



## **Strategic Response to a Volatile Environment: The Case of Cross-Cultural Cooperative Ventures**

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**Abstract.** Unlike free-standing companies, joint ventures involve more complex governance structures and organizational systems. Because of interpartner dependence in the managerial process, it is more difficult for joint ventures to configure their strategies with environmental dynamics. Without such configuration, however, joint ventures will suffer from operational instability and resource misallocation. This study assesses the strategic response of joint ventures to a dynamic environment. Based on a survey of top managers in international joint ventures (IJVs) in China, it is found that managerial perceptions of increased environmental complexity and hostility are positively related to an Analyzer strategy. Proactive and Defensive strategies are either negatively or non-significantly linked with perceived environmental dynamics. Further, the Analyzer strategy is associated with superior performance for IJVs in the context of an emerging economy.

**Keywords:** strategic response, joint ventures, environment volatility

### **1. Introduction**

The alignment between strategy and environment lies at the center of strategic management. Correct alignment helps a firm maximize the economic benefits from resources, improve the effectiveness of operations, and boost the fulfillment of its strategic goals (Hambrick, 1983; Venkatraman and Prescott, 1990). A large number of studies have already demonstrated the importance of this alignment, both theoretically and empirically, and suggested that the strategy-environment fit has strong performance implications (e.g., Miller and Friesen, 1983; Tung, 1979; Tan and Litschert, 1994; Venkatraman and Prescott, 1990). When the environment is uncertain and complex, the importance of this fit is magnified (Wernerfelt and Kamani, 1987).

Previous studies, however, have mostly examined the strategy-environment configuration for self-standing Western organizations in domestic environments. Its applicability to international joint ventures (IJVs) in emerging economies has remained largely unexplored. This is an important gap in the field given that IJVs have become the primary vehicle for firms engaged in global expansion, particularly into emerging economies. In contrast to free-standing companies, joint ventures involve more complex organizational structure,

systems, and procedures because of interdependence between partners in the management process (Yan and Gray, 1994). This in turn results in more difficulty as joint ventures attempt to configure their strategies with environmental dynamics. International joint ventures may encounter even more challenges than domestic ones because they operate in countries in which various aspects of the environment are heterogeneous to those at home (Harrigan, 1985). Facing these difficulties, IJVs are likely to have different strategic responses to environmental dynamics than free-standing, autonomous domestic businesses. The latter are generally more proactive and innovative in response to emerging opportunities in advanced market economies (Miller and Friesen, 1983; Rajagopalan and Finkelstein, 1992).

The appropriate coupling between strategy and environment for IJVs warrants investigation because IJVs need a pre-formulated strategic posture to facilitate goal accomplishment (Harrigan, 1985; Yip, 1995), govern venture evolution (Osborn and Baughn, 1990), and boost managerial compatibility between partners (Parkhe, 1993). This necessity is reinforced in an emerging economy because strategic choice determines the degree of exposure to contextual uncertainty and complexity (Luo, 1998).

This study aims to examine the environment-strategy relationship and its performance implications for IJVs operating in an emerging market. The basic premise is that managerial perceptions of host environmental nature such as complexity, dynamism, and hostility have a strong influence over strategic choices; the choice that best aligns with the environment will have profound implications for IJV performance. Building upon the Miles and Snow's (1978) typology (i.e., Prospector, Analyzer, Defender) and based on survey data from IJV executives in China, this study finds that the Analyzer strategy best fits the environmental dynamics and leads to high performance for IJVs in China. Using China as the analytical setting seems appropriate given that it is now the world's largest emerging economy and the biggest host for IJVs in developing countries. In the remainder of the paper, we elucidate grounded theories and present hypotheses. We next address methodological issues and describe our major results. Finally, we discuss our conclusions and highlight some implications.

## 2. Theory and hypotheses

### *Theoretical underpinnings*

This article adopts Miles and Snow's (1978) typology to assess the strategy-environment configuration.<sup>1</sup> Miles and Snow (1978) define Prospectors as firms that aggressively seek growth opportunities through product and market development and innovation. Prospectors tend to have changeable policies, making it difficult for managers to rely on historical precedents. This reinforces equivocation. Thus, Prospector firms are characterized by low behavior programmability, multiple options, and ambiguity in cause-effect relationships. Moreover, Prospector strategies are inherently riskier than other strategies. Their dependence on customers and their focus on growth implies a greater concern for dealing with environment and uncertainty (Hambrick, 1983).

According to Miles and Snow (1978), Defenders have a nonadaptive, rigid, and risk-averse strategic orientation. They deliberately reduce innovative and adaptive costs and

risks by selecting a stable, narrowly defined product or market domain. While Prospectors are externally-oriented and innovative, Defenders are internally-oriented and efficient. Defenders do not operate in as many domains as Prospectors (Duncan, 1972). Defender firms tend to exhibit more discretion about cost efficiency than Prospectors.

As a hybrid strategy between Prospectors and Defenders, Analyzers seek both risk-adjusted efficiency and emerging market opportunities (Miles and Snow, 1978). They defend existing product markets through efficiency-oriented strategies while cautiously penetrating new markets through intensified product/market innovation. Analyzer firms tend to have less discretion than Defenders, but more than Prospectors. While their interest in growth expands their range of options, their concern with efficiency limits the resources available to pursue such expansion (Rajagopalan and Finkelstein, 1992). In addition, the level of risk associated with Analyzer strategies tends to fall between that of Prospectors and Defenders. Analyzers often enter new product markets after Prospectors, while trying to control costs in their quest for efficiency. These dual strategies reduce the likelihood of outright failure, but also create upper limits to success (Miles and Snow, 1978).

In contrast to single-business firms, the strategic choices of IJVs are substantially influenced by the role the business intends to play in the corporate portfolio (Beamish and Banks, 1987; Hambrick, MacMillan and Day, 1982). IJVs are rarely likely to both build long-term market share and maximize profits and cash flow in the short run. This is because: i) the markets in which IJVs compete are often differentially attractive (Porter, 1991; Yip, 1989); ii) IJVs possess different competitive strengths (Harrigan, 1985); and iii) local IJV partners have heterogeneous attributes, leading to idiosyncratic complementarity between the partners (Buckley and Casson, 1988). Consequently, an MNC must decide explicitly or implicitly which strategic orientation each of its IJVs will pursue.

Interpartner reliance on resources leads to interdependence regarding managerial procedures, operational processes, and organizational control (Yan and Gray, 1994; 1995). This in turn puts limits on each partner's power to make strategic decisions for the IJV's development (Geringer and Hebert, 1989). As the strategic objectives underlying IJV formation may not be compatible between partners, opportunism and conflict often occur (Parkhe, 1993). Further, IJV structure is inherently unstable relative to other forms such as wholly-owned subsidiaries. This is because of interfirm conflict over organizational control, high governing costs, and short-term or incompatible goals (Osborn and Baughn, 1990; Singh, 1997; Yan, 1998). Consequently, a firm's on-going commitment to the growth of an IJV is likely to be circumspect. Such caution affects the innovativeness, adaptability, and riskiness of the IJV. Prospector strategies may not be advisable unless the party who dominates the IJV operations and management can ensure a payoff from such an orientation. Certainty of this payoff is enormously difficult, if not impossible, when the IJV operates in a very complex, even hostile, environment (Luo, 1997). This study assesses the strategic posture from the IJV perspective. Future research may further examine this issue from the viewpoint of parent firms.

The contribution of strategy to firm growth largely depends on its alignment with the external environment. The particularist approach of analyzing dimensions of an uncertain environment in isolation from other dimensions has recently come under criticism (Miller, 1992; Oxelheim and Wihlborg, 1987). Duncan (1972) suggests that the environment be

viewed as a multidimensional construct. Broadly, the external environment may be perceived along two dimensions: (1) sources of impact (i.e., environmental segments such as regulatory, competitor, supplier, and customer); and (2) the nature of impact (complexity, dynamism, and hostility) (Dess and Beard, 1984; Miller, 1992; Tan and Litschert, 1994). Together, these two dimensions describe the business environment affecting firm operations. Both dimensions depend upon and reinforce each other. In each of the environmental segments, complexity, dynamism, and hostility may be identified (Scott, 1987; Tan and Litschert, 1994). This study combines both sources and nature of impact in an assessment of environmental dynamics.

The impact of the host regulatory and industrial environments on an IJV's decision characteristics and organizational behavior is fairly vigorous and direct (Brewer, 1993). In an uncertain host environment, regulatory factors (e.g., IJV laws, FDI policies, taxation and financing regulations, foreign exchange administration rules, threat of nationalization, earnings repatriation, and price controls) may outweigh macroeconomic and technological factors (Aggarwal and Agmon, 1990). As some studies suggest (e.g., Agmon, 1985), defining the regulatory environment should also include the threats and opportunities associated with potential or actual changes in the political system. It should be understood that changes in government do not necessarily result in changes in policies affecting foreign business operations (Root, 1988), nor does political stability preclude policy uncertainty (Kobrin, 1982). Policy uncertainty can be significant, however, in formerly centrally-planned economies now undergoing transition, such as in the former Soviet republics, Eastern European countries, and China. Recent studies set in China report that the regulatory sectors have a significant impact on managerial decisions (Tan and Litschert, 1994; Tan, 1996). While regulatory forces are generally viewed as part of the institutional environment (Meyer and Rowan, 1977; Scott, 1987), their influence is more direct in transitional economies.

While there is a rather extensive literature on the general environment in relation to IJV formation and operations, the industrial level effect of environment has not been fully explored (Luo, 1998). According to Porter (1979), customers, suppliers, and competitors (i.e., existing and potential competitors in the same and substitute industries) all shape competition in an industry. Similarly, in his integrated environment management framework, Miller (1992) categorizes the dimensions of the industrial environment as input (i.e., suppliers), product (i.e., customer), and competition (i.e., competitors). In this study, our focus is on those regulatory and industrial level environmental sectors that directly influence firm performance, including competitors, customers, and suppliers.

Conceptual and empirical studies on strategic management have identified several environmental dimensions as perceived by managers within each of the above segments, including dynamism (Dess and Beard, 1984), complexity (Child, 1972; Tung, 1979), and hostility (Miller and Friesen, 1983; Venkatraman and Prescott, 1990). An important notion in IJV literature is that, when an environment is complex and dynamic, the rationale for IJV formation is strengthened because a local partner can assist a partner firm to search for, scan, interpret, and examine information in the host context (Harrigan, 1985; Parkhe, 1993). Environmental complexity, dynamism, and hostility all affect managerial perceptions of uncertainty in a host country, which in turn influences such strategic characteristics as the propensity for risk-taking, futurity, and proactiveness or defensiveness (Killing, 1983).

These three environmental dimensions therefore define the nature of environmental impact in this study.

### *Hypotheses*

The strategic behavior perspective of IJV theory suggests that firms establish IJVs to maximize economic rents through market expansion and improving their market position (Gomes-Casseres, 1989; Harrigan, 1988). Such improvement is assumed since IJVs are deemed to create partner synergies in the marketplace, deter competitive market entry, and capture more positive externalities (Contractor and Lorange, 1988; Kogut, 1988). Recently, Kumar (1995) and Luo (1997) observed that a local partner's market share and industrial experience has a significant impact on an IJV's goal accomplishment. Moreover, dynamic and uncertain economies often offer more investment opportunities and business potentials that firms can preempt (Porter, 1986; Wernerfelt and Karnani, 1987). Shama (1995) finds that U.S. investors are entering the newly independent states, Baltic states, and Eastern European countries in search of local market share. Similarly, Shenkar (1990) and the National Council (1991) find that Western parent firms seek market expansion and growth in China. These arguments and evidence suggest that a Defender strategy may be too conservative to be adopted by MNCs seeking global competitive advantages. If an IJV uses a Defender strategy, it may be because it is preoccupied with internal efficiency within the firm rather than responding to environmental dynamics.

It may also be unrealistic to orient IJVs toward a highly proactive and innovative direction because it could lead to vast operational and contextual risks and enormous innovative and adaptive costs for IJVs in a complex, dynamic, and hostile environment (Shan, 1991; Wright et al., 1995). Theoretically, IJVs are often formed because inter-firm cooperation will alleviate important risks (Harrigan, 1988; Osborn and Baughn, 1990). Even large MNCs will join hands to share high development risks and use larger joint markets over which they can amortize costs (Contractor, 1990; Stopford and Wells, 1972). The major strategic thrust of investors in such a context is to adapt to foreign environments through incremental changes (Davidson, 1980). Transaction cost theorists assert that IJVs can be a lower cost means of testing a foreign market considered too risky for a full investment (Hennart, 1991; Kogut, 1988). As an inherently riskier strategic orientation, therefore, the Prospector strategy may not be the right choice for IJVs in an uncertain environment. Rajagopalan and Finkelstein (1992) further demonstrate that the risk associated with the Prospector strategy increases outcome uncertainty and operation instability. In an emerging economy, such as in China, characterized by a lack of legal systems protecting intellectual or industrial proprietary rights, uncertainty and instability for Prospector firms are intensified because of the higher risk of uncompensated leakage of technological resources and innovative knowhow. A poor technical infrastructure in these economies further inflates the difficulties of maintaining profit and stability. IJVs are unlikely to pursue innovative, proactive strategies under conditions of increased complexity, uncertainty, and hostility in the environment.<sup>2</sup>

The above discussion suggests that both the defender and prospector orientations are not good fits with environmental dynamics in emerging markets for IJVs. We propose, as detailed below, that the analyzer orientation best aligns with environmental characteristics and the organizational needs of IJVs. It is positively associated with increased environmental

complexity, dynamism, and hostility. Environmental complexity refers to the number of relevant stakeholders and the diverse signals to which an enterprise must be able to respond. A complex environment implies a large number of decision factors (Duncan, 1972), especially where such factors are diverse (Miller and Friesen, 1983). For instance, Venkatraman and Prescott (1990) operationalized environmental complexity in terms of different sources of environmental impact, while Tan and Litschert (1994) focused on the degree of diversity of markets and customers. A complex environment increases the need to process information and manage and coordinate sub-tasks (Hambrick, 1983). When the host environment is complex, the costs of transactions and searching for information will increase (Williamson, 1991). This is especially evident in emerging economies where institutional environments and regulatory frameworks are extremely opaque and uncertain (Shama, 1995). A complex environment also makes appraising cash flow more difficult, which in turn elevates the cost of strategic planning and risk premium from economic exposure. At the business level, environmental complexity can drive up the cost of product differentiation and the expense of customer responsiveness because the host market is more segmented and heterogeneous (Tan and Litschert, 1994). In this situation, IJVs are likely to increase levels of analysis and be more circumspect when making decisions. Increased analysis enhances the likelihood of payoff from investment and operations and attenuates transaction costs and contractual hazards. Miles and Snow (1978:134) argue that MNCs follow the Analyzer strategy "to the extent that they avoid the complexities involved in IJVs and/or host country production facilities." Following this line of reasoning, we predict:

*Hypothesis 1. Among IJVs in an emerging economy, managerial perceptions of environmental complexity are associated with an Analyzer orientation.*

It should be noted that environmental complexity and dynamism are two different concepts. Dynamism refers to the extent and patterns of change in the environment, especially as it relates to predictability (Duncan, 1972). Other terms with the same general meaning include instability, turbulence, and volatility (e.g., Lawrence and Lorsch, 1967). Structural contingency theory, which highlights the various dimensions of the environment, offers some clues to this distinction. Child (1972) and Hambrick (1983) observed that while a dynamic, fast changing environment creates uncertainty, complexity does not. A recent review of structural contingency literature (Shenkar, Aranya and Almor, 1995) confirms the importance of the distinction between complexity and dynamism and attributes much of the variability in structural contingency findings to this distinction. In other words, complexity and dynamism create entirely different challenges for organizations and require different structural configurations to achieve a good strategy-environment fit.

When the host environment is highly dynamic, IJVs need to closely scan various environmental contingencies that may affect venture operations. An IJV facing a dynamic environment needs to monitor changing conditions, assess their impact on the organization, and rapidly prepare and execute strategic responses. One critical task in this environment is to gather and analyze information (Child, 1994). This is especially crucial when information is uncodified and regulations are inexplicit (Root, 1988). A host environment characterized by uncodified information can promote noneconomic forms of opportunism (Williamson, 1991), increased transaction costs (Luo, 1997), and greater caution amongst IJV managers

making resource commitments (Gomes-Casseres, 1989). This aspect of the environment spurs IJVs to be more discrete than Prospectors, but less than Defenders. In such an uncertain context, an Analyzer strategy can encourage managers to be more efficient and innovative (Berg, Duncan and Friedman, 1982). The dual nature of this strategy also reduces the likelihood of outright failure and creates upper limits to success; hence, IJVs face only moderate outcome uncertainty (Miles and Snow, 1978). According to the above, we propose:

*Hypothesis 2. Among IJVs in an emerging economy, managerial perceptions of environmental dynamism is associated with an Analyzer orientation.*

According to Dess and Beard (1984), environmental hostility refers to the scarcity of vital resources needed for firm operations (i.e., customers, raw materials, capital, and information). Thus environmental hostility is an inverse function of environmental munificence (Venkatraman and Prescott, 1990). The availability of resources is an important facet of how favorable a business environment is for a firm. As the environment becomes less munificent or more hostile, IJVs are subjected to greater uncertainty. The resource dependence perspective suggests that management's ability to cope with such conditions by reducing the firm's dependence on or increasing its control over resources will affect organizational effectiveness (Pfeffer and Salancik, 1978). Empirical evidence finds that IJVs in emerging economies allocate most of their resources to a set of reasonably stable environments while at the same time conducting somewhat routinized scanning activities in a limited product-market area (Shan, 1991; Shenkar, 1990). By doing this, IJVs can overcome the transactional hazards derived from environmental hostility and mitigate their vulnerability to such hostility.

In response to increased hostility, IJVs tend to be less proactive in committing resources to the host environment. In most cases, R&D activities are conducted at the headquarters level; only mature products and well-known technologies are transferred to the host country (Shama, 1995). Much IJV success occurs through market penetration since the organization's strength comes from its traditional product-market base. This market development strategy allows foreign investors to extend the product life cycle and maximize returns on technological and organizational skills (Teagardon and Von Glinow, 1990).<sup>3</sup> From the standpoint of foreign partners, this strategic posture is grounded in a natural fear of creating potential competitors in the local market and over-dependence on local resources (Kumar, 1995). Within the concentrated business domain (product, market, and technology), however, these IJVs are adaptive and innovative. They analyze the environment carefully when the perceived hostility increases. This configuration may improve an IJV's risk-adjusted net return on its investment. Thus, IJVs in this context exhibit a pattern of strategic orientation consistent with the Analyzer strategy. In line with the above discussion, we expect:

*Hypothesis 3. Among IJVs in an emerging economy, managerial perceptions of environmental hostility is associated with an Analyzer orientation.*

The alignment of IJV strategies to environmental dynamics in a host country is of paramount importance for venture success (Buckley and Casson, 1992; Morrison and Roth, 1992). The environment-strategy paradigm asserts that there must be an appropriate fit

between strategy-making behavior and the nature of the environment to ensure effective selection of strategies (Miller and Friesen, 1983; Tan and Litschert, 1994). For IJVs, inter-partner complementary competence cannot alone guarantee business success because the performance effect of competence depends on the requirements of, and the degree of fit with, the host environment (Beamish and Banks, 1987; Harrigan, 1985; Kogut and Singh, 1988). A number of IJV studies based on developing countries have verified that when managerial discretion is constrained in the indigenous setting, the environment-strategy alignment plays a larger role in determining IJV performance (Dang, 1977; Gold, 1991; Lall, 1987). In such circumstances, IJV managers must be able to scan and interpret the environment and make decisions appropriate to both internal arrangements and external alignment (Lecraw, 1984).

The necessity for a strategy-environment fit is expected to be magnified in the context of an emerging economy. A good coupling between strategic orientation and environmental conditions in a turbulent context can enable the IJV to maximize the economic rents gained from the interaction between the 'societal effect' and the 'organizational effect' (Mueller, 1994).<sup>4</sup> This coupling better exploits the advantages of having a local partner such as access to distribution channels, more insightful information, a better relationship with the local government, and reduced environmental risks (Beamish, 1993). Shan (1991) and Teagarden and Von Glinow (1990) suggest that a pre-arranged strategic orientation can reduce opportunism by the local partner and boost its incentive to collaborate.

We hypothesized above that the Analyzer strategy best fits environmental dynamics for IJVs in an emerging economy. It is common wisdom in the literature that the better the fit, the greater the performance. Thus, an Analyzer strategy is expected to lead to high performance for IJVs. As Prospector or Defender strategies do not fit the external environment of an emerging economy appropriately, these two strategies will not be associated with superior performance. Indeed, Analyzer IJVs maintain a stable domain in which they can operate relatively efficiently while identifying emerging opportunities (Miles and Snow, 1978). Such IJVs emphasize output improvement and differentiation through innovation and advertising or other promotional efforts. Businesses that combine efficiency with improvements or innovations may have higher levels of returns than the industrial average (Buzzell and Gale, 1987).

In addition, the Analyzer strategy provides more flexible market orientation options than other strategies. Prospector IJVs tend to focus on market expansion in a host country. Defender IJVs often use a developing country as a platform for cost minimization and re-export. By contrast, because Analyzers use hybrid strategies combining innovation effectiveness and cost efficiency, they can sell products either in the local or export markets depending on market changes, consumer demands, and organizational needs.<sup>5</sup> Contractor (1990) observed that Analyzer IJVs are often viewed more favorably by the host government and thus bear a lower political risk because they are more likely to generate foreign exchange earnings through export than do Prospector IJVs and bring more appropriate technologies to the host country than do Defender IJVs.

Apart from the misfit between Prospector or Defender strategies and the environment, other factors solidify the likelihood of low performance for these two strategies. As IJVs have a relatively short history in China and generally have not yet firmly established a niche



there, a Defender strategy may not be appropriate because IJVs do not have much to defend. A Prospector strategy is also undesirable because the lack of protection of industrial and intellectual property rights imposes a higher risk of uncompensated leakage of proprietary knowledge for more innovative, proactive, and resource committed ventures. Further, many IJVs in China produce or modify a product that already exists in an MNC's portfolio. The major advantage of starting up production of such products in China is proximity to the end market. With this investment rationale, foreign investors are unlikely to risk heavy investments on new product development as is normal for the Prospector strategy. In light of the above, we hypothesize:

*Hypothesis 4. Among IJVs in an emerging economy, an Analyzer orientation is related to higher performance than either Prospector or Defender orientations.*

### 3. Research design

#### *Data collection*

This study was set in the People's Republic of China during a pivotal time in its economic transition. China officially opened its doors to foreign investment in 1979. From that point through the end of 1998, Chinese authorities had approved the establishment of over 300,000 FDI projects involving \$522.4 billion in foreign capital. Of these, over 150,000 ventures, representing \$221.04 billion in investment, had commenced operations by the end of 1997 (Luo, 1998). The formation and operation of these ventures have played a major role in shaping the new economic environment, turning China into the second largest FDI absorbing country in the world, only behind the United States. Among FDI entry modes, the IJV form remains dominant; equity and contractual joint ventures accounted for 64.3% of total FDI value in 1997.

Data used in this study were obtained through a survey of senior managers from IJVs operating in 11 cities in Eastern China, including Nanjing, Suzhou, Wuxi, Changzhou, Zhengjiang, Yangzhou, Nantong, Xuzhou, Yanchen, Huaiying, and Liangyungang. The questionnaire was adopted from Tan and Litschert (1994) and then subjected to a back-translation procedure to ensure validity in a cross-cultural setting. Consultation was sought regarding the quality of the instrument and revisions were made. The pretest and survey were administered in several cities in China. All these IJVs are manufacturing businesses in growing but competitive industries such as telecommunications, electric and electronic products, and machine building. Technological skill generally plays an important part in these industries. All sample IJVs were strategic business units of foreign parents.<sup>6</sup> Export-oriented IJVs are not included in the sample as they do not engage sufficiently with the domestic Chinese environment.

We distributed the questionnaire to about 300 IJVs in above cities. These ventures were identified mainly from the List of Foreign-Funded Enterprises in Jiangsu, compiled by the Jiangsu Provincial Commission of Foreign Trade and Economic Cooperation. After several rounds of reminders, we finally received 83 complete responses, representing a 27.67 percent response rate. In order to reduce common method variance, we interviewed

a small sample of respondents during the design stage and asked them to report those decisions they considered 'strategic'. The results demonstrated a good correspondence with conceptions of strategic decisions in the literature. We also asked them to identify specific environmental and decision-making characteristics; their answers were checked for correspondence with their responses in the questionnaire. The information collected exhibits a high level of consistency with questionnaire responses. Our field study suggested that IJV executives in China were less likely to generate common method variance than their counterparts in Western countries who often develop lay theories concerning surveyed issues. We also checked the Guttman Split-Half reliability indexes (0.7–0.9) based on 12 paired returns (the general manager and the planning director from the same firm). The results displayed a high consistency between the two respondents from each firm. Lastly, this study followed the usual academic convention of leaving unidentified the individual organization in the sample. Researchers who have used questionnaire surveys in China have reported that under conditions of anonymity, Chinese managers are more willing and more likely to provide accurate information (Adler, Campbell and Laurent, 1989).

#### *Variable measurement*

In this study, environment is conceptualized as a multidimensional construct (Lawrence and Lorsch, 1967; Dess and Beard, 1984). Three environmental attributes, namely complexity, dynamism, and hostility, are investigated. These dimensions affect managerial perceptions of environmental dynamics, which in turn influences the choice of strategic orientations characterized as Prospector, Defender, or Analyzer (Miles and Snow, 1978). It has long been recognized that the manner in which managers perceive their environment is more relevant to variables subject to managerial control than archival measures of the environment (e.g., Hambrick, 1983). Perceptual measures enable the researcher to view a firm's environment from the perspective of organizational members or key respondents (Venkatraman and Prescott, 1990). It has also been argued that perceptual measures make sense since it is not the external reality but the way entrepreneurs think about that reality that determines outcome (Rajagopalan and Finkelstein, 1992). In addition, these measures of organizational environment have been shown to correlate with objective measures with a high degree of reliability (e.g., Chandler and Hanks, 1993).

To measure the three environmental dimensions, respondents were asked about the level of each dimension within each environmental segment (i.e., competitors, suppliers, buyers, and regulatory sectors). Complexity was defined as the mean of heterogeneity and diversity for each segment, dynamism as the mean of variability and unpredictability, and hostility as the mean of deterrence and criticality of resources as controlled by the different stakeholders. Our principal component test observed a high level of communality estimates across each of these multidimensional constructs, indicating the importance of every dimension.

Strategy was also measured as a multidimensional construct (Miles and Snow, 1978; Venkatraman and Prescott, 1990). This study defines 'strategy' as strategic tendencies or orientations rather than categorical types. Respondents were asked to assess the characteristics of those strategic orientations that were relevant to their particular firms on a seven-point

scale. A Prospector tendency is defined as the mean of three items: (1) in making strategic decisions, managers constantly seek to introduce new brands or new products in the market; (2) whenever there is ambiguity in government regulations, managers move proactively to try to take the lead; and (3) in making strategic decisions, managers respond to opportunity signals quickly. An Analyzer orientation is the mean of: (1) in making strategic decisions, managers emphasize planning techniques and information systems; (2) in analyzing situations, managers evaluate possible consequences thoroughly and obtain alternatives; and (3) managers seek opportunities that have been shown to be promising. Finally, a Defender tendency is the mean of: (1) managers emphasize the use of cost control systems for monitoring performance; (2) managers constantly modify manufacturing technology to achieve efficiency; and (3) managers put emphasis on following governmental regulations and make important changes only as allowed. All three strategic tendencies are defined as continuous constructs. Instead of identifying each IJV as one of three categorical variables, we sought to assess strategy based on each firm's response to all the above questions, along with those on environment and performance. In other words, one firm may have high scores in the items for one strategic tendency but only moderate or low scores in items from the other two strategic tendencies.<sup>7</sup> This continuous approach was validated in a previous study by Tan and Litschert (1994). The categorical approach was not used largely because of limited sample size.

In addition, a set of questions was included to measure the subjective evaluation of performance. This includes after-tax returns on sales and on assets, sales growth, and competitive position. These measures of performance are widely used in the PRC.<sup>8</sup> The response format was a five-point scale (bottom 20 percent to top 20 percent compared to major rivals in the industry). The overall performance score in our study is the mean of the above composite measures. The latest research suggests that the use of subjective measures of firm performance relative to competitors is particularly desirable in studying newly emerging businesses (Chandler and Hanks, 1993). Self-reporting is appropriate not only because financial and accounting data are not readily available in China, but also because these measures of organizational environment and performance have been validated and shown to correlate with objective measures with a high degree of reliability (Chandler and Hanks, 1993). In addition, firm size was included in this study as a control variable, measured as the number of employees. The average number of employees in our sample is 386.

The reliability of the above constructs which contain multiple items was tested using Cronbach's  $\alpha$  Coefficient. Generally a value around 0.7 is considered adequate for concluding internal consistency (Nunnally, 1978). This guideline was met for all constructs containing multiple items in this study. The dimensionality of these constructs was also validated by high communalities estimates ( $>0.78$ ). Descriptive statistics and correlation coefficients are presented in Table 1.

#### 4. Data analysis and results

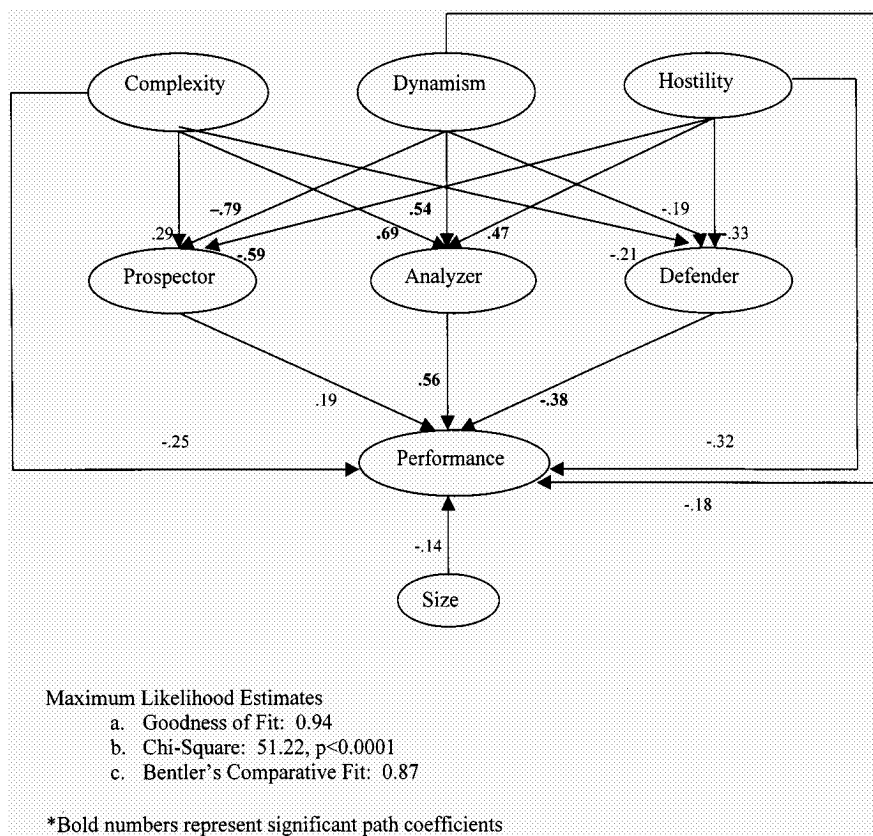
We performed the covariance structure analysis using structural equation modeling technique (CALIS in SAS). Figure 1 reports the path coefficients of the proposed relationships,

Table 1. Descriptive statistics and Pearson correlation.

	N	Mean	s.d.	1	2	3	4	5	6	7	8
1. Complexity	83	3.92	1.45	1.00							
2. Dynamism	83	3.99	1.14	0.08	1.00						
3. Hostility	83	3.80	0.93	-0.06	0.70**	1.00					
4. Prospector	83	4.91	1.07	0.16	-0.43**	-0.36**	1.00				
5. Analyzer	83	5.21	1.08	0.57**	0.34**	0.39**	-0.23*	1.00			
6. Defender	83	5.05	1.23	-0.28*	0.14	-0.09	0.12	-0.25*	1.00		
7. Size	83	3.86	23.1	-0.31**	-0.11	-0.09	0.12	-0.02	0.06	1.00	
8. Performance	83	3.12	1.06	-0.18*	0.52**	-0.25*	-0.16	0.37**	0.13	-0.14	1.00

\*  $p < 0.01$ ;  
 \*\*  $p < 0.001$ .

Figure 1. Covariance structure analysis: path coefficients.



with significant ones in bold. Maximum likelihood estimates ( $\chi^2 = .94$ ,  $p < .0001$ , Bartlett's CFI = 0.87) indicate a fair fit between the model and the data.

As shown in figure 1, a Prospector orientation is negatively associated with environmental dynamism ( $-0.79$ ) and hostility ( $-0.59$ ) and insignificantly linked to environmental complexity (0.29). A Defender orientation is not significantly related to all the three environmental dimensions. This evidence suggests that there is no systematic configuration between a Defender orientation and environmental dynamics and between a Prospector orientation and environmental complexity. Nevertheless, sample IJVs demonstrate that their proactiveness is reduced when the external environment is more volatile and deterrent.

H1 states that IJVs will cope with environmental complexity by adopting an Analyzer strategy. This hypothesis is supported by the positive relationship between complexity and the Analyzer strategy (0.69). We also hypothesized a positive association between environmental hostility and the Analyzer strategy. Statistical results indicate that the firms tend to deal with increased hostility through an increased Analyzer orientation (0.47). Figure 1 further exhibits that the Analyzer strategy is significantly and positively associated with environmental dynamism (0.54). These findings imply that an Analyzer orientation is the dominant strategic response to increased environmental complexity, dynamism, and hostility. The Analyzer strategy is strongly aligned with environmental attributes in the same direction. IJVs use this strategy as their prime response to environmental challenges. H1–H3 are therefore supported.

The covariance structure analysis also presents some findings about the performance implications of strategic response. The dominant strategic orientation we hypothesized for IJVs in China, the Analyzer strategy, is significantly and positively related to firm performance which is defined as the average of return on sales, return on assets, sales growth, and competitive position as perceived by IJV managers (0.56). This finding supports our strategy-performance relationship hypothesis (H4). In addition, from a path analysis perspective, we find that poorer performance correlates with increased defensiveness ( $-0.38$ ). In an emerging market such as China where both opportunity and challenges coexist, the Defender choice deters firm growth in profitability and market share. Our analysis does not reveal any systematic relationship between the Prospector strategy and IJV performance.

Figure 1 also shows that environmental complexity, dynamism, and hostility as perceived by IJV managers are non-significantly related to firm performance, despite their negative path coefficients. This suggests that perceived environmental dimensions do not directly affect IJV performance. Instead, they affect a firm's strategic response, which in turn influences joint venture performance. In other words, IJV managers formulate or adjust a strategic response in terms of organizational proactiveness, innovativeness, and risk-taking to perceived environmental complexity, volatility, and hostility. Such a strategic response exerts a direct and significant influence on venture performance. In a structurally transforming market such as China, the Analyzer strategy enhances performance whereas other strategic responses do not. Whether perceived and actual environmental dynamics have a different or similar impact on performance is an important question warranting future exploration. Organizational size, defined as the number of employees, is also not associated with performance.

## 5. Discussion and conclusion

Based in the context of a highly uncertain economy (China), this study examined the environment-strategy configuration and its performance implications for international joint ventures. The issue addressed here is central to a better understanding of IJV strategy and performance. The primary findings suggest that IJVs exhibit distinctive strategies in such a context and that these strategies are significantly associated with perceived environmental complexity, dynamism, and hostility. More specifically, managerial perceptions of increased environmental complexity, dynamism, and hostility are found to be positively related to the intensity of Analyzer orientation. Proactive and defensive strategies are either negatively or non-significantly linked with perceived contextual uncertainty. Moreover, the Analyzer strategy is positively and significantly related to the overall performance of IJVs.

The above findings suggest that IJV success hinges on establishing a good fit between strategic orientation and the host country environment. Indeed, environmental dynamism, hostility, and complexity imply both market opportunities and threats from competitors, buyers, suppliers, and government authorities in a host country. These conditions drive IJVs to seek both risk-adjusted efficiency and emerging opportunities. They become innovative but not highly proactive, adaptive but not highly risk-taking. Moreover, they tend to be circumspect without being completely defensive and pursue efficiency without becoming fully dependent upon cost minimization through export. Analyzer IJVs therefore lie in the middle of Prospectors and Defenders in terms of futurity, innovativeness, and risk-taking. Their dual market orientation (i.e., seeking both local market and export advantages) mitigates their dependence on local settings, thus reducing business uncertainties. It also provides a superior position in achieving internalization as well as internationalization benefits.

This research observed fundamental differences in the effect that different environmental dimensions have on IJV strategies as well as performance. This suggests that it is imperative to use a multidimensional approach in assessing strategy-environment configurations and their performance effects in a dynamic environment. Analyzing specific environmental dimensions in isolation from others is inappropriate because it fails to capture the heterogeneous effects of different environmental dimensions on either strategy formulation or operational outcome.

Both Prospector and Defender strategies are found to be either negatively or non-significantly related to environmental dimensions and IJV performance. A Prospector orientation often leads to great operational and contextual risks and high innovation and adaption costs in an uncertain environment such as in China. When the perceived host environment is uncertain, this orientation fails to reduce risks for IJVs. A defensive orientation, on the other hand, renders IJVs ineffectual in seizing preemptive opportunities and business potentials. This orientation is hence contrary to the rationale that an IJV is a vehicle for market expansion in emerging economies (Beamish, 1993; Luo, 1997; Shenkar, 1990). The Analysis orientation appears to be the best strategic choice for IJVs in aligning with a complex and uncertain environment and in attaining advantages and potential benefits.

This work enriches IJV theory in the following areas. First, it establishes that an IJV's performance is significantly influenced by its strategic orientation, and that the Analyzer

orientation is the best strategic posture in an uncertain environment. Second, it confirms that alignment of IJV strategies with the host country environment is critical to venture success (Contractor, 1990; Harrigan, 1985). Perceived environmental complexity, dynamism, and hostility have strong, sustained influences over strategic choices in terms of proactiveness, riskiness, and innovativeness. Third, it underlines the multidimensional nature of the host country environment that IJVs face. Different environmental dimensions affect IJV strategies and performance idiosyncratically. This necessitates more sophisticated, vigorous analyses of local responsiveness, industry selection, information processing, and competence deployment by IJVs.

This study has important managerial implications for international executives, particularly those interested in investing or marketing in emerging economies. First, it is important for transnational investors to establish a good coupling between an IJV's strategic orientation and its contextual conditions. This orientation formulation has replaced conventional controls as a major instrument for creating a balance between MNC headquarters and its foreign subsidiaries, including IJVs. Second, a hybrid strategy (Analyzer) can facilitate the accomplishment of both internalization and internationalization advantages for IJVs in an emerging market. The evidence presented in this study suggests that a strategy between proactive and defensive orientations spurs efficiency and market expansion.

Third, foreign investors need to assess the individual dimensions of the local environment, because various attributes such as complexity, dynamism, and hostility influence IJV strategy and performance heterogeneously. The configuration of IJV strategy with a local environment is a complicated matrix rather than a one-dimensional linkage. The lessons from China demonstrate that the diversity and criticality of environmental sectors are much more conducive to IJV performance than variability and predictability. Since environmental dimensions can be industry-specific and region-specific, international executives should identify correctly the nature of the environment based upon the particular dynamics of the selected industrial and geographical market. This in turn will help them improve strategy formulation, resource dispersal, and output control.

Despite some contributions to the literature and practice, this research has several limitations that should be addressed in future. First, the sample IJVs studied here may not be fully representative of all IJVs in China. In order to truly appreciate the robustness and generalizability of our empirical results, future work should use a larger sample or more representative firms. Although this study is cross-sectional, its representativeness for all industries is limited. It would be interesting to test if the strategy-environment alignment differs across industries. Second, the lessons drawn from China could possibly be extended to other emerging economies, but this remains to be verified.

Third, an IJV's motives need to be captured in the empirical model because they may influence strategic orientation. Similarly, a local partner's objectives for joining an IJV, as well as its technological, operational, and organizational skills, must be controlled for when examining the strategy-environment-performance relationships. The degree of congruence in motivations for IJV formation and the degree of complementarity in rent-generating skills between foreign and local partners are areas worthy of investigation because they are likely to either independently impact IJV performance or moderate the relationship between IJV strategy and performance.

Fourth, future research should investigate the possible moderating effects of equity distribution between partners. It can influence bargaining power and IJV control on each side, thus affecting strategy formulation and implementation. Fifth, as China and other emerging economies are highly dynamic, more valuable insights can be gained from additional studies that trace IJV strategy-environment configurations and performance implications over time. Taking this study as a point of departure, future research should be devoted to longitudinal comparisons on this issue. Lastly, this study employed an indirect approach in measuring the performance implications of the strategy-environment configuration for IJVs. That is, we first sought to identify which strategy best fits the environment, and then examined the effect of this strategy on performance. Future research may instead directly diagnose the influence of the degree of fit between strategy and environment on IJV performance.

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### Notes

1. This study focuses on Prospector, Analyzer, and Defender orientations. The fourth type of strategy in Miles and Snow's (1978) typology, namely Reactor, is not considered in this article because it does not fit with the strategic role of international joint ventures in an emerging market such as in China.
2. We thank an anonymous reviewer for suggesting this insight.
3. The resource-dependence perspective maintains that in a complex and dynamic environment, an IJV's ability to reduce its dependence on local settings and increase its bargaining power over the host government relies on the distinctiveness of its invested competence (Pfeffer and Salancik, 1978). MNCs often contribute organizational skills, international distribution channels, and technological skills to Analyzer IJVs as distinctive competencies.
4. The "organizational effect" may arise against the "societal effect" (Mueller, 1994). This could be true through technological and organizational skill diffusion. As argued by both strategic management theorists and in the 'internationalization theory' school, an MNC is a relatively effective mechanism for transferring knowledge via IJVs across borders (Bartlett and Ghoshal, 1989). However, this effect is likely to be deterred when IJVs operate in a hostile, complex, and dynamic environment because contextual and structural impediments hinder dissemination of information (Sorge, 1991).
5. The characteristics of an Analyzer orientation may not differ significantly between developing and developed countries although this strategy was initially defined based on the context of developed countries. Foreign ventures in a developing country may find that environmental contingencies and the market orientation associated with this strategic orientation do vary, however. The market domain for ventures with an Analyzer orientation extends from a single, home market to multiple choices (host, home, or international), which in turn provides greater operational flexibility (Kogut, 1988).
6. It is important to note that Miles and Snow's (1978) typology is intended for strategic business units (SBU). Thus, it is necessary to ensure that the sample IJVs are overseas SBUs established by MNC parents. This step is especially imperative in China given that some IJVs are formed by other SBUs in China or beyond.
7. We checked the returned questionnaires and found that most respondents gave high scores to one strategic orientation and moderate or low scores to items for the other two strategic orientations.
8. The performance measures this study used may not be appropriate for very young IJVs in China. For instance, return on sales or assets and competitive position in the market may not be very realistic measures of the performance of newly formed IJVs, as it often takes time to sufficiently reflect operational results (e.g., 1–2 years later, according to the Bulletin of MOFTEC, Issue 1, 1998). The sample IJVs had on average of 5.5



years (0.96 standard deviation) of operations; all have operated longer than 2 years. It is hence appropriate to measure their performance using these financial and market measures. We acknowledge an anonymous reviewer's suggestion for this clarification.

## References

- Adler, N.J., N. Cambell, and A. Laurent (1989). "In Search of Appropriate Methodology: From Outside the People's Republic of China Looking In." *Journal of International Business Studies*, 20, pp. 61–74.
- Aggarwal, R. and T. Agmon (1990). "The International Success of Developing Country Firms: Role of Government-Directed Advantage." *Management International Review*, 30(2), pp. 163–180.
- Agmon, T. (1985). *Political Economy and Risk in World Financial Markets*. Lexington, Mass.: Lexington Books.
- Bagozzi, R.P. and L.W. Phillips (1982). "Representing and Testing Organizational Theories: A Holistic Construal." *Administrative Science Quarterly*, 27, pp. 459–489.
- Bartlett, C.A. and S. Ghoshal (1989). *Managing Across Borders*. Boston: Harvard Business School Press.
- Beamish, P.W. (1993). "The Characteristics of Joint Ventures in the People's Republic of China." *Journal of International Marketing*, 1(2), pp. 29–48.
- Beamish, P.W. and J.C. Banks (1987). "Equity Joint Ventures and the Theory of the Multinational Enterprises." *Journal of International Business Studies*, 17, pp. 1–16.
- Berg, S.V., J. Duncan, and P. Friedman (1982). *Joint Venture Strategies and Corporate Innovation*. Cambridge, MA: Oelgeschlager.
- Brewer, T.L. (1993). "Government Policies, Market Imperfections, and Foreign Direct Investment." *Journal of International Business Studies*, 24, pp. 101–120.
- Buckley, P.J. and M.C. Casson (1988). "The Theory of Cooperation in International Business." In F. Contractor and P. Lorange (eds.), *Cooperative Strategies in International Business*. Lexington, Mass.: Lexington Books, pp. 31–34.
- Buckley, P.J. and M.C. Casson (1992). "Multinational Enterprises in Less Developed Countries: Cultural and Economic Interactions." In P. J. Buckley (ed.), *Studies in International Business*. New York: St. Martin's Press.
- Bulletin of Ministry of Foreign Trade and Economic Cooperation (MOFTEC), People's Republic of China, Issue no. 1, 1995; no. 1, 1998.
- Buzzell, R.D. and B.T. Gale (1987). *The PIMS Principles: Linking Strategy to Performance*. New York: The Free Press.
- Chandler, G.N. and S.H. Hanks (1993). "Measuring the Performance of Emerging Business: A Validation Study." *Journal of Business Venturing*, 8, pp. 391–408.
- Child, J. (1972). "Organizational Structure, Environment and Performance: The Role of Strategic Choice." *Sociology*, 6, pp. 1–22.
- Child, J. (1994). *Management in China During the Age of Reform*. Cambridge, England: Cambridge University Press.
- Contractor, F.J. (1990). "Contractual and Cooperative Forms of International Business: Towards a Unified Theory of Modal Choice." *Management International Review*, 30(1), pp. 31–54.
- Contractor, F.J. and P. Lorange (1988). "The Strategy and Economic Basis for Cooperative Venture." In Farok J. Contractor and Peter Lorange (eds.), *Cooperative Strategies in International Business*. Toronto: Lexington.
- Dess, G. and D. Beard (1984). "Dimensions of Organizational Task Environments." *Administrative Science Quarterly*, 29, pp. 52–73.
- Dang, T. (1977). "Ownership, Control, and Performance of the Multinational Corporation: A Study of US Wholly-Owned Subsidiaries and Joint Ventures in Philippines and Taiwan." Unpublished doctoral dissertation. University of California, Los Angeles.
- Davidson, W.H. (1980). "The Location of Foreign Direct Investment Activity: Country Characteristics and Experience Effects." *Journal of International Business Studies*, 12, pp. 9–22.
- Duncan, J. (1972). "Characteristics of Organizational Environments and Perceived Environmental Uncertainty." *Administrative Science Quarterly*, 17, pp. 313–327.
- Foreign Investment in China*. 1996. China Foreign-Invested Enterprises Association, 41: 20–22.
- Geringer, J.M. and L. Hebert (1989). "Control and Performance of International Joint Ventures." *Journal of International Business Studies*, 20, pp. 235–267.

- Gold, D. (1991). "The Determinants of Foreign Direct Investment and Their Implications for Host Developing Countries." *CTC Reporter*, 31, pp. 21–24.
- Gomes-Casseres, B. (1989). "Ownership Structure of Foreign Subsidiaries: Theory and Evidence." *Journal of Economic Behavior and Organization*, 11, pp. 1–25.
- Hambrick, D.C. (1983). "Some Tests of the Effectiveness and Functional Attributes of Miles and Snow's Strategic Types." *Academy of Management Journal*, 26, pp. 5–26.
- Hambrick, D.C., I.C. MacMillan, and D.L. Day (1982). "Strategic Attributes and Performance in the BCG Matrix: A PIMS-Based Analysis of Industrial Product Business." *Academy of Management Journal*, 25, pp. 510–531.
- Harrigan, K.R. (1985). *Strategies for Joint Ventures Success*. Lexington, MA: Lexington Books.
- Harrigan, K.R. (1988). "Joint Ventures and Competitive Strategy." *Strategic Management Journal*, 9, pp. 141–158.
- Hennart, J.F. (1991). "The Transactions Cost Theory of Joint Ventures: An Empirical Study of Japanese Subsidiaries in the United States." *Management Science*, 37(4), pp. 483–497.
- Killing, J.P. (1983). *Strategies for Joint Venture Success*. New York: Praeger.
- Kobrin, S.J. (1982). *Managing Political Risk Assessment*. Berkeley, CA: University of California Press.
- Kogut, B. (1988). "Joint Ventures: Theoretical and Empirical Perspectives." *Strategic Management Journal*, 9, pp. 319–332.
- Kogut, B. and Singh, H. (1988). "Entering US by Joint Venture: Competitive Rivalry and Industry Structure." In F. J. Contractor and P. Lorange (eds.), *Cooperative Strategies in International Business*. Lexington, Mass.: Lexington Books.
- Kumar, B.N. (1995). "Partner-Selection-Criteria and Success of Technology Transfer: A Model Based on Learning Theory Applied to the Case of Indo-German Technical Collaborations." *Management International Review*, 35 (special issue), pp. 65–78.
- Lall, S. (1987). "Transnational, Domestic Enterprises and Industrial Structure in Host LDCs: A Survey." *Oxford Economic Papers*, pp. 217–248.
- Lawrence, P. and J.W. Lorsch (1967). "Differentiation and Integration in Complex Organizations." *Administrative Science Quarterly*, 12, pp. 1–47.
- Lecraw, D. (1984). "Bargaining Power, Ownership, and Profitability of Transnational Corporations in Developing Countries." *Journal of International Business Studies*, Spring/Summer, pp. 27–43.
- Luo, Y. (1998). "Timing of Investment and International Expansion Performance in China." *Journal of International Business Studies*, 29(2), pp. 391–408.
- Luo, Y. (1997). "Partner Selection and Venturing Success: The Case of Joint Ventures with Firms in the People's Republic of China." *Organization Science*, 8(6), pp. 648–662.
- Meyer, J.W. and B. Rowan (1977). "Institutionalized Organizations: Formal Structures as Myth and Ceremony." *American Journal of Sociology*, 83, pp. 340–363.
- Miles, R.E. and C.C. Snow (1978). *Organizational Strategy, Structure, and Process*. New York: McGraw-Hill.
- Miles, R.E. and C.C. Snow (1986). "New Concepts for New Forms." *California Management Review*, 28(3), pp. 66–73.
- Miller, K.D. (1992). "A Framework for Integrated Risk Management in International Business." *Journal of International Business Studies*, 23(2), pp. 311–331.
- Miller, D. and P.H. Friesen (1983). "Strategy-Making and Environment: The Third Link." *Strategic Management Journal*, 4, pp. 221–235.
- Morrison, A.J. and K. Roth (1992). "A Taxonomy of Business-Level Strategies in Global Industries." *Strategic Management Journal*, 13, pp. 399–417.
- Mueller, F. (1994). "Societal Effect, Organizational Effect and Globalization." *Organization Studies*, 15(3), pp. 407–428.
- National Council for US-China Trade (1991). *Special Report on US Investment in China*. Washington, D.C.: Department of Commerce.
- Nunnally, J.C. (1978). "Psychometric Theory (2nd edn.)". New York: McGraw-Hill.
- Osborn, R.N. and C.C. Baughn (1990). "Forms of Interorganizational Governance For Multinational Alliances." *Academy of Management Journal*, 33, pp. 503–519.
- Oxelheim, L. and C.G. Wihlborg (1987). *Macroeconomic Uncertainty: International Risks and Opportunities For the Corporation*. New York: John Wiley & Sons.

- Parkhe, A. (1993). "Strategic Alliance Structuring: A Game Theoretic and Transaction Cost Examination of Interfirm Cooperation." *Academy of Management Journal*, 36, pp. 794–829.
- Pfeffer, J. and G.R. Salancik (1978). *The External Control of Organizations: A Resource Dependence Perspective*. Harper & Row, New York.
- Porter, M.E. (1979). "How Competitive Forces Shape Strategy?" *Harvard Business Review*, March–April: pp. 35–44.
- Porter, M.E. (1986). *Competition in Global Industries*. Boston, Mass.: Harvard Business School Press.
- Porter, M.E. (1991). "Towards a Dynamic Theory of Strategy." *Strategic Management Journal*, 12, pp. 95–117.
- Rajagopalan, N. and S. Finkelstein (1992). "Effects of Strategic Orientation and Environmental Change on Senior Management Reward Systems." *Strategic Management Journal*, 13, pp. 127–142.
- Root, F.R. (1988). "Environmental Risks and the Bargaining Power of Multinational Corporations." *International Trade Journal*, Fall, pp. 111–124.
- Scott, W.R. (1987). *Organizations: Rational, Natural, and Open Systems* (2nd edn.). Englewood Cliffs, NJ: Prentice-Hall.
- Shama, A. (1995). "Entry Strategies of U.S. Firms to the Newly Independent States, Baltic States, and Eastern European Countries." *California Management Review*, 37(3), pp. 90–109.
- Shan, W. (1991). "Environmental Risks and Joint Venture Sharing Arrangements." *Journal of International Business Studies*, 22, pp. 555–578.
- Shenkar, O. (1990). "International Joint Ventures' Problems in China: Risks and Remedies." *Long Range Planning*, 23(3), pp. 82–90.
- Shenkar, O., N. Aranya, and T. Almor (1995). "Construct Dimensions in the Contingency Model: An Analysis Comparing Metric and Non-Metric Multivariate Instruments." *Human Relations*, 48(5), pp. 559–576.
- Singh, K. (1997). "The Impact of Technological Complexity and Interfirm Cooperation on Business Survival." *Academy of Management Journal*, 40, pp. 339–367.
- Sorge, A. (1991). "Strategic Fit and the Societal Effect: Interpreting Cross-National Comparisons of Technology, Organization and Human Resources." *Organization Studies*, 12(2), pp. 161–190.
- Stopford, J.M. and L.T. Wells (1972). *Managing the Multinational Enterprise*. New York: Basic Books.
- Tan, J.J. (1996). Characteristics of Regulatory Environment and Impact on Entrepreneurial Strategic Orientations: An Empirical Study of Chinese Private Entrepreneurs. In *Academy of Management Best Papers Proceedings*, 1996, pp. 106–110.
- Tan, J.J. and R.J. Litschert (1994). "Environment-Strategy Relationship and Its Performance Implications: An Empirical Study of the Chinese Electronics Industry." *Strategic Management Journal*, 15, pp. 1–20.
- Teagarden, M.B. and M.A. Von Glinow (1990). "Sino-Foreign Strategic Alliances Types and Related Operating Characteristics." *International Studies of Management and Organization*, 20, pp. 99–108.
- Tung, R.L. (1979). "Dimensions of Organizational Environments: An Exploratory Study of Their Impact on Organizational Structure." *Academy of Management Journal*, 22, pp. 672–693.
- Venkatraman, N. and J.E. Prescott (1990). "Environment-Strategy Coalignment: An Empirical Test of Its Performance Implications." *Strategic Management Journal*, 11, pp. 1–23.
- Wernerfelt, B. and A. Karnani (1987). "Competitive Strategy Under Uncertainty." *Strategic Management Journal*, 8, pp. 187–194.
- Williamson, O.E. (1991). "Comparative Economic Organization: The Analysis of Discrete Structural Alternatives." *Administrative Science Quarterly*, 36, pp. 269–296.
- Wright, P., M. Kroll, B. Pray, and A. Lado (1995). "Strategic Orientations, Competitive Advantage and Business Performance." *Journal of Business Research*, 33, pp. 143–151.
- Yan, A. (1998). "Structural Stability and Reconfiguration of International Joint Ventures." *Journal of International Business Studies*, 29(4), pp. 773–796.
- Yan, A. and B. Gray (1995). "Reconceptualizing the determinants and measurement of joint venture performance." *Advances in Global Technology Management*, 5B: pp. 87–113.
- Yan, A. and B. Gray (1994). "Bargaining Power, Management Control, and Performance in United States-China Joint Ventures: A Comparative Case Study." *Academy of Management Journal*, 37, pp. 1478–1517.
- Yip, G.S. (1995). *Total Global Strategy: Managing for Worldwide Competitive Advantages*. New Jersey: Prentice Hall.
- Yip, G.S. (1989). "Global Strategy...In a World of Nations?" *Sloan Management Review*, 31(1), pp. 29–32.