and to increase the competitiveness of the firm's output.

*International Outsourcing* refers to the coordination of the procurement process worldwide. It considers different levels of coordination.

## 5. Results

The data were analyzed using a structural equations model as shown in Figure 2. The sample size of 222 is adequate for a model of this size in as much as it has at least 10 respondents per the total number of estimated paths and variances. There are also more than five responses per the number of items (measures) used as construct indicators.

The chi-square for the model was insignificant; however, the relative goodness of fit index came to .90 (well above a cut-off point of .80), and the non-centrality parameter came to only 1.4. Thus, this model is deemed acceptable.

Hypothesis 1 was not supported. Instead of increasing competence leading to increasing usage of foreign suppliers, there is an inverse relationship. The path coefficient is -.25. Hypothesis 2 was also not supported. Here the path coefficient is significant at -.28 and the sign is in the opposite direction of the hypothesized relationship.

Hypothesis 3 is only partially supported with a path coefficient of -.01. The sign is in the right direction, but the path coefficient is not significant. Hypothesis 4 is supported with a significant path coefficient of -.61. Communication difficulties are associated with reduced trust. Interestingly, this seems to be true from both sides. This study looked at the firm's difficulties with its suppliers. A consistent result was found in a study looking at the firm's difficulties with its international distributors (Zhang, Cavusgil and Roath 2003).

Hypothesis 5 is supported with a path coefficient of -.24 and hypothesis 6 is supported with a path coefficient of .30; both are significant. Thus, while communication difficulties are associated with less exchange of sensitive information, trust seems to lead to more exchange. This is consistent with earlier findings (Zaheer and Venkatraman 1995).

Hypotheses 7 and 8 are both supported with significant path coefficients of .28 and -.25 respectively. It appears that greater usage of foreign suppliers leads to greater continuity in the relationships; however, increased international competence mitigates the reliance on a particular set of foreign suppliers.

Support was found for hypothesis 9 as the path coefficient of .64 is positive and significant. This indicates that greater sharing of sensitive information between firms is concurrent with greater integration of tasks between buyers and their foreign suppliers. Hypothesis 10 is supported with a significant path coefficient of .12 which exemplifies that long-term commitment or continuity of the relationship leads to higher levels of task integration between the firms.

The test of hypothesis 11 resulted in a path coefficient of .26 which is significant and supports the hypothesized relationship of greater task integration leading to better outsourcing performance. Hypothesis 12 is also supported with a path coefficient of .27 which is significant and confirms that

greater task integration results in a commitment to international outsourcing.

## **6. Discussion and Conclusions**

Though the model performs well, it might be improved through modifications. One proposed modification would be to link outsourcing performance and international outsourcing. In the short-term, performance is irrelevant since the relationship represents a substantial investment by the firm and, as a consequence, minor fluctuations in performance would not trigger termination. However, performance is quite relevant in the long term. In order for the firm to become satisfied with its current relationships, it must assess the performance of those relationships. Hence, a dependent linkage from outsourcing performance to international outsourcing would be appropriate to test in a longitudinal study.

Since hypothesis 1 is unsupported, we conclude that it is possible that while firms need to have some base level of competence to even consider international prospects, use of foreign suppliers may be seen as the means to increase international competence. In that case, firms would seek international partners to gain skills from partnerships in order to increase their own competence. The lack of support for hypothesis 2 may be explained from a resource-based perspective. If applied, the resource-based view of the firm would suggest that there is an experience factor at work here. Firms that have a higher degree of foreign supplier usage have gained experience in international communication, which has resulted in fewer difficulties when communicating with their foreign suppliers.

In considering the results of the test of hypothesis 3, it may be that the experience factor operating on hypothesis 2 has absorbed the explanatory power of hypothesis 3. This suggests that experience and competence are unrelated; otherwise, hypothesis 3 would be significant and hypothesis 2 would be insignificant. The resource-based view would consider experience as the source for competence; thus, the two constructs are closely related. Reexamining the factor structures of the constructs (see Appendix I) suggests a potential cause for the discrepancy: the international competence factor does not include any of the original cross-cultural communication indicators. Thus, these aspects are apparently captured as a hidden factor in the foreign supplier usage and communication relationship. The international competence factor includes primarily in-house skills, which are not likely to affect communication between firms.

The inverse relationship between communication difficulties and trust is as predicted; however, whether this is due to an inability to reduce uncertainty or to an unwillingness to trust those with whom one cannot easily communicate remains to be clarified by future research. The support for hypothesis 5 demonstrates that difficulties in communication result in the exchange of less information. This is the result of difficulties that *constrain* the information flow; efforts are made to communicate, but little information survives the difficulties inherent in the process of communicating. Use of the term *constrain* here implies that the firm has little control over the outcome. Support for hypothesis 6 demonstrates that trust opens the door to the exchange of sensitive information; the absence of trust correspondingly *restrains* the flow of information. Use of the term *restrain* implies that the firm has taken control of the outcome.

The implication of support for hypothesis 7 is that the use of foreign suppliers leads to an interdependent relationship. The use of economic theories to model this relationship would be wholly inappropriate. Foreign supplier usage is more closely linked with relational exchanges than it is with pure market transactions. However, hypothesis 8, which is also supported, reveals that firms which have the search skills expect to be able to replace suppliers with greater ease than those which lack or are deficient in those skills. Thus, firms seem to face a challenge of balancing both their



willingness and their ability to replace their foreign suppliers.

As predicted, the increase in information exchange between firms leads to greater integration between the firms. Also, our findings reaffirm earlier findings that continuity is a necessary element preceding task integration (Heide and John 1990).

The full impact of hypothesis 11 — that task integration leads to improved purchasing performance — is discussed later. It is important to note that this finding serves to justify the use of relational exchange theory in the present study. Via cooperation, firms are able to reduce their production costs. In accord with our final prediction, through increased task integration benefits accrue to the firm, which boosts its desire to increase involvement in task integration with foreign suppliers, ultimately leading to a commitment to international outsourcing.

In summary, our model demonstrates some of the elements of successful international outsourcing. The model suggests that the domestic firm should adopt an international view to become aware of its outsourcing options. It ought to explore the environment to see what can be done and with whom and expand the relationships that it has developed. Finally, the firm will ultimately be able to commit to this new way of doing business.

It is conceivable that firms with high levels of international competence would be likely to make direct foreign investments. If true, then this model might not be reflective of those firms at the upper end of international competence because these firms, while engaging in international sourcing, will not be involved in international outsourcing.

The significant finding of hypothesis 11 that task integration leads to improved purchasing performance emphasizes the critical need to consider exchanges outside of the typical economic paradigm. Transaction cost theory would predict that if a function's costs were expected to be lower internally than can be had at the market, then the firm will internalize that function. Any other outcome is treated as a market exchange. The application of relational exchange theory would predict that a firm will move away from pure market exchanges toward relational exchanges if costs can be lowered by doing so. Thus, relational exchange theory covers the entire middle ground between market transactions and internalization and yields greater explanatory power. As we are learning, not every decision is purely "make or buy" ; the modern day equivalent would be "make alone, cooperate or buy." Perhaps it is the complexity of today's technologies, the rate of technological change and the cost of developing next generation technologies that have motivated this change in thinking; regardless, our paradigms must move with the times. It is evident that if executed properly international outsourcing will create a strategic advantage for firms so engaged. Strategic advantage must be examined through new paradigms, and international outsourcing, as a source of sustainable competitive advantage, warrants further study.

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## **Appendix I**

### International Competence (rotated solution)

*Indicate whether each of the following tasks generally exist within your firm or if they are generally outsourced:*

*In-house capability.....Outsourced*

<u>Measure</u>	<u>Factor Loading</u>
Foreign exchange risk management	.615
Country risk assessment	.541
International logistics and procedures management	.716

Reliability = .74

Foreign Supplier Usage  
(rotated solution)

<u>Measure</u>	<u>Factor Loading</u>
Foreign suppliers - % of total	.703
First-tier foreign suppliers - % of total	.705
Foreign purchases - % of total	.785

Reliability = .90

Communication Difficulty  
(rotated solution)

*Indicate how characteristic each of the following statements is in describing the relationship between your firm and your first tier foreign suppliers:*

*Not at all characteristic.....Extremely characteristic (5 point Likert scale)*

<u>Measure</u>	<u>Factor Loading</u>
Foreign suppliers have difficulty understanding our operations	.639
Different corporate cultures make working with foreign suppliers difficult	.582
Difficult to communicate with foreign suppliers	.625

Reliability = .69

Trust  
(rotated solution)

*Indicate how characteristic each of the following statements is in describing the relationship between your firm and your first tier foreign suppliers:*

*Not at all characteristic.....Extremely characteristic (5 point Likert scale)*

<u>Measure</u>	<u>Factor Loading</u>
Full confidence in information from foreign suppliers	.608
Open channels of communication	.612
Trust foreign suppliers to keep us informed of developments	.511
Relationships work because of mutual trust	.557

Reliability = .84

Information Exchange Intensity  
(rotated solution)

*To what extent does your firm exchange information with its first tier foreign suppliers in the following areas:*

*Not at all.....To a great extent (5 point Likert scale)*

<u>Measure</u>	<u>Factor Loading</u>
Delivery and schedule information	.554
Inventory levels	.544
Production schedules	.527

Reliability = .81

Continuity  
(rotated solution)

*After losing a first tier foreign supplier, how long would it take to...?  
Within 3 mos...3-6 mos...6-9 mos...beyond 9 mos*

<u>Measure</u>	<u>Factor Loading</u>
Meet needs with established suppliers	.598
Identify new supplier	.703
Qualify another supplier	.881
Develop equivalent relationship with another supplier	.583

Reliability = .80

Task Integration  
(rotated solution)

*Describe how your firm works with its first tier foreign suppliers in the following areas:  
Completely independent of supplier.....Completely integrated (5 point Likert scale)*

<u>Measure</u>	<u>Factor Loading</u>
Market needs assessment	.628
Process design	.737
Product design	.647
Value analysis	.754
Cost targeting	.609
Design of quality control systems	.755
Design of delivery systems	.746
Component testing	.742
Prototyping	.678
Forecasting component requirements	.615

Reliability = .92

Outsourcing Performance  
(rotated solution)

*Indicate sourcing performance, compared to management's expectations, in contributing to the following corporate objectives:  
Far below expectations.....Far exceeds expectations (5 point Likert scale)*

<u>Measure</u>	<u>Factor Loading</u>
Cost reduction	.535

Return on assets	.621
Increased exposure to worldwide technology	.563
Improved responsiveness to customer needs	.629
Improvement in competitive position	.785
Increased market share	.709

Reliability = .80

International Outsourcing  
 (rotated solution)

Indicate how characteristic each of the following statements is in describing the sourcing activities of your firm:

Not at all characteristic.....Extremely characteristic (5 point Likert scale)

<u>Measure</u>	<u>Factor Loading</u>
Common procurement requirements accumulated across business units worldwide	.554
Each business unit has its own supplier base	-.521
Procurement performance evaluated across business units on a corporate-wide basis	.565
Supplier evaluation criteria common across business units worldwide	.539
Procurement information systems linked across all business units in corporation	.600
Manager at executive level coordinates global sourcing efforts	.520

Reliability = .75

Figure 1

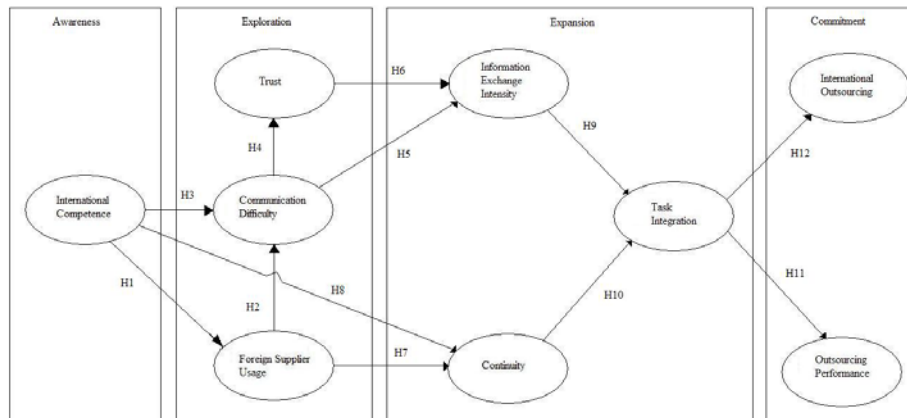


Figure 2

