

**Regulatory and Stakeholders Influences on  
Corporate Environmental Behavior in Costa Rica**

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## **Abstract**

This study aims to identify how institutional forces, such as regulatory and stakeholder pressures, are related to voluntary environmental behavior by hotel facilities participating in the Certification for Sustainable Tourism, a voluntary environmental program established by the Costa Rican government. This program is among the first third-party performance-based voluntary initiatives implemented in the developing world. Findings suggest that voluntary environmental programs that include performance-based standards and third-party certification may be effective in promoting beyond-compliance environmental behavior when they are complemented by isomorphic institutional pressures exerted by government environmental monitoring, and trade association membership. These results are consistent with institutional theory from the organizational sociology literature. Surprisingly, findings also indicate that foreign owned and multinational subsidiary facilities do not seem to be significantly correlated with higher participation and superior environmental performance in the Certification for Sustainable Tourism.

**Key words:** Latin America, Costa Rica, voluntary environmental programs, tourism, hotel industry, national parks, institutional theory, and multinational corporations.

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## 1. INTRODUCTION

In developing countries, proactive corporate environmental protection is considered an expensive luxury. The conventional wisdom in these countries is that given the economic limitations of businesses, governments, and consumers, the trade-off between environmental protection and competitiveness is significantly more important than in industrialized nations (Wehrmeyer and Mulugetta, 1999). For some policy makers and business managers this conventional wisdom generally implies that enactment of environmental regulations should be postponed until a more advanced level of economic development has been achieved (Rivera, 2002; Wheeler, 1999; Moser, 2001). Thus, a significant fraction of firms operating in these countries exhibits inadequate environmental management. At the same time, environmental agencies frequently lack clear mandates and the capacity to enforce and monitor compliance with environmental regulations (Blackman, 2000; Bell and Russell, 2002; Wheeler, 1999; Rivera, 2002; Moser, 2001; Dasgupta, 2000). Accordingly, it is surprising to observe that some firms are beginning to participate in voluntary environmental programs established in developing countries to promote beyond-compliance environmental behavior.

Despite the recent increase in the number of scholarly articles on voluntary environmental programs, very little is known about how these programs work in the developing world. These initiatives are increasingly promoted as an efficient incentive-based alternative for encouraging corporate environmental protection. Previous studies focused on industrialized nations have shown that firms participate in these initiatives for different reasons. Some participate because these programs can be more cost efficient than mandatory regulations and

they allow firms to acquire innovative pollution prevention technology (Khanna, 2001; Lyon and Maxwell, 1999; Wirth and Luzar, 1999; Arora and Cason, 1996). Firms may also participate to improve their environmental reputation and gain differentiation advantage benefits such as price premiums and enhanced sales (Rivera, 2002, Khanna, 2001; Bray, et al, 2002). Other firms may also participate for altruistic reasons motivated by CEOs' perceived moral obligation (Andrews, 1998; Winter and May, 2001; Steam, et al, 2003). Still others may opportunistically enroll in voluntary initiatives to disguise their poor environmental behavior and to preempt increased government oversight, penalties, and/or regulations (King and Lenox, 2000; Rivera, 2002; Raedeke, et al, 2001; Meegeren, 2001; Khanna, 2001; Andrews, 1998).

This study aims to identify how institutional forces, such as regulatory and stakeholder pressures, are related to voluntary environmental behavior by firms operating in developing countries. Do institutional pressures increase participation and improve the effectiveness of voluntary environmental programs? Do foreign owned facilities show different behavior than local ones? Is participation in voluntary programs related to superior beyond-compliance environmental performance? This research seeks to answer these questions by using empirical evidence from a sample of hotels participating in the Certification for Sustainable Tourism (CST), a voluntary initiative established in Costa Rica. Additionally, by focusing on service firms operating in a developing country, this study intends to help advance the literature on voluntary environmental programs beyond its almost exclusive focus on the manufacturing sector of industrialized nations.

Results indicate that voluntary environmental programs that include performance-based standards and third-party certification may be effective in promoting beyond-compliance environmental behavior when they are complemented by institutional pressures exerted by government environmental monitoring, and trade association membership. Surprisingly, findings also suggest that foreign owned and multinational subsidiary facilities do not seem to be significantly correlated with higher CST participation and superior beyond-compliance environmental performance.

## **2. BACKGROUND**

In 1997, the Costa Rican Ministry of Tourism began organizing a voluntary environmental program for hotels, the Certification for Sustainable Tourism (CST). This voluntary initiative was conceived as an alternative environmental policy instrument to address the increased environmental problems generated by the boom of tourism and hotel facilities in Costa Rica. More than 1.1 million tourists visited the country in 2001, a four fold increase since 1987 (ICT, 2002). This extraordinary rate of growth has made tourism the most important sector of the Costa Rican economy. In 2001, hotels and other tourism related businesses generated about 45 percent of total foreign revenue produced by Costa Rica (ICT, 2002). During the last decade more than one third of the foreign direct investment to the country, about US\$1.2 billion, has been devoted to establishing hotels and related businesses (Rivera, 1998). Currently, about 2000 hotels are operating in the country. Remarkably, more than 75 percent of these hotels did not exist in the mid 1980s (INCAE 2002; ICT 2002). Most hotels are small, offer basic services, compete based on price, and are located close to national parks and beaches (Rivera, 2002).<sup>i</sup>

Unfortunately, the rapid growth of visitors and hotel investment has led to significant environmental problems around the most popular parks and beaches. Hotel construction and operations, in particular, are associated with the pollution of rivers and beaches, deforestation, and destruction of wetlands (Rivera, 2002, Wildes, 1998; Weinberg, et al, 2002; Stem, et al, 2003; ). The CST program aims to ameliorate these environmental problems by certifying the adoption of beyond-compliance environmental practices. The certification process is carried out by third-party audit teams based on specific environmental performance standards that exceed requirements of current regulations. A National Accreditation Board that includes representatives of the Ministry of Tourism, environmental organizations, the local hotel trade association, and academic institutions, is responsible for establishing the CST standards and overseeing the auditing process (Rivera, 2002; Jones, et al., 2001).

Like the general quality ratings that classify hotels from zero to five stars, the CST program rates hotel environmental performance by granting zero to five ‘green leaves’ of beyond-compliance. At the beginning of 2002, nearly 200 hotels were participating in the CST and 54 had received certification on a first come first serve basis. Certification results and CST ratings can be accessed online at: <http://www.turismo-sostenible.co.cr/>. Currently, the CST program is being implemented in other Central American countries. Notably, in 2001, the CST was also adopted as the official voluntary environmental certification program of the World Tourism Organization (Rivera, 2002).

The organizers of the CST program conceived it as an incentive-based environmental policy instrument. It is assumed that third-party certification of beyond-compliance environmental performance can allow participant hotels to gain higher sales and/or price premiums from environmentally aware consumers who visit Costa Rica. These financial benefits are expected to promote higher participation and superior environmental performance by participant hotels. A recent assessment of the CST program shows that indeed hotel room price premiums are significantly correlated with certified environmental performance above two green leaves of beyond-compliance (Rivera, 2002).

### **3. THEORY AND HYPOTHESES**

Neo-institutional theory from the organizational sociology literature stresses that not all business choices are intended and that not all outcomes are the result of managers' rational economic decisions (DiMaggio and Powell, 1983, 1991; March and Olsen, 1984, 1989; Oliver, 1991; Scott, 1995). This theory proposes that external norms, values, and traditions that provide a sense of social legitimacy to organizations also influence their management choices and practices. Social legitimacy is seen as a key factor in determining a firm's long-term profitability and survival. The result is a social construction process in which external entities influence the selection and implementation of strategies that motivate organizations to become alike (DiMaggio and Powell, 1983, 1991; March and Olsen, 1984, 1989; Oliver, 1991; Scott, 1995). DiMaggio and Powell (1983, 1991) classify isomorphic institutional influences as coercive, normative, and mimetic to respectively emphasize the role of pressures exerted by government agencies, professions, and social expectations.

### Coercive forces/pressures.

Certain strategic choices can be imposed coercively through a sanction or threat, as in the case of a government legally mandating environmental standards or a major corporation requiring a specific code of environmental conduct from its supplier (Meyer and Rowman, 1977; Grasmick et al., 1991; May and Winter, 1999; Winter and May, 2001; Meegeren, 2001; Delmas, 2002). For instance, Ford and General Motors demand ISO-14001 certification from their suppliers in Mexico, China, and Brazil.

### Normative forces/pressures.

Professional networks, industry associations, environmental organizations, and academic institutions, among others, exert significant influence by diffusing values and norms of conduct that promote standardized behavior from their members. For example, the Responsible Care Program requires improved environmental management and safety practices by all the members of the American Chemical Council (King and Lenox, 2000). Moreover, the voluntary practices promoted by this program are also being adopted by multinational subsidiaries operating in developing countries (Garcia-Johnson, 2000). Normative pressures do not necessarily have to involve explicit sanctions for non-complying firms; opprobrium and public embarrassment have proven to be effective mechanisms for motivating adherence to established values and norms (Delmas, 2002; Bray, et al, 2002; Stem, et al, 2003; Winter and May, 2001; Meegeren, 2001; Hoffman, 1999; Grasmick et al., 1991).



### Mimetic forces/pressures.

Firms also adopt strategies through a modeling process based on the practices of other organizations that are perceived as successful. For example, small forestry operations in Latin America and South East Asia have significantly increased adoption of the Smart Wood program after major multinational forestry corporations decided to participate. This emulating behavior is a means of appearing legitimate or up-to-date when managers are uncertain about the sources of competitive advantage (DiMaggio and Powell, 1983).

### **(a) Neo-institutional theory and voluntary environmental behavior**

A dominant assumption of recent empirical work on beyond-compliance corporate behavior has been that the selection of corporate environmental practices is the result of economic rationality that emphasizes financial cost and benefits (Arora and Cason, 1996; Khanna, 2001). Institutional theory, on the other hand, highlights the importance of considering the role of stakeholders, political influences, and social factors in order to predict corporate environmental management choices (Delmas, 2002; Bray, et al, 2002; Raedeke, et al, 2001; King and Lenox 2000; Hoffman, 1999;). From this perspective, a firm's enrollment in a voluntary environmental initiative can be explained as a social construction process intended to obtain legitimacy. In this social process, different stakeholders exert coercive, normative and mimetic pressures that promote participation and isomorphic adoption of beyond-compliance environmental management practices. Consumers, government agencies, the media, industry associations, and environmental groups are usually the most influential stakeholders. Using institutional mechanisms such as public embarrassment, even voluntary initiatives that lack

sanctions and third-party oversight may be able to motivate isomorphic adherence to beyond-compliance standards among participants (Delmas, 2002; King and Lenox, 2000; Hoffman, 1999). Additionally, most voluntary programs offer to provide technical assistance to facilitate the adoption of proactive environmental management practices by participant facilities. The following paragraphs use the insights from neo-institutional theory to develop hypotheses about factors and facility level characteristics related to a higher likelihood of participation in voluntary programs and to higher beyond-compliance environmental performance.

#### Government monitoring.

Mandatory environmental regulations that are combined with monitoring and explicit penalties for non-compliance have been shown to be an effective mechanism for motivating firms to improve their environmental practices (Winter and May, 2001; Meegeren, 2001; Cashore and Vertinsky, 2000; Henriques and Sadorsky, 1996). Moreover, the ability of the government to influence firms' behavior has been found to be significant, even when regulations have not been enacted and no specific penalties are imposed (Raedeke, et al, 2001; Cashore and Vertinsky, 2000; Khana and Damon 1999). Threats of new environmental regulations or explicit government support of beyond-compliance environmental practices are known to be significant incentives for firms to participate in voluntary environmental initiatives (Winter and May, 2001; Cashore and Vertinsky, 2000; Khanna, Quimio, and Bojilova, 1998). These government pressures have a higher impact on firms that face greater monitoring because they are more likely to be affected by government decisions (Cashore and Vertinsky, 2000; Henriques and Sadorsky, 1996; Raedeke, et al, 2001). Firms facing higher government oversight also tend to

have more information about regulatory and enforcement trends. These arguments suggest the following hypotheses:

***Hypothesis 1:** Facilities facing higher government monitoring are more likely to participate in voluntary environmental programs.*

***Hypothesis 2:** Government monitoring is positively related to beyond-compliance environmental performance.*

Affiliation to industry trade associations.

Previous research has also found that firms that are members of trade associations face stronger normative and mimetic pressures to show exemplary environmental performance and to get involved in voluntary environmental initiatives that aim to promote proactive environmental management (Delmas, 2002; Garcia-Johnson, 2000; King and Lenox, 2000; Hoffman, 1999; Khanna and Damon, 1999; Grasmick et al., 1991). A few environmentally irresponsible facilities can significantly reduce the perceived environmental credibility of an entire industry. Hence, industry associations are increasingly promoting voluntary environmental management standards and providing technical assistance to poorly performing facilities (King and Lenox, 2000; Rivera, 2002; 2001). Trade groups have a significant interest in maintaining a positive industry wide environmental reputation to avoid increased scrutiny from environmentalists, the media, and regulators that may lead to the imposition of new regulations (King and Lenox, 2000). For

instance, the main industry association of the hotel sector in Costa Rica has been an active supporter of the CST program. This reasoning suggests the following hypotheses:

***Hypothesis 3:** Industry association member facilities are more likely to participate in voluntary environmental programs.*

***Hypothesis 4:** Trade association membership is positively related to beyond-compliance environmental performance.*

#### Facility size.

Larger facilities are more visible to customers, the media, environmentalists, and government agencies. Thus, they are more likely to participate in voluntary initiatives with the intention of signaling credible superior environmental performance (Darnall, 2001). Previous research has shown that governments, the media, and environmental organizations are more likely to focus on the environmental practices of more visible facilities (King and Lenox, 2000; Arora and Cason, 1996; Hettige, et al., 1996). Because of their assumed greater resources, such facilities are held to higher standards by stakeholders and are expected to play a leadership role in environmental protection by showing beyond-compliance environmental performance. They also are more likely to enjoy economies of scale when implementing environmental protection measures (Dasgupta, et al., 2000; Hettige, et al., 1996; Wheeler, 1999). These arguments suggest the following hypotheses:

*Hypothesis 5: Larger facilities are more likely to participate in voluntary environmental programs.*

*Hypothesis 6: Facility's size is positively related to beyond-compliance environmental performance.*

Foreign owned and multinational subsidiary facilities.

Foreign owned facilities and multinational subsidiaries are also more visible to local and international stakeholders leading to heightened expectations and monitoring of their environmental practices (Christman, 2001; Wheeler, 1999). These facilities are also more likely to have easier access to cost efficient pollution prevention technologies developed to respond to industrialized countries' stringent environmental standards (Christman, 2001, Wheeler, 1999). Hence, foreign owned facilities and multinational subsidiaries can be expected to be more likely to participate in voluntary programs that promote the adoption of beyond-compliance environmental standards (Neumayer, 2001, Christman, 2001; Wheeler, 1999; Garcia-Johnson, 2000). Endorsement of voluntary environmental programs allows multinational subsidiaries and foreign investors to improve their image with their home country consumers and influential international environmental groups (Christman, 2001; Garcia-Johnson, 2000). Other authors also argue that foreign investors and managers motivated to preempt mandatory command and control regulations are active supporters of voluntary programs that promote beyond-compliance environmental practices (Christman, 2001; Garcia-Johnson, 2000). Drawing on the previous reasoning the following hypotheses can be proposed:

***Hypothesis 7:** Foreign owned facilities are more likely to participate in voluntary environmental programs.*

***Hypothesis 8:** Foreign ownership is positively related to beyond-compliance environmental performance.*

***Hypothesis 9:** Multinational subsidiary facilities are more likely to participate in voluntary environmental programs.*

***Hypothesis 10:** Multinational subsidiary facilities show a positive relationship with beyond-compliance environmental performance.*

#### **4. RESEARCH METHODOLOGY**

##### **(a) Data collection and sample**

Following Dillman's Total Design Method (Dillman, 1978), I developed and pre-tested a survey questionnaire to gather information on hotels' basic characteristics. The top managers of 164 hotels operating in different regions of Costa Rica agreed to provide information and completed the survey during face-to-face interviews. This final sample of 164 included all 52 hotels that as of December 2000 had been audited and certified by the CST program. The other 112 hotels were obtained from a stratified random survey of 250 hotels (yielding a 44.8 percent response rate).<sup>ii, iii</sup> Data collected about hotel basic characteristics (e.g. size, location, quality

rating, and ownership) was verified using archival information available at the Costa Rican Chamber of Tourism, the Ministry of Tourism, and the Costa Rican Association of Small Hotels.

## **(b) Data analysis**

### Regression analysis technique.

To test the hypotheses proposed, I used a recursive two-stage modeling process originally developed by Heckman (1978) that controls for self-selection bias in the evaluation of voluntary choices. This method has been adapted to evaluate environmental and economic benefits generated by voluntary environmental programs (Lee and Trost, 1978; Hartman, 1988; Khanna and Damon, 1999; Welch, Mazur, and Bretschneider, 2000; Khanna, 2001; Rivera, 2002). Controlling for self-selection bias is necessary because firms that anticipate higher benefits from joining a voluntary initiative are expected to be more likely to participate (Heckman, 1978, 1979; Hartman, 1988; Maddala, 1983; Khanna and Damon, 1999).

In the first stage a probit regression identifies variables significantly related to participation (Maddala, 1983; Khanna and Damon, 1999). This probit regression is also used to estimate the probability of participation for each hotel. In the second stage, an ordinary linear regression (OLS) models the environmental performance of hotels certified by the CST program. To control for self-selection bias the OLS regression includes as one of its independent variables the probability of participation estimates calculated during the first stage of the analysis (Maddala, 1983; Khanna and Damon, 1999).

### **(c) Variable measures**

Variable metrics are described in the order in which they appear in the theory section, beginning with dependent variables and following with independent ones.

#### Participation in the CST program.

It was coded using a dummy variable equal to one for hotels enrolled in the CST program by December 2000 and zero otherwise.

#### Beyond-compliance environmental performance.

Lack of available data on firms' environmental performance is a pervasive problem in developing countries. There is little agreement about appropriate measures and existing publicly available data is generally self-reported (Wheeler, 1999; Rivera 2002). The CST program has probably generated the first third-party database on beyond-compliance environmental performance for service sector firms operating in a developing country.

For the purpose of this research, I used CST percentage scores as a measure of hotel beyond-compliance environmental performance. The CST program certifies hotels based on 153 beyond-compliance standards divided into four general areas of environmental protection that include: (1) management of surrounding habitat, (2) management of hotel facilities, (3) guest environmental education programs, and (4) cooperation with local communities (see Table 1).



**Table 1. CST general areas of beyond-compliance environmental protection\***

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**A. Management of hotel surrounding habitat**

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1. Policies and programs
2. Emissions and wastes
3. Gardens
4. Natural areas
5. Protection of flora and fauna

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**B. Environmental management of hotel facilities**

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6. Formulation of policies
7. Water consumption
8. Energy consumption
9. General supplies consumption
10. Waste management
11. Employee training

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**C. Guest environmental education**

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12. Communication of environmental programs
13. Room information and management
14. Incentives for environmental awareness
15. Measurement of environmental satisfaction

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**D. Cooperation with local communities**

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16. Direct benefits to local communities
  17. Indirect benefits to local communities
  18. Contribution to local culture
  19. Contribution to public health
  20. Contribution to local infrastructure and safety
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\* Source: Rivera, J. (2002). Assessing a voluntary environmental initiative in the developing world: The Costa Rican Certification for Sustainable Tourism. Policy Sciences, Vol, 35:333-360.

Each CST standard assesses adoption of a specific environmental practice and contributes one to three points to the final CST certification score depending on its level of importance assigned by the CST National Accreditation Commission. The final CST percentage score received by each hotel is calculated by computing the coefficient between its total adoption score for all CST standards and its maximum possible score to yield percentage performance rates (Jones, et al., 2001; Rivera 2002).

Government monitoring.

Hotel location was used as a proxy for the different levels of government monitoring faced by hotel facilities. Previous research in Costa Rica has shown that the level of environmental monitoring for hotels is higher for hotels located close to national parks, medium for hotels located in the greater metropolitan area of the Costa Rican Capital (San Jose), and lower for hotels situated close to the beach (Wildes, 1998; Jones, et al., 2001; Rivera, 2002; Honey, 1999). Dummy variables were used to identify park, beach and city locations. Park and beach categories included those hotels situated within 10 miles of a national park or the beach respectively. City hotels were those operating in the greater metropolitan area of San Jose.

Trade association membership, was identified using a dummy variable equal to one for members of the main hotel industry association, the Costa Rican Chamber of Tourism and zero otherwise.

Hotel size (size) was measured as the logarithm of the number of hotel rooms.

Foreign ownership (*foreign investors*) was measured by a dummy variable equal to one for hotels with majority ownership by foreign investors and zero otherwise.

Multinational subsidiaries were coded using a dummy variable equal to one for those facilities that were either owned or managed by an international chain of hotels (e.g., Marriott, Best Western, Spanish Barceló) and zero otherwise.

Hotel quality (*quality*) was measured using the number of ‘stars’ assigned to each hotel by the Costa Rican Ministry of Tourism based on international quality standards developed by Triple A, Mobil and Michelin.

## **5. RESULTS AND DISCUSSION**

### **(a) Descriptive Results**

Frequency distributions and other descriptive statistics are displayed in Table 2. Of the 164 hotels that completed the survey, 52 had undergone CST certification. Nearly 10 percent of the certified hotels show beyond-compliance environmental performance scores (CST scores) above 80 percent. Most hotels, however, showed CST scores ranging between 20.1 and 80 percent.

**Table 2. Frequency distributions and comparison of means by CST status**

| Variable                  | Total Sample |             | Not participating in the CST |             | Participating in the CST      |             |        |
|---------------------------|--------------|-------------|------------------------------|-------------|-------------------------------|-------------|--------|
|                           | N            | Percent     | N                            | Percent     | N                             | Percent     |        |
| CST participation         |              |             | 97                           | 59.15%      | 67                            | 40.85%      |        |
| Environmental performance | 0% to 20%    |             |                              |             | 0                             | 0%          |        |
|                           | >20% to 40%  |             |                              |             | 10                            | 19.23%      |        |
|                           | >40% to 60%  |             |                              |             | 21                            | 40.38%      |        |
|                           | >60% to 80%  |             |                              |             | 16                            | 30.77%      |        |
|                           | >80 to 100%  |             |                              |             | 5                             | 9.62%       |        |
|                           | Total        |             |                              |             | 52                            | 100%        |        |
|                           | Mean         |             |                              |             | 56.48 (15.60) <sup>a</sup>    |             |        |
| Non-CST certified         |              |             |                              |             | 15                            |             |        |
| Foreign Investors         | No           | 83          | 50.61%                       | 52          | 53.61%                        | 31          | 46.27% |
|                           | Yes          | 78          | 47.57%                       | 44          | 45.36%                        | 34          | 50.75% |
|                           | Missing data | 3           | 1.83%                        | 1           | 1.03%                         | 2           | 2.99%  |
|                           | Total        | 164         | 100%                         | 97          | 100%                          | 67          | 100%   |
|                           |              |             |                              |             | $\chi^2: 1.491$               |             |        |
| Multinational subsidiary  | No           | 154         | 93.90%                       | 96          | 99.0%                         | 58          | 86.6%  |
|                           | Yes          | 10          | 6.10%                        | 1           | 1.0%                          | 9           | 13.4%  |
|                           | Total        | 164         | 100%                         | 97          | 100%                          | 67          | 100%   |
|                           |              |             |                              |             | $\chi^2: 10.645^{**}$         |             |        |
| Location                  | Beach        | 44          | 26.8%                        | 31          | 32.0%                         | 13          | 19.4%  |
|                           | City         | 32          | 19.5%                        | 16          | 16.5%                         | 16          | 23.9%  |
|                           | Park         | 88          | 53.7%                        | 50          | 51.5%                         | 38          | 56.7%  |
|                           | Total        | 164         | 100%                         | 97          | 100%                          | 67          | 100%   |
|                           |              |             |                              |             | $\chi^2: 2.438$               |             |        |
| Quality (# of stars)      | 0            | 76          | 46.3%                        | 66          | 68.0%                         | 10          | 14.9%  |
|                           | 1            | 3           | 1.8%                         | 2           | 2.1%                          | 1           | 1.5%   |
|                           | 2            | 7           | 4.3%                         | 3           | 3.1%                          | 4           | 6.0%   |
|                           | 3            | 53          | 32.3%                        | 20          | 20.6%                         | 33          | 49.2%  |
|                           | 4            | 23          | 14.0%                        | 6           | 6.2%                          | 17          | 25.4%  |
|                           | 5            | 2           | 1.2%                         | 0           | 0.0%                          | 2           | 3.0%   |
|                           | Total        | 164         | 100%                         | 97          | 100%                          | 67          | 100%   |
|                           |              |             |                              |             | $\chi^2: 48.318^{***}$        |             |        |
|                           | Mean         | 1.69 (1.67) |                              | 0.95 (1.45) |                               | 2.78 (1.34) |        |
|                           |              |             |                              |             | $t\text{-test: } -8.16^{***}$ |             |        |

**Table 2. Continuation**

|                   |              |               |       |                              |       |               |       |
|-------------------|--------------|---------------|-------|------------------------------|-------|---------------|-------|
| Size (# of rooms) | 0 –10        | 42            | 25.8% | 37                           | 38.1% | 5             | 7.5%  |
|                   | 10< - 20     | 44            | 27.0% | 29                           | 29.9% | 15            | 22.4% |
|                   | 20< - 30     | 37            | 22.7% | 18                           | 18.6% | 19            | 28.4% |
|                   | 30< - 40     | 15            | 9.2%  | 8                            | 8.2%  | 7             | 10.4% |
|                   | 40< - 50     | 7             | 4.3%  | 2                            | 2.1%  | 5             | 7.5%  |
|                   | 50< - 100    | 9             | 5.5%  | 1                            | 1.0%  | 8             | 11.9% |
|                   | 100<         | 9             | 5.5%  | 2                            | 2.1%  | 7             | 10.4% |
|                   | Missing data | 1             | 0.6%  | 0                            |       | 1             | 1.5%  |
| Total             | 164          | 100%          | 97    | 100%                         | 67    | 100%          |       |
|                   |              |               |       | $\chi^2: 33.665^{***}$       |       |               |       |
|                   | Mean         | 31.08 (41.68) |       | 19.82 (25.77)                |       | 47.62 (53.67) |       |
|                   |              |               |       | t-test: -4.41 <sup>***</sup> |       |               |       |
| Trade association | No           | 133           | 81.1% | 91                           | 93.8% | 42            | 62.7% |
| Membership        | Yes          | 31            | 18.9% | 6                            | 6.2%  | 25            | 37.3% |
|                   | Total        | 164           | 100%  | 97                           | 100%  | 67            | 100%  |
|                   |              |               |       | $\chi^2: 25.048^{***}$       |       |               |       |

\* prob<0.10 ; \*\* prob<0.05; \*\*\* prob < 0.01

<sup>a</sup> Standard deviations are in parenthesis.

### (b) Participation in the CST program<sup>iv</sup>

Model 1 in Table 3 presents the findings of the probit analysis of hotel participation in the CST program. This model shows a statistically significant overall fit ( $p<0.05$ ) and correctly classifies 87.8% of the decision to participate in the CST program.

As predicted, the results suggest that park hotels facing higher government monitoring (Hypothesis 1) appear to be statistically more likely to participate in the CST program than beach hotels ( $p<0.05$ ). Also, as expected, trade association membership (Hypothesis 3) seems to show a positive and statistically significant relationship with the CST program adoption ( $p<0.05$ ). These findings suggest that institutional pressures directly wielded by the government and industry associations may play an important role

in promoting adoption of voluntary environmental programs (Delmas, 2002; Rivera, 2002; King and Lenox, 2000; Cashore and Vertinsky, 2000; Hoffman, 1999).

**Table 3. Regression results**

| <b>Model 1: Probit regression</b><br>(Dependent variable:<br>Participation in the CST) |                                   | <b>Model 2: OLS regression</b><br>(Dependent variable:<br>CST environmental performance) |                                 |
|--|-----------------------------------|--|---------------------------------|
| Constant   | -2.613***<br>(0.646) <sup>b</sup> | Constant   | 38.176**<br>(2.65) <sup>b</sup> |
| Foreign Investors  | 0.043<br>(0.256)                  | Foreign Investors  | 5.404<br>(1.26)                 |
| Location:  |                                   | Location:  |                                 |
| City   | 0.036<br>(0.382)                  | City   | 19.776***<br>(3.60)             |
| Park   | 0.873***<br>(0.325)               | Park   | 26.565***<br>(2.99)             |
| Multinational subsidiary   | 0.343<br>(0.664)                  | Multinational subsidiary   | -0.514<br>(-0.08)               |
| Quality  | 0.400***<br>(0.099)               | Probability of participation   | -55.988*<br>(-1.85)             |
| Size   | 0.325*<br>(0.193)                 | Quality  | 5.582<br>(1.41)                 |
| Trade association membership   | 1.00***<br>(0.379)                | Size   | 2.567<br>(0.56)                 |
| N  | 159                               | Trade association membership   | 22.888**<br>(2.38)              |
| -2 Log L   | 139.954                           | N  | 49                              |
| ?2 for covariates  | 77.987***                         | F-Value  | 2.78**                          |
| Percent correctly classified   | 87.8                              | R2   | 0.36                            |
|  |                                   | Adj-R2   | 0.23                            |

<sup>b</sup> Probit Model 1: Standard errors are in parentheses.

<sup>c</sup> OLS Model 2: t-values are in parentheses

Prob: ?\* prob<0.10; \*\* prob<0.05; \*\*\* prob < 0.01

Larger hotels as well appear to be more likely to participate in this program, although this relationship is statistically significant only at the 90 percent confidence level ( $p < 0.1$ ). This result suggests that increased facility visibility generated by larger size may not attract institutional pressures as strong as those generated by park location and trade association membership.

Surprisingly, foreign owned facilities (Hypothesis 7) and those affiliated with multinational hotel chains (Hypothesis 8) do not seem to be significantly more likely to participate in the CST program than locally owned hotels ( $p < 0.05$ ). These results challenge the conventional wisdom about the behavior of foreign owned and multinational subsidiary facilities operating in developing countries (Neumayer, 2001, Christman, 2001; Wheeler, 1999; Garcia-Johnson, 2000; Delmas, 2002). Supporters of this conventional wisdom posit that easier access to innovative pollution prevention technology and enhanced scrutiny by international and local stakeholders leads foreign owned and multinational subsidiary facilities to be more likely to participate in voluntary environmental programs (Neumayer, 2001, Christman, 2001; Wheeler, 1999; Garcia-Johnson, 2000).

Two explanations can be offered to explain these surprising results. First, it can be argued that hotel facilities may not be perceived as environmentally damaging as manufacturing ones. Accordingly, they may not yet be experiencing strong institutional pressures from international and local stakeholders to demonstrate their “greenness” by

endorsing voluntary environmental programs (Darnall, 2001; King and Shaver, 2001; Christman, 2001). Second, a case can also be made that multinational corporations and foreign investors looking to reduce production costs may be taking advantage of developing countries' lax regulatory and enforcement conditions. Thus, they would tend to implement minimum reactive environmental management practices and show little interest in voluntary programs that promote beyond-compliance environmental performance (Neumayer, 2001; Porter, 1999; Weinberg, et al, 2002).

**(c) Beyond-compliance environmental performance<sup>v, vi</sup>**

Results of the environmental performance OLS regression are displayed in Table 3, Model 2. The overall model fit tests indicate that the independent variables significantly account for 23 percent of the variance in environmental performance (Adjusted R-square =0.23;  $p < 0.05$ ).

Model 2's findings suggest that, after controlling for other factors, park hotels (Hypothesis 2) and trade association membership (Hypothesis 4) appear to be significantly associated with higher CST environmental scores ( $p < 0.05$ ). These results highlight, as predicted by institutional theory, that higher government monitoring pressures and normative industry association influences tend to not only be associated with higher CST participation but are also related to superior beyond-compliance environmental performance.



City hotels also appear to be significantly correlated with higher CST scores than beach hotels ( $p < 0.05$ ). A preliminary analysis of the CST program has suggested that city hotels exhibit higher environmental performance because they have easier access to environmental management expertise and resources (Jones, et al., 2001). City hotels may also exhibit higher CST scores because their location in the metropolitan area of San Jose (the Costa Rican capital) imposes enhanced demands for isomorphic environmental management behavior from government agencies, environmentalists, the media, and other stakeholders headquartered in San Jose.

Surprisingly, hotel size (Hypothesis 6) does not appear to be significantly correlated with higher CST environmental performance scores ( $p < 0.05$ ). These results provide additional support to suggest that in Costa Rica the increased visibility of larger hotel facilities may not yet attract enough institutional pressures from government agencies and stakeholders to promote significant adoption of beyond-compliance environmental practices. This result is also surprising given that larger facilities are known to enjoy economies of scale in the adoption of superior environmental management practices (Delmas, 2002; King and Lenox, 2000; Khanna and Damon, 1999; Hettige, et al., 1996).

Foreign owned (Hypothesis 9) and multinational subsidiary hotels (Hypothesis 10) do not seem to show a statistically significant relationship to higher beyond-compliance environmental performance ( $p < 0.05$ ). Moreover, the regression coefficient

for multinational chain hotels seems to indicate a negative relationship to CST environmental scores. These unexpected findings may be attributed to the wide variance in beyond-compliance behavior exhibited by these two hotel categories. To be sure, some of the hotels with the highest CST environmental scores are either foreign owned or multinational subsidiaries. Yet, some foreign owned and multinational subsidiary hotels in the sample also receive very low CST environmental scores.

These results are surprising given that foreign owned facilities, and particularly multinational subsidiaries are thought to face higher environmental demands from stakeholders (Wheeler, 1999; King and Shaver, 2001; Garcia-Johnson, 2000; Christman, 2001). They are also known for having more resources and easier access to environmental expertise available in the international markets (Wheeler, 1999; King and Shaver, 2001; Garcia-Johnson, 2000; Christman, 2001).

Multinational and foreign owned hotels displaying lower environmental performance than locally owned hotels may be opportunistically participating in the CST program trying to improve their 'green' reputation without significantly improving their environmental practices. Follow up interviews with the general managers of these low performing hotels tend to indicate that they decided to participate in the CST to avoid increased monitoring and more stringent regulations. These managers appear to perceive the CST program as a preferred, yet expensive, alternative to more rigorous environmental regulations and monitoring.

Recent facility level empirical studies implemented in other developing countries suggest that this mixed environmental performance behavior is not unique to the Costa Rican hotel industry. Evidence from manufacturing facilities in South and Southeast Asia (Pargal and Wheeler, 1996; Hettige, et al., 1996), Korea (Aden, et al., 1999), and Mexico (Dasgupta, et al., 2000) indicate lack of statistically significant association between foreign ownership and superior environmental performance.<sup>vii</sup>

Finally, the ‘probability of participation’ variable derived from the probit model (Model 1) and included in the OLS Model 2 to control for self-selection bias suggests a negative association with CST environmental performance scores. This association is, nevertheless, statistically significant only at the 90 percent confidence ( $p < 0.1$ ). This finding implies that hotels that are more likely to participate in the CST program may actually be associated with lower levels of beyond-compliance environmental performance. For some hotels that enrolled in the program and expected to receive high CST scores, these results could indicate a lack of environmental management expertise and resources to keep up with the paperwork and management changes required by the CST. In fact, absence of technical assistance was a common complaint expressed by the hotel managers interviewed for this study. On the other hand, this result also suggests opportunistic behavior by some hotel facilities that expect to improve their ‘green’ reputation without actually adopting the environmental management practices required by the CST program.

## 6. CONCLUSIONS

Previous research suggests that Costa Rica's growing ecotourism industry and outstanding national park system offer economic incentives for promoting participation and higher environmental performance in the CST program (Rivera, 2002; INCAE, 2002; Stem, et al, 2003; Weinberg, et al, 2002; Honey, 1999; Gentry, 1998). However, the results of this study indicate that third-party performance-based voluntary programs such as the CST may not work effectively by solely relying on market incentives. Even when including specific environmental performance standards and third party oversight, voluntary initiatives may need to be complemented by government environmental monitoring and normative isomorphic pressures arising from industry association membership. These two factors tend to be significantly associated with a higher likelihood of participation in the CST and higher beyond-compliance environmental performance. In sum, they appear to be necessary conditions for making the CST program an effective environmental policy instrument for promoting beyond-compliance environmental behavior by companies.

Despite some exceptional cases, multinational subsidiary and foreign owned hotels do not yet seem to be showing higher beyond-compliance environmental performance in Costa Rica. These hotels do not appear to be significantly more likely to enroll in the CST program and once enrolled do not tend to exhibit significantly higher

beyond-compliance environmental performance than locally owned facilities. For multinational hotel chain facilities these results are even more startling given their greater resources, easier access to technology, and longer experience responding to higher globalization pressures and more stringent regulations in industrialized countries.

These findings suggests that caution needs to be used when assuming that foreign investors and multinational subsidiaries operating in developing countries bring with them advanced environmental management technologies and show superior environmental performance than domestic firms (Wheeler, 1999 and 2001; Weinberg, et al, 2002).

The evidence from the CST program indicates that governments in developing countries cannot take for granted the superior environmental management behavior of foreign owned or multinational facilities. As in the case of the CST program, some multinationals and foreign investors may play a remarkable leadership role in supporting the creation of the voluntary environmental programs and displaying some of the highest beyond-compliance environmental performance. However, other multinational subsidiaries and foreign owned facilities may also show a more reactive environmental behavior displaying little interest in participating in voluntary programs and/or opportunistically participating in these initiatives.

## **7. LIMITATIONS AND FUTURE RESEARCH**

The discussion of results and the conclusions from this study need to be considered in the context of four important limitations. First, social desirability and common variance problems could have been generated by the use of a survey instrument to collect data on hotel basic characteristics (Pedhazur and Schmelkim, 1991). To minimize this problem, the survey information collected was triangulated with archival data available at the Ministry of Tourism and the Costa Rican Chamber of Tourism.

Second, despite the statistical significance of the regression models, it is important to highlight that the relatively small sample size involved in the analysis limits the precision of the findings.<sup>viii</sup> In the future, as the CST program expands, assessments of the CST need to take advantage of the availability of data to use a larger sample of hotels.

Third, the use of cross-sectional data precludes identification of any causal relationships between institutional pressures exerted over hotels and their participation and environmental performance in the CST program. Future research needs to collect longitudinal data to determine the causality of the relationships identified here.

Finally, the generalizability of the findings to other countries and other voluntary programs is prevented by the exclusive focus of this study on the implementation of the

CST program in Costa Rica. Additional assessment of voluntary programs implemented in other countries and other industries is clearly necessary. Despite these limitations, I hope that this study can provide initial guidance to the policy makers in charge of expanding the CST program to other developing countries.

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## End-Notes

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<sup>i</sup> The average hotel size is 16 rooms. Five-star hotels represent less than 2 percent of the industry (INCAE 2002; ICT 2002).

<sup>ii</sup> Using power analysis and assuming ‘small’ effect size for the independent variables, it was determined that a minimum sample of 138 observations was necessary to have an 80% chance of rejecting a false null hypothesis at 95% confidence (Cohen and Cohen 1981, 59).

<sup>iii</sup> No comprehensive list of all the hotels operating in Costa Rica was found. Thus, a sample frame list including 649 hotels was prepared. Sources of information consulted for building the sample frame included: Archival data available at the Ministry of Tourism, the Costa Rican Chamber of Tourism, and the Association of Small Hotels, the 2000 Costa Rican Phone Directory, and the most popular travel book guides to Costa Rica. The travel guides consulted were: *A New Key to Costa Rica* (Blake and Becker 1998), *The Berkeley guide to Central America* (Nystrom and Smith, 1996); *Lonely Planet* (Rachowiecki, 1997); *Fodor’s Costa Rica 99* (Rockwood 1999). Subsequently, we categorized the sample frame into 6 geographic groups and drew a stratified random sample of 250 hotels.

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<sup>iv</sup> Probit regression model (see Model 1, Table 3). Diagnostic tests (Hat matrix, Dffits and Dfbetas, Studentized Residual) and index plots identified two influential outlier observations that were dropped from the sample (Pregibon, 1981; Belsley, Kuh, and Welsh, 1980). Also, three observations had missing data and were excluded from analysis.

<sup>v</sup> OLS regression model (see Model 2, Table 3). Three observations had missing data and were excluded from analysis.

<sup>vi</sup> OLS regression model Condition index and variance inflation measures for the independent variables

revealed weak to moderate dependencies among the independent variables. Hence, it was concluded that harmful multicollinearity did not affect the regression (Balsley, et al., 1980, 105). Lack of heteroscedasticity was also determined by White's chi-square test (White 1980).

<sup>vii</sup> Two studies assessing participation in ISO-14001 and the Chemical Industry's Responsible Care Program have found that multinational subsidiaries operating in China, Mexico, and Brazil are more likely to participate in voluntary environmental programs (Christman, 2001; Garcia-Johnson, 2000). It is important to note, however, that ISO-

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14001 and Responsible Care lack performance-based standards and do not required third-party overseeing of the environmental behavior of participants.

<sup>viii</sup> “An increase in sample size (assuming no change in population standard deviation) results in a decrease of the standard error, thereby affording more precise estimates (Pedhazur and Schmelkin, 1991).”