Impact of Corporate Cultural Diversity on International Strategy

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This paper addresses the issue of how three cultural factors i.e. cultural distance between countries, focal firm's prior experience in host country culture, and firm-level cultural diversity affect firm's choice of international strategic combination mode between M&A and joint ventures. Rooted in organizational learning approach to internationalization, our model specifies firm-level cultural diversity as a key determinant of mode choice. Empirical support was found in a sample of U.S. firms.

Keywords: cultural factors, mode choice, strategic combination, U.S. firms

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I. INTRODUCTION

The learning-based sequential process model has provided an important perspective on foreign expansion strategy (e.g., Johanson and Vahlne 1977; Root 1987; Barkema, Bell and Pennings 1996). Briefly, the idea is that firms enter a foreign country initially with relatively small commitments, for instance through export, because of the high uncertainty caused by a low level of knowledge regarding the operational environment of the host country. At the second stage, as learning takes place over time and the uncertainty is reduced, firms then gradually increase their levels of commitment to the country, for instance by establishing sales branches or production facilities. Firms are perceived to go through this sequential and incremental process of expansion not only within a foreign country but also when they stretch out from one foreign country to another. Firms will move to “distant” countries (either geographically or socioculturally) only after having established a presence in more “proximate” countries. In essence, learning is viewed as the driving force behind the internationalization process (Barkema et al. 1996).

This paper applies the above learning-based model of internationalization to the issue of mode choice for international strategic combinations. Specifically, in firms' choices between acquisitions and joint ventures as alternative modes for entering a foreign country, how would learning factors affect their choices? It seems quite reasonable to understand such firms' mode choices as being influenced by the *dynamic* context of learning by firms (e.g., the stage of a focal firm's learning of host country culture) if one takes the above learning-based internationalization perspective. However, as noted by Barkema et al. (1996), systematic research efforts linking firms' learning to their mode choice behaviors have been lacking in the literature thus far.

Among different types of learning involved in foreign expansion processes, this study will focus exclusively on *cultural learning* i.e., a firm's adaptation to a host country culture. How cultural barriers influence firms' choice of mode has been studied by several researchers (e.g. Kogut and Singh 1988; Gatignon and Anderson 1988; Agarwal and Ramaswami 1992). However, by examining only the effect of *cultural distance* (measured from a home country to a foreign host country) on choice in their studies, the current status of conceptualization seems rather limited. While cultural distance determines the amount of learning needed in general, other firm-level variations, such as firms' previous site-specific learning experiences or unique capacity in learning, need to be incorporated to develop a more comprehensive model to explain how a particular *firm's learning contexts* influence mode choice. And this task of moving from a country-level conceptualization to a firm-level conceptualization in modeling the effect of cultural factors on mode choice does seem to be important.

In an attempt to fill the above gaps in the literature, this paper develops

a learning-based model consisting of two parts. First, a firm's mode choice is affected by the cultural learning context i.e., a firm's "need to learn" and "ability to learn" a host country's culture. While "cultural distance" and "firm's level of prior experience in host country culture" determine the firm's "need to learn", "firm cultural diversity" corresponds to the firm's "ability to learn." Departing from the *rational decision making* approach to mode choice prevalent in the literature, the second part of our model conceptualizes mode choice decision as a firm's risk-taking behavior under uncertainty.

As a result, a moderated effect of "ability to learn" by "need to learn" on mode choice is specified.

An empirical test with a sample of cross-border acquisition and joint venture activities by U.S. firms during 1986-1990 period showed strong support for the model. In this section, we first start with a brief discussion on why the relative merit of joint ventures over acquisitions increases as uncertainty increases.

II. Joint Ventures as Options

Recently, the perspective of viewing joint ventures as financial options has emerged (Kogut 1991; Folta and Leiblein 1994). An option (a *call* option to be specific) is a financial instrument which gives the option purchaser "the right to buy" certain assets such as stocks at a given time in the future, *without* assuming "the obligation to buy." For illustration, an option holder may exercise the right to purchase a certain stock if the price of the stock turns out to be favorable at a given time in the future, and may not if unfavorable. Similar to such financial options, joint ventures are viewed as having the characteristics of real options to expand in response to future technological and market developments (Kogut 1991). When the future value of an investment is volatile due to uncertainty, a firm can invest in a smaller scale through joint venture at $t = 0$, and when the value of the investment becomes more certain and high enough to warrant a larger scale investment at $t = 1$ the firm will exercise the option of making a full commitment to the investment by, for instance, taking over the partner's equity in the venture. Both Kogut (1991) and Folta and Leiblein (1994) found empirical support for the option perspective of joint venture. In sum, the option perspective suggests that the higher the future uncertainty is, the more likely the joint venture mode is chosen over such full commitment modes as acquisitions and green-field start up ventures. Translated directly into this study's context, when a higher cultural barrier creates a higher degree of both perceived and actual operational uncertainty, the relative merit of joint venture over acquisition increases, since the importance of flexibility (i.e., a possible full-scale investment when the uncertainty is reduced, without making a full commitment initially) increases as well. The above discussion

is summarized as follows:

Proposition 1: The amount of cultural barrier faced by a focal firm will have a negative effect on the likelihood of choosing the acquisition mode over the joint venture mode, ceteris paribus.

III. MODEL AND HYPOTHESES

In this study, we propose a cultural learning model of mode choice in the following form:

$$\text{Mode choice} = f(\text{Cultural learning factor, Control factor}).$$

The control factor includes a set of variables which were found to be significant in the extant literature on mode choice, including the transaction cost variables and host government restrictive policy effects (see details in the Methods section).

For cultural learning factor, we identify the following three variables as critically influencing mode choice decision: (1) “cultural distance”, (2) “prior experience in host country culture”, and (3) “firm cultural diversity.” “Cultural distance” is defined as the degree of cultural difference between a foreign host country entered by a focal firm and a home country of the firm (U.S. in our study). “Prior experience in host country culture” is defined as the degree of the focal firm's cumulated cultural experience in the host country, prior to the entry. “Firm cultural diversity” is defined as the degree of the focal firm's exposure to different types of country cultures.

The first two variables, “cultural distance” and “prior experience in host country culture”, essentially correspond to the theoretical dimension of how much learning of the host country culture is necessary to overcome the cultural barrier i.e., the firm's “need to learn.” Therefore, it is the “difference of the stock of knowledge” i.e., between the target knowledge level and the current knowledge level of the firm regarding host country culture. While target knowledge level is determined by cultural distance from the home country, current knowledge level is an outcome of the firm's previous learning efforts in the particular culture.

To the contrary, “firm cultural diversity” is theorized to reflect a firm's “ability to learn” dimension, orthogonal to the above “need to learn” dimension. The higher the “firm cultural diversity” is, the stronger the firm's ability to learn new cultures will be. In contrast to the stock concept of “need to learn” variables, “firm cultural diversity” is conceptualized as firm's “speed” of reducing the knowledge gap between the target knowledge level and the current knowledge level.

In sum, the present model's conceptual foundation is that not only a firm's “need to learn”, but also its “ability to learn” a host country's culture should

affect mode choice decisions. In the following, the above variables are discussed in relation to their effects on the likelihood of choosing the acquisition mode over the joint venture mode.

1. Cultural Distance

Cultural distance was earlier defined as the degree of cultural difference between the host country entered by a focal firm and the home country of the firm (i.e., U.S. in our study). It is often noted that managers tend to perceive higher uncertainties in cultures that are truly foreign (Caves 1982), and shy away from high ownership entry modes due to reasons such as; not being familiar, being uncomfortable, not being in agreement with the values and operating methods of the host country (Davidson 1982), difficulty of transferring home management techniques and values (Richman and Copen 1972), and excessive information needs (Root 1983). The significance of cultural distance on mode choice decision has been empirically found through the examples of the U.S. firms (Gatignon and Anderson 1988) and foreign firms entering the U.S. (Kogut and Singh 1988).

In the conceptualization of this study, cultural distance reflects the amount of learning necessary for the focal firm to overcome cultural barriers and realize the anticipated benefit of the foreign venture. We expect the higher the cultural distance is, the higher the need to learn will be. The assumption here is that the more dissimilar new knowledge is from the existing body of knowledge, the more difficult learning that knowledge will be. Organizational learning literature suggests that "... learning is cumulative and learning performance is greatest when the object of learning is related to what is already known" (Cohen and Levinthal 1990: 131). Thus, learning a new culture becomes *more* difficult as the culture is *more* dissimilar to the home country culture. Therefore, according to the logic of Proposition 1 above, the joint venture mode will be increasingly preferred to the acquisition mode, as cultural distance increases.

Hypothesis 1: Ceteris paribus, cultural distance between U.S. and host country (CULTDIST) will have a negative effect on the likelihood of choosing the acquisition mode over the JV mode i.e., $P(ACQ > JV)$.

2. Prior Experience in Host Country Culture

Prior experience in host country culture was defined as the degree of the focal firm's cumulated experience of host country culture, prior to entry. For a fixed amount of cultural distance (i.e., the target level of knowledge to be learned), as a firm's prior experience in the host country culture (i.e., the current level of knowledge possessed by the firm) increases, the need to learn the culture should decrease. While this is a rather obvious notion regarding the learning

effect, the research effort to shed light on the cultural learning from this perspective has been relatively scarce. Probably the most distinguishable contribution has been that of the process-model of internationalization which explicitly views foreign expansion strategy as relatively small sequential steps of reducing uncertainties (e.g. cultural barriers) through organizational learning (Johanson and Vahlne 1977; Root 1987; Barkema et al. 1996). For instance, under certain circumstances, a firm's knowledge of host country culture and nearby cultures was found to enhance the longevity of the firm's subsidiaries in the particular host country (Barkema et al. 1996). Building on the above discussion, in the context of this study, it is expected that the higher the past learning is, the lower the cultural barrier and uncertainty will be, thus the more likely the acquisition mode will be chosen over the joint venture mode.

Hypothesis 2: Ceteris paribus, the U.S. firm's prior experience in host country (PRIOREXP) will have a positive effect on $P(ACQ > JV)$.

3. Firm Cultural Diversity

While the above two factors are essentially concerned with the amount of learning needed to adapt to host country culture, in this study, we extend one step beyond and conceptualize that a firm's "ability to learn" new culture should matter as well in explaining mode choice. Here, we define "ability to learn" as the firm-specific capacity to understand different characteristics of foreign cultures and accommodate them in operational settings. An underlying assumption here is that some firms are better than others in terms of learning capacity. Therefore, in our conceptualization, even with an identical level of cultural distance and an identical level of prior experience in host country culture, two firms can still make different choices in mode if they possess different levels of ability to learn new cultures. As the ability to learn reflects the speed of reducing the knowledge gap, according to the logic of Proposition 1 above, a firm with stronger ability to learn is expected to be more likely to choose the acquisition mode over the joint venture mode, compared to a firm with less strong ability to learn.

We identify a firm-level antecedent of the ability to learn as "firm's cultural diversity" i.e., the degree of a firm's exposure to different types of foreign cultures. In the organizational learning literature, similar to our concept of the ability to learn, Cohen and Levinthal (1990) define firm's *absorptive capacity* as "... an ability to recognize the value of a new external information, assimilate it, and apply it to commercial ends" (p. 128). Importantly, they argue that *the diversity of knowledge* plays an important role in the absorptive capacity. Specifically they maintain "in a setting in which there is uncertainty about the knowledge domains from which potentially useful information may emerge, a diverse background

provides a more robust basis for learning because it increases the prospect that incoming information will relate to what is already known" (p. 131). This conceptualization of firm's ability to learn suggests that even though the new knowledge may be completely different in its content from the existing set of knowledge possessed by the firm, the extent to which the firm's internal routine of acquiring similar types of knowledge is established (i.e., knowing how to learn) would reduce the difficulty of acquiring the new knowledge.

Applying this concept of absorptive capacity, we view that the diversity of a firm's experience in foreign cultures increases its ability to adapt to any new culture in the future. The discussion so far is summarized as follows.

Hypothesis 3: Ceteris paribus, the U.S. firm's cultural diversity (CDIVERSITY) will have a positive effect on $P(ACQ > JV)$.

4. Cultural Risk and Mode Choice Behavior: Moderation Effects

So far, a fundamental assumption of our model has been that managers make *rational* decisions in mode choice. However, it is well known that individual decision making can be systematically biased in various ways (Kahneman and Tversky 1979). The literature on individual decision making in risk situations suggests the importance of individuals' "problem domain familiarity" (i.e., the familiarity that results from increased levels of past experience in a given problem domain) in determining risk perceptions (i.e., a decision maker's assessment of the risk inherent in a situation), and in turn, risk behaviors (Sitkin and Pablo 1992). More specifically, it has been maintained that a higher degree of problem domain familiarity does not necessarily lead to a more accurate assessment of risk. Instead, as experience increases, decision makers are more likely to focus on their own abilities and past success rather than on current situational constraints (Sitkin and Pablo 1992). As a result, they may simultaneously *underestimate* the actual risks involved in achieving success and *overestimate* their abilities to overcome unforeseen problems (Jemison and Sitkin 1986; March and Shapira 1987). Incorporating the relationship that a high level of past learning experience may lead to overconfidence into the context of this study, we expect that firms would also show a tendency of overconfidence about their learning capacity and underestimation of the degree of cultural risk when they have cumulated high levels of past learning experience with respect to adapting to different cultures i.e., high ability to learn in our conceptualization. And the effect caused by underestimating cultural risk will be greater in the situations where cultural risks are higher than lower. This is so because, in lower cultural risk situations, the absolute magnitude of risk itself is smaller, therefore there will be *less* to be underestimated (assuming a firm's *rate* of underestimation will be invariant over different levels of risk). Hence, we propose that the effect of firm's "ability

to learn" new cultures (i.e., firm cultural diversity) on mode choice will be moderated by the degree of "need to learn" (i.e., cultural distance and prior experience in host country culture) in the following ways.

Hypothesis 4: Ceteris paribus, the positive effect of the U.S. firm's cultural diversity (CDIVERSITY) on $P(ACQ > JV)$ will be stronger when cultural distance between U.S. and host country (CULTDIST) is higher, and less strong when cultural distance between U.S. and host country (CULTDIST) is lower.

Hypothesis 5: Ceteris paribus, the positive effect of the U.S. firm's cultural diversity (CDIVERSITY) on $P(ACQ > JV)$ will be stronger when the U.S. firm's prior experience in host country (PRIOREXP) is lower, and less strong when the U.S. firm's prior experience in host country (PRIOREXP) is higher.

IV. METHODS

1. Sample

For testing the above hypotheses, the events of cross-border acquisitions and joint ventures by U.S. firms during the period of 1986-1990 were examined. Such events were identified by scanning various publications including the *Wall Street Journal Index*, *Predicast Funk and Scott Index of Corporate Policy Changes*, *Yearbook on Corporate Mergers, Acquisitions, and Joint Ventures*, and *Mergers and Acquisitions*. In constructing the data set, we focused only on the acquisitions and joint ventures within the manufacturing sector (i.e., SIC 2000-3999), since systematic differences in the pattern of mode choice between manufacturing and service sectors have been reported in the literature (e.g. Kogut and Singh 1988). Country-wise, only the combination activities in capitalistic economies were included in order to control for potential exogenous effects due to the differences in economic systems. While countries with restrictive government policies on foreign ownership were still included in the sample, the host government policy effect was controlled by entering a dummy variable in model tests.

The final data set for analysis consisted of 229 international strategic combination activities by U.S. firms (129 full acquisitions and 100 joint ventures), after excluding observations with missing data. A total of 67 U.S. firms were represented, with firm size ranging from \$38 million to \$12 billion in net sales. The data set reflects 33 foreign countries entered by U.S. firms, with the highest concentration in such developed countries as the U.K., France, Germany, and Japan, followed by a group of newly industrializing countries such as Brazil and Mexico. Combination activities were reported in almost all manufacturing segments in

the data set, with higher frequencies in chemicals and allied products, motor vehicles and equipments, food, and electrical equipments. It is noted with interest that the above industry and country patterns of this data set are quite similar to those of the Harvard MNE data set used in both Gatignon and Anderson (1988) and Gomes-Casseres (1989), though the sample periods of the two data sets are quite distant (i.e., 1986-1990 for this data set and 1960-1975 for the Harvard MNE data set). This convergence suggests a temporal stability in the industry and country patterns of U.S. firms' foreign operations in general. More importantly, it implies a significant degree of comparability between the findings from the Harvard MNE data set and those from this data set.

2. Measures

Dependent variable: The dependent variable of this study is defined as the likelihood of choosing the acquisition mode over the joint venture mode. Acquisition and joint venture are defined and operationalized in the following ways. Following Kogut and Singh (1988), an acquisition is defined in this study as "the purchase of stock in an already existing company in an amount sufficient to confer control" (p. 412). While this definition is used as a general rule in identifying and categorizing acquisitions in the data collection procedure, in the cases where the information on the controlling equity is not directly available, the variations of the following statements expressed in related articles were used as proxies: i.e., "U.S. firm A acquired foreign firm B", "U.S. firm A purchased a majority stake of foreign firm B", or "U.S. firm A acquired more than 50% of the stocks of foreign firm B." On the other hand, cases of less than 50% equity purchases with unknown controlling position by U.S. firms were excluded from the category of acquisition. Also excluded were the cases of minority equity investment, because they represent a qualitatively different mechanism from both acquisitions and joint ventures (Kogut and Singh 1988).

Following Kogut and Singh (1988), the joint venture definition of "the pooling of assets in a common and separate organization by two or more firms who share joint ownership and control over the use and fruits of these assets" was adopted in this study. Accordingly, an important defining characteristic adopted in the data collection procedure was the existence of the two parent firms as separate entities after venture formation. While a broader definition of joint venture based on ownership level (i.e., joint ventures as partial ownership) was often used in literature (e.g. Gatignon and Anderson 1988; Gomes-Casseres 1989; Hennart 1991), this "third-party" definition was chosen for this study since it fits better with the theoretical context of this study. Joint ventures, in this study, represent a unique learning mechanism that is qualitatively different from acquisitions, rather than the relative amount of control *per se*. In addition to the conceptual fit to this study, the general validity of this third-party definition

of joint venture has been supported in literature as well. Kogut and Singh (1988; 412), for instance, argued that "... joint ventures are not merely a matter of equity control, but represents a set of governance characteristics appropriate for certain strategic or transaction motivations or for the transfer of tacit organizational knowledge."

Cultural distance (CULTDIST): For measuring cultural distance, we followed the operationalization by Kogut and Singh (1988), which is based on Hofstede's national culture scores (1991). Several studies in international strategy literature have used Kogut and Singh's cultural distance measure (e.g. Agarwal and Ramaswami 1992; Benito and Gripsrud 1992; Cho and Padmanabhan 1992; Barkema, Bell, and Pennings 1996). A formal definition of CULTDIST is stated as follows. Also, for summary statistics regarding this variable, and other variables in the model, see Table 1.

TABLE 1. MEANS, STANDARD DEVIATIONS, AND CORRELATIONS^a

Variables	Means	s.d.	1	2	3	4	5	6	7	8	9
1. Host government restriction (GOVERESTR)	.38	.49	1.00								
2. Natural resource industry (RESOURCE)	.29	.46	-.08	1.00							
3. Firm size (SIZE)	19111.5	30403.6	.07	-.24*	1.00						
4. Firm R&D intensity (RNDINT)	3.46	2.77	.05	-.48*	.03	1.00					
5. Firm advertising intensity (ADVINT)	4.83	5.02	.06	.17*	-.23*	-.01	1.00				
6. Firm product diversification (PRODDIVN)	1.11	.49	-.12*	-.01*	-.05	.06	-.09	1.00			
7. Cultural distance (CULTDIST)	1.37	1.11	.47*	-.14*	.16*	.07	-.05	-.11*	1.00		
8. Prior experience (PRIOREXP)	1.34	.88	-.07	.07	.05	.04	.11*	.03	-.29*	1.00	
9. Firm cultural diversity (CDIVERSITY)	.36	.22	.11	.02	.27*	.16*	.24*	-.01	.08	.43*	1.0

Note: a: N ranges from 226 to 229; Two-tailed Pearson correlation coefficients are reported.

*: $p < .05$.

$$CULTDISTi = \sum_{j=1}^4 \sqrt{(S_{ij} - S_{usj})^2 / Var(j)}$$

where,

S_{ij} = culture score of a foreign country i on cultural dimension j

S_{usj} = culture score of the U.S. on cultural dimension j

$Var(j)$ = variance of scores among the countries studied in Hofstede (1991) on cultural dimension j

Cultural dimensions (j): 1 for power distance, 2 for individualism, 3 for masculinity, and 4 for uncertainty avoidance

Prior experience in host country culture (PRIOREXP): For the measurement of PRIOREXP, an interval scale was constructed; i.e., PRIOREXP is '0' if the focal U.S. firm has no prior operations in the host country at the time of entry, '1' if the U.S. firm has at least one non-manufacturing (e.g. sales) operations, but no manufacturing operations in the host country, and '2' if the U.S. firm has at least one manufacturing operation in the host country. The assumption used here is that manufacturing in a foreign country tends to involve more diverse and complex operations, thus generally requiring a greater degree of cultural understanding than non-manufacturing activities. Therefore, firms with local manufacturing operations are likely to have accomplished a higher degree of learning of local culture than the ones with only non-manufacturing operations. This assumption is also in line with the stage models of foreign direct investment (Johanson and Vahlne 1977; Root 1987), where foreign sales and service i.e., "non-manufacturing" subsidiaries precede foreign "manufacturing" subsidiaries in a firm's internationalization process. The *International Directory of Corporate Affiliations* was used as the data source for identifying U.S. firms' both manufacturing and non-manufacturing operations in foreign countries.

Firm cultural diversity (CDIVERSITY): Firm cultural diversity was defined at firm level as the degree of a focal U.S. firm's exposure to different foreign cultures. Since the operationalization of this variable is not available in current literature, a new measure was constructed based on the following. First, the greater the number of different country cultures a focal U.S. firm has been exposed to, the higher the firm's cultural diversity should be. Second, for a given number of country cultures to which a focal U.S. firm is exposed, the more distant the foreign country cultures are from the U.S. culture, the higher the firm's cultural diversity should be. Finally, for a given number of different country cultures with given cultural distances from the U.S., a firm is expected to have a higher degree of cultural diversity if the diversity *among* the set of foreign cultures is higher. For an illustrative example of the last point, see Appendix.

To incorporate the above aspects, a composite measure of CDIVERSITY was constructed on two components: *cultural distance scores (CDS)* and *cultural variation*

scores (CVS). CDS captures the degree of a focal U.S. firm's exposure to foreign cultures by assessing how distant a set of foreign cultures to which the focal U.S. firm is already exposed are from the U.S. culture. On the other hand, the CVS portion intends to capture how different a set of foreign cultures to which the focal U.S. firm is exposed are different among themselves. CDIVERSITY was calculated as the summation of product terms between CDS and CVS along the four dimensions of country culture identified by Hofstede (1991). A formal statement of the measure is as follows:

$$\text{CDIVERSITY} = \sum_{i=1}^4 \text{CDS}_i \times \text{CVS}_i$$

CDS is defined as the sum of cultural distances from the U.S. to the foreign countries in which the focal U.S. firm operates in the year of entry, weighted by the variance of each cultural dimension. The following formula was used.

$$\text{CDS}_i = \sum_{j=1}^m \sqrt{(S_{ij} - S_{ius})^2 / \text{Var}(i)}$$

where,

S_{ij} = culture score of a foreign country j ($=1, \dots, m$) in which a focal U.S. firm operates on cultural dimension i

S_{ius} = culture score of the U.S. on cultural dimension i

$\text{Var}(i)$ = variance of scores among the countries studied in Hofstede (1991) on cultural dimension i

Cultural dimensions (i): 1 for power distance, 2 for individualism, 3 for masculinity, and 4 for uncertainty avoidance

CVS is defined as the coefficient of variation of culture scores among the foreign countries in which the focal U.S. parent operates in the year of entry. The following formula was used for calculation.

$$\text{CVS}_i = \text{Var}(S_i) / \overline{S}_i$$

where,

$\text{Var}(S_i)$ = variance of culture scores on dimension i among m countries in which a focal U.S. firm operates

$\overline{S}_i$ = mean of culture scores on dimension i among m countries in which a focal U.S. firm operates

In this measure, a focal U.S. firm was assumed to have been exposed to a country culture if the firm had one or more prior operations in the foreign

country. The data on U.S. firms' operations in foreign countries were gathered from the *International Directory of Corporate Affiliations*. Culture score data for each country was adopted from Hofstede (1991).

Control variables: When a host government imposes a policy of either restricting foreign ownership or encouraging joint venture with local partners, the actual mode chosen by a firm does not necessarily reflect the firm's first best choice. In both Gatignon and Anderson (1988) and Gomes-Casseres (1989), such restrictive host government policy was found to be a significant factor in mode choice. Therefore, in this study, a control variable for the host government policy effect was included in model tests. GOVERESTR is a binary variable taking '1' if a host government has a restrictive policy, and '0' otherwise. Based on the Department of Commerce data used in Gomes-Casseres (1989), Australia, Brazil, Columbia, Ecuador, France, India, Indonesia, Iran, Japan, Korea, Malaysia, Mexico, New Zealand, Nigeria, Pakistan, Peru, Philippines, Spain, Sri Lanka, and Venezuela were considered as restrictive host governments.

The likelihood of joint venture over wholly-owned subsidiary was found to be significantly higher in natural resource-based industries (e.g. food, tobacco, pulp, etc.) than in the other industries (Gomes-Casseres 1989; Hennart 1991). Gomes-Casseres (1989) reasoned that, compared to foreign firms, local firms tend to have privileged access to a domestic supply of such natural resources and the domestic market for these resources is usually not competitive, thus joint ventures with local partners tend to be preferred to wholly-owned subsidiaries. To control for this industry effect, in this study, a dummy variable RESOURCE was constructed i.e., taking '1' if a target industry is one of the natural resource industries, and '0' otherwise. Following Gomes-Casseres (1989), food and beverage (SIC 20), tobacco (SIC 21), textile mills (SIC 22), wood except furniture (SIC 24), pulp and paper (SIC 26), petroleum (SIC 29), rubber (SIC 30), and primary metals (SIC 33) were included as natural resource industries.

Firm size was another variable which has been frequently controlled in previous studies (Dubin 1975; Wilson 1980; Caves and Mehra 1986; Kogut and Singh 1988; Hennart 1991). As Kogut and Singh (1988) noted, acquisitions tend to require more financial and managerial resources than joint ventures, therefore, smaller firms may be less likely to choose acquisitions over joint ventures due to such resource constraints. SIZE is operationalized by the focal U.S. firm's net sales (in million US\$) in the year of combination formation. The net sales data were gathered from the COMPUSTAT database.

Firm R&D intensity is controlled in this study because, from the transaction cost economics perspective, the intangible asset content of a focal firm has been viewed as an important factor influencing mode choice decisions (Gatignon and Anderson 1988; Gomes-Casseres 1989; Hennart 1991). By nature, intangible assets tend to suffer significantly from transactional hazards (for further discussion, see Gatignon and Anderson 1988; Hennart 1991). Following Hennart (1991),

firm R&D intensity (RNDINT) is operationalized at firm level by the ratio of R&D expenses to net sales of the focal U.S. parent firm in the year of entry. The firm-level expenses and net sales data were collected from the COMPUSTAT database.

Marketing know-hows and brand reputation are also important firm-specific intangible assets that have been argued to be susceptible to transactional hazards (Gatignon and Anderson 1988; Gomes-Casseres 1989; Hennart 1991). Similar to RNDINT, firm advertising intensity (ADVINT) is measured at firm-level by the ratio of advertising expenses to net sales of a focal U.S. firm in the year of entry.

Whether or not foreign entry represents a diversification move into a new product market area from the existing product market areas of a focal parent firm has also been studied in the literature. Diversifying entries were viewed to encourage the choice of joint ventures over wholly-owned subsidiaries, mainly because of the need to get access to new product market knowledge through a joint venture partner (Stopford and Wells 1972; Gomes-Casseres 1989; Hennart 1991). Therefore, we control the product diversification effect in this study by constructing PRODDIVN, an interval scale taking '0' if a combination's product area matches at 4-digit SIC level with the U.S. firm's primary business segment (4-digit SIC definition) as reported in SEC 10-K filing, '1' if there is no match at 4-digit, but a match at 3-digit, '2' if there is no match at 3-digit, but a match at 2-digit, and '3' if there is no match at 2-digit. The method of taking a firm's 4-digit primary business segment reported in 10-K filing as the basis for measuring the degree of diversification has already been used in previous strategy literature (e.g. Koh and Venkatraman 1991). Data on U.S. firms' primary business segments was gathered from the COMPUSTAT database.

V. RESULTS

Due to the binary nature of the dependent variable in this study, logistic regression analysis was used as the statistical method to test our hypotheses. In logistic regressions, the impacts of independent variables on the probability of a certain event's occurrence (e.g. acquisition over joint venture formation in the current study) are estimated by the following model:

$$\text{Prob (event)} = \frac{1}{1 + \exp(-\beta_0 - \beta_1 X_1 - \dots - \beta_n X_n)}$$

where X_i is an independent variable, β_0 is the constant, and β_i is a regression parameter ($i = 1, \dots, n$) (Neter, Wasserman and Kutner 1989). Throughout the models tested in this study, the dependent variable is defined as the probability

of acquisition over joint venture. Hence, a positive coefficient of an independent variable implies that, with a unit increase in the independent variable, the probability of acquisition over joint venture also increases by the amount determined by the above equation.

TABLE 2. RESULTS OF LOGISTIC REGRESSION ANALYSIS (DEPENDENT VARIABLE = PROBABILITY OF CHOOSING ACQUISITION OVER JOINT VENTURE; BETA COEFFICIENTS WITH STANDARD ERRORS IN PARENTHESES)

Independent Variables	I	II	III	IV	V	VI
Constant	1.32 (.53)***	2.22 (.61)***	.66 (.57)	.94 (.56)**	1.45 (.66)**	1.47 (.67)**
GOVEREST	-1.48 (.32)***	-.89 (.35)***	-1.53 (.34)***	-1.69 (.34)***	-1.04 (.38)***	-1.10 (.38)***
RESOURCE	-.07 (.40)	-.22 (.41)	-.23 (.42)	-.34 (.41)	-.28 (.43)	-.41 (.44)
SIZE	-1.7E-05 (5.65E-06)***	-1.6E-05 (5.94E-06)***	-2.1E-05 (6.06E-06)***	-2.5E-05 (6.26E-06)***	-2.0E-05 (6.22E-06)***	-2.4E-05 (6.67E-06)***
RNDINT	-.15 (.06)***	-.16 (.06)***	-.19 (.06)***	-.21 (.06)***	-.19 (.06)***	-.22 (.07)***
ADVINT	.08 (.03)***	.08 (.03)***	.07 (.03)**	.05 (.03)*	.07 (.03)**	.05 (.03)*
PRODDIVN	-.01 (.30)	-.11 (.31)	-.09 (.32)	.06 (.35)	-.16 (.36)	-.18 (.37)
CULTDIST		-.67 (.16)***			-.53 (.17)***	-.59 (.18)***
PRIOREXP			.86 (.18)***		.72 (.19)***	.52 (.21)***
CDIVERSITY				2.83 (.86)***		2.03 (1.00)**
-2 Log Likelihood	259.20	240.72	236.04	243.45	222.43	218.19
Model χ^2 (d.f.)	54.57*** (6)	73.05*** (7)	77.73*** (7)	66.15*** (7)	87.16*** (8)	91.39*** (9)
$\Delta\chi^2$ (d.f.)	-	18.48*** (1)	23.16*** (1)	11.58*** (1)	32.59*** (2)	4.23** (1) ^a
Correct %	72.49%	72.05%	75.98%	73.45%	75.66%	76.11%
N	229	229	229	226	226	226

Note: Tests of significance (one-tail): * $p < .10$; ** $p < .05$; *** $p < .01$.

a: $\Delta\chi^2$ from Equation V.

TABLE 3. CLASSIFICATION TABLE

		Predicted		Percent correct
		Acquisition	Joint venture	
Observed	Acquisition	104	25	80.62%
	Joint venture	38	62	62.00%
Overall				72.49%

Table 2 summarizes the test results of Hypotheses 1, 2, and 3. In equation II, the coefficient of cultural distance variable (CULTDIST) is negative and significant at $p < .01$ level, thus supporting Hypothesis 1. Compared to the base-line model containing only the control variables (equation I), the inclusion of CULTDIST increased the model's power significantly as indicated by χ^2 increase of 18.48 at $p < .01$ level. The model's performance was assessed with the classification percentage as well (see Table 3). The classification percentage of 72.05% in equation II was satisfactory because it is much higher than the size-controlled percentage criterion, 50.79% in our sample, suggested by Morrison (1974) (the criterion percentage is calculated from $p^2 + (1-p)^2$, where p is the proportion of the smaller category i.e., joint venture in our sample).

For the test of Hypothesis 2, the U.S. firm's prior experience in the focal foreign country (PRIOREXP) was entered in the model (equation III in table 2). As expected, PRIOREXP showed a strong positive sign ($p < .01$) i.e., the higher U.S. firm's prior experience, the higher the likelihood of choosing acquisition over joint venture. Model χ^2 increase of 23.16 from the base-line model (control variables only) was also significant ($p < .01$).

In support of Hypothesis 3, the U.S. firm's cultural diversity (CDIVERSITY) was found to encourage acquisition over joint venture as reported in equation IV (significant at $p < .01$).

In addition to separate tests, the above variables were also entered simultaneously into the model. The results are reported in equation V (entering CULTDIST and PRIOREXP) and equation VI (entering CULTDIST, PRIOREXP, and CDIVERSITY). First, in equation VI where all three variables were entered, the coefficients of the variables remained unchanged in terms of both direction and significance, thus suggesting the significance of the variables independent of each other in explaining the mode choice behavior. A comparative analysis was performed between equations V and VI to examine whether the effect of CDIVERSITY (i.e., reflecting the theoretical dimension of firm's ability to learn new cultures) on mode choice is independent of the two other variables,

CULTDIST and PRIOREXP (i.e., reflecting the theoretical dimension of firm's need to learn new culture in both absolute and relative senses). The Model χ^2 increase of 4.23 (equation VI) from equation V was significant at $p < .05\%$, and no significant changes in the coefficients of the remaining variables were found between equations V and VI, thus supporting the orthogonality of CDIVERSITY (i.e., ability to learn) to the two other 'need to learn' variables in determining the choice of mode. There was a potential multicollinearity effect due to a relatively high correlation between PRIOREXP and CDIVERSITY (.43 significant at $p < .01$). To examine this potential effect, a further analysis was conducted, and the results are summarized in Table 4.

TABLE 4. MULTICOLLINEARITY EFFECTS (DEPENDENT VARIABLE = PROBABILITY OF CHOOSING ACQUISITION OVER JOINT VENTURE; BETA COEFFICIENTS WITH STANDARD ERRORS IN PARENTHESES)

Independent Variables	Drop PRIOREXP	Drop CDIVERSITY	Drop Both
Constant	1.92 (.64)***	1.47 (.65)**	2.22 (.61)***
GOVERESTR	-1.05 (.38)***	-1.05 (.37)***	-.89 (.35)***
RESOURCE	-.43 (.43)	-.30 (.43)	-.22 (.41)
SIZE	-2.5E-05 (6.65E-06)***	-2.0E-05 (6.19E-06)***	-1.6E-05 (5.94E-06)***
RNDINT	-.22 (.07)***	-.19 (.06)***	-.16 (.06)***
ADVINT	.05 (.03)*	.07 (.03)**	.08 (.03)***
PRODDIVN	-.15 (.36)	-.15 (.32)	-.11 (.31)
CULTDIST	-	-.51 (.17)***	-.67 (.16)***
PRIOREXP	-.72 (.17)***	.71 (.19)***	-
CDIVERSITY	3.10 (.90)***	-	-
-2 Log Likelihood	224.00	226.75	240.72
Model χ^2 (d.f.)	85.82*** (8)	87.02*** (8)	73.05*** (7)
Correct %	72.57%	75.55%	72.05%
N	226	229	229

Note: Tests of significance (one-tail); * $p < .10$; ** $p < .05$; *** $p < .01$.

Table 4 reports the results of regressions in which PRIOREXP and CDIVERSITY were dropped from the equation, following the method suggested by Norusis (1993) and used by Nehrt (1996). The results from these equations do not significantly differ from the original equation, thus rejecting the potential multicollinearity problem.

TABLE 5. RESULTS OF LOGISTIC REGRESSION ANALYSIS (DEPENDENT VARIABLE = PROBABILITY OF CHOOSING ACQUISITION OVER JOINT VENTURE; BETA COEFFICIENTS WITH STANDARD ERRORS IN PARENTHESES)

Independent Variables	HIGH CULTDIST	LOW CULTDIST	HIGH PRIOREXP	LOW PRIOREXP
Constant	.01 (1.34)	1.71 (.76)**	1.64 (.74)**	.34 (1.14)
GOVERESTR	-.43 (.47)	-3.77 (.93)***	-1.29 (.44)***	-2.33 (.64)***
RESOURCE	-.11 (.58)	-.13 (.68)	.41 (.56)	-1.58 (.74)**
SIZE	-2.4E-05 (8.57E-06)***	-2.6E-05 (9.80E-06)***	-1.8E-05 (7.36E-06)***	-4.6E-05 (1.81E-05)***
RNDINT	-.30 (.10)***	-.18 (.10)**	-.20 (.08)***	-.26 (.12)**
ADVINT	.05 (.04)	.04 (.06)	.02 (.04)	.08 (.06)*
PRODDIVN	-.05 (1.11)	-.16 (.37)	-.20 (.37)	.92 (.88)
CDIVERSITY	3.80 (1.19)***	2.42 (1.46)*	1.73 (1.23)*	2.59 (1.65)*
-2 Log Likelihood	122.06	101.23	143.04	79.52
Model χ^2 (d.f.)	33.14***(7)	34.57***(7)	32.00***(7)	35.96***(7)
Correct %	73.68%	77.68%	74.82%	79.31%
N	114	112	139	87

Note: Tests of significance (one-tail): * $p < .10$; ** $p < .05$; *** $p < .01$.

The test results of Hypotheses 4 and 5 are summarized in Table 5. To test the moderation relationship, a subgroup analysis was conducted in this study. The methodology of using subgroup analysis for testing moderation effect is supported in the models where the nature of proposed moderation relationship is one of *strength* rather than of *form* (Venkatraman 1989). Since the *strength* of moderation is of concern in this study (e.g. CDIVERSITY is expected to have a *stronger* effect when CULTDIST is higher), the subgroup analysis was chosen as the test method. First, the sample was partitioned into two subgroups

i.e., high versus low cultural distance groups, based on the sample median value of CULTDIST. The positive effect of CDIVERSITY was much stronger in the high cultural distance group ($p < .01$) than in the low cultural distance group ($p < .10$), thus supporting Hypothesis 4.

For testing Hypothesis 5, another sample split was conducted based on whether a focal U.S. firm has any type of prior operations in the host country (i.e., PRIOREXP = 1 or 2), or not (i.e., PRIOREXP = 0). The effect of CDIVERSITY was not significantly different between the high and low groups (both significant at $p < .10$). Therefore, Hypothesis 5 was not supported.

VI. DISCUSSION AND CONCLUSION

Probably, the most important contribution by this paper is the confirmation of the learning perspective on mode choice decisions. U.S. firms in our sample were found to choose a higher commitment mode (i.e., acquisition) over a lower commitment mode (i.e., joint venture) as they entered into lower cultural distance countries and also as they gained more operational experiences in host countries. These results suggest that the amount of cultural learning needed (i.e., need to learn) in a particular host country is indeed an important determinant of mode choice.

Furthermore, firm cultural diversity which intends to measure a firm's "ability to learn" foreign cultures had a significant effect on encouraging acquisitions over joint ventures in addition to the above two "need to learn" variables. This confirms the adequacy of our model specification in that, not only how much a firm has already learned regarding the host country culture prior to entry, but also how effectively it will be able to learn posterior to the entry matter. Hence the construct of "ability to learn" does seem to add value in building a more comprehensive understanding of the phenomena.

Another important finding was that a firm's cultural diversity's effect of encouraging acquisition over joint venture was systematically stronger when entering high cultural distance countries than low cultural distance countries. While this finding supports our prediction based on the behavioral relationship between learning ability and overconfidence in assessing risk, it is especially noteworthy that almost all the research efforts on mode choice so far implicitly assumed rational decision making by managers. For further progress of this field, future research efforts along this line seem to be important.

This study has some limitations. It is a manufacturing sector-based study, thus the implications to service sector must be limited. Also, due to data availability problem, some smaller firms had to be excluded in the sampling procedure, creating another possibility of sample bias. Future research along this line of investigation can focus on small and medium-size firms exclusively in order

to verify the generalizability of this study's findings. Another potential pitfall of this study's findings arise from the fact that our dataset focuses on the international activities between the 1986-1990 time frame, thus may not adequately reflect the changes in global business environment and corporate behaviors after that time. Future research could possibly replicate this study with a more recent dataset to address this issue. Cultural distance was operationalized based on Kogut and Singh's index, which in turn relies on Hofstede's cultural scores for each country. An alternative to this would be the cluster measure (or cultural block) developed by Ronen and Shenkar (1985) and later used by some researchers in the field (e.g. Gatignon and Anderson 1988; Barkema et al. 1996). Future research may benefit from combining both measures. More generally, it seems worthwhile to pursue the learning-based model of foreign expansion approach further by incorporating other types of learning contexts such as learning of technology or new product market areas, in relation to firms' mode choice.

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APPENDIX

Let us hypothetically assume that a U.S. Firm, A, has been exposed to the cultures of Korea and Taiwan, and another U.S. Firm, B, has been exposed to the cultures of Korea and New Zealand. Along the cultural dimension of *power distance* established by Hofstede (1991), the scores for the U.S., Korea, Taiwan, and New Zealand are 40, 60, 58, and 22, respectively. In the case of firm A (with prior exposures to Korea and Taiwan), the sum of cultural distances (in absolute values) from the U.S. is 38 (i.e., $20+18$). In the case of firm B (Korea and New Zealand), the sum of cultural distances from the U.S. is also 38 (i.e., $20+18$). The point here is that, even though the two firms do not differ in terms of the exposure to foreign cultures when only the cultural *distances* from the U.S. are measured, the firm cultural diversity should be higher in the case of firm B (Korea and New Zealand) than firm A (Korea and Taiwan), because the cultural difference *between* Korea (60) and New Zealand (22) is much higher than the difference *between* Korea (60) and Taiwan (58). Hence there is the need to capture the dimension of cultural variation *within* a set of cultures to which a focal U.S. firm is exposed.