

Foreign subsidiary divestment decision process: The pharmaceutical industry experience

Luis M. Baquero / luis_baquero@yahoo.com
Universidad Católica Pontificia, Recinto de Mayagüez

Teresa Longobardi / tlo9966@gmail.com
Universidad de Puerto Rico, Recinto de Río Piedras

Received: April 27, 2014

Accepted: December 7, 2014

■ ABSTRACT

This paper aims to examine the decision process for the divestment of foreign subsidiaries, from the perspective of managers of pharmaceutical manufacturing subsidiaries located in Puerto Rico. The analysis provides evidence that relations with the parent firms were cooperative and no obstructive, and that foreign management assumed overall control during the implementation of disinvestment decisions; however, there was insufficient evidence to demonstrate involvement as initiator or coordinator of the divestment process or to show they were kept informed before the decision to divest was made. Finally, it showed that the increase in the expiry of patents did not increase participation of executives in the evaluation of their plants.

Keywords: divestment decision process, HQ-subsidiary relations, pharmaceutical manufacturing operations in Puerto Rico, subsidiary management styles.

■ RESUMEN

Este trabajo tiene por objeto examinar el proceso de decisión para la desinversión en filiales extranjeras, desde la perspectiva de los gerentes de las subsidiarias farmacéuticas situadas en Puerto Rico. El análisis proporciona evidencia de que las relaciones con las empresas matrices fueron cooperativas y no obstructivas, y que la gerencia de las filiales extranjeras asumió el control total durante la implantación de las decisiones de desinversión; sin embargo, no hubo pruebas suficientes para demostrar que tuvo participación como iniciador o coordinador del proceso de desinversión o para mostrar que se mantuvo informada durante el proceso de

Foreign subsidiary divestment decision process: The pharmaceutical industry experience

Luis M. Baquero / luis_baquero@yahoo.com
Universidad Católica Pontificia, Recinto de Mayagüez

Teresa Longobardi / tlo9966@gmail.com
Universidad de Puerto Rico, Recinto de Río Piedras

Received: April 27, 2014

Accepted: December 7, 2014

■ ABSTRACT

This paper aims to examine the decision process for the divestment of foreign subsidiaries, from the perspective of managers of pharmaceutical manufacturing subsidiaries located in Puerto Rico. The analysis provides evidence that relations with the parent firms were cooperative and no obstructive, and that foreign management assumed overall control during the implementation of disinvestment decisions; however, there was insufficient evidence to demonstrate involvement as initiator or coordinator of the divestment process or to show they were kept informed before the decision to divest was made. Finally, it showed that the increase in the expiry of patents did not increase participation of executives in the evaluation of their plants.

Keywords: divestment decision process, HQ-subsidiary relations, pharmaceutical manufacturing operations in Puerto Rico, subsidiary management styles.

■ RESUMEN

Este trabajo tiene por objeto examinar el proceso de decisión para la desinversión en filiales extranjeras, desde la perspectiva de los gerentes de las subsidiarias farmacéuticas situadas en Puerto Rico. El análisis proporciona evidencia de que las relaciones con las empresas matrices fueron cooperativas y no obstructivas, y que la gerencia de las filiales extranjeras asumió el control total durante la implantación de las decisiones de desinversión; sin embargo, no hubo pruebas suficientes para demostrar que tuvo participación como iniciador o coordinador del proceso de desinversión o para mostrar que se mantuvo informada durante el proceso de

decisión realizado. Finalmente, se demostró que el aumento de la expiración de las patentes no aumentó la participación de los ejecutivos en la evaluación de sus plantas.

Palabras clave: proceso de decisión de desinversión, relaciones entre empresas matrices y filiales, operaciones industriales farmacéuticas en Puerto Rico, estilos de gestión de subsidiarias.

INTRODUCTION

Based on a review of previous research literature, the following aspects were hypothesized to be individually important: the roles of subsidiary executives, the behavior of parties, the extent of attachment and the relations between headquarters and subsidiary, the impact of patent expirations in the roles of foreign executives, and the impact of being an acquired subsidiary on the role of foreign subsidiary executives. For each of the constructs, there will be a discussion of how prior researchers operationalized it, and a discussion of how the operationalization was used in this study.

As Duhaime and Baird (1987) suggest, in order to understand the divestment decision-making process, it is necessary to study the steps involved in that process and the actors who play important roles. It is also necessary for academics and managers to better understand how to structure and design divestitures (Moschieri, 2011). The model to be tested includes the direct relationship between the divestment decision-making process and the role and participation of subsidiary managers in those decisions. This initial research step has not been previously undertaken.

Previous discussion motivates the formulation of the following hypotheses. All hypotheses are stated in the null.

ROLE OF SUBSIDIARY MANAGER IN THE DIVESTMENT DECISION PROCESS

The first aspect to be studied in this essay is the role of subsidiary executives in the different stages of the divestment decision process. Several quantitative studies (Sachdev, 1976; Boddewyn, 1976; Ness, 1979, 1981; Ghertman, 1984, 1988; Hayes 1997; Ketkar, 2006)

Table 1

Hypothesized criteria and related literature sources

Criteria	Literature Sources*
Role of Subsidiary Manager (Phases of Decision Process)	Bettauer (1967); Gilmour (1973); Boddewyn (1979); Ness (1983); Ness (1979, 1981); Porter (1976); Ghertman (1988); Duhaime (1981); Duhaime & Grant (1984); Griffin (2003); Rouleau (2005); Qi, (2005); Moschieri (2011); Moschieri & Mair (2008, 2011)
Behavior on Divestment Decision	Ness (1979); Duhaime & Grant (1984); Duhaime & Baird (1987); Ghertman (1988); Hayes (1997); Redman, Wilkinson & Snape (1997); Gopinah & Becker (2000); Marks & Mirvis (2001); Griffin (2003); Rouleau (2005); Qi, (2005); Haynes, Thompson, & Wright (2007); Moschieri (2011); Moschieri & Mair (2008, 2011)
Headquarter-Subsidiary Relations	Ness (1979); Ghertman (1984, 1988); Duhaime & Grant (1984); Jarillo & Martínez (1990); Benito (1997); Hayes (1997); Gopinah & Becker (2000); Rouleau (2005); Qi, (2005); Ketkar (2006); Haynes, Thompson, & Wright (2007); Moschieri (2011); Moschieri & Mair (2008, 2011)
Factors to Subsidiary Divestment Patents on Drugs	Sachdev (1976); Hamilton & Chow (1993); Benito & Welch (1997); Hayes (1997); Kaitin & DiMasi (2000); Schmid & Smith (2002); Mao (2007); Kester (2009); Kesselheim, Murtagh, & Mello (2011)
Mergers and Acquisitions	Hayes (1972); Boddewyn (1976); Ness (1981); Duhaime & Schwenk (1985); Ghertman (1988); Benito (1997); Benito & Welch (1997); Hamilton & Chow (1993); Hayes (1997); Bergh (1997); Capron, Mitchell, & Swaminathan (2001); Balogun & Johnson (2004) Belderbos & Zou (2004); Shimizu & Hitt (2005); Ketkar (2006); Brauer (2006, 2009); Xia & Li (2013)

*Complete citations are given in the references.

Source: Own elaboration.

suggest that their involvement was minimal. In reality, they explain that the disinvestment decisions were taken by the executive director of the parent company with teams of three executives, primarily from their finance department, without prior consultation with the foreign managers and international operations, and with minimal participation of subsidiary management.

According to Boddewyn (1976), in a study of United States (U.S.) and European corporations, only 33% of international divestment included management of the subsidiary during the decision-making process and the roles of the executives of the subsidiary were limited to receiving information and orders from their head office, to provide operational information in order to maintain production levels and to focus and maintain employee morale. Meanwhile, Ness (1979) concluded that divested units can play several roles at different stages of process, but never as initiator of the process. He suggested that unit management was informed when the decision to divest was taken, because as Duhaime and Grant (1984) pointed out, initiation of divestment is a corporate management task which division managers are unlikely to take. The functions of the divisional managers during the divestiture process have been previously found to be limited to the following responsibilities: information provider, instigator of decisions, guardian of employee morale and productivity, host of potential buyers, and possibility of becoming a buyer (Ness, 1981; Gopinath & Becker, 2000; Moschiri, 2011). As Brauer (2006) states, divisional managers have been argued to be actively involved in the implementation of corporate level management's restructuring plans rather than simply being passive followers.

Many studies on the topic have approached the divestment decision process from the executive, parent office perspective, assuming that local management is informed after the decision has been taken and restricting their primary role to implementing the divestment process including negotiation with the employees and officers of local governments (Redman, Wilkinson, & Snape, 1997; Qi, 2005; Brauer, 2006). To confirm this traditional perspective Hayes (1997), in her dissertation about factors for the divestment of foreign subsidiaries, decided not to use the opinions of executives of the divisions, stating: "Initiation of a divestment decision process does not come from Division Management because they are responsible for the survival, not the dissolution, of a Division."

According to Moschieri and Mair (2011), the decision to divest is still made by top managers, but the implementation is managed by a dedicated in-house team that takes on the operational and managerial responsibility for a set of units as it assesses whether and how to divest them. It can be argued that executives of high-tech foreign plants do not operate like executives evaluated in previous divestment studies. Given the importance of plants in the global production chain of high-tech industries, in the case of pharmaceutical companies, we can expect the roles and collaboration of local executives to be broader.

This study aims to identify whether there is participation of subsidiary executives in the initial stages of the divestiture decision process. Given the lack of recent studies on the role of executives in foreign subsidiaries specifically, we will assume that there should be no difference in our sample and expect to find that they have a limited role and limited participation in the decision-making process. In particular, one would expect that the role of the executives of the subsidiaries are limited to receiving information filtered from headquarters (HQ), intended to provide operational information to the subsidiaries and to maintain operations at the highest level. The main purpose of this information would be to focus on maintaining subsidiary productivity and workforce morale. By allowing subsidiary executives to reveal their roles and participation in different stages, we can establish the role of foreign executive in the decision-making process.

H₁. The subsidiary executive never assumes the role of the initiator or coordinator in the divestment decision-making process.

If the results obtained from the survey provide evidence against the null hypothesis, this will imply that executives of high-tech subsidiaries have significant involvement from the beginning of the divestment decision activities.

BEHAVIOR ON DIVESTMENT DECISION

Previous studies from the HQ perspective have specified that the behavior of executives from foreign subsidiaries can be detrimental to the objectives of the parent companies during the divestment decision process (Boddeyn, 1973, 1979; Gilmour, 1976; Porter, 1976; Ness, 1983; Duhaime, 1984; Hayes, 1997; Ketkar, 2006; Brauer, 2006; Moshieri, 2011). Other related studies have concluded that foreign executives should be kept uninformed to reduce the probability of sabotage or a reduction in the production levels of the subsidiary. Formally stated, divestment decisions, to eliminate unprofitable operations, are made quickly to avoid distracting foreign executives from their operations (Sachdev, 1976). Further, they are made without rigorous analysis (Gilmour, 1973) to relieve corporations of a painful process (Boddeyn, 1979), to avoid a negative impact on financial markets (Boddeyn, 1985), to diminish stress for the parties involved (Bergh, Johnson, & Dewitt, 2008; Moschieri, 2011), to reduce ambiguity and uncertainty regarding the unit managers' professional and financial future (Moschieri & Mair, 2011).

From the international business perspective, Boddeyn (1976), Hamilton and Chow (1984), Gerthman (1988), and Hayes (1997) posited that when multinational corporations have problems, foreign subsidiaries will be the first to go, because it is easy to justify to foreign governments, shareholders, and the public. As indicated by Porter (1976), the emotions of the foreign managers during closure or sale of their subsidiary are unaffected, because they are not present where the decisions are made. An empirical study of 14 Belgian companies by Ness (1979) established that the impact of the executive on the subsidiary and the relative success of the divestiture operation relates to their treatment of potential buyers, and their ability to follow instructions from the parent company during the process of disinvestment. In addition, it has been suggested that the executive treatment of parent company staff and their loyalty are also important factors Ness (1976, 1981). Traditional HQ perspective, as evidence on Ness (1979, 1981) and Moschieri and Mair (2011), has established that the success of the divestment

decision process is very dependent on the loyalty and cooperation of unit managers; however, until now, no one has studied the foreign subsidiary perspective to define the actual behavior of local executives involved in the decision-making process. Consequently, it remains to be determined if conflict, resistance or even sabotage from local subsidiary executives should be of concern to HQ. In spite of this lack of evidence, it has been a working assumption of parent company executives that information regarding the divestiture process should remain confidential (Gopinah & Becker, 2002; Moschieri, 2008; Moschieri & Mair, 2011).

This research aims to assess whether the behavior of foreign executives was generally negative or positive, from the viewpoint of the executives themselves. However, in the case of high-technology industries, the status quo HQ assumption is that lower division managers' behavior will be negative. In our proposition, it can be argued that foreign executives have a positive non-obstructive behavior, because they participate in the evaluation process and play an active role in the evaluation of alternatives considered.

H₂. Most subsidiary executives demonstrate obstructive behaviors during the divestment decision-making process.

If the data collected by the survey show evidence against the null hypothesis, this would provide support that executives contributed constructively to the activities of decision and implementation of the divestment of manufacturing plants.

HEADQUARTER AND SUBSIDIARY RELATIONS IN THE DIVESTMENT DECISION-MAKING PROCESS

This part measures the degree and relationship between headquarters and subsidiary executives during the divestment decision-making process. If there is a close collaboration of parent company executives and managers of foreign subsidiaries, we should expect a greater flow of information during the communication process. In his doctoral dissertation about U.S. and European corporations, Sachdev (1976) reported that among U.S. multinational corpora-

tions, most HQ executive visits occurred during the analysis stage of the process or during the implementation of the decision without prior consultation with the managers of subsidiaries and international operations.

Exploring HQ-subsidiary relations during the decision-making process to divest units, Boddewyn (1983) found that ethnocentric approaches by executives in parent offices facilitated the decision-making process. Consequently, national operations are prioritized over the foreign subsidiary. Other studies established that HQ executives consider the divestment decision an impersonal process triggered by the geographical and emotional distance that exists between headquarters staff and local subsidiary management teams (e.g. Ness, 1979; Boddewyn, 1979; Duhaime, 1981; Hamilton & Chow, 1993; Hayes, 1997; Gopinah & Becker, 2000; Qi, 2005; Moschieri 2008, 2010). Contrary to the findings of previous studies, it can be argued that in high-tech companies, there is greater integration of executives of the subsidiary during the decision-making process, including the decision to close or sell affiliates. To date, there are limited studies (Gopinah & Becker, 2002; Moschieri, 2008; Moschieri & Mair, 2011) that challenge the belief that there is limited communication between the parent and the subsidiaries during the decision-making process. Given the lack of recent published studies on the relations between HQ executives and foreign subsidiaries, in our hypothesis we must assume limited communication between HQ and subsidiary executives until the final decision is made. Also, we can argue that if foreign executives are kept uninformed, the relationship between HQ and the subsidiary was poor. It can be argued that the greater the involvement of subsidiary executives, the less likely the possibility of divesting. In the case of strategic decisions, we would expect HQ to keep the subsidiary divestment decision secret until the deal is virtually consummated; thus, the following hypothesis is proposed:

H₃. Most subsidiary executives are kept uninformed of the divestment decision until the decision is agreed upon.

If the results of the quantitative study reject the null hypothesis, this will provide statistical evidence that there were ample channels of communication and two-way information flowing between executives of the subsidiary and parent company, from the early stages of the decision to the completion of the divestment process. Finally, we can conclude that the information did not cause a decrease in efficiency, productivity, quality levels or motivation of employees while operations continued until final day of drug production.

FACTORS TO DIVEST FOREIGN SUBSIDIARIES

PATENTS ON DRUG

To date, it has been assumed that the loss of patent protection globally has had an adverse impact on the profits of multinational corporations, but very little has been written about the impact of event-loss protection on the participation of foreign subsidiaries of high-tech firms in the divestment process. Existing literature depicts that pharmaceutical companies are divesting, as a reaction to patent expirations, but they are not exiting from the business of producing innovations (Kester, 2009), due to pressures from shareholders who wish to improve the performance of firms, insurance companies, government payers, patient advocacy groups who wish to lower the costs of medication, and regulatory agencies to make safe and effective drugs widely (Mao, 2007).

We infer that the termination of patents on products manufactured by the subsidiaries have an adverse impact on the level of profits of multinational corporations. One can argue that in the case of subsidiaries producing high value goods protected by patents, executives of the subsidiaries should have more power during the divestment decision process. There are no previous studies linking the impact of the expiration of patents on the process of closing or selling plants of high-tech manufacturing. For example, prior research has demonstrated that licensing difficulty is one of the most important financial factors responsible for foreign divestment (Sachdev, 1976; Hamilton & Chow,

1984; Hayes, 1997; Ketkar, 2004; Moschieri & Mair, 2008). As Mao (2007) claims, divestments is a reaction to patent expirations; it is imperative for public policy scholars to understand the effects of divestments on innovations. A firm falls off the patent cliff when the most profitable patents expire and there are no comparable patents to replace them. The patent cliff invariably reduces profits. Merging with and acquiring firms with viable patents extends cash flow (Kaitin & DiMasi, 2010).

If a foreign subsidiary is responsible for the manufacture of high levels of profits for the parent company, we should expect the subsidiary to have a key role in the decision-making process. As explained in H_1 above, this study will assess evidence that executives of foreign plants had power and active participation in the decision-making process. In addition, it is important to define whether the pressure to close or sell manufacturing plants came from expiration of patents on manufactured goods. Recent studies have shown that decisions by pharmaceutical companies to merge, acquire, and divest can be reactions to patent expirations. (Kesselheim, Murtagh, & Mello, 2011; Mao, 2007). As Kaitin and DiMasi, (2010) pointed out, with soon-to-expire patents and no new patents in the pipeline, companies merged with or acquired other firms that held patents with greater longevity in order to infuse cash. The decrease in sales of products manufactured by foreign subsidiaries should diminish the power and role of foreign executives in the decision-making process of divestment; therefore, we believe that the expiry of patents has no significant impact on the participation of executives of the subsidiaries in the decision-making process of disinvestment. In particular, one would expect that the roles of the subsidiary executives are not adversely impacted by the increase in the loss of patent protection. By allowing subsidiary executives to reveal their perception as patent expiration approached, we can establish how they perceived these changes in levels of protection for the production of high-tech plants. It was hypothesized that the loss of patents has an impact on the role and participation of subsidiary executives in the decision-making process. The specific hypothesis tested was:

H_4 . *For subsidiaries anticipating an increase in patent expirations on drugs manufactured at the plant, there is a higher expressed likelihood that subsidiary executives will be involved in the divestment decision-making process.*

The null hypothesis presented above aims to study if the expiration of drug patents had an impact on the participation and roles of the executives of the subsidiaries. Finding evidence against the null hypothesis would imply that an increase in the number of expired patents is not correlated with an increase in participation of subsidiary executives.

MERGER AND ACQUISITIONS

An important related issue, not addressed in prior work on international divestiture, is the impact of merger and acquisitions in the divestment decision process. In recent years, mergers and acquisitions of multinational companies have led to changes in production structures and excess production capacity. In the case of high-tech industries, merger and acquisitions caused executives of foreign subsidiaries to be integrated into new production systems and organizational cultures. Previous theory and research demonstrated that management considered the decision to acquire those businesses a mistake (Duhaime & Schwenk, 1985) as it was found that acquisition of an already existing operation is subject to numerous problems during the integration. One of the first studies to recognize the impact of previous mergers and acquisitions, conducted by Boddewyn (1979) concluded that divestment decisions frequently follow investment acquisitions that were made without careful pre-investment analysis. According to Hamilton and Chow (1993), U.S. divestment activities are common components of acquisition and merger activities realized by organizations. For example, by the end of 1989, 44% of large acquisitions made between 1971 and 1982 had been divested. In addition, companies with substantial operations, which may well be duplicated within and across (Benito & Welch, 1997; Benito, 2005) and acquired subsidiaries, had a greater likelihood of being

divested than Greenfield subsidiaries (Ghertman, 1988). As Brauer (2006) state, divisional managers are likely to oppose divestitures via sell-off, because they are at risk of being replaced by employees of the buyer.

In 1987, Chastain indicated that many corporate acquisitions don't succeed and divestiture is often the least costly alternative for fixing previous failures. As clearly shown by Meyer, James, and Geoffrey (1990), divestiture, like mergers and acquisitions, are elements of a dynamic process of adaptation to a changing environment. As Hayes (1997) pointed out, from 1982 through 1992 divestment activities comprised 43% of previous merger and acquisition transactions realized. Meanwhile, Benito and Welch (1997) indicated that merger and acquisitions, such as those that occurred in the global pharmaceutical industry, with substantial international operations will cause a duplication of processes across nations and will lead to several divestiture activities. Perhaps, the acquired subsidiaries are the ones most likely to be closed or sold due to the difficulties that exist in their cultural and operational integration into the new multinational company.

This research seeks to establish the role and participation of executives of the subsidiaries acquired during the decision-making process. Acquisitions are often unstable and experience lower longevity than wholly-owned Greenfield subsidiaries. It is important to examine whether executives of foreign subsidiaries acquired through mergers and acquisitions have different roles during the decision-making process of disinvestment; hence it is proposed that

H₅. For subsidiaries created through previous acquisition instead of established as Greenfield, there is a higher expressed likelihood that the parent company will select it for complete divestment.

If the survey results provide evidence against the null hypothesis, it can be argued that executives of the acquired plants that were part of the divestment process did not perceive differences in their roles and participation as compared to other executives of the plants that were Greenfield subsidiaries.

Table 2 presents a summary of all five sets of hypotheses. The next subsection will outline the methodology employed to test these hypotheses.

Table 2

Hypotheses criteria

Criteria	Summary of Hypotheses from Foreign Executives Perspectives	
H ₁ Role of Executive	Limited in initial phases of decision process	Follower of instruction
H ₂ Behavior on Divestment Process	Obstructive attitude	Negative perception in headquarters
H ₃ HQ-Subsidiary Relations	Secretively in all phases of the process	Up (HQ)-download (sub) communication flow
H ₄ Patents on Drugs	Increase in patents expirations	Reduction in executives power and participation
H ₅ Merger and Acquisitions	Less power if subsidiary is acquired	Acquired subsidiaries are first to be divested

Source: *Pharmaceutical subsidiary divestment decision process and executives experiences data*

RESEARCH METHODOLOGY

A web questionnaire was administered to a sample of executives from the pharmaceutical industry. According to Vissak (2010), the anonymity of survey methods may motivate the respondents to answer honestly, compared to interviews, where they may not choose to reveal all the facts.

The web questionnaires, called *Pharmaceutical subsidiary divestment decision process and executives experiences*, included 35 items measuring different aspects of the subsidiary divestment decisions process. Twenty of the items were slightly adapted from Ketkar (2006) instrument, called *Multinational corporations foreign subsidiary divestment strategy*. This was used and adapted with the authorization of the author. These and the other fifteen items were selected based on various aspects from previous quantitative divestiture survey based research (Sachdev, 1976; Duhaime,

1981; Duhaime & Grant, 1984; Hamilton & Chow, 1993; Hayes, 1997). The questionnaires included classification data and allowed respondents to self report, by means of a Likert type attitude scale, their level of agreement of 35 statements drawn from the literature. Because this set of items had not been previously analyzed together, and because we slightly modified the instructions and items to fit our research objectives, exploratory rather than comparative perspectives were used.

Based on a previous study by Duhaime and Grant (1984), the items were presented in random sequence to conceal our underlying framework and to minimize the chances of the respondents merely responding to what we expected to hear. Similar to Hamilton and Chow (1997) in their study of divestment factors, our questionnaire also included some negative items, to ensure that executives responded carefully rather than automatically to each item. No pretest with a practicing sample was undertaken, because of the specificity of the topic.

SAMPLE PARTICIPANTS

Primarily interested in examining the hypothesis related to the roles, behaviors, relations, impact of patents, and previous merger and acquisitions on divestment decision process, we chose a sample period in which a large number of pharmaceutical plant divestiture occurred in Puerto Rico. This sample period spans 18 years, from 1990 to 2008; our research detected the divestment decision of 29 pharmaceutical plants during said period.

According to Hayes (1997), virtually all prior empirical researchers who have looked at divestment lamented at the difficulty in getting people to speak out about their divestment decisions. The names of companies thought to have made subsidiary divestiture in Puerto Rico were obtained from various sources such as newspapers, the *Caribbean Business* list, and the business list provided by Puerto Rico Manufacturer Association. The executives in this study had some type of relationship with 15 (65% of the pharmaceutical affiliates cases) of these divestment decisions. The merit of using a small sample of cases (executives) to generate conclusions has been

increasingly recognized in international business (Eisenhart, 1989) and has been extensively applied in the study of international divestment decision-making process (Griffin, 2003).

NONPARAMETRIC STATISTICS

Nonparametric tests were deemed appropriate, because of the small sample size and because of the ordinal measurement level of variables. Inference tests were used to test the five hypotheses. Due to the nature of the research questions and in line with previous foreign subsidiary studies, the sign test was used to determine if the response from the executives surveyed rejected the status quo or null hypotheses. The data obtained from the survey was analyzed in terms of the variables under study.

For hypothesis H_1 regarding the role of the subsidiary executive, we tested the status quo belief of no or limited participation using the assessment of the block of statements contained in question 31 of the survey. Here participants were asked to assess statements like: "Subsidiary management initiated the divestment decision process;" "Subsidiary management was fully integrated in the divestment decision process;" and "Subsidiary management was informed immediately when the decision was made." Responses were "Strongly Agree," "Agree," "Slightly Agree," "Disagree," "Strongly Disagree." These were assigned values 1 to 5, respectively, and the null hypothesis of no or limited participation was established as the median response having a value of 4 or 5. The resulting median of the respondents was tested for significance.

In the case of H_2 , the status quo belief that executives were obstructive in their behavior during the divestment process, we used assessments of the block of statements in question 28, including statements like: "Your loyalty was never questioned or tested;" "Subsidiary managers had an obedient attitude;" and "Subsidiary executives felt offended by the lack of trust." The responses to the last two questions were inverted on the scale so that the values followed the same order as the majority of the questions. Respondents were asked if they "Strongly Agree," "Agree," "Slightly Agree," "Disagree," "Strongly Disagree." These were assigned values

1 to 5, respectively, and the null hypothesis of obstructive behavior was established as a median of 4 or 5.

The third hypothesis, H_3 , that most of subsidiary executives were kept uninformed of the divestment decision until the decision was virtually consummated, was evaluated using the assessment of the block of statements in question 29. Statements assessed by participants included: "You heard the rumor that headquarters was plotting to divest your subsidiary;" "There was a do-not-tell-plant-manager attitude from headquarters;" "A genuine dialogue was maintained with headquarters;" and "Your opinion was neither solicited nor taken into consideration." The responses to the third and fourth questions were inverted on the scale so that the values followed the same order as the majority of the questions. Respondents were asked if they "Strongly Agree," "Agree," "Slightly Agree," "Disagree," "Strongly Disagree." These were assigned values 1 to 5, respectively, and the null hypothesis of poor HQ-subsidiary relations was established as a median of 1, 2 or 3. Four key areas were assessed: whether the opinions of the executives were requested, if any, as executives' perception of genuine dialogue, and if they showed a high level of power and process control by the executives of the subsidiaries.

In H_4 , we assessed whether impending patent expirations on drugs manufactured at the plant increased the likelihood that foreign executives were involved in the divestment decision-making process. In question 32, executives were asked: To what extent did the following events occur in the subsidiary while the divestment decision process was in progress? Statements assessed by participants included: "A major drug produced by the company lost a significant portion of sales;" "New drugs and/or processes received FDA approval;" and "The subsidiary produced no significant drug on the market." The responses to the second question were inverted on the scale so that the values followed the same order as the majority of the questions. Their possible responses were "Always," "Very Often," "Sometimes," "Rarely," "Never". These were assigned values 1 to 5, respectively, and the null hypothesis of negative impact of patent expirations was established as a median of 1, 2 or 3 together

with a result of broad participation in the decision to divest (that is a rejection of H_1 and H_2).

Finally for H_5 , we examined whether subsidiaries created through previous acquisition instead of established as Greenfield had a higher likelihood of being divested. Assessments of statements in question 35, about previously acquired or merged subsidiaries were used in the analysis. Respondents were asked to indicate the degree to which they agreed with statements like "Subsidiaries acquired or merged were the last to be divested;" "Management team from acquired subsidiary has the same role as management from the Greenfield subsidiary;" and "Management of the acquired subsidiary was allowed to present its alternatives to the divestiture option." The alternative responses "Strongly Agree," "Agree," "Slightly Agree," "Disagree," "Strongly Disagree" were ranked from 1 to 5. The null hypothesis of negative impact of merger and acquisitions was synonymous with a median of 3, 4 or 5. The statistical package SPSS 17 was used for all the analysis.

RESULTS

SUMMARY STATISTICS

We e-mailed 185 executives who may have participated in the divestiture of a manufacturing plant from 1990 to 2008. Over half of the invitation e-mails did not get to the executives identified, because the e-mail addresses were disabled. Half of the remaining e-mails were received, but recipients did not report their intention to answer the questionnaire. Ten percent of invitations were to executives who told us that they had no experience in divestment activities of plants and, therefore, were not qualified to answer our questionnaire about their experiences. It was impossible to receive the cooperation of professional organizations related to the pharmaceutical industry in Puerto Rico to identify contact information for executives with experience in disinvestment. A total of 11 executives participated in the online survey. As Table 3 shows, all executives who participated in the study had experience in the divestiture of a plant, with 5 of the 11 participants involved in two, three, or six events to divest plants in Puerto Rico.

Table 3

Episodes consider for response

Number of Divested Plants	Number of Executives	Percentage
1	6	55%
2	3	27%
3	1	9%
6	1	9%

Source: *Pharmaceutical subsidiary divestment decision process and executives experiences data*

In order to obtain an approximate measurement of the importance of subsidiary operations, executives were asked to indicate countries in which they supplied their position in the subsidiary at the time it was considered for divestment, and how many people were employed locally as of the date when the plant divestment decision was made. Tables 4, 5, and 6 indicate the responses to the alternatives of the executives that responded.

Table 4

Global regions subsidiary serve

Region	Number of Executives	Percentage
USA (mainland)	9	100%
European Community	9	100%
Central America and Caribbean	7	78%
Japan	7	78%
South America	5	56%
Asia (excluding Japan)	5	56%

Source: *Pharmaceutical subsidiary divestment decision process and executives experiences data*

Table 5

Subsidiary position

Position	Number of Executives (%)
Major Operation	7 (64%)
Average Operation	3 (27%)
Minor Operation	1 (9%)

Source: *Pharmaceutical subsidiary divestment decision process and executives experiences data*

Table 6

Number of employees in manufacturing affiliates

Employees in Divested Plant	Number of Executives (%)
(<) Less than 200 employees	1 (9%)
201-400 employees	2 (18%)
401-600 employees	4 (36%)
(>) More than 600 employees	4 (36%)

Source: *Pharmaceutical subsidiary divestment decision process and executives experiences data*

All subsidiaries had the responsibility of producing for the largest drug markets in the world, namely the U.S. and Europe, while the vast majority produced for Japan and nearby markets of Central America and the Caribbean. Regarding the size of production, a majority of respondents (64%) indicated that the subsidiaries were divested from the largest operations in the global production system with 72% of plants represented in the survey (8 of 11) having a number of employees of at least 400 at the beginning of the process of divestiture. When they were asked about how subsidiary divestment was perceived within the corporation, two (18%) indicated that plants were a drag to the rest of the manufacturing chain, while four (36%) said they were considered an inspiration to other manufacturing plants.

The stages of the divestiture decision where the executives participated are included in Table 7. Participants were asked "In which of the following phases of the divestment decision process did you participate?"

Table 7

Phases of participation

Phases	Participated	Did not participated
Identified that something should be done	8 (72.73%)	3 (27.27%)
Developed a course of action	8 (80.00%)	2 (20.00%)
Selected alternatives for the subsidiary	8 (72.73%)	3 (27.27%)
Implemented the divestment decision	10 (90.91%)	1 (9.09%)

Source: *Pharmaceutical subsidiary divestment decision process and executives experiences data*

A quick glance shows that, most executives were involved in all phases of the divestiture decision. Even more participated in the final stage of implementing the decision.

ANALYSIS OF HYPOTHESES

Below, a description of the analysis of each of the hypotheses and their results. Inference was used to find support for our theoretical framework of the foreign subsidiary divestment decision-making process. Due to the nature of the research questions and in line with previous foreign subsidiary studies, the sign test was applied. Table 8 shows the respective hypotheses as well as the results of the statistical analyses, indicating if the status quo (null) hypothesis was rejected or not.

Table 8

Results of sign test and hypothesis decisions

Hypothesis Criteria	Hypothesis Decision Rule	Statistical Analysis	Mean	Median	P-Value	Decision
H1 Role of Executive	Ho: Md \geq 4 Ha: Md $<$ 4	Sign Test	3.36	4	.50 (1/2)	Do not reject Ho
H2 Behavior	Ho: Md \geq 4 Ha: Md $<$ 4	Sign Test	2.5	2	.006* (.012/2)	Reject Ho
H3 HQ-Sub Relations	Ho: Md \leq 3 Ha: Md $>$ 3	Sign Test	3.909	4	.113* (.227/2)	Do not reject Ho
H4 Patents on Drugs	Ho: Md \geq 3 Ha: Md $<$ 3	Sign Test	2.045	2	.005* (.01/2)	Reject Ho
H5 M&A	Ho: Md \geq 3 Ha: Md $<$ 3	Sign Test	3.136	3	1	Do not reject Ho

*Significance at the 1% level

Source: *Pharmaceutical subsidiary divestment decision process and executives experiences data*

Sufficient evidence was not found to reject H_1 ($p=0.5$). Based on the summary statistics in Table 7 and the test results for H_1 in the first row of Table 8, it can be said that most of the executives were involved in the initial stages, but very few had the opportunity to begin the process of decision-making for the divestiture of subsidiaries under their control. There was, however, sufficient evidence to reject

H_2 , that subsidiary executives had obstructive behaviors ($p<0.01$). There was insufficient evidence to reject H_3 that most of subsidiary executives were kept uninformed of the divestment decision until the decision was virtually consummated ($p=0.1153$). There was sufficient evidence to reject H_4 ($p<0.01$) suggesting that there were patent expirations and this was correlated with limited participation (as evidenced in H_1 and H_2). Most companies seemed to have suffered the loss of patents in some phase of the process, and a decrease in approval of new patents, both influencing the decision to disinvest from HQ perspective, at the same time that subsidiary executives were not involved in the decision-making process. However, this was not correlated with an increased involvement of executives in the decision-making process as found in the failure to reject hypotheses 1 and 3. Finally, insufficient evidence was found to reject H_5 , the belief that subsidiaries that resulted from merger and acquisitions were more likely to be selected for divestment.

Table 9

Summary of findings for hypotheses

Hypotheses	Supported/ Rejected
H_1 The subsidiary executive never assumes the role of the initiator or coordinator in the divestment decision-making process.	Do not reject Ho
H_2 Most subsidiary executives demonstrate obstructive behaviors during the divestment decision-making process.	Rejected
H_3 Most subsidiary executives are kept uninformed of the divestment decision until the decision is consummated.	Do not reject Ho Confounding results
H_4 For subsidiaries anticipating an increase in patent expirations on drugs manufactured at the plant, there is a higher expressed likelihood that subsidiary executives will be involved in the divestment decision-making process.	Rejected
H_5 For subsidiaries created through previous acquisition instead of established as Greenfield, there is a higher expressed likelihood that the parent company will select it for complete divestment.	Do not reject Ho Confounding results

Source: *Pharmaceutical subsidiary divestment decision process and executives experiences data*

DISCUSSION AND CONCLUSIONS

Although there are clear indications that the roles, behaviors, and relationships between parent companies and subsidiaries must be different in the overall context of current international business, very few studies have looked for the views of executives of foreign subsidiaries. As many of the hypotheses are consistent with both conventional management wisdom and related literature, ours are interesting and somewhat provocative results.

This study showed significant support of traditional research (Ness 1979, 1981, 1984; Boddewyn, 1979, 1983; Duhaime & Grant, 1984; Gerthman, 1988; Hayes, 1997; Moschieri, 2008; Moschieri & Mair, 2011) that executives of the subsidiaries had a limited initiative in the initial stages of decision. The data in the present study are illustrative: executives do not have the initiative or authority to start the decision process nor do they have a significant role and participation until the divestment decision is made. This runs counter to Benito's (2005) findings and Belderbos and Zou (2008), that the specialization of processes, production levels, the importance of the products, and the absence of other plants with duplicate capacity gave executives a position within the structures of decisional required to include companies from the start of production processes. A possible explanation is that most executives who answered the questionnaire had intermediate level management positions that made them multi-story office and regional operations, by giving them opportunity to directly access the decision centers located in the parent companies. In other cases, management at operational levels within the plants was involved in the final stages of implementation and execution of the divestment. This does not mean that there were not good channels of communication between headquarters and subsidiaries management, but rather confirms that plant managers (local executives) were not involved in all stages of the process and cannot define the level of communication that existed. The research gives strong support not to reject the traditional HQ perspective, as Brauer (2006) mentioned that the communication channels with subsidiaries executives are still

limited. We propose that a limited group of executives in charge of international operations located in the foreign subsidiaries may have had enough power within the operational structure of the multinational corporation, to have the drive to start a process of disinvestment in some of their plants.

A new finding from this study is related to behaviors exhibited by the executives of the subsidiaries in the decision-making process. Although past research conducted by Ness (1981) indicated that the participation of executives from the division to be divested was essential in the successful execution of the process, it always gave the impression that many of the executives hold negative attitudes and were obstructive to the process. Previous studies (Boddewyn, 1976; Ness, 1979, 1983; Hayes, 1997; Moschieri, 2011) suggest that executives should not be included in the decision-making process, because they know the possibility of divestment would generate a negative attitude, so to avoid them obstructing the processes their cooperation was limited. This study adds a new perspective to the literature recognizing that executives of the subsidiaries usually have cooperative behavior in the process of divestiture of subsidiaries because, among other reasons, they are responsible for deciding on such international operations. Most of the executives indicated that there was a partnership between parent companies and subsidiaries. In many cases, executives with a high level of expertise head offices and are actively involved in all planning and decision-making on international operations, including the process of evaluating the potential divestment of manufacturing plants. Although previous research predicted a negative and obstructive behavior of executives of the subsidiaries, our research showed the opposite. Most of the executives indicated that there was a partnership between parent companies and subsidiaries and this is to be expected as open communication in today's international operations is commonplace.

Although most companies seemed to have suffered the loss of patents in some phase of the decision process for the divestment of the plants, this was not correlated with an increased involvement of executives in the decision-making process as found in the failure

to reject hypotheses 1 and 3. Drawing on limited previous studies (Duhaime & Schwenk, 1985; Benito, 1997; Bergh, 1997; Capron, Mitchell, & Swaminathan, 2001; Shimizu & Hitt, 2005) reporting the relations between patents expiration and participation in the divestment decisions making process, hypothesis H_4 tried to assess whether the increase in expired patents directly related to an increased level of participation. The statistical sign test results did not establish that the loss of patents caused an increase in the level of executive involvement in the decision-making process, but allows us to strongly suggest that there was a large presence of patent expirations in conjunction with the decrease in approval of new patents that impacted the decision to keep plants operating.

With respect to previously acquired subsidiaries, (73% of cases), events evaluated indicate that these plants had a higher propensity to be included in the disinvestment process. This study has taken a good first look at differences that may exist between a Greenfield subsidiary and an acquired subsidiary when it comes to divestment. To obtain more solid conclusions on this subject, and the others, an increase in the participation of executives with comparable experience in divestment processes is necessary. This, however, according to previous investigations (Gilmour, 1973; Duhaime, 1984; Hayes, 1997; Ketkar, 2006), is extremely difficult to achieve.

Certain assurances were made about confidentiality. The sensitive and confidential nature of divestiture as a research topic placed limitations on this work, particularly in the area of participation and data availability (Sachdev, 1976; Duhaime, 1984; Duhaime & Grant, 1984; Gerthman, 1988; Hayes, 1997; Ketkar, 2006). Several of our claims failed to receive statistical support from the data in this study. More data may have provided different, more representative and conclusive results as the strength of the findings of this study are limited by the relatively small sample size. In addition, due to the self-report design of the survey, validity, particularly in responses concerning negative or obstructive behavior cannot be confirmed.

This study extends the research in the field of subsidiary divestment decision processes as the first broadly based study of the perspectives of subsidiary executives in a high tech industry.

While previous studies have been performed on the perception of headquarters executives, this is the first study that has addressed the decision process for the divestment of subsidiaries of manufacturing, from the viewpoint of plant executives who led and participated in a process initiated by the parent companies. Additionally, where previous studies concentrated on divestment activities realized in the U.S. and Europe, this study encompassed a group of pharmaceutical plants located at the most important production cluster, in Puerto Rico.

There are several avenues for future research. First, this research can be extended to divestment activities of other high-tech plants within a region or country, in order to increase the number of survey participants. Second, one could evaluate differences in the opinions of the executives of the parent company and the executives of the subsidiaries regarding the same disinvestment incident. Third, in order to gain greater understanding of the perceptions of executives of the divestment process, one could include executives from various industries as has been done in previous research; however, it remains an assumption that the disinvestment experience in different industries would be the same or comparable.

REFERENCES

- Balogun, J., & Johnson, G. (2004). Organizational restructuring and middle manager sensemaking. *Academy of Management Journal*, 47, 523-549.
- Belderbos, R., & Zou, J. (2008). On the growth of foreign affiliates: Multinational plant, networks, joint ventures, and flexibility. *Journal of International Business Studies*, 38(7), 1095-1112.
- Benito, G. (1997). Divestment of foreign production operation. *Applied Economics*, 29(10), 1365-1377.
- Benito, G. (2005). Divestment and international business strategy. *Journal of Economic Geography*, 5(2), 235-251.
- Benito, G., & Welch L. S. (1997). De-internationalization. *Management International Review*, 37(2), 7-25.
- Bergh, D. (1997). Predicting divestiture of unrelated acquisitions: an integrative model of ex ante conditions. *Strategic Management Journal*, 18, 715-731.
- Bergh, D., Johnson, R. A., & Dewitt, R. L. (2008). Restructuring through spin-off or sell-off: Transforming information asymmetries into financial gain. *Strategic Management Journal*, 29(1), 133-148.
- Bettauer, A. (1967). Strategy for divestment. *Harvard Business Review*, 45(2), 116-124.
- Boddedwyn, J. (1976). Divestment: local vs. foreign, and U.S. vs. European approaches. *Management of International Review*, 19, 21-28.
- Boddedwyn, J. (1979). Foreign divestment: magnitude and factors. *Journal of International Business Studies*, 10(1), 21-27.
- Boddedwyn, J. (1983). Foreign and domestic divestment and investment decisions: like or unlike. *Journal of International Business Studies*, 14(3), 23-35.
- Boddedwyn, J. (1985). Theories of foreign direct investment and divestment: A classificatory note. *Management International Review*, 25(1), 57-65.
- Boddedwyn, J., & Torneden, R. (1973). U.S. foreign divestment: A preliminary survey. *Columbia Journal of World Business*, 8(2), 25-29.
- Brauer, M. (2006). Corporate and divisional manager involvement in divestitures—a contingent analysis. *Journal of Management*, 20, 341-362.
- Brauer, M. (2006). What have we acquired and what should we acquire in divestiture research? A review and research agenda. *Journal of Management*, 32(6), 751-785.
- Capron, L., Mitchell, W., & Swaminathan, A. (2001). Asset divestiture following horizontal acquisitions: A dynamic view. *Strategic Management Journal*, 22(9), 817-844.
- Chastain, C. (1987). *Corporate asset management: A guide for financial and accounting professionals*. New York, NY: Quorum Books.
- Dickinson, J. (1993). *Non parametric statistics: An introduction*. Newbury Park, CA: Sage Publications.
- Dillman, D. A. (2000). *Mail and internet survey's: The tailored design method*. Hoboken, NJ: John Wiley & Sons.
- Duhaime, I. M. (1981). *Influences on the divestment decisions of large diversified firms* (Unpublished doctoral dissertation). University of Pittsburgh, Pennsylvania.
- Duhaime, I. M. (1984). *The divestment behavior of large diversified firm*. Oxford, OH: Planning Executives Institute.
- Duhaime, I., & Baird, I. (1987). Divestment decision-making: The role of business unit size. *Journal of Management*, 13(3), 483-497.
- Duhaime, I., & Grant, J. (1984). Factors influencing the divestment decision-making: Evidence from a field study. *Strategic Management Journal*, 5(4), 301-318.
- Duhaime, I., & Schwenk, C. R. (1985). Conjectures on cognitive simplification in acquisition and divestment decision. *The Academy of Management Review*, 10(2), 287-295.
- Eisenhardt, K. M. (1989). Buildings theories from case study research. *The Academy of Management Review*, 14(4), 538-550.
- George, D., & Mallery, P. (2005). *SPSS for Windows: Step by step*, Boston, MA: Pearson Education.
- Ghertman, M. (1984). Decision-making in multinational enterprises: Concepts and research approaches. Retrieved from http://www.ilo.org/empent/Publications/WCMS_126552/lang-en/index.htm
- Ghertman, M. (1988). Foreign subsidiary and parents role during strategic investment and divestment decisions. *Journal of International Business Studies*, 19(1), 47-67.
- Gibbons, J. D. (1993). *Nonparametric statistics: An introduction*. Newbury Park, CA: Sage Publications.

- Gilmour, S. C. (1973). *The divestment decision process* (Unpublished doctoral dissertation). Harvard Business School, Boston.
- Gopinath, C., & Becker, T. (2000). Communication, procedural justice, and employee attitudes: Relationships under conditions of divestiture. *Journal of Management*, 26(1), 63-80.
- Griffin, R. (2003). Subsidiary divestment: The case of CDMI Ireland 1970-2002. *Irish Journal of Management*, 24(1), 215-228.
- Hamilton, R., & Chow, Y. (1993). Why managers divest evidences from New Zealand's largest companies. *Strategic Management Journal*, 14(6), 479-484.
- Hayes, R. (1972). New emphasis on divestment opportunities. *Harvard Business Review*, 50(4), 55-64.
- Hayes-Goddard, S. (1997). *Drivers for the divestment of foreign subsidiary: An exploratory study* (Unpublished doctoral dissertation). Temple University, Pennsylvania.
- Haynes, M., Thompson, S., & Wright, M. (2007). Executive remuneration and corporate divestment: Motivating managers to make unpalatable decisions. *Journal of Business Finance and Accounting*, 34(5-6), 792-818.
- Jarillo, J., & Martínez, J. (1990). Different roles of subsidiaries: The case of multinational corporations in Spain. *Strategic Management Journal*, 11(7), 501-512.
- Kaitin, K., & DiMasi, J. (2000). Measuring the pace of new drug development in the user fee era. *Drug Information Journal*, 34(3), 673-680.
- Kesselheim, A. S., Murtagh, L., & Mello, M. M. (2011). Pay for delay: settlements of disputes over pharmaceutical patents. *The New England Journal of Medicine*, 365(15), 1439-1445.
- Kester, S. (2009). *Divestitures and their impact on the innovative capacity of firms* (Unpublished MBA research). Erasmus University, Rotterdam.
- Ketkar, S. (2006). *Multinational corporation's foreign subsidiary divestiture modes and sustainability of competitive advantages* (Unpublished doctoral dissertation). Temple University, Pennsylvania.
- Leedy, P., & Ormrod, J. (2001). *Practical research: Planning and design*. Upper Saddle River, NJ: Prentice Hall.
- Mao, R. (2007). *The effects of core business divestments on innovations within the pharmaceutical industry: A public policy analysis* (Unpublished doctoral dissertation), George Mason University, Washington, DC.
- Marks, M. L., & Mirvis, P. H. (2001). Making mergers and acquisitions work: Strategic and psychological preparation. *Academy of Management Executive*, 15(1), 80-92.
- Meyer, A., James, G., & Geoffrey, B. (1990). Environmental jolt and industry revolutions: Organizational responses to discontinuous changes. *Strategic Management Journal*, 11(5), 93-110.
- Moschieri, C. (2011). The implementation and structuring of divestitures: The unit's perspectives. *Strategic Management Journal*, 32(4), 368-401.
- Moschieri, C., & Mair, J. (2008). Research on corporate divestitures: A synthesis. *Journal of Management & Organization*, 14(4), 399-422.
- Moschieri, C., & Mair, J. (2011). Adapting for innovation: Including divestitures in the debate. *Long Range Planning*, 44, 4-25.
- Muijs, D. (2011). *Doing Quantitative Research in Education with SPSS*. Thousand Oaks, CA: Sage Publications.
- Ness, D. (1979). The divestment decision process in large and medium-sized diversified companies: A descriptive model based on clinical studies. *International Studies of Management and Organizations*, 8(4), 67-96.
- Ness, D. (1981). Increase your divestment effectiveness. *Strategic Management Journal*, 2(2), 119-130.
- Ness, D. (1983). Simulation: A complementary method for research on strategic decision-making. *Strategic Management Journal*, 4(2), 175-185.
- Presser, S., Rothgeb, J., Couper, M., Lessler, J., Martin, E., Martin, J., & Singer, E. (2004). *Methods for testing and evaluating survey questionnaires*. Hoboken, NJ: John Wiley and Sons.
- Porter, M. (1976). Please note location of nearest exit: Exit barriers and planning. *California Management Review*, 19(2), 21-33.
- Porter, M. (1979). The structure within industries and companies' performance. *The Review of Economics and Statistics*, 61(2), 214-227.
- Porter, M. (1986). Competition in global industries: A conceptual framework. In M. Porter (Ed.), *Competition in global industries* (pp. 15-60). Cambridge, MA: Harvard University Press.

- Qi, H. (2005). Strategy implementation: The impact of demographic characteristics on the level of support received by middle managers. *Management International Review*, 45, 45-70.
- Rea, L. M., & Parker, R. (2005). *Designing and conducting survey research: A comprehensive guide*. San Francisco, CA: Jossey-Bass.
- Redman, T., Wilkinson, A., & Snape, E. (1997). Stuck in the middle? Managers in building societies. *Work, Employment and Society*, 11, 101-114.
- Rouleau, L. (2005). Micro-practices of strategic sensemaking and sensegiving: How middle managers interpret and sell change every day. *Journal of Management Studies*, 42, 1413-1441.
- Sachdev, J. C. (1976). Disinvestment: A corporate failure or a strategic success. *International Business of Management and Organizations*, 18(3), 112-130.
- Schmid, E. F., & Smith, D. A. (2002). Discovery, innovation and the cyclical nature of the pharmaceutical business. *Drug Discovery Today*, 7(10), 563-568.
- Shimizu, K., Hitt, M., & Vaidyanath, D. (2004). Theoretical foundations of cross-border mergers and acquisitions: A review of current research and recommendations for the future. *Journal of International Management*, 10(3), 307-353.
- Siegel, S., & Castellar, N. J. (1988). *Nonparametric Statistics for Behavioral Sciences*. New York, NY: Mc-Graw-Hill.
- Simões, V. (2005). Disinvestment by foreign-owned firms: Fact in search of framework. In L. Guyver & F. Beule (Eds.), *Transnational corporations and economic development: From internationalization to globalization*. Basingstoke, UK: Palgrave Macmillan.
- Vissak, T. (2010). Recommendations for using the case study method in international business research. *The Qualitative Report*, 15(2), 370-388.
- Xia, J., & Li, S. (2013). The divestiture of acquired subunits: A resources dependence approach. *Strategic Management Journal*, 34, 131-148.

El tamaño empresarial como factor que influye en el comportamiento innovador de las empresas mexicanas: un caso de estudio

José Luis Esparza Aguilar / jlesparza@uqroo.mx
Universidad de Quintana Roo, México

Teodoro Reyes Fong / teodoro_reyesf@ucol.mx
Universidad de Colima, México

Recibido: 21 de octubre de 2013

Aceptado: 28 de octubre de 2014

RESUMEN

El objetivo del trabajo es analizar el tamaño empresarial como factor que influye en el comportamiento innovador de las empresas. Se ha aplicado una encuesta a una muestra de 221 empresas en el sur del estado de Quintana Roo, México. Dentro de las variables de estudio se ha considerado a la innovación como la variable dependiente; y al tamaño empresarial, medido a través del empleo y las ventas, como la variable que influye en ese comportamiento. Para el análisis de los datos se han utilizado técnicas no paramétricas. Los resultados obtenidos muestran que el tamaño empresarial condiciona significativamente el comportamiento innovador de las empresas, y que las empresas de mayor tamaño son las que realizan mayor innovación.

Palabras clave: tamaño empresarial, pequeñas empresas, comportamiento innovador, Quintana Roo.

ABSTRACT

The purpose of this work is to analyze the enterprise size as a factor that influence the innovative behavior of enterprises. A survey of a sample of 221 businesses from the southern part of the state of Quintana Roo, México was used. Among the variables considered in the study, innovation of the business was used as the dependent variable. The enterprise size was used as the independent variable. For the data analysis, non parametric techniques were used. The results show that enterprise size significantly impacts the innovative behavior of businesses, and that larger businesses are more innovative.

Keywords: enterprise size, small businesses, innovative behavior, Quintana Roo.