

## **Subsidiary Survival and Competitive Dynamics in Host Country Markets**

### **Abstract**

The trend among multinational firms in an industry to move their subsidiaries to lower cost and resource abounding regions has been well documented in media and academic work. This pattern often leads to agglomeration in host country markets. This grouping together of foreign and domestic firms creates fierce competition for the same resources and this affects market dynamics. Using a sample of foreign and domestic auto firms in Brazil, we analyzed the nature of this competition drawing from competition theories. We found that intense competitive conditions might lead some subsidiaries to exit and force others to differentiate in order to survive. We also found that differentiation led to better performance.

**Keywords:** market entry decisions, competitive dynamics, subsidiary exit, survival, and competition.

## **Competitive Exclusion in Agglomerated Host Country Markets:**

### **Subsidiary Survival and Exit**

A significant portion of recent international business studies focuses on subsidiary performance and survival in foreign markets (Delios and Beamish, 2001; Li, 1995). Some of these topics include the relationship between firm capabilities, entry modes, host environment factors and subsidiary survival. Non survival leads to market exit. Newspapers are also full of information about firms setting up new or shifting existing operations to certain attractive parts of the world. By doing so, firms can reap the benefits of location. Often, these are subsidiaries of global firms that belong to the same or similar industry and their expectations from the host country market for resources are thus alike. A good example of this trend dates back to the 1970s when consumer electronics firms from the Triad region moved manufacturing to Singapore, Taiwan and other East Asian countries. At that time, local suppliers in those countries were in business relationships with multiple, competing subsidiaries of global firms. Studies that examined have examined the role and performance of these subsidiaries in host country markets, implicitly assumed a state of equilibrium (Boeker, Goodstein, Stephan & Murmann, 1997). In reality, as more and more firms enter that market, the competition for limited resources increases. What is relatively less known about this pattern among global firms in how this type of agglomeration affects the host country market dynamic and how that dynamic affects firms strategies, entry, survival or exit. There are different models of foreign investment that explain why firms belonging to a particular industry tend to establish foreign operations in the same country market. This kind of concentration or spatial grouping of industry sometimes creates what are known as clusters (Porter, 1990). Examples of popular clusters are the auto cluster in Detroit,

USA and high-technology cluster in Bangalore, India for technology services. The definition of clusters, nevertheless, is subjective and often named such by popular newspapers and media. However, in any geographical space where there is a concentration of firms belonging to the same industry, there is competition for similar resources in the host market. These firm actions and rivals' reactions create competitive dynamics. These dynamics affect subsidiary survival and invariably subsidiary exit. This statement forms the crux of this paper. Our objective is to improve our understanding of competitive dynamics in host country market, and how that affects subsidiary survival and exit. In this paper, we investigate this issue by using a sample of automotive firms operating in Brazil, which has recently developed into a hot spot for global and domestic manufacturers and suppliers in this industry. Inquiry into this subject matter is extremely important both from an academic and practical standpoint. In that, this study makes a key contribution to international strategy and international marketing literature by filling in a gap in survival studies. Also, from a global manager's perspective, understanding the threats that might exist in a host market is central to implementing a long-term foreign strategy. As more and more firms shift operations across the globe to cheaper areas, some as first-movers but most as followers and as managers increasingly look for ways to not only survive but make profits in foreign markets, this study has managerial implications for how such moves might affect firm profitability and survival.

The basic argument developed here is that domestic and foreign firms belonging to the same industry and located in proximity with their rivals compete aggressively for resources, suppliers, customers and such others. It is important for researchers and managers to know and understand the nature of this competition and how it affects subsidiary survival. We attempt to fulfill two main purposes in this study: (1) how competitive dynamics in dense foreign markets

affects subsidiary exit (2) what firms can do to increase their chances of survival in such a competitive environment. Using competitive dynamics to explain exit is not necessarily a brand new suggestion (Porter, 1980). However, what amplifies the contribution of this study is that this topic has not been adequately examined in the context of agglomerated industries in host countries. Also, our study is normative in that it attempts to point out what firms can do to avoid exit from these markets and to increase their chances of survival and profitability.

The rest of this paper unfolds as follows. We delve into existing studies on subsidiary survival in order to summarize findings as relevant to our study. We then explain the theoretical bases of our arguments. Next, we develop hypotheses relating market dynamics and firm actions to firm reactions, given certain industry factors and the nature of competition in host countries. We follow with a methodology section to analyze our model and dataset. We conclude with a discussion of the results and identify avenues for further inquiry. On a side note, we would like to clarify that even though we do not explicitly make our arguments with respect to clusters, the results of this study should apply to any agglomeration of firms in a host country or national market as well as a heavily concentrated, inner-country location such as a cluster. In fact, by using a sample of global auto firms in Brazil's country market, rather than a narrow area in Brazil, we are able to generalize our results to heavy and light industry concentrations. In a study examining interfirm rivalry among firms in the U.S. airline industry, Baum and Korn (1996) differentiated between competition and rivalry by arguing that rivalry exists between firms for 'incompatible positions' whereas 'interplay' between firms that act and react to each other's moves is competition. In a global industry market that comprises of domestic and foreign manufacturers, suppliers, customer and other peripheral actors, a combination of rivalry and competition exists because while firms are reacting to each other's moves, they are

simultaneously trying to build their own unique market niche. This point will become clearer as we present our arguments. For the purpose of this study, we use rivalry and competition interchangeably. We define a 'market' based on Baum and Korn (1996, p. 256) and Abell's (1980, p. 17) definition as, "a set of goods and services that serve similar functions' are created with the use of similar technology, and are used by similar users."

## **LITERATURE REVIEW**

In conceptualizing our arguments, we draw on three streams of literature; namely, competition theories, subsidiary exit and firm location decisions. What is common among the studies on competitive dynamics and subsidiary or market exit in the context of strategic management is that these concepts have been explored primarily with reference to domestic firms.

Comparatively less knowledge exists about these constructs as applied to global firms that transcend boundaries.

Popular international theories such as those by Dunning (1980) have shed sufficient light on firms that establish operations abroad in foreign locations due to certain advantages. One set of these advantages are location advantages or the relocation to an attractive country market due to lower costs, skilled labor force, availability of resources and so on. Firms belonging to the same industry are known to often follow their rivals to places around the world to seek similar markets, resources, suppliers, customers, etc. This behavior often leads several firms in the same industry to the same host country market or even a specific region within a particular host country. Central and state governments also offer foreign firms an opportunity to benefit from such location decisions through a variety of incentives, adding to the number of domestic and foreign firms operating in that area.

Ultimately, as more and more firms enter a market, the battle for similar but limited resources shapes competition in these locations and firm actions affect the dynamics of that industry. As mentioned earlier, certain locations in the world see a concentration of firms belonging to the same industry (hereafter referred to as 'industry firms'). At any given time, the incumbents of that market include domestic or local firms from the host nation as well as foreign firms that are gaining the benefits of that location. Whereas competition exists at all levels in any industry or market, firms concentrated in a single country market fight for all forms of resources, tangible, intangible, capabilities and knowledge. Therefore, the nature of competition is defined by interdependence and geographical proximity of rivals firms. This normal pursuit of resources and profits leads to competitive dynamics, often described as, 'a series of actions (moves) and reactions (countermoves) among firms in an industry.....(and) how firm actions (moves) affects competitors, competitive advantage and performance' (Smith, Ferrier and Ndofor, 2001).

Industry firms are both the actors and reactors and their moves and consequences of those moves are reactions. Also, actors can be reactors and vice versa. Competitive dynamics has its roots in Schumpeter's theory of creative destruction, which contends that all firms in a market attempt to overtake each other and the first moving firm gains profits and market share. This rivalry is therefore inevitable. In the frame of reference of global industry firms in a host country, the concept of competitive dynamics ties in well with organizational ecology. Organizational ecologists (Hannan and Freeman, 1989; arguments based on population ecology) argued that in competitive environments succumb to the process of natural selection, due to which firms enter, grow, survive or fail.

Actions by industry firms in host country markets can include a variety of moves such as entry into the market, product introduction, strategic intent and innovativeness among others.

These actions can be classified into two categories, 'entry actions' or those initial firm-related moves such as entry, market entry position (i.e. whether first mover or follower) and 'market actions' such as new product introduction, product variety and product quality, to name a few. Actions are not only proactive moves by industry firms but are also outcomes of basic firm decisions. Reactions by industry firms could engage a multitude of alternatives, depending on the action or move. Entry by one or more competitors or change in the environment prompted by an actor could promote exit by other or others.

The potential for competition is heightened due to the familiarity that domestic firms share with their own national environment and the answerability of global firms' subsidiaries operating in that market to the rest of their multinational network. In addition, foreign subsidiaries might face liabilities of foreignness but domestic firms might suffer from other disadvantages. Nevertheless, both types of firms face the challenge of survival and the threat of being ousted from their market.

In a complementary vein, we introduce a novel theory in this study, a competition theory borrowed from biology known as competitive-exclusion principle (or Gause's Law, 1934). This theory as applied to organizations blends in smoothly with competitive dynamics studies and argues that in case of severe competition between firms fighting for the same resources, there are two possible outcomes: exit (or extinction for species) or survival (through differentiation by firms).

It is common knowledge that foreign subsidiary exit has traditionally been less studied than subsidiary entry for a variety of reasons. This pattern is slowly changing. Subsidiary exit takes place when a firm either divests or closes down a foreign subsidiary. Thus, exit can take many forms. Previous literature on foreign subsidiary exit has explored the connection between

foreign entry and exit (Mata and Portugal, 2000; Li and Guisinger, 1991). Subsidiary survival studies (Li, 1995; Delios and Beamish, 2001) also looked at the relationship between entry modes and host country experience and survival. No significant international business study has, however, examined the role of competitive dynamics in foreign subsidiary exit. Knowledge of this issue gains increased importance due to the enormous number of multinational firms that find themselves in the news for hastily shifting operations to lower cost regions of the world. Noteworthy among these are relocation to China and other Asian countries that are witnessing an exponential rise in foreign subsidiaries every year.

## **THEORETICAL DEVELOPMENT AND HYPOTHESES**

### **Market Dynamics and Subsidiary Exit**

From an organizational perspective, it is important to understand how firms respond to intense competition. The greater the number of firms or competitors in the market, the greater is the level of competition. Often but not always, market position plays an important role in determining who the surviving market players will be. First movers enter a market already having an advantage due to their market position. As more firms enter the playing field, competition heats up as does the contest for resources. According to the competition-exclusion principle explained earlier, different firms have different survival probabilities that depend on a variety of firm-specific factors such as age, experience (Li, 1995), level of intangible resources (Delios and Beamish, 2001). Previous studies that have looked at subsidiary survival have almost implicitly assumed that the industry environment is stable. But, subsidiary survival also depends on how firms respond to environmental changes. An 'action' or entry by some firms could cause others to react by exiting the market because they are unable to sustain the battle for resources. This



case has been highlighted by competition theories. However, intense competition in industry markets could lead to exit by some firms if the number of existing firms in the market is high. Early entrants in markets do not face as much competition as later entrants, after whose entry, markets get closer to saturation. As stated by Baum and Korn (1996, p 258), “market entries and exits are substantive because they represent the primary way in which firms define and redefine their market positions and establish or avoid market contact with each other.” This is especially true in a market in which both domestic and global firms exist. Each set has its own competitive advantage but the increase in the number of players might result in exit by a weaker player.

Therefore, we hypothesize that:

*H1a: The rate of market entry is positively associated with the rate of exit*

In addition to the hypothesis above, we explore the possibility that the relationship between rate of market entry and rate of exit is moderated by the number of competitors in the market.

Therefore, we propose the following hypothesis:

*H1b: The relationship between the rate of market entry and rate of exit from the market will be moderated by the number of industry competitors.*

### **Industry Dynamics and Subsidiary Exit**

In our discussion on both competitive dynamics and the competitive-exclusion principle we explained how the competitive environment affects market positions of firms. The notion of competition is ambiguous unless we identify the symbols of such rivalry. One of the indicators of competition in an agglomerated host country market is how dynamic the market is; i.e. the rate of change in firms’ products and processes. A frequent and rapid change in industry competitors’ products serves as an action or trigger for other firms in the industry to bring about similar

innovations. If not, they tend to fall behind in market share and profits. As a result, some firms might also exit the market. In a technologically oriented industry, firms that are not able to invest extensively in research and development might not be prepared to compete with a new and innovative product launched by a rival firm. Some firms are also unable to keep up with technology because of heavy outsourcing of technology design and/or development (Kotabe, Mol & Ketkar, 2006). Therefore, we hypothesize that increased competition, industry and technological dynamism might increase the rate of exit as a reaction by some firms.

*H2: Technological dynamism is positively associated with rate of subsidiary exit.*

### **Determinants of Subsidiary Survival**

Upon examining some of the reasons for subsidiary exit, the main question is: what can industry firms faced by competitive pressures do to survive and to make profits? Competition theories suggest that in a continually evolving market, firms avoid exit by differentiating themselves from their competitors so that they are able to survive and make profits. Such differentiation could entail changes in strategy or even products. In manufacturing industries in particular, any kind of differentiation manifests itself in a superior product or product features. The competitive-exclusion principle notes that for some species in areas in which they “do not coexist, they (species) are virtually indistinguishable, but in areas in which both species occur, they have formed local subspecies in which the otherwise slight differences are prominent” (Vaurie, 1950, *wikipedia*). This could hold true for multinational firms also. In local markets in which strong competitors operate, firms might end up localizing their products to meet consumer expectations. The forces for differentiation act as pressures for firms to adapt their product and differentiate it from those of rivals to be able to carve out a market niche and thus gain profitability. This point

is supported by Luo's (2001) study which demonstrated that competitive intensity increases local responsiveness. Local responsiveness entails adapting the product to meet local market expectations and differentiating it. Even domestic firms that are competitors in the market need to either differentiate their products, which increases the chances of survival or then face the threat of exit. Additionally, effects of a good product strategy which includes greater speed to market, better product quality and positive reputation might also improve survival and profitability. Therefore, we hypothesize that:

*H3: Product differentiation is inversely associated with rate of subsidiary exit.*

*H4: Product uniqueness is inversely associated with rate of subsidiary exit.*

### **Influence of Local Embeddedness on Subsidiary Survival**

Survival studies (Delios and Beamish, 2001) showed that host country experience influenced subsidiary survival. More experience in a host country enables firms to get involved with local suppliers and customers, especially if they need to be locally responsive and differentiate their product for the local market. These ties to various parties along the supply chain might act as barriers to exit. Furthermore, more involvement with such parties allows firms to understand the local market better and thus manufacture better products. Therefore, we hypothesize that:

*H5: A higher level of supplier involvement is inversely associated with subsidiary exit from the market.*

*H6: A higher level of customer involvement is inversely associated with subsidiary exit from the market.*

## **Product Differentiation and Business Performance**

Needless to state, managers are not only concerned with survival but also aim for superior business performance. Strategic management studies and textbooks discuss at length about how firms that differentiate their products or services should perform better than firms that do not. Thus, differentiation is a very popular strategy used by firms such as Toyota's Lexus brand in the global auto industry. For firms that are in an agglomerated host country environment, whether to differentiate or not is often not a choice but it is necessary to do so if they want to survive in the market. Nevertheless, differentiating a product in a highly competitive market might lead to superior profits and improved performance. This is because as marketing scholars would confirm, differentiated products often do not have substitutes or cheaper alternatives, thus assuring them a unique share of the market. Therefore, we also expect that survivor firms in an agglomerated host country market would achieve higher levels of business / product performance from differentiated products that in turn is associated with higher overall financial performance. This leads us to hypothesize that:

*H7: Product differentiation is positively associated with business performance.*

*H8: Product uniqueness is positively associated with business performance.*

## **RESEARCH METHODS**

### **Sample and Data Collection**

Since no published comprehensive data were available to test our conceptual framework, this research adopted the questionnaire survey method to collect data on a sample of manufacturing subsidiaries operating in the Brazilian automotive industry. The unit of analysis is the business unit/plant level.

We developed Likert-type measurement scales for the constructs contained in our conceptual framework following previous studies that analyzed and measured the phenomena of interest (e.g. Parente and Gu, 2005). Wherever possible, items were reused, or the general question format from existing scales was maintained. However, it was difficult to apply existing scales in their entirety.

The development of the new items was informed by field studies, as part of a broader qualitative research by one of the authors, which included semi-structured interviews with managers and executives working in the automobile industry in Brazil. In addition, one expert in the automobile industry at the University of São Paulo provided us some feedback on a pilot version of the questionnaire, and helped us refine key constructs and identify the appropriate use of words in the auto industry.

Before deciding on the final version of the questionnaire, we extensively pre-tested a preliminary version with executives in charge of manufacturing subsidiaries in Brazil. After we decided on the final version of the questionnaire, it was translated into Portuguese and then back translated into English to assure that the translation had not missed any meaning of the questions. Following Dillman (1978), the entire questionnaire was kept as short as possible in an attempt to increase the response rate. In addition, in order to minimize the potential for retrospective biases, we followed the strategy used in previous studies (e.g. Stump and Heide, 1996) to conceal the actual objective of our investigation. We asked respondents to focus on the products and characteristics of their division and the relationship with their suppliers in responding to the survey. We mailed the refined questionnaire to those identified for sample group in hard copies, along with a personalized cover letter.

We identified our sample of manufacturing subsidiaries in the automobile industry through the lists provided by the ANFAVEA (Brazilian Automobile Manufacturers Association) and the SINDIPECAS (Brazilian Automobile Suppliers Association). In addition, we cross-checked the two associations' lists with the Brazilian magazine *Automotive News*, which is published once a year and which profiles firms and executives in the auto industry in Brazil. After combining these data sources and deleting duplicated entries, we mailed the questionnaire to the remaining sample of 493 business units (including assemblers and suppliers) in the automobile industry of Brazil. We mailed the survey to senior managers at the plant/divisional level. After the initial mailing, a total of 37 questionnaires were returned because of incorrect addresses, which reduced the sample size to 456 business units. After two follow-ups, we received 136 usable questionnaires for a response rate of 27 percent.

As a control, firms of a variety of ages, sizes, and geographical scope were represented in the final sample group. All 136 respondents held executive positions (e.g., plant manager, manufacturing supervisor, purchasing manager, etc.) and were directly involved in making important strategic decisions in their respective firms.

An important methodological concern of this study regards the reliability of the data gathered through the questionnaire-based survey. We addressed this issue taking into account three main concerns: (1) non-response bias that might lead to a systematic exclusion of firms from the population (Armstrong & Overton, 1977); (2) common method variance (Podsakoff et al. 2003) and (3) validity of responses of single key information. In order to minimize the potential problems above introduced, we developed a specific strategy of data processing (Kotabe, Parente & Murray).

First, we evaluated non-response bias using Armstrong and Overton's (1977). In order to ascertain non-response bias across the survey instrument itself, we performed t-tests comparing early and late respondents. The first 70 percent of the returned questionnaires were defined as early responses and the remaining 30 percent as late responses and thus deemed representative of firms that ultimately did not respond to the survey. We performed t-tests on 30 randomly selected variables to compare early and late responses. We found no significant differences between early and late respondents on any one of these 30 variables, suggesting that non-response bias would not likely exist in the survey instrument.

We developed a four-step strategy in order to minimize the effects of common method variance. First, we dispersed the items used in our study in a wide questionnaire in order to avoid that the respondent would predict the final motivation of our study and to force him/her-self to "calculated" biased answers (Mohr and Spekman, 1994). Second, we dispersed questions pertaining to some constructs throughout the questionnaire so that respondents would not fall into a pattern linked to Likert or semantic differential scales. Third, some of the questions were reverse coded in the questionnaire. Fourth, we applied the Harman's one-factor test on the final database in order to address the common method variance issue. Neither a single factor from the factor analysis nor a general factor in accounting the covariance of independent and criterion variables emerged in our analysis as a confirmation of the lack of common method variance disturbs (Podsakoff and Organ, 1986).

Although there have been questions about the validity of data collected from a single key informant, we used this approach due to the extensive nature of our survey. Indeed, the choice of a survey with multi-informants for each company would have dramatically reduced the expected percentage of respondent companies.

We developed a specific strategy to reduce the bias related to a single informant response. First, informants were asked questions related to their current production method and inter-firm collaborative relationships. Prior research suggests that informant recollections are stable over short periods of time (Huber, 1985).

Second, we used the field studies, conducted as part of another study by one of the authors, in conjunction with plant tour observations, and the literature review to verify respondents' consistency and reliability. Finally we compared informants' responses to archival and public data (e.g., company profiles and articles from the business press) where available. These comparisons provided a check that the informants were accurate and competent sources and we did not keep out any questionnaire from our database due to reliability concerns.

### **Operationalization of Variables, Construct Validation and Measurements**

The construct validation was developed through a combination of exploratory and confirmatory factor analysis. In particular, each of the scales was refined by removing questions that exhibited low inter-question correlations (Parente and Gu, 2005). Scales' internal consistency was guaranteed by Cronbach's alphas superior to 0.70 in accordance with the recommendations of Nunally (1978). Moreover, we adopted aggregate means of the factor firm's performance as its summary factor measure, in accordance to previous empirical researches (e.g. Mendelson and Pillai, 1999; Parente and Gu, 2005). Below we provide the measurement indicators for the dimensions adopted in our structural model along with their reliability alphas.

We used multi-item measures to represent all the variables, except for firm size / dimension, which was measured using sales volume. We measured multi-item variables using a 5-point scale (1=Strongly Disagree, 2=Disagree Somewhat, 3=Neither Agree or Disagree,



4=Agree Somewhat, 5=Strongly Agree) with some items adapted from those used in similar studies (Worren, 2001; Lancot & Swan, 2000; Worren et al., 2002). As mentioned earlier, it was difficult to apply existing scales in their entirety, and the development of the new items was informed by our fieldwork. The following are the measures for the constructs used in our study:

***Business / Product Performance.*** We measured business performance using six items (Cronbach's  $\alpha = 0.858$ ), where we asked our respondents about (1) The time R&D and manufacturing spent on determining how to produce a product at a desirable price; (2) the overall product performance; (3) how easy was product serviceability, (4) the level of product reputation in the market, (5) the overall quality of the workmanship, and (6) the overall product quality.

***Rate of Exit to the Market.*** We measured subsidiary exit using a continuous one-item variable. We asked our respondent to the best of their knowledge and during the last three years, how many competitors exited their served market.

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***Number of Competitors.*** We measured the number of competitors in the market using a continuous one-item variable. We asked our respondent to the best of their knowledge to tell us approximately how many businesses were currently competing in their served markets.

***Technological Dynamism.*** We measured the level of technological dynamism in the market using the following two items (Cronbach's  $\alpha = .719$ ): (1) There have been major technological changes in the products offered by our business or by our major competitors during

the last few years. (2) There have been major technological changes in methods of production in our industry during the last few years.

***Product Uniqueness.*** We measured the extent that the product is unique and hard to imitate by competitors in the market using the following two items (Cronbach's  $\alpha = .767$ ): (1) Our products have features that competitors do not offer. (2) Our products are difficult for competitors to imitate.

***Product Differentiation.*** We measured product differentiation with the following three items (Cronbach's  $\alpha = .718$ ). (1) Most of our products have been decomposed into separate modules that can be re-combined into new product designs to achieve higher variety and reduce development time, (2) We have a high degree of component sharing between different products in our main product line (3) Overall our business unit adopts a high degree of modularity in production.

***Supplier Involvement.*** We measured the level of supplier involvement with the following four items (Cronbach's  $\alpha = .787$ ). (1) Our major suppliers are always ready to react to any problems that may appear in the assembly line, (2) Our major suppliers are always willing to renegotiate their prices in the event of major decrease in demand for our products, (3) Our major suppliers are always willing to work together with us when we are bidding for new sales contract, and (4) Our major suppliers have the ability to quickly adjust their production schedule accordingly to the speed of our production line.

***Customer Involvement.*** We measured the level of customer involvement with the following two items (Cronbach's  $\alpha = .758$ ). (1) Our customers demand frequently price reductions on our products and (2) Today our customers pressure us for more cost/price reductions than they did three years ago.

***Control variables.*** Two additional control variables were included in our analysis: firm size and past financial performance. Firm size has been a typical control in the strategic and international management literatures (e.g. Helfat, 1997; King and Tucci, 2002; Menguc and Auh, 2006). Echoing the measurements in these studies it was operationalized as firm sales volume, which was measured as a continuous variable. Past profitability was also included as a control variable and measured using four items (Cronbach's  $\alpha = 0.712$ ), where we asked our respondents in relation to the last 12 months, how was their business unit's financial performance (in comparison to their three major competitors) with regards to their (1) profitability, (2) return on investments, (3) return on sales, and (4) overall financial position.

## ANALYSIS AND RESULTS

Prior to testing the hypotheses, we conducted a factor analysis with varimax rotation to develop the measures representing the constructs in the regression models. We discussed the measures used for this study, along with their Cronbach's alpha values, in the previous section. Means, standard deviations, and zero-order correlations are presented in Table 1.

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Insert Table 1 about here  
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### **The Competitive / Market Dynamics and Subsidiary Exit Model**

The results relating to H1a and H2 to H6 are reported in Table 2. Model 1 in Table 3 reports the main effects of the control variables on business performance. Model 2 adds the main effects of the antecedent variables, with a  $R^2$  of .649 (p-value < .001). H1a states that the rate of market entry is

positively associated with the rate of exit from the market. This hypothesis is strongly supported ( $\beta = .710$ ,  $p < .001$ ).  $H_2$ , which predicts that technological dynamism is positively associated with the rate of subsidiary exit, is marginally supported ( $\beta = .106$ ,  $p < .10$ ). Hypotheses 3 and 4 relate to the effects of product differentiation and uniqueness to subsidiary exit.  $H_3$  states that product differentiation is inversely associated with the rate of subsidiary exit and it is supported ( $\beta = -.148$ ,  $p < .05$ ).  $H_4$ , which predicts that product uniqueness is inversely associated with rate of subsidiary exit, is not supported but the beta coefficient is in the expected direction ( $\beta = -.09$ ). Hypotheses 5 and 6 relate to the influence of local embeddedness on subsidiary survival. The beta coefficient ( $\beta = .015$ ) for testing  $H_5$  in Model 2 is non significant.  $H_6$  states that a higher level of customer involvement is inversely associated with subsidiary exit. This hypothesis is supported ( $\beta = -.12$ ,  $p < .05$ ). Moreover, Model 3 was used to test  $H_{1b}$  regarding the exploratory moderating effect of number of competitors in the relationship between the rate of market entry and the rate of subsidiary exit. Results indicate that the beta coefficient for the product term is marginally significant ( $\beta = -.327$ ,  $p < .10$ ). In order to reduce multicollinearity that might occur with the interaction term, we mean-centered the independent and moderator variables before creating the interaction term (Aiken and West 1991). All of the variables in the model had a variance inflation factor (VIF) below 5, suggesting that multicollinearity would not be a problem.

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Insert Table 2 here

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### **The Business / Product Performance Model**

We present the results for H7 and H8 in Table 3. Model 1 in Table 3 reports the main effects of the control variables on business performance. Note that we also include rate of entry, rate of exit, and number of competitors as control variables because extant literature has suggested that these variables can affect business performance. Model 2 adds the main effects of the antecedent variables, with a  $R^2$  of .345. H7 and H8 related to the effect of product differentiation and uniqueness in business performance. H7 states that product differentiation is positively associated with business performance and H8 states that product uniqueness is positively associated with business performance. H7 was found to be significant ( $\beta = .242$ ,  $p < .01$ ) and H8 was only marginally significant ( $\beta = .145$ ,  $p < .10$ ). In the next section, we discuss the theoretical and managerial implications associated with our findings.

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Insert Table 3 about here  
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## **DISCUSSION AND IMPLICATIONS**

There are several issues in management, especially strategic management, that have been explored in detail in the domestic context. However, these same topics shed very little light on similar questions in the international context. It is dangerous to naturally assume that the results of domestic studies can be applied to the global context even if that might be true in certain cases. We examined one such topic that has received its fair share of attention with respect to domestic firms but there is less awareness about how competition in host markets affects subsidiary survival and exit.

Given the complexities of conducting business across borders, foreign subsidiary survival and exit are very interesting and important managerial matters. There are some studies that have focused on divestment and survival of foreign subsidiaries in general. However, when foreign subsidiaries are a part of an agglomerated host country market marked by competition among other multinational and domestic firms, the challenges of survival and the threat of exit take on a new meaning. We built our arguments based on competition theories, namely competitive dynamics, which is commonly used by strategy scholars. We also synched competitive dynamics with the competitive-exclusion principle or Gause's Law that is originally an evolution-based biology theory, which reveals how species that compete for the same limited resources in nature could either become extinct or be forced to adapt in order to survive. We applied this principle to organizations in a similar milieu and found that this theory not only enabled us to lay down some conditions under which subsidiaries will exit but also under which they could survive and profit. We tested our hypotheses on a sample of auto firms in Brazil. As explained in the methodology section, this proved to be an ideal setting for our examination.

Drawing on market dynamics, we examined whether market entry by competitors would affect market exit by other firms, if the number of existing rivals in the market is high. We found that rate of entry indeed affects the rate of exit. However, we also found that this was not influenced by the number of competitors already in the market. This finding does not altogether meet the expectations of competitive dynamics literature. Theoretically, the competitive-exclusion principle bases its arguments on 'two' species reliant on the same resources. Given that, this finding is not surprising. In reality, the reason why the number of competitors did not moderate entry and exit could be due to the nature of our sample. Our respondents consisted of manufacturers, suppliers, buyers, etc. When asked how many competitors existed in the market,

it is highly possible that suppliers would state the number of suppliers, whereas manufacturers would name manufacturers and so on. The distinction among these categories might actually be fuzzy because of some vertically integrated firms and the extensive interactions between firms in the industry. This is especially true in the auto industry, which is characterized by innumerable alliances and contracts with rival firms, some of which might be suppliers and others might be co-manufacturers. An appropriate question would have been to find out how many firms existed in the same industry. Another possible explanation is that since there is a lot of buyer-supplier collaboration in this industry (more so in Brazil) we would have to examine the moderating effect of number of real competitors since these firms in collaboration may not be actually competing. They are actually joining resources and therefore, are better equipped to compete. But we did not control for that. The significance of the negative moderating term is weak. This unexpected moderating effect needs to be further examined. In spite of that, the relationship between entry and exit is supported.

We also looked at how technological dynamism affects subsidiary exit from the market. Keeping up with technological developments in the industry and constantly being innovative through investment in research and development is one of the most important requisites for sustaining competitive advantage. But, some firms are better at it than others. In an agglomerated market, there is an overall level of technological competence or a technology average. When rival firms introduce or change technology rapidly, firms that are unable to keep up with such changes might be forced to exit the industry.

Industrial organization theorists would be the first to agree that we should not discuss market exit without discussing exit barriers. Specifically, for foreign firms with subsidiaries in host country markets, greater embeddedness through multiple relationships with suppliers,

customers and others would serve as barriers to exit. We found this to be true in case of customers but not for suppliers. For decades, multinational firms have maintained long distance relationships with suppliers in different parts of the world. Therefore, supplier involvement is not necessarily a location-specific phenomenon. Global account management literature has investigated this issue. In case of localized products, local supplier involvement might be more important. However, when firms consider exit decisions, this set of ties might be easier to sever or then instead the relationship can still be maintained even after exit from that particular location. We found that customer involvement in the production process was in fact an exit to barrier. Intuitively, firms' strategies revolve around making profits from satisfying customer needs. If customers' input is integrated into the production process, it should lead to more need satisfying products and in turn would ensure subsidiary survival. Severing ties is tedious, time consuming and could affect long-term competitive advantage. Also, there sunk costs to being rooted in the host country environment. The greater the host country market embeddedness, the less the likelihood of exit.

The most managerially relevant findings were those that informed us about how differentiating products could ensure subsidiary survival and also subsidiary profitability. As per our expectations, product differentiation led firms to better performance. In the auto industry which is rapidly moving toward modular production, product differentiation involved modularization of production. This finding is very industry-specific. Hence, managers faced with severe competition-laced situations in host country markets should attempt to set apart their products and processes so as to attain competitive advantage. We did not find support for the inverse relationship between product uniqueness and survival. This might be due to the perceptions of managers regarding products in the same industry. Often, most automobiles are in



fact substitutable for one another. Therefore, product differentiation was possible a better way to capture differentiation in the industry than product uniqueness. We now see some areas of the world that are fast becoming global hotbeds for activities for multinational and domestic firms in the same industry. Before leaping onto the bandwagon, managers need to be aware of some of the challenges they might face. This study brought out some of these significant challenges and how managers respond to them. In that lies the functional contribution of this paper. This study also engaged the theoretical lens of competitive-exclusion principle that has never been used to examine foreign subsidiary exit. This not only adds a new dimension to international business literature but also reminds us how biology and species evolution theories are extremely useful in understanding organizational theories also.

Like any other academic work, this study suffers from certain limitations that we hope will be overcome by future research. In that, they also serve as avenues for further research in this area. Our data were not longitudinal. Even though our data set served the purpose of this study, we were not able to observe the time frame for exit subsequent to entry. A longitudinal would have given us more freedom to explore. Future studies should probably use a longer time frame so that they are able to elicit interesting findings from the data. Also, due to the nature of our dataset and confidentiality agreements with respondents, we were not able to differentiate between foreign and domestic firms. This was a serious limitation in that it did not allow us to find out the extent to which foreign competition affects domestic businesses and vice versa. Having this information would have helped us understand competition in agglomerated industries much more. We used a sample of firms from one manufacturing industry. Later studies could look at other manufacturing studies to find out whether the results are generalizable across

industries and host countries. Even more interesting would be to examine services industries due to their unique criteria.

In spite of the limitations, this study enlightens us on subsidiary survival and subsidiary exit or market exit, all of which are relatively under-researched topics. Our expectations as teachers and researchers are that these issues will continue to receive increased attention so that scholars and managers can become more knowledgeable about foreign subsidiary management in host countries.

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**TABLE 1**  
**Correlation Matrix and Descriptive Statistics of Measures**

VARIABLES	1	2	3	4	5	6	7	8	9	10	11
1 BUSINESS PERFORMANCE	1	.094	.599(**)	.067	.062	.023	-.079	.384(**)	.325(**)	.142	-.237(*)
2 LOG OF SALES VOLUME		1	.009	.017	.017	.087	.095	.198(*)	.057	.279(**)	.005
3 PAST PROFITABILITY			1	.006	-.009	-.050	-.134	.370(**)	.320(**)	.352(**)	-.114
4 NUMBER OF COMPETITORS				1	.709(**)	.613(**)	.219(*)	-.218(*)	-.029	-.044	-.195(*)
5 RATE OF ENTRY					1	.779(**)	.101	-.210(*)	-.017	-.078	-.192(*)
6 RATE OF EXIT						1	.160	-.243(**)	-.084	-.066	-.227(*)
7 TECHNOLOGICAL DYNAMISM							1	.061	.122	.191(*)	.031
8 PRODUCT DIFFERENTIATION								1	.117	.520(**)	-.145
9 PRODUCT UNIQUENESS									1	.062	-.070
10 SUPPLIER INVOLVEMENT										1	.032
11 CUSTOMER INVOLVEMENT											1
MEAN	3.66	16.38	3.36	18.81	3.18	1.71	3.50	3.55	3.30	3.21	4.13
STANDARD DEVIATION	.598	2.080	.773	23.979	3.546	1.657	.888	.865	1.041	.973	.821

\*\* Correlation is significant at the 0.01 level (2-tailed).

\* Correlation is significant at the 0.05 level (2-tailed).

**TABLE 2**  
**Results of the Competitive Dynamics and Subsidiary Exit Models**  
**Dep. Var. = Rate of Exit**  
**N = 111**

Model	Variables	Standardized Beta Coefficients	t-values
<b>1</b>	<b><u>Control Variables</u></b>		
	LOG OF SALES VOLUME	.088	.917
	PAST PROFITABILITY	-.050	-.517
<b>2</b>	<b><u>Direct Effects</u></b>		
r-square = .649	LOG OF SALES VOLUME	.095	1.534
F-stat = 23.529	PAST_PROFIT	.034	.483
	RATE OF ENTRY (H1a)	.710 <sup>†</sup>	11.236
	TECHNOLOGICAL DYNAMISM (H2)	.106 *	1.679
	PRODUCT DIFFERENTIATION (H3)	-.148 **	-1.978
	PRODUCT UNIQUENESS (H4)	-.090	-1.427
	SUPPLIER INVOLVEMENT (H5)	.015	.196
	CUSTOMER INVOLVEMENT(H6)	-.120 **	-1.923
<b>3</b>	<b><u>Moderating Effects</u></b>		
	LOG OF SALES VOLUME	.098	1.581
r-square = .660	PAST_PROFIT	.017	.232
F-stat = 19.412	RATE OF ENTRY	.876 <sup>†</sup>	5.885
	TECHNOLOGICAL DYNAMISM	.062	.910
	PRODUCT DIFFERENTIATION	-.117	-1.525
	PRODUCT UNIQUENESS	-.070	-1.092
	SUPPLIER INVOLVEMENT	-.006	-.079
	CUSTOMER INVOLVEMENT	-.110 *	-1.754
	NUMBER OF COMPETITORS	.199 *	1.665
	RATE OF ENTRY*NUMBER OF COMPETITORS (H1b)	-.327 *	-1.689

Significance Levels: \* p < .10 ; \*\* p < .05; \*\*\* p < .01; <sup>†</sup> p < .001

**TABLE 3**  
**Results of the Business Performance Model**  
**Dep. Var. = Business Performance**  
**N = 111**

Model	Variables	Standardized Beta Coefficients	t-values
<b>1</b>	<b><u>Control Variables</u></b>		
r-square = .345	LOG OF SALES VOLUME	.088	1.136
F-stat = 12.594	PAST PROFITABILITY	.595 <sup>†</sup>	7.690
	RATE OF ENTRY	.050	.354
	RATE OF EXIT	-.035	-.279
	NUMBER OF COMPETITORS	.075	.669
<b>2</b>	<b><u>Direct Effects</u></b>		
r-square = .398	LOG OF SALES VOLUME	.026	.342
F-stat = 11.393	PAST PROFITABILITY	.462 <sup>†</sup>	5.477
	RATE OF ENTRY	.025	.188
	RATE OF EXIT	.030	.245
	NUMBER OF COMPETITORS	.114	1.052
	PRODUCT DIFFERENTIATION (H7)	.242 ***	2.841
	PRODUCT UNIQUENESS (H8)	.145 *	1.843

Significance Levels: \*  $p < .10$  ; \*\*  $p < .05$ ; \*\*\*  $p < .01$ ; <sup>†</sup>  $p < .001$