

Institutional Pressures and Voluntary Environmental Behavior in Developing Countries: Evidence From the Costa Rican Hotel Industry

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This study aims to identify how institutional forces, such as regulatory and stakeholder pressures, are related to proactive environmental behavior by hotel facilities participating in Certification for Sustainable Tourism, a voluntary environmental program established by the Costa Rican government. This program is among the first third-party performance-based environmental certification initiatives implemented in the developing world. Findings suggest that voluntary environmental programs that include performance-based standards and third-party monitoring 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 neo-institutional theory from the organizational sociology literature. Surprisingly, findings also indicate that compared to locally owned hotels, foreign-owned and multinational subsidiary facilities do not seem to be significantly correlated with higher participation and superior environmental performance in Certification for Sustainable Tourism.

Keywords Costa Rica, voluntary environmental programs, tourism, hotel industry, institutional theory, Latin America, multinational corporations, national parks

Despite the recent growth of the literature on voluntary environmental programs, very few articles have evaluated their implementation in developing countries (Andonova 2003; Rivera 2002; Utting 2002; Christmann and Taylor 2001; Wehrmeyer and Mulugetta 1999). In addition, empirical evidence is still contradictory about businesses' motivations for participating in voluntary programs and about the environmental effectiveness of these initiatives (Carmin, Darnall, and Homes 2003; Delmas 2002; Rivera 2002; Khanna 2001). This study aims to address

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these gaps by evaluating Certification for Sustainable Tourism (CST), a voluntary program established to improve the environmental performance of the Costa Rican hotel industry. Building on Rivera's (2002) initial assessment of the association between CST participation and hotel price premiums and enhanced sales, this study seeks to examine how institutional factors are correlated with participation and environmental performance in this program.

More specifically, this article addresses three research questions: (1) Are institutional pressures correlated with participation and higher environmental performance in voluntary environmental programs? (2) Is participation in voluntary programs related to superior beyond-compliance environmental performance? (3) Do foreign owned facilities operating in developing countries show different environmental performance than local ones?

Results indicate that voluntary environmental programs, such as the CST, 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 hotels do not seem to be significantly correlated with higher CST participation and superior beyond-compliance environmental performance.

The Certification for Sustainable Tourism

In 1997, the Costa Rican Ministry of Tourism began organizing a voluntary environmental program for hotels, Certification for Sustainable Tourism (CST). This voluntary initiative was conceived as an incentive-based alternative to address the increased environmental problems generated by the boom of tourism and hotel facilities in Costa Rica (author interviews R. Lizano, director, Certification for Sustainable Tourism 2001). The rapid growth of visitors and hotel investment in Costa Rica 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 ecological problems by certifying the adoption of beyond-compliance environmental practices. 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 that visit Costa Rica. These financial benefits are expected to promote superior environmental performance by participant hotels. A recent cross-sectional assessment of the CST program suggests that hotel room price premiums are correlated with higher certified environmental performance by this program (Rivera 2002). Nonetheless, the causal nature of this correlation is not clear yet. Higher quality hotels that are more expensive may simply have more resources to adopt the CST standards (Rivera 2002; Khanna 2001).

The CST certification process is carried out by third-party audit teams that assess hotel performance in four general areas of environmental management (see Table 1). 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).

TABLE 1 CST General Areas of Beyond-Compliance Environmental Protection

A. Mangement of hotel surrounding habitat
1. Policies and programs
2. Emissions and wastes
3. Gardens
4. Natural areas
5. Protection of flora and fauna
B. Environmental management of hotel facilities
6. Formulation of policies
7. Water consumption
8. Energy consumption
9. General supplies consumption
10. Waste management
11. Employee training
C. Guest environmental education
12. Communication of environmental programs
13. Room information and management
14. Incentives for environmental awareness
15. Measurement of environmental satisfaction
D. Cooperation with local communities
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

Note. From Rivera (2002).

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 performance. At the beginning of 2002, nearly 200 hotels were participating in CST and 54 had received certification on a first come, first served 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.

Tourism and the Evolution of the Costa Rican Hotel Industry

Costa Rica is one of the best examples of a country that has become a popular tourist destination, thanks to its political stability and an extensive system of national parks and reserves that covers about 20% of the country’s territory (INCAE 2002; Gentry 1998). Opinion surveys consistently show that visiting the rain forest and observing biodiversity is regarded as one of the most important reasons to visit Costa Rica by more than 85% of the tourists (INCAE 2002; Rivera 2002). Hotels located on the buffer zones of national parks own more than 70,000 acres of private reserves (author interview with A. Bien, director, Costa Rican Association of Private Reserves 2000; Wildes 1998).

In 2001, more than 1.1 million tourists visited Costa Rica, a fourfold 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% 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 \$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% 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). Specifically, the average hotel size in Costa Rica is 16 rooms, and five-star hotels represent less than 2% of all facilities (INCAE 2002; ICT 2002). The impressive dynamic of the hotel industry in Costa Rica is both cause and effect of the existence and growth of a national park system that is possibly the best managed in Latin America. This symbiotic relationship is remarkable for Costa Rica, a country that despite its outstanding environmental reputation has simultaneously experienced one of the highest deforestation rates in Latin America (Gentry 1998).

Theory and Hypotheses

Neo-institutional theory from the organizational sociology literature stresses that not all business choices are the result of managers' rational economic decisions (DiMaggio and Powell 1983, 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 (Meyer and Rowan 1977). Social legitimacy is seen as a key factor in determining a business facility's long-term profitability and survival (DiMaggio and Powell 1983; 1991). The result is a social construction process in which external entities influence the selection and implementation of strategies that motivate companies to become alike. 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 pressures, usually imposed by governments, require companies to pursue specific behaviors by relying on legal sanctions or threats (Meyer and Rowan 1977). Normative pressures arise from values and norms of conduct promoted by professional networks, industry associations, and academic institutions. Normative pressures usually exert influence on organizations by relying on peer pressures and embarrassment of noncompliers (Hoffman 1999). Mimetic pressures are demands that firms face to appear legitimate and competitive by imitating the behavior of the most profitable and respected companies in their industry (DiMaggio and Powell 1983).

Neo-Institutional Theory and Voluntary Environmental Behavior

According to this perspective, a firm's enrollment in a voluntary environmental initiative is driven not only by financial considerations but also by the need to attain socially constructed environmental 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 technical assistance to facilitate the adoption of proactive environmental management practices by participant facilities. The following paragraphs use 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 noncompliance have been shown to be an effective mechanism for motivating firms to improve their environmental practices (Winter and May 2001; Meegeren 2001; Henriques and Sadorsky 1996; Wirth and Luzar 1999). 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; Dasgupta 2000; Khanna 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). These government pressures have a higher impact on firms that face greater monitoring because they are more likely to be affected by government decisions (Henriques and Sadorsky 1996; Raedeke et al. 2001). 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; 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 beyond-compliance standards and providing technical assistance to poorly performing facilities (King and Lenox 2000; Rivera 1998; 2001; 2002). Trade groups have a significant interest in maintaining a positive industrywide 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 and their environmental practices receive higher scrutiny from customers, the media, government agencies, and environmentalists (King and Lenox 2000; Arora and Cason 1996; Hettige et al. 1996). Thus, they are more likely to participate in voluntary initiatives with the intention of signaling credible superior environmental performance (Darnall 2001). Additionally, because of their assumed greater resources, larger 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 (King and Lenox 2000; Bray et al. 2002; 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 (Christmann and Taylor 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 (Christmann and Taylor 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 standards (Neumayer 2001, Christmann and Taylor 2001; Wheeler 1999; Garcia-Johnson 2000). On the other hand, foreign investors may participate in voluntary programs motivated to preempt mandatory command and control regulations (Christmann and Taylor 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.

Research Methodology

Data Collection and Sample

Following Dillman's total design method (Dillman 1978), I developed and pretested 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 survey of a sample of 250 hotels (yielding a 44.8% response rate).¹ The 250 hotels surveyed were selected using stratified random sampling based on hotel geographic location.² Data collected about hotel basic characteristics (e.g., size, location, quality rating, and ownership) were verified using archival information available at the Costa Rican Chamber of Tourism, the Ministry of Tourism, and the Costa Rican Association of Small Hotels.

Data Analysis

To test the hypotheses proposed, I used a recursive two-stage technique that combines probit and ordinary linear regression models to control for self-selection bias in the evaluation of voluntary social behavior (Greene 2000; Maddala 1986). This technique, originally developed by Heckman (1978), is the standard statistical methodology used to assess benefits of participation in voluntary environmental programs (Welch, Mazur, and Bretschneider 2000; Khanna and Damon 1999; Hartman 1988; Rivera 2002). Controlling for self-selection bias is necessary because firms that anticipate higher benefits from joining a voluntary initiative are also expected to be more likely to participate (Heckman 1978; 1979; Hartman 1988; Maddala 1986; Khanna and Damon 1999). In other words, the decision to participate and its outcome are endogenous variables jointly determined by similar factors (Greene 2000). Evaluations that do not consider the impact of self-selectivity bias are likely to overestimate the benefits of participation in voluntary programs (Greene 2000; Khanna and Damon 1999; Hartman 1988; Maddala 1986).

In the first stage of the regression analysis a probit model identifies variables significantly related to participation (Maddala 1986; Khanna and Damon 1999). This probit model 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 1986; Khanna and Damon 1999).

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. This variable was coded using a dummy variable, with a value of 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 (Utting 2002). There is little agreement about appropriate measures, and existing publicly available data are 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

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 Environmental performance	0 to 20		97	59.15	67	40.85	
	>20 to 40				0	0	
	>40 to 60				10	19.23	
	>60 to 80				21	40.38	
	>80 to 100				16	30.77	
Total				5	9.62		
Mean					52	100	
Non-CST certified					56.48	(15.60) ^a	
					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
					$\chi^2: 10.645^b$		
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 (number 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
Mean			1.69 (1.67)		0.95 (1.45)		2.78 (1.34)
							$\chi^2: 48.318^c$
							$t\text{-test: } -8.16^c$
Size (number of rooms)	0-10	42	25.8	37	38.1	5	7.5
	11-20	44	27.0	29	29.9	15	22.4
	21-30	37	22.7	18	18.6	19	28.4
	31-40	15	9.2	8	8.2	7	10.4
	41-50	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
Mean			31.08 (41.68)		19.82 (25.77)		47.62 (53.67)
							$\chi^2: 33.665^c$
							$t\text{-test: } -4.41^c$
Trade association membership	No	133	81.1	91	93.8	42	62.7
	Yes	31	18.9	6	6.2	25	37.3
Total		164	100	97	100	67	100
							$\chi^2: 25.048^c$

^aStandard deviations are in parentheses.

^bSignificant, $p < .05$.

^cSignificant, $p < .01$.

environmental protection: (1) management of surrounding habitat, (2) management of hotel facilities, (3) guest environmental education programs, and (4) cooperation with local communities (see Table 1).

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, classified as park, beach, and city, was used as a proxy for the different levels of government monitoring faced by hotel facilities. 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 the Costa Rican Capital (San Jose). Previous research in Costa Rica suggests 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 San Jose, and lower for hotels situated close to the beach (Boo 1990; Wildes 1998; Honey 1999; Ascher 1999; Jones et al. 2001; Farrell and Marion 2001; Steinberg 2001; Rivera 2002; Stem et al. 2003; Weinberg et al. 2002)

Nevertheless, it is important to highlight that hotel location can also be an indicator of the main segment of consumers demanding the services of a hotel.³ Park hotels accommodate mainly ecotourists, whereas beach and city hotels also serve leisure and business travelers (INCAE 2002). Ideally, a better measure of government monitoring should have been used. However, the lack of consistent and reliable data prevented the use of a better indicator.

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. Controlling for hotel quality is important because of previous evidence in the literature suggesting a link between a firm’s general quality standards and its environmental performance standards (Khanna 2001; Lyon and Maxwell 2002; Arora and Cason 1996).

Results and Discussion

Descriptive Statistics

Frequency distributions, cross-tabulations, and comparison of means by CST participation are displayed in Table 2. This table provides initial evidence that CST participation is associated with affiliation to a multinational subsidiary, higher hotel

quality, larger hotel size, and trade association membership. Of course, these results are preliminary because they identify linear relationships and do not control for other independent variables included in the model (Greene 2000). The probit regression analysis described in the next section corrects for this limitation (Aldrich and Nelson 1984).

Participation in the CST Program

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 ($p < .05$) and correctly classifies 87.8% of the decision to participate in the CST program. As expected, more expensive, higher quality hotels are positively correlated with participation in the CST program.

TABLE 3 Regression Results

Model 1: Probit regression ^a (dependent variable: participation in the CST)		Model 2: OLS regression ^b (dependent variable: CST environmental performance)	
Constant	-2.613 ^g (0.646) ^c	Constant	38.176 ^f (2.65) ^d
Foreign investors	0.043 (0.256)	Foreign investors	5.404 (1.26)
Location:		Location:	
City	0.036 (0.382)	City	19.776 ^g (3.60)
Park	0.873 ^g (0.325)	Park	26.565 ^g (2.99)
Multinational subsidiary	0.343 (0.664)	Multinational subsidiary	-0.514 (-0.08)
Quality	0.400 ^g (0.099)	Probability of participation	-55.988 ^e (-1.85)
Size	0.325 ^e (0.193)	Quality	5.582 (1.41)
Trade association membership	1.00 ^g (0.379)	Size	2.567 (0.56)
<i>N</i>	159	Trade association membership	22.888 ^f (2.38)
-2 log L	139.954	<i>N</i>	49
χ^2 for covariates	77.987 ^g	<i>F</i> value	2.78 ^f
Percent correctly classified	87.8	<i>R</i> ²	0.36
		Adj- <i>R</i> ²	0.23

^aDiagnostic tests (Hat matrix, Df fits and Df betas, Studentized residual) and index plots identified two influential outlier observations that were dropped from the sample (Pregibon 1981; Belsley et al. 1980). Also, three observations had missing data and were excluded from analysis.

^b*Ols regression model* (see Model 2, Table 3). Three observations had missing data and were excluded from analysis. Ownership was missing for two hotels and size was also missing for another hotel.

^cProbit model 1: standard errors are in parentheses.

^dOLS model 2: *t* values are in parentheses.

^eSignificant, $p < .10$.

^fSignificant, $p < .05$.

^gSignificant, $p < .01$.

As predicted, the results suggest that compared to beach hotels, park hotels facing higher government monitoring (Hypothesis 1) appear to be significantly correlated with higher probability of participation in the CST program ($p < .05$). These findings suggest that institutional pressures directly wielded by the government may play an important role in promoting adoption of voluntary environmental programs. The interpretation of this finding is limited, however, by the fact that hotel location can also be an indicator of tourists' preferences. Thus, the statistical significance of this finding may also reflect higher demands for environmental protection by "green" tourists visiting national parks.⁴

Also, as expected, trade association membership (Hypothesis 3) seems to show a positive and statistically significant relationship with the CST program adoption ($p < .05$). This outcome implies that normative institutional pressures exerted by the Costa Rican Chamber of Tourism may be linked to higher probability of participation in voluntary environmental initiatives, such as the CST program (Delmas 2002; Rivera 2002; King and Lenox 2000; Cashore and Vertinsky 2000; Hoffman 1999).

Larger hotels also appear to show a significant association with a higher probability to participate in this program, although this relationship is statistically significant only at the 90% confidence level ($p < .1$). 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 have a significantly higher probability of participation in the CST program than locally owned hotels ($p < .05$). These findings suggest that in the future, as more foreign-owned and multinational chain hotels are established in Costa Rica, significantly stronger institutional pressures from government, environmentalists, the industry association, and other stakeholders may be necessary to promote participation in CST program. Otherwise, adoption of the CST program may decrease.

The lack of support for Hypotheses 7 and 8 also challenges the conventional wisdom about the behavior of foreign-owned and multinational subsidiary facilities operating in developing countries (Neumayer 2001; Christmann and Taylor 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 lead foreign-owned and multinational subsidiary facilities to be more likely to participate in voluntary environmental programs (Neumayer 2001, Christmann and Taylor 2001; Wheeler 1999; Garcia-Johnson 2000).

Different explanations can be offered to elucidate these surprising results. First, given their greater access to information, managers of foreign-owned and multinational subsidiary facilities may be more aware of the CST program's implementation costs than managers of local hotels (Rivera 2002). Second, because of their longer experience in adopting global environmental standards, such as ISO-14001, some multinational and foreign owned hotels may prefer to adopt these better known and laxer international standards rather than the CST standards (Delmas 2002). Additionally, multinational and foreign owned hotels may have greater resources than local hotels to fend off institutional pressures from international and local stakeholders to signal their "greenness" by adopting the CST program⁵ (Darnall 2001; King and Shaver 2001; Christmann and Taylor 2001).

Beyond-Compliance Environmental Performance⁶

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% of the variance in environmental performance (adjusted R -square = .23; $p < .05$).

Model 2's findings suggest that, after controlling for other factors, park hotels (Hypothesis 2) and trade association membership (Hypothesis 4) are significantly associated with higher CST environmental scores ($p < .05$). These results highlight, as predicted by institutional theory, that higher government monitoring pressures and normative industry association influences not only tend to 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 ($p < .05$). 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 imposes enhanced demands for isomorphic environmental management behavior from government agencies, environmentalists, the media, and other stakeholders headquartered in San Jose. Model 2 also indicates that hotel quality is positively, but not significantly, correlated with CST environmental performance scores ($p < .1$). This finding suggests that higher quality hotels may only be adopting the CST program symbolically with no intention to improve their beyond compliance environmental performance. Surprisingly, hotel size (Hypothesis 6) does not appear to be significantly correlated with higher CST environmental performance scores ($p < .05$). 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 exhibit a statistically significant relationship to higher beyond-compliance environmental performance ($p < .05$). 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 facilities included in 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 institutional environmental demands from stakeholders (Wheeler 1999; King and Shaver 2001; Garcia-Johnson 2000; Christmann and Taylor 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; Christmann and Taylor 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, Kyu-Hong, and Rock 1999), and Mexico (Dasgupta, Hettige, and Wheeler 2000) indicate lack of statistically significant association between foreign ownership and superior environmental performance.⁷

Finally, the probability of participation variable derived from the probit model (Model 1) and included in the OLS regression (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% confidence level ($p < .1$). This finding implies that of the CST-certified hotels, those with higher predicted probability of participation appear to be significantly correlated with lower levels of CST environmental performance scores. 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.

Conclusions

The literature on voluntary environmental programs suggests that short-term financial incentives are correlated with proactive environmental behavior by businesses (Andrews 1998; Khanna 2001; Rivera 2002). Following a similar logic, previous research based in Costa Rica suggests that this country’s exceptional national park system and growing ecotourism industry generate economic incentives that can promote beyond-compliance environmental protection (Rivera 2002; Weinberg et al, 2002; Honey 1999; Gentry 1998; Boo 1990). An initial assessment of the CST program suggests that hotel room price premiums are both cause and effect of higher certified environmental performance in this program (Rivera 2002).

Using a neo-institutional theory framework, this study contributes to this literature by suggesting that the CST program may not work effectively despite being correlated with market incentives and involving third-party oversight and performance-based standards. To effectively promote voluntary environmental behavior, the CST program appears to require the complement of coercive institutional pressures in the form of government environmental monitoring and normative pressures arising from industry association membership. Findings of this study suggest that these coercive and normative institutional pressures are significantly

correlated with a higher likelihood of participation and higher environmental performance in the CST. In sum, besides market incentives, this study suggests that institutional pressures may also be necessary conditions for making the CST program an effective policy instrument for promoting beyond-compliance environmental behavior by hotels.

In addition, this article contributes to the research examining the environmental performance of multinational and foreign-owned businesses in developing countries. Despite some exceptional cases,⁸ findings suggest that multinational subsidiary and foreign-owned hotels do not exhibit significantly higher participation and superior environmental performance in the CST program than locally owned facilities. For multinational hotel chain facilities these results are startling given their greater resources, easier access to technology, and longer experience responding to stronger institutional pressures wielded by international environmental organizations, the media, and more stringent home-country environmental regulations (Christmann and Taylor 2001; Wheeler 1999; 2001; Weinberg et al. 2002). These findings indicate that stronger institutional pressures by the government and other stakeholders may be necessary to assure that foreign-owned and multinational subsidiary hotels operating in Costa Rica bring with them advanced environmental management technologies and show superior environmental performance than domestic firms.

Finally, although the evidence from this single case study cannot be extended to other nations, policymakers trying to promote the use of voluntary programs in other developing countries need to be aware that even in the case of Costa Rica, where the hotel industry is mainly driven by ecotourism, the superior environmental performance of foreign-owned and/or multinational facilities cannot be taken for granted. To be sure, some multinationals and foreign investors have played a remarkable leadership role in supporting the creation of the CST program and have displayed some of the highest beyond-compliance environmental performance. However, other multinational subsidiaries and foreign-owned facilities have also shown more reactive environmental behavior, displaying little interest in adopting the CST program or participating in it for opportunistic reasons.

Limitations and Future Research

The discussion of results and the conclusions from this study need to be considered in the context of five 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.⁹ In the future, as the CST program expands, additional assessments need to take advantage of the availability of new 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. Fourth, some of the measures of institutional pressures analyzed in this study are evidently rudimentary, as in the case of using hotel location as an indicator of government monitoring. Future studies may be able to

overcome this problem as new databases are generated in Costa Rica and other developing countries. Finally, the generalizability of the findings to other nations 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 policymakers in charge of expanding the CST program to other developing countries.

Notes

1. 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 1983, 59).

2. 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); and *Fodor's Costa Rica 99* (Rockwood, 1998). Subsequently, we categorized the sample frame list into 6 geographic groups and randomly drew observations from each group to build a survey sample of 250 hotels.

3. The author thanks one of the anonymous reviewers for highlighting the limitations of using hotel location as a measure for government monitoring.

4. I am grateful to an anonymous reviewer for pointing out this alternative explanation.

5. An anonymous reviewer suggested this alternative rationale.

6. *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 (Belsley et al. 1980, 105). Lack of heteroscedasticity was also determined by White's chi-square test (White 1980).

7. 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 (Christmann and Taylor 2001; Garcia-Johnson 2000). It is important to note, however, that ISO-14001 and Responsible Care lack performance-based standards and do not require third-party overseeing of the environmental behavior of participants.

8. These exceptional cases include five foreign-owned or multinational subsidiary hotels that have received some of the highest CST environmental scores.

9. “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).

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