

The Detail of Drugs: Horizontal Distribution Alliances in the International Pharmaceutical Industry

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**The Detail of Drugs: Horizontal Distribution Alliances in the
International Pharmaceutical Industry**

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Abstract

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Key Words: Horizontal distribution alliances; Pharmaceutical industry; Resource Dependence; Transaction Cost Analysis

Introduction

Globalization has become the imperative for many firms. Whether it is entering *de novo* into a foreign market, or simply an expansion of current overseas operations, globalization is viewed as a necessity for greater world market share and new revenue streams (Shrader, Oviatt, and McDougall 2000). The focus of this research is to study the use of a specific mode of entry that could ease the process of entering a new market. This particular entry strategy is termed a *horizontal distribution alliance (HDA)* and occurs when an entrant firm forms a partnership that allows it to use the channel resources of another firm (i.e., the host) in the target market. The host in the target market then distributes the entrant's goods or services. HDAs have also been termed as "piggybacking" because the entrant manufacturer basically "rides" on the distribution system of the host (Terpstra and Simonin, 1993; Terpstra and Yu, 1990). The horizontal descriptor of the strategy is used because the host is often a competitor of the entrant.

Horizontal distribution arrangements can be found in industries ranging from consumer goods and pharmaceuticals to automobiles and air travel (Gallacher, 1994; Malkin, 1992; Martin, 1974; Ohmae, 1989). In the pharmaceutical industry companies borrow each other's sales forces to gain access to underdeveloped or foreign markets. For example, the British pharmaceutical firm Glaxo used an HDA with Roche Pharmaceuticals to help launch Zantac in the United States (Rapoport, 1983). By the time the drug was coming off patent and going to the over-the-counter market, Zantac had become the best selling drug in history with annual sales in the U.S. of almost \$2 billion (Durman, 1997). These results were due in large part to the effective marketing of the drug by the Roche sales force.

While practiced for many years, HDAs as a market entry strategy seem to have risks for both parties (Ryan, 1976). For instance, the host partner (the manufacturer in the target market) may appropriate the technology of the entrant such that the host becomes a stronger competitor in the marketplace (Bucklin and Sengupta, 1993). Alternatively, the entrant firm might learn enough about the target market for the entrant to be able to "go it alone" at a future date.

Once a decision is made to enter into a horizontal distribution agreement, it is also critical to understand how the partners will ensure that the benefits of the alliance are maintained. Given the benefits from and costs of the alliance, the purpose of this research is to contribute to an understanding of the strengths of these effects and their impacts on alliance formation and success (Varadarajan and Cunningham, 1995). Specifically, these objectives are to:

- Provide a theoretical base for the formation and success of HDAs as a mode of entry.
- Gain empirical support from both partners for the structure of a successful alliance.

The need for greater understanding of the use of horizontal distribution alliances is evident. We see the examination of success parameters of the alliance to be just as critical. In the following sections, we first operationalize two theories that underpin the formation and success of horizontal distribution alliances, Transaction Costs Analysis and Resource Dependence. We supplement these two perspectives with strategic, firm-specific factors. Our methodology is then discussed and is followed by the results and implications from the empirical analysis.

Review of International Entry Modes Literature

The quest to determine the “right” or “preferred” international entry mode gained momentum as the imperative of going overseas increased. As managers endeavored to understand the critical components of an effective international marketing strategy, academic researchers were able to test the key factors determining the choice of entry mode. The initial examination of the problem began with the attempt to predict the “make” or “buy” decision with regard to the form of channel distribution. In particular, a firm can choose to enter with an equity mode such as going directly into the market via greenfield investment, merger, or acquisition (Anderson and Gatignon, 1986). In contrast, the firm may wish to enter with a purely “arms-length” mode of entry by choosing to use the market to distribute its goods (Root, 1994).

Anderson and Coughlan (1987) empirically tested the binary choice between vertical integration and an arms’ length mode in the international semiconductor industry. Other researchers extended the

range of the integration level in their models to better represent the multiple choices available to firms (Agarwal and Ramaswami, 1992; Kim and Hwang, 1992; and, Klein, Frazier, and Roth, 1990). These forms could include a joint venture (Harrigan, 1988), licensing, or other contractual formⁱ (Contractor and Kundu, 1998). Interestingly, while the empirical studies have been consistent in their results regarding the choice to vertically integrate versus having an arms' length arrangement, the findings pertaining to the choice of the intermediate levels in between the two extremes have been somewhat mixed. For instance, Klein, Frazier, and Roth (1990) found that the use of a highly integrated channel was preferred to that of a market option, particularly as the volume of the product line increased. However, their predictions for the levels in between had mixed support.

Consequences of Horizontal Distribution Alliances

The literature on the consequences of the use of certain modes of entry is not as well developed as the literature on choice of entry modes. Relatively few studies have been conducted with respect to the consequences of alliance formation. However, one recent article that does attempt to take into account the consequences of entry mode choice is that of Aulakh and Kotabe (1997). In their paper, they investigate the performance of the firm based on the mode of entry chosen. They speculate, and find, that various forms of channel integration can yield high levels of performance (measured relative to the home country of the firm as well as to the competition in the target market). With few empirical studies conducted on the consequences of modes of entry, we examined the channel management and alliances literatures. The theoretical foundations found in these literature streams have noted important implications for the use of certain structural mechanisms that may aid partners in ultimately reaching their own definitions of success. We examine these as we propose the theoretical framework of our research in the next section.

Theoretical Foundations for the Formation and Success of Alliances

Environmental Effects: Dependence on Resources

A resource dependence (RD) perspective holds that the strongest predictor of a firm's choice of organization form is the degree to which the firm desires to manage the resources it requires to operate within an environment (Aldrich, 1976; Jap, 1999; Pfeffer and Salancik, 1978; Van de Ven, Emmet, and Koenig, 1974). Within the various levels of the environment (Achrol, Reve, and Stern, 1983) exist the organizations with which the firm transacts (e.g., suppliers, customers, employees, competitors, etc.) as well as the institutions that may interact with the firm (e.g., government regulators, social agencies, universities, etc.). Each of these organizations and institutions, as well as the firm, owns or controls resources that the other desires. Whether those resources are tangibles like goods, employees, and money, or intangibles, such as knowledge, skills, and intelligence, exchange relationships develop to facilitate the trade of resources among the various actors (Levine and White, 1961; Van de Ven and Walker, 1984).

Pfeffer (1982) contends that it is the degree of dependence on the resources and the exchange relationships themselves that primarily dictate the organizational form of the firm. When these exchanges are critical for managing the flow of resources into and out of the firm, Pfeffer and Salancik suggest that firms will tend to vertically integrate in order to gain a greater degree of "control over exchanges vital to its operation" (1978, p. 114). One of the more recent articles supporting the assertion that control of resources is the main objective of organizational form is that of Zinn, Proenca, and Rosko (1997). These researchers find that the degree of dependence on (and the subsequent desire to control) scarce resources in the environment does lead firms to choose between two different forms of organizational design. Other authors have also found that RD theory can provide hypotheses that result in significant findings with respect to organizational choice (Aldrich, 1976; Boyd, 1990; Pfeffer, 1972).

Continuing to elaborate on the resource dependence perspective, the extant literature purports that the environment affects constraints on, contingencies from, and uncertainties about the resources that are required by a firm participating in a market (Pfeffer, 1982; Ring and Van de Ven, 1994; Shamdasani and

Sheth, 1995). The theory goes on to suggest that constraints such as government regulations should have the greatest effect on the choice to use a full-equity mode of entry such as vertically integrating into the market. In our investigation of alliances, we surmise that the dependence on scarce resources in the environment leads market entrants to choose an organizational form that will allow them to better control these resources.

Environmental constraints may include governmental regulations, underdeveloped infrastructure, as well as host market dynamics that potentially impede market entry. In extending the RD perspective, the prediction is made that the entrant's desire to directly enter the market will be enhanced by the lack of control over the environment (i.e., the market); otherwise, the entrant will choose another organization form instead. In our research, the use of a horizontal distribution alliance serves a special purpose in meeting the basic needs of the customers in the market, without necessarily having to invest in distribution assets (i.e., vertically integrate). We, therefore, propose the following hypothesis:

H1: As a firm's perceived level of environmental constraints decreases, it is more likely to choose to form a horizontal distribution alliance and less likely to choose to vertically integrate.

In other words, as the firm's perception of its environmental control increases, the likelihood of observing the formation of an HDA will increase. If there exist many constraints, then the opposite would be found: the likelihood that the firm will feel compelled to directly enter the market increases. For the entrant, gaining control over resources in the market is critical for eventually being successful in that market.

Firm Specific Effects: Strategic Considerations for the Firm's Mode of Entry

Strategic motivation, or intent, to enter a new market has been found to be highly predictive of the mode chosen by new entrants (Agarwal and Ramaswami, 1992; Aulakh and Kotabe, 1997; Contractor and Kundu, 1998). An example of a firm's strategic motivation leading to an organizational form includes that of Agarwal and Ramaswami (1992) when they found that the higher the potential of the market, the greater the desire to use a mode of entry with higher levels of investment. From these previous findings, we hypothesize that the more motivated or desirous a firm is to enter a market to meet

the needs of customers, the more likely a firm will choose to vertically integrate as opposed to using a hybrid mode of entry, such as a horizontal distribution alliance. We therefore propose:

H2a: As the level of market potential decreases, the entrant is more likely to form a horizontal distribution alliance and less likely to vertically integrate.

In other words, as the potential rewards for entering the market decrease, we will expect the firm to choose to use a less controlling form of entry into the market, that of a horizontal distribution alliance. However, we proposed in Hypothesis 1 that the higher the level of environmental constraints, the more likely a firm will be required to vertically integrate. We therefore suggest that the interaction of environmental constraints with the strategic intent of the firm will impact the choice of mode of entry.

Hypotheses 2b formally states this position:

H2b: As the level of the interaction between environmental constraints and the potential of the market increases, the entrant is more likely to form a horizontal distribution alliance and less likely to vertically integrate.

Firm size is a factor that has been consistent in being able to predict the choice of market entry mode. For instance, Aulakh and Kotabe (1997) noted that larger firms have a greater ability to manage internal costs due to their greater organizational capabilities. Channel management researchers have advanced a similar position in proposing that small firms may lack the means necessary to vertically integrate or lack access to financial or managerial assets (Heide and John, 1988; John and Weitz, 1988). From these findings, we propose the following:

H3: As the size of the firm increases, the entrant is less likely to form a horizontal distribution alliance and more likely to vertically integrate.

Transaction Specific Effects: TCA Predictions of Alliance Formation

Prior to proceeding with this section, the basic difference between the predictions of resource dependence theory and transaction costs analysis needs to be revealed. Essentially, resource dependence is based upon the sociopolitical aspects of power and dependence as the driving forces for organization formation (Pfeffer, 1982). By focusing on the resources in the environment, the theory is said to look to the level of importance of external measures as opposed to purely internal ones. On the other hand, TCA

focuses on the level of transaction costs to the firm, an internal measure (Williamson, 1999; Zajac and Olsen, 1993). Put another way, transaction costs analysis uses an *efficiency* argument while resource dependence adheres to an *effectiveness* argument.

Asset specificity, in the context of entry modes, refers to the investments made by the firm in order to transact in the marketplace. It is the key internal characteristic that increases transaction costs for the firm due to the inability to reapply the investments made in these assets; in other words, they have little salvage value (Erramilli and Rao, 1993; Rindfleisch and Heide, 1997; Williamson, 1985). However, in the case of horizontal distribution alliances, entrants are seldom required to invest in tangible assets such as plants, equipment, and personnel. This is due to the host firm already having many of these assets in place. Instead, the entrant would be expected to increase its level of investment in intangible assets related to communicating the product's attributes (e.g., building the brand). Therefore, the increased investment in certain specific assets will increase the costs of transacting in the market but not to the extent that investment in more tangible assets would. As a consequence, rather than seek to vertically integrate the entrant will prefer to form an HDA to save on these costs:

H4: As the level of investment in intangible assets increases, the entrant is more likely to form a horizontal distribution alliance and less likely to vertically integrate.

Bounded rationality is another factor of the TCA framework. For potential entrants, bounded rationality is the degree to which the firm is unable to comprehend everything that exists or is occurring when entering a new market. As bounded rationality increases, the costs of transacting in the market would then be expected to increase since the firm has little knowledge of how best to operate in the market and might be taken advantage of by a distributor. In order to counter this action, the entrant would be expected to vertically integrate in a TCA framework. However, rather than vertical integration, the firm could choose a horizontal distribution alliance in order to manage its level of bounded rationality. The knowledge that the host firm maintains regarding the target market would allow the entrant to harness this knowledge for its own product. In addition, the contractual basis of an HDA provides many of the safeguards that would bind the partners together in a much stronger way than an arms' length distribution

relationship would do. Thus, the HDA provides a blend of the “control” benefits of vertical integration and the ability to gain access to the knowledge of the partner in the marketplace. Therefore we suggest that, instead of choosing to go direct when bounded rationality is high, the firm will choose to form an HDA:

H5: As the level of bounded rationality increases, the entrant is more likely to form a horizontal distribution alliance and less likely to vertically integrate.

The relevant concepts of TCA and RD that potentially lead to the formation of a horizontal distribution alliance have now been presented. In the next section, we again draw from these perspectives to develop hypotheses that would predict a successful alliance.

Alliance Success: Coordination of and Dependence on Scarce Resources

Pfeffer and Salancik (1978) predict that firms will expand horizontally (i.e., form alliances such as joint ventures) in order to increase their dominance over others. Horizontal expansion can, therefore, result in the firm having more power when interacting with organizations such as its competitors. Companies would need to make such strategic moves since no firm is ever totally self-sufficient; therefore, it must rely on other firms, actors, agencies, etc., to supply critical resources (Levine and White, 1961). But, this does not have to make the firm vulnerable to the environment: “the fact that organizations are dependent for survival and success on their environments does not, in itself, make their existence problematic” (Pfeffer and Salancik, 1978, p. 3). Instead, they suggest that firms can manage their dependencies through strategies such as alliances and still be successful.

Aldrich (1976) further suggests that inviting another company to participate in activities with the focal firm can increase the coordination of resources between the two companies. This strategy can be referred to as “co-opting” the firm with the necessary resources. Executing this strategy could prevent a vulnerable firm from being controlled by the other. This claim is extended to an alliance level so that if a firm, as an alliance partner, is co-opted, this brings a potentially hostile outsider (i.e., a competitor) into the fold. Such an action would be demonstrated through the contribution level of skills maintained by the

alliance partners. If the contribution levels of these skills maintain the strength of the respective partner, then we could assume that co-opting has occurred and that coordination of resources will follow, as suggested by Aldrich (1976). Therefore, the alliance will be expected to function as required by the firm and satisfaction with the partner and the alliance will increase (Saxton 1997). Our hypothesis testing the resource dependence perspective on success follows:

H6: As the extent of co-opting of the partner increases, alliance success will also increase.

This hypothesis does not suggest that the firms will necessarily lessen their dependence on the resources maintained by the partners that are co-opted; rather, Pfeffer and Salancik claim that the level of interdependency between the firms is altered. In other words, an increase in resource sharing between the companies leads to higher levels of interdependency between the firms. The belief then is that this intensity of interdependency will lead the firms to consider themselves to be one system with one set of superordinate goals yielding ultimate success for the alliance (Buchanan, 1992; Kumar, 1996; Coughlan, Anderson, Stern and El-Ansary 2001).

Interorganizational dependence refers to the degree to which one firm relies on another to operate in the marketplace. As has been noted in the literature, some level of dependency is necessary for exchange to result between two or more parties (Anderson and Narus, 1990; Levine and White, 1961). However, the level of dependence of one partner on another can rise to such a level that it may cause the relationship to falter (Emerson, 1962; Kumar, Scheer, and Steenkamp, 1995; Perrow, 1986; Stern and Reve, 1980). For example, Kumar et al., (1995) found that increases in the level of *total interdependence* (i.e., the entirety of dependence between two firms) tend to result in more trusting and committed relationships. In addition, they were able to show that increases in *interdependence asymmetry* (i.e., the inequality between the levels of dependence of each partner on the other) will result in more conflict-laden relationships, potentially leading to complete failure.

We extend these findings by incorporating total interdependence and interdependence asymmetry into our hypotheses of success. In this study, an alliance partner's level of dependence is considered to be a relative measure, one that is assessed in relation to the other alliance partner's dependence level

(Anderson and Narus, 1990). In addition, incorporating the notion of total interdependency of the relationship championed by Kumar, et. al. (1995) gives rise to the idea of *relative interdependence*. *Relative interdependence* is defined as the level of dependence of one firm divided by the total level of interdependence demonstrated by both firms. This formulation allows us to consider the positive side of relative interdependence as well as the negative side, and naturally incorporates the asymmetry mentioned above. Therefore, we posit that the relationship between relative interdependence and success is non-monotonic:

- H7:** As the level of a partner's *relative interdependence* increases, alliance success will first increase and then decrease. In other words, there is an inverted U-shaped relationship between dependence and success.

Strategic Considerations: The Effect of Alliance Performance on Success

One of the main considerations for firms entering into any new venture is the potential for higher profitability. Firms are not known for their altruistic pursuits in business markets, so the choice to collaborate with a potentially competing firm in a new market implies an expectation of tangible results. Therefore, in our consideration of success, we acknowledge that firms will require some minimum level of performance from the alliance. Our hypothesis on this important strategic consideration follows:

- H8:** As the performance of the alliance increases, alliance success will also increase.

TCA's Prescriptions for Alliance Success

Few researchers agree on the determinants--or even the definition--of a successful relationship (Bleek and Ernst 1991). However, there does appear to be concurrence that commitment to the relationship is a key component for alliance/channel success (Gundlach, Achrol, and Mentzer, 1995; Kumar, Hibbard, and Stern, 1996; Morgan and Hunt, 1994). Indeed, tangible forms of commitment are important in distribution alliances because of the threat that a firm involved in a partnership or an alliance will be taken advantage of after investing assets in the alliance (Anderson and Weitz, 1992). Forms of *commitment* include pledges or promises made regarding the business arrangement between two parties. These might be contractual such as guaranteeing a certain level of sales force effort as well as

guaranteeing a certain level of sales volume. Other commitments include participation in joint advertising or promotion campaigns or training the partner's employees on the product or service.

Recognizing the multiplicity of possible types of commitment, we hypothesize:

H9: As the level of commitments received from the partner increases, alliance success will also increase.

Opportunistic behavior (or *post contractual opportunistic behavior--PCOB*) is characterized by "...a lack of candor or honesty in transactions..." that is magnified with the critical ingredient of the perpetrator demonstrating "self-interest seeking with guile" (Williamson, 1975, p. 9). Opportunistic behavior on the part of the alliance members is certainly capable of ruining an alliance. We predict that by increasing transaction costs between partners, *post contractual opportunistic behavior* can have a detrimental effect on satisfaction, and therefore, the success of an alliance. In an HDA in particular, even though firms may have selectively chosen a partner, there may still remain concerns about the partner:

H10: As the level of potential opportunistic behavior on behalf of the partner decreases, alliance success will increase.

Figure 1 is a schematic that outlines our conceptual framework of alliance formation and success, including the relevant factors and their hypothesized directions. Next, we provide the background information for the use of the pharmaceutical industry to test our hypotheses. We then provide the methodology for testing our hypotheses as well as the results of the analysis.

--Insert Figure 1 about here--

The Pharmaceutical Industry

We focus our research on the pharmaceutical industry due to its widespread use of co-promotion and co-marketing alliances. Co-promotion alliances occur when the entrant uses the existing sales force of a host partner to detail (i.e., sell) its product(s) in the marketplace. A co-promotion agreement differs from a co-marketing agreement only in that a co-marketing agreement allows the two companies to use two different brand names for the products; in co-promotion, the brand name remains the same regardless of the market. Both types of agreements allow the entrant firms to reach new markets--and expand within

markets--without using (or building) their own sales force to detail/sell the products (*In Vivo* 1996). Such an alliance also allows the host firm carrying the entrant's product to have "new news" to offer to the physicians it is calling upon. For example, The Procter & Gamble Company recently entered a co-promotion agreement with Quidel Corporation. As part of the agreement, P&G's sales force will promote Quidel's in-office ulcer detection equipment along with P&G's own ulcer medication, Helidac, thereby making the office visit a more comprehensive educational experience for physicians and a potentially lucrative one for both firms (Larkin, 1997).

The industry has witnessed several years of growing alliance activity. These alliances may cover development of the drug, aid with the approval process in the local country, manufacturing of the product, and ultimately, the marketing and selling of the drug (*In Vivo*, 1996). While all of these are important considerations for the pharmaceutical firms, our focus will be on investigating the alliances that are formed to promote the drug in a new market.

The Methodology

The process for developing the sample of alliance managers consisted of a few key steps. First, approximately 150 distribution alliances were identified with the help of Windhover Information, Inc. Windhover publishes pharmaceutical trade magazines, including *In Vivo* and *Start-up*. They also regularly gather and analyze data with regard to alliances and mergers in the pharmaceutical and biotechnology industries. We obtained a list of co-promotion and co-marketing alliances that Windhover identified covering the dates January 1991 through July 1997. Included in the list were the companies involved in the alliance, the start date, and the product(s) to be promoted.

In the second step of developing the sample, the existence of the alliances was verified via news releases and announcements. These were often published in the press or on-line via LEXIS-NEXIS; otherwise, they were listed on the firms' web sites. Approximately 42 alliances were eliminated from the original list due to lack of confirming evidence or evidence indicating that the alliance did not concern distribution of the product. Finally, an attempt was made to identify key individuals in the

pharmaceutical companies involved with negotiating and/or managing the alliance. Importantly, this was done for both sides of the alliance: the entrant firm as well as the host firm. The *Medical & Healthcare Marketplace Guide, 13th Edition* (1998), was a critical source for names of specific managers; likewise, firm web sites provided key details such as current addresses and phone numbers.

Questionnaire development began with in-depth interviews with managers who knew about and were involved in forming and managing distribution alliances in the pharmaceutical and medical devices industries. Two versions of the questionnaire were developed: one for the entrant firm and one for the partner firm in the target market. They were similar in question format except for one major difference: the questionnaire for the entrant had two parts. One section was devoted to the alliance of concern, while the second section asked the entrant to provide information about the use of a different mode of entry for a different market. Both versions asked the managers to provide insights into the formation of the alliance as well as provide their estimation of the success of the alliance. Pre-tests were conducted and after revisions were made, the final versions were ready for mailing.

Prior to mailing the questionnaires, target respondents were contacted by phone, regardless of country location. Approximately 80% of the targeted managers were contacted and/or were left a message informing them of the study and asking for their participation in our research. Final versions of the questionnaire were mailed to managers of 108 alliances (216 total questionnaires, two for each alliance). In return for completing the survey, the respondents were informed that with their participation in the research, each would receive both a general report on the results of the survey and an individualized summary comparing the respondent's answers with those of the rest of the industry. After one follow-up mailing of the complete package approximately four weeks after the initial mailing, the last of the completed surveys was received. We discuss the results from these surveys in the section that follows.

Survey Results

Demographic Information

The target respondents were marketing and alliance managers at pharmaceutical firms around the world. Sixty-four responses were received. This is a 30% response rate, which is an average response rate for this type of research (Mangione, 1995). Approximately half of the respondents were hosts (33) and the other half of the respondents were entrants (31). Those who completed the surveys were primarily executive- or officer-level managers in the firms (69% of the total). This is not surprising, given the important strategic issues that firms face when entering these agreements, not the least of which is the fact that the partner is often a competitor in the industry. The average number of years the respondent had been with the company was 12.9 years. The average level of involvement in strategic planning for the firm was 6.11 while the level of involvement in alliance planning was 4.97 (on a scale from “1” = “Not at all Involved” to “7” = “Extremely Involved”).

Financial figures were obtained from reports issued by third parties (e.g., Reed Elsevier, Inc., Hoover’s Inc., Nelson’s Public Company Profiles, etc.). Annual sales for the entrants averaged \$5 billion while the average number of employees was 21,000. The average annual sales for the host were \$8 billion with an average of 34,000 employees. The average number of alliance agreements reported by the respondents was about eight per firm. While the majority of the companies were based in the U.S. (59%), other countries were also represented. These included the United Kingdom (12%), Japan (6%), and Germany (6%), among many others. As can be seen from these statistics, our data provides broad representation across the worldwide pharmaceutical industry.

Another way to capture the diversity of the sample is to discuss the alliances themselves. A majority of these alliances (59%) can be described as “Cross-border”. In other words, the intent of the alliance was to gain entry to a market not in the same country as the entrant firm. On the other hand, a “Specialized” market alliance need not be cross-border. It could be a domestic market, yet the product required an almost niche-like handling by the sales force. Rather than have little or no coverage in this specialized market, an alliance would be used, allowing the host firm to supply the salespeople to detail

the entrant's product to the special market. "Specialized" markets represented 33% of the alliances, while less than 10% of all the alliances were purely "Domestic" in nature.

A sample with a majority of agreements less than five years old was purposely targeted. The result of this targeting is that most agreements (97%) were in effect for five years or less, at the time of the survey. In the following section, we first present the results pertaining to formation of the alliance followed by the results regarding the success of the alliance.

Testing the Determinants of Alliance Formation

One of the more critical segments of this research is to understand why companies choose to use an alliance strategy as a distribution mode rather than a more conventional arrangement such as vertical integration. In the following section, each of the components of the hypotheses is given, detailing their operationalizations in the survey.

Dependent variable (ENTRY). The model predicts the choice to form an HDA. The dependent variable is binary, with the choice of an HDA coded as "1" and the choice to use a direct mode coded as "2".ⁱⁱ The framework developed in the theoretical section reflects vertical integration as the alternative to that of forming an alliance.

Lack of environmental control (H1: REGUL). This factor was operationalized by asking respondents to rate their agreement with statements describing environmental constraints. Two seven-point Likert type scale items were used for this factor. The scale items captured the limitations imposed by government regulations on vertical integration and the level of governmental regulations on industry practices. The lower the level of regulations, the less likely that the firm will experience a loss of environmental control and therefore, we expect the coefficient to be negative in predicting the formation of an HDA.

Firm-specific perception of market potential (H2a: POTENTIAL). Two questions regarding firm-level intent were posed to the respondents. Our assumption was that this intent would directly reflect the degree to which the entrant perceived the potential of the market. The items respectively measured the

level of importance of providing products to the target market and the criticality of the sales revenue to the firm in the target market (rated on a scale of 1 – 7, where “1” = “Not at all Important” to “7” = “Extremely Important”). The variable’s coefficient is expected to be negative given that the higher motivation should impel the firm to enter directly into the market to meet the needs of the customers. The factor, *REGFIRM* (H2b) is the interaction term of *POTENTIAL* and *REGUL*. This factor is expected to be positive since an HDA will serve as a superior alternative to investing in the market through vertical integration when both the market potential and the regulatory restrictions are relatively low.

Size of the firm (H3: ENTSALE). This variable is the annual sales revenues of the entrant in millions. The variable is an objective measure using data from third parties. We predict that the variable will be negatively related to the likelihood of choosing an HDA as a mode of entry since the larger the firm, the more likely to enter directly into the market due to the advantages attributable to size.

Level of asset specificity (H4: ADVPRO). We asked respondents to rate their agreement with a statement describing the main component of transaction costs, asset specificity. In previous research, the level of asset specificity was measured by the amount of advertising used for the product (Gatignon and Anderson, 1988). This would indicate the degree to which the product was a branded product. This would serve as a sign of investments in a product that could not be easily transferred away; that is, asset specificity. The scale was a seven-point Likert type and was reverse coded in the survey. For purposes of testing, the scale was inverted so that the level of the advertising and promotion needed to launch the product in the market would be greater as the rating increased. The relationship is therefore expected to be positive.

Bounded rationality (H5: BOUNDED). Respondents were asked to rate the degree of difficulty of going directly into the target market. The scale ranged from 1-7, with “1” = “Not at all Difficult” to “7” = “Extremely Difficult”. The measure was expected to capture the level of bounded rationality experienced by the firm. A higher level of bounded rationality will increase the level of difficulty of entering a market directly. Therefore, the variable coefficient is expected to be positive.

Descriptive statistics for the predictor variables in the model are provided in Table 1. Results of the logistic regression analysis in Table 2 show an overall significance of the associations between the variables and the predicted choice of alliance formation (chi-square = 17.77; $p < .01$). Namely, the TCA factors as well as the resource dependence factors are all supported. Of the firm specific factors, only *ENTSALE* was not a significant contributor to predicting the formation of an alliance. The results are further examined in the section titled, “Discussion of the Results and Limitations.”

-- Insert Table 1 and Table 2 about here --

Testing the Determinants of Alliance Success

The RD perspective suggests that firms can meet their goals through the control of scarce resources in the environment (Aldrich, 1976; Pfeffer, 1982). In conjunction with this point is the requirement that firms must be able to form exchange relationships so that these scarce resources can be obtained (Levine and White, 1961). The theory goes on to suggest that in order for these exchange relationships to work, coordination of the resources and the level of dependencies between the firms must also occur (Anderson and Narus, 1990; Kumar, et.al., 1995). In the following section, the factors and their expected relationships to alliance success are discussed.

The dependent variable (SUCCESS). Success of the alliance is measured by averaging the expressed satisfaction level with the alliance and with the partner. Respondents were asked to rate their satisfaction level on a scale from 1 – 7 with “1” = “Not at All Satisfied” to “7” = “Extremely Satisfied”.

Co-optation (H6: COOPT). Respondents were asked to provide the level of specific skills and knowledge contributed to the alliance by each of the partners. The list of skills was given to the respondents with the instructions that for each skill, the respondent should note the percentage of the skill that was contributed by first itself and then by its partner. The total of the two percentages was expected to equal 100%. The overall level of co-optation was calculated as the difference between the average level of skills contributed by the respondent’s firm and the average level of skills contributed by the alliance

partner (Aldrich 1976). The coefficient is expected to be positive since the greater the perceived level of skills contributed to the alliance by the respondent versus the partner reflects the extent of co-optation of the partner.

Dependency (H7: DEPEND). This variable proposed to measure the relative level of interdependency of the respondents. In the survey, respondents were instructed to list the percentage of each asset that was contributed by each of the respondents. The list was provided in the survey and the respondents were instructed to make certain the addition of the two contribution levels for each asset summed to 100%. We then calculated the level of dependency for each respondent as a ratio of the respondent's assets versus the total level of assets contributed by both partners. *DEPEND* is expected to be positive since some level of dependence is necessary to make the exchange possible. However, there is a point when this dependency degenerates into dissatisfaction with the alliance. Given that we expected a non-monotonic relationship between the level of dependency and the level of success of the alliance, a quadratic term ($DEPEND^2$) was included in the model in order to capture the downward slope of the curve. Note that the *COOPT* variable specifically addresses *intangible* skills and knowledge while the *DEPEND* variable focuses on the *tangible* assets of the firms. While it is possible that assets could be co-opted and coordinated while dependencies might be based on certain skills, we chose to separate the analysis to determine if there are differences in the way that these resources are used in alliances.

Alliance performance (H8: PROFIT). *PROFIT* was measured by averaging the level of profit gained from the alliance (rated on a scale from 1 – 7, where “1” = “Not at All” to “7” = “To a Great Extent”) and the satisfaction with the profits from the alliance (rated on a scale from 1 – 7, where “1” = “Not at All Satisfied” to “7” = “Extremely Satisfied”). The level of alliance performance was expected to have a positive relationship with success of the alliance.

Partner's commitment level (H9: PARTCOMM). Commitments are critical components of the TCA perspective. To gauge the level of commitment involved in the alliance, respondents were asked to tell us which commitments their partners had provided. The questions were in closed-form and respondents were asked to answer “yes” or “no” to each commitment listed. While the list was not

exhaustive, from the pre-tests we learned that these were the most common and other types of commitments would likely involve special circumstances. The variable *PARTCOMM* was calculated as a fraction, with the number of commitments made by the partner set over the total possible number of commitments (since the question was in closed form, the commitments listed numbered eight). According to TCA, the sign of the coefficient should be positive since the higher the level of commitments from the partner, the more likely the success of the alliance.

Level of opportunistic behavior (H10: OPBEHAVE). For the entrant, the level of opportunistic behavior was measured as the difficulty of the search for a partner that fit the criteria of the entrant firm (namely, one that would not directly compete with the entrant's products). The respondents rated the extent of their search from 1 – 7 with “1” = “Not at All Difficult” to “7” = “Extremely Difficult”. The assumption was made that the more difficult the search for the right partner, the more likely the entrant expected the partner to behave opportunistically. For the host firm, the level of opportunistic behavior was measured using scale items describing examples of such behavior. The respondents were requested to rate their level of agreement with each of the statements. Included in the statements were: 1) the partner would acquire or copy the host's market expertise; and 2) the partner might be expected to develop into a direct competitor in the target market. The rating scale was a seven-point Likert type and was reverse coded in the survey. For the purpose of testing, the scale was inverted so that the level of opportunistic behavior would be greater as the rating increased. The relationship with the dependent variable for both the host and entrant operationalizations was expected to be negative.

Descriptive statistics for the variables are summarized in Table 3 and the results from the regression analysis are provided in Table 4. The overall model significantly fit the data (F -value = 8.42, $p < .01$) and the individual results for the variables of interest were significant and were in the hypothesized directions except for the TCA variables, *PARTCOMM* and *OPBEHAVE*. In particular, the environment-specific variables, *COOPT* was significant at the $p < .05$ and *DEPEND* and *DEPEND*² were significant at the $p < .01$ level. The firm-specific variable, *PROFIT*, was significant ($p < .01$) and positive. In the next section, the implications of these findings are discussed.

-- Insert Table 3 and Table 4 about here --

Discussion of Results and Limitations

Our examination of horizontal distribution alliances in the international pharmaceutical industry has provided some very interesting results with regard to the alliances. By combining two theoretical frameworks with that of firm-specific strategic considerations, we were able to provide empirical evidence for the antecedents and consequences of using HDAs as a mode of entry. In the analysis of the choice to enter an alliance, the level of asset specificity was found to be a significant contributor to the entrant's choice of using a horizontal distribution alliance. We also found that when there was a high degree of bounded rationality, an alliance would serve the purpose instead of vertical integration.

The level of environmental constraints was also a significant predictor. The result suggests that the greater the level of environmental constraints, the more likely a firm will use vertical integration instead of an alliance to enter the market. We also found that firms are more likely to use vertical integration as opposed to an alliance when market potential is judged to be relatively high. In addition, inclusion of an interaction term between these two hypotheses supported our assertion that when both regulatory constraints are relatively low and the motivation to be in the market is not high, an alliance will suit the firm's strategic plan. One variable that was not significant was that of the size of the firm. Our hypothesis was that a smaller firm would choose an alliance while a larger one would choose to go direct. This hypothesis was not supported.

Turning to the other objective of the research, to gain a greater understanding of the drivers of success of the alliance, we find mixed support for our hypotheses. Specifically, the level of the respondent's relative dependency on the assets of the partner did evidence a non-monotonic relationship with success. In addition, the level of partner co-optation was found to be a significant predictor of success.

The main limitation of this study was that we were not able to obtain significant results for TCA's predictions of success. Finding this result to be somewhat surprising, we separated the entrants from the

hosts. In this part of the analysis, presented in Table 6, we do find that TCA can be predictive for the *entrant's* perception of success (descriptive statistics are summarized in Table 5). Therefore, it must be the host's situation that does not find TCA to be highly predictive of success for the host respondents. We are not able to fully address the situation of the host since the sample size (n=18) appears to be too low to achieve any power in the statistical analysis. If we assume that the sample size is not restrictive, then the conclusion from this limitation is that host firms may need to have different criteria than that of the entrant when assessing what works in pursuing alliance success. Further study into the host's side of the story will go far in aiding managers of alliances.

-- Insert Table 5 and Table 6 about here --

Contributions

The primary contribution from this research is the learning that has taken place with respect to the formation and success of horizontal distribution alliances. The use of these types of alliances is becoming fairly common, particularly in certain industries where international entry may be very difficult. Researching a specific type of alliance and applying theoretical rigor to the analyses has yielded significant predictors for the formation and management of these alliances.

Specifically, we found that for the entrant, HDAs are viewed as an important mode of entry when there are high levels of certain intangible transaction-specific costs such as when heavy levels of advertising and promotion are required to launch a new product in the market. On the other hand, the use of HDAs can only go so far. As the environmental constraints in the market increase, we are less apt to see the use of HDAs and more likely to see the use of vertical integration. Basically, what firms seem to be doing is deciding that if the constraints and risks are that high, there must be greater return to be gained from actually going directly into the market.

The second major contribution from this research is the understanding gained about how alliances are structured and managed to achieve success. We found that the relative level of dependence between

the entrant and the host should be a moderate one. The results from the analysis suggest that some level of dependency is required to achieve a successful alliance; however, too much dependence can negatively affect its success. The use of commitments proved to be an important component of successful alliances for entrants; however, when the entrant and host responses were combined neither the use of commitments or the presence of opportunistic behavior significantly affected alliance success.

Future Directions

With regard to the specific research at hand, future directions must include a deeper investigation into the consequences for both sides of the alliance. We still face less understanding of the host firms than for the entrant firms. One idea would be to restart the analysis from the point of view of the host, as opposed to only being a partner of the entrant. We could perhaps gain more understanding by only focusing on this side of the alliance in the next research endeavor. Eventually the two parts should be put together so that the whole, complete picture can be examined.

Other directions continue to lie in the realm of “how firms go to market.” Indeed, we continue to look at some of the interesting consequences resulting from distribution alliances. Namely, investigating the effects on the firm image when another manufacturer is representing the entrant and is fulfilling the needs of the market. With the level of discussion regarding relationship marketing these days, how is it possible for the entrant to have a meaningful relationship with the consumers in the target market if someone else is servicing its customers?

Another area of interest is in understanding how alliances can create value in the market and not just with the goals of minimizing costs or controlling the environment. One way of doing this is to look at the case of efficient consumer response (ECR) and its use as a strategy of an integrated supply chain management system around the world. Investigating the phenomenon of SCM by looking at both the management of the transactions required by the channel members and the management of the relationships between the various firms (Heide, 1994) will aid in uncovering the factors that will help to fully understand the effectiveness of the strategy.

Finally, a critical need for understanding distribution systems is to see how they evolve over time. This could be done in various ways including observing a few particular firms from beginning of negotiations to the ongoing implementation of their strategy. Another approach would capture various firms at different stages of the evolution of their alliances to better understand the many phases of an alliance, thereby providing greater insights into how such relationships should be managed (Jap and Ganesan, 2000; Zajac and D'Aunno, 1994; Zuckerman and D'Aunno, 1990).

Regardless of the method used to research the evolution of alliances, our findings from this study suggest that researchers should include both transaction-specific factors as well as environment-specific factors in developing a theoretical framework for analyzing alliances. In addition, it is critical that firm-specific strategic considerations be taken into effect to learn more about firm's motivations for entering new or expanding markets.

Figure 1:

Conceptual Framework of Formation and Success of Horizontal Distribution Alliance

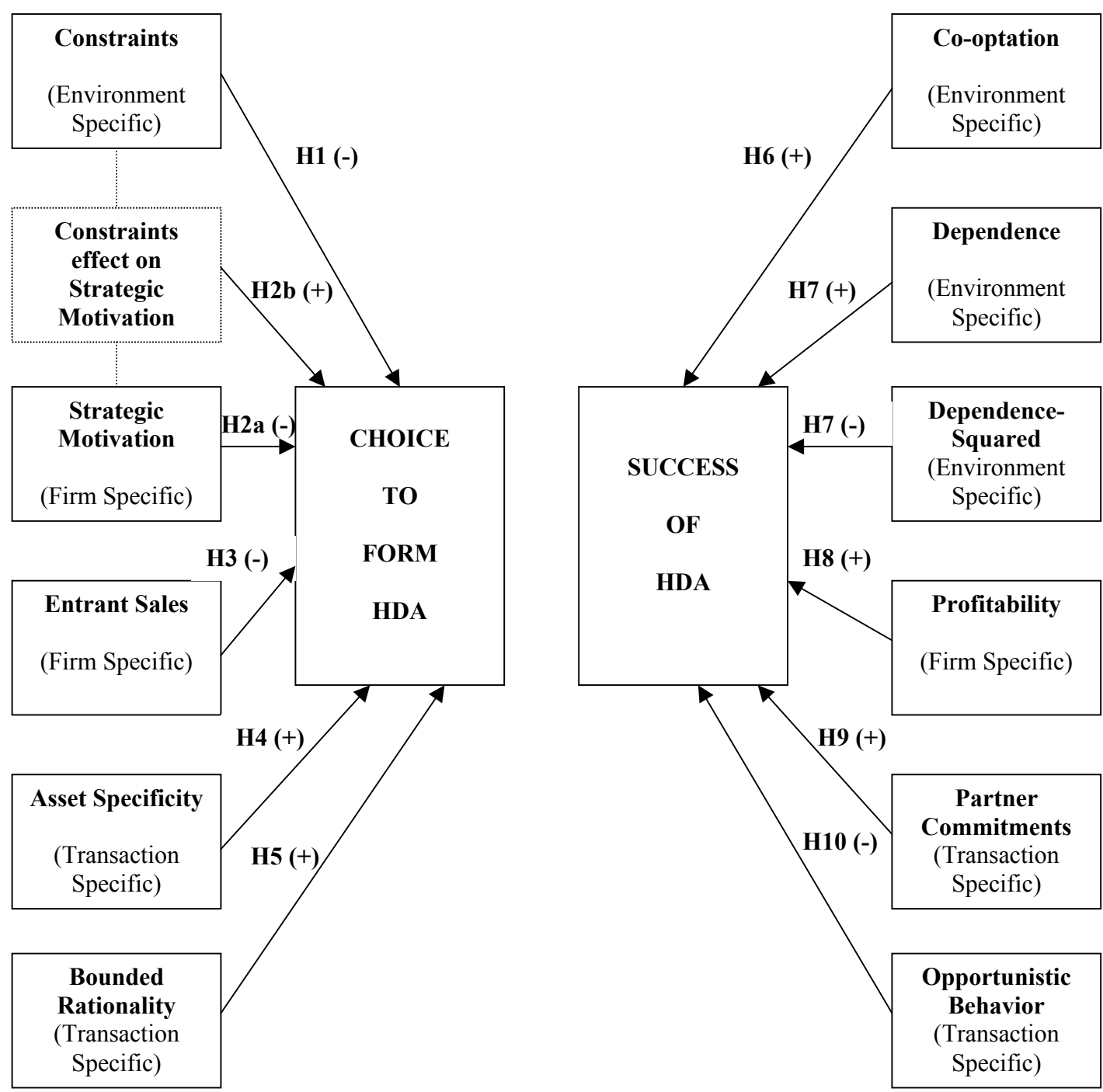


Table 1
Likelihood Of Horizontal Distribution Alliance Formation:
Means, Standard Deviations, And Correlations

Variables	Mean	s.d.	Correlation					
			1	2	3	4	5	
1. REGUL	3.55	1.80						
2. POTENTIAL	6.16	0.80	0.073					
3. REGFIRM	21.96	11.89	0.962***	0.323**				
4. ENTSALE	4,034.00	5,110.00	-0.169	-0.082	-0.184			
5. ADVPRO	4.83	2.15	-0.055	0.204	0.005	0.148		
6. BOUNDED	4.40	2.01	0.251	0.137	0.269	-0.107	-0.132	

* $p < .10$; ** $p < .05$; *** $p < .01$
n=43

Table 2

Logistic Regression Results: Predicting The Choice Of A Horizontal Distribution Alliance

Variable	Coefficient ^a	s.e.	Hypothesized
			Sign
			+ / -
Intercept	14.0299	9.3991	NA
REGUL (H1)	-6.4216**	2.9867	-
POTENTIAL (H2a)	-2.6212*	1.5897	-
REGFIRM (H2b)	0.9788**	0.4753	+
ENTSALE (H3)	-0.0001	0.0001	-
ADVPRO (H4)	0.4967**	0.2354	+
BOUNDED (H5)	0.5312**	0.2644	+

^aDistributed Chi-square; * $p < .10$; ** $p < .05$; *** $p < .01$

-2Log L = 36.494

Likelihood Ratio Chi-square (6 DF): 17.7722***

n = 43; Alliances = 29; Direct = 14

Percent Concordant = 84.2%

Table 3

Alliance Success: Means, Standard Deviations, and Correlations of Predictor Variables

Variable	Mean	s.d.	Correlation					
			1	2	3	4	5	
1. COOPT	-0.162	0.62						
2. DEPEND	0.440	0.200	0.061					
3. DEPEND ²	0.233	0.184	0.101	0.968***				
4. PROFIT	3.938	1.653	-0.293*	-0.096	-0.077			
5. PARTCOMM	0.600	0.158	-0.382**	-0.012	-0.001	0.190		
6. OPBEHAVE	4.300	1.672	0.145	-0.219	-0.275*	0.149	0.094	

* $p < .10$; ** $p < .05$; *** $p < .01$

n = 40

Table 4
Regression Results: Alliance Success

Variable			Expected
	Coefficient	s.e.	Sign
Intercept	-1.02488	1.26784	NA
COOPT (H6)	0.99153**	0.36294	+
DEPEND (H7)	11.05875***	3.88854	+
DEPEND ² (H7)	-12.75278***	4.34152	-
PROFIT (H8)	0.78839***	0.12100	+
PARTCOMM (H9)	2.10425	1.29828	+
OPBEHAVE (H10)	-0.11896	0.12563	-

F-value: 8.42***; Adj. *R*²: 0.53; n = 40
p*<.10; *p*<.05; ****p*<.01

Table 5

Entrant Perspective on Alliance Success: Means, Standard Deviations, and Correlations of Predictor Variables

Variable	Mean	s.d.	Correlation					
			1	2	3	4	5	
1. COOPT	-0.167	0.572						
2. DEPEND	0.482	0.226	0.075					
3. DEPEND ²	0.281	0.201	0.206	0.965***				
4. PROFIT	3.705	1.750	-0.440**	-0.022	0.029			
5. PARTCOMM	0.614	0.150	-0.335	-0.184	-0.201	0.124		
6. OPBEHAVE	3.864	1.490	-0.020	-0.465**	-0.473**	0.057	0.315	

* $p < .10$; ** $p < .05$; *** $p < .01$

n = 22

Table 6

Regression Results: Alliance Success for the Entrant

Variable			Expected
	Coefficient	s.e.	Sign
Intercept	-2.23551	1.66064	NA
COOPT	1.35458**	0.58844	+
DEPEND	13.13723**	4.76201	+
DEPEND ²	-16.66015***	5.58764	-
PROFIT	1.01486***	0.15729	+
PARTCOMM	4.68286***	1.55930	+
OPBEHAVE	-0.39502**	0.16578	-

F-value: 9.91***; Adj. *R*²: 0.72; n = 21

p*<.10; *p*<.05; ****p*<.01

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Endnotes

ⁱ Pan and Tse (2000) offer a variation on the basic modes by classifying the primary binary choice as non-equity versus equity forms of organization. As a consequence, joint ventures along with other investment modes are grouped under the “equity modes” classification.

ⁱⁱ Of the 31 entrants, 17 reported using a direct method to enter the second market; five licensed the technology; and, three formed joint ventures with partners. The remaining six entrants did not report their modes of entry. Given the small numbers in the licensing and joint venture categories, we chose to restrict the analysis to comparing the option of going direct with that of forming an alliance in the market.