

**DOES IT PAY TO BE GREEN IN THE DEVELOPING WORLD?
PARTICIPATION IN A COSTA RICAN VOLUNTARY ENVIRONMENTAL
PROGRAM AND ITS IMPACT ON HOTELS' COMPETITIVE ADVANTAGE**

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The empirical research examining incentives and economic benefits of participation in voluntary programs still shows contradictory results. Is higher performance in voluntary environmental programs related to higher prices and/or higher sales for participants? What factors and firm characteristics are associated with participation in voluntary environmental programs (VEPs)? This paper aims to answer these two questions by providing 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 in a developing country this study tries to begin providing evidence beyond manufacturing firms located in industrialized nations. The business and the environment literature almost exclusive attention to the manufacturing sector of developed countries is one the main weaknesses of the field (Starik and Marcus 2000). Results indicate that participation in the CST program alone is not significantly related to higher prices and higher sales. Only hotels with higher environmental performance show a significant relationship with price premiums. The evidence also indicates that participation in the CST program was not only related to economic rationality factors but also to institutional factors such as trade association membership and the level of regulatory oversight.

THE COSTA RICAN HOTEL SECTOR AND THE CST PROGRAM

Hotels and other tourism related businesses have become the second most important sector of the Costa Rican economy generating about 20% of its foreign income, approximately 5% of its gross domestic product and employing about 12% of the country's labor force (Rivera 1998). The number of hotels has grown more than 400% from 433 hotels in 1987 to about 1800 in 2000 (INCAE 1999). This expansion is due to a significant increase in the number of tourists; from about 250,000 in 1987 to 1 million in 1999. Most hotels offer very basic services, have an average size of 16 rooms, and compete primarily based on price and proximity to national parks or beaches (INCAE 1999). On average, tourists visit three national parks and about 87% consider the rainforest to be the most important place to visit in the country (INCAE 1999). The growth in tourism has, nevertheless, led to adverse environmental problems. The Costa Rican Ministry of Tourism responded to these problems in 1997 by launching a third-party VEP for hotels, the Certification for Sustainable Tourism. The CST program aims to promote beyond compliance environmental management practices by rating hotel environmental performance. An independent National Accreditation Commission regulates the CST standards and supervises the hotel certification process (Jones et al 2001). At the end of 1999, 115 hotels had decided to enroll in the program. The first 52 hotels have been evaluated and their environmental performance ratings are available at www.turismo-sostenible.co.cr.

THEORY AND HYPOTHESES

The mainstream environmental economics view posits that the main reason firms participate in VEPs is to prevent and/or weaken costly environmental regulations (Lyon and Maxwell 1999). Conversely, the proactive management perspective argues that firms' participation in voluntary initiatives can improve their environmental reputation and lead to price premiums and/or enhanced sales (Hart 1995). To be sure, the most recent empirical evidence appears to be contradictory, is limited to manufacturing firms operating in industrialized nations, and varies depending on the type of VEP and industry analyzed (Videras and Alberini 2000)

Self-promotion of proactive environmental management is typically met with strong suspicion by the public and seldom leads to a reputation of superior environmental performance (Klassen and McLaughlin 1996). According to the resource-based view, firms with credible green reputations are more likely to enjoy higher prices or enhanced sales for their products. A credible green reputation can be a source of differentiation advantage that yields price premiums and/or enhanced sales because it is rare, difficult to create and imitate, and provides higher value to environmentally aware customers (Barney 1991; Hart 1995). Participation in VEPs is seen as a way to obtain credible green reputations. To be successful, however, at least two conditions must be met. First, the VEP should be controlled by a well-known and publicly respected third party. Second, the program should use performance-based standards and provide a clear indication of superior environmental management that is readily observable by consumers. The previous arguments suggest the following hypotheses:

***Hypothesis 1:** Higher environmental rating in a third-party performance-based voluntary environmental program is positively associated with higher product prices.*

***Hypothesis 2:** Higher environmental rating in a third-party performance-based voluntary environmental program is positively associated with higher product sales.*

The previous arguments and hypotheses implicitly assume that the decision to participate and the level of environmental performance achieved are the result of rational economic choices. Economic rationality would also predict that firms that focus on serving environmentally aware consumers would benefit more from credible green reputations and thus be more likely to participate in VEPs. Institutional theory, on the other hand, suggests that not every decision in an organization is the result of economic rationality (DiMaggio and Powell 1991). In order to understand firms' environmental management choices, it may be important to consider the role of institutional pressures generated by different stakeholders (Hoffman 1999; King and Lenox 2000). For instance, previous research has shown that governments and environmental organizations demand and pressure larger firms and/or those with higher brand name recognition to have better environmental performance (Arora and Cason 1996; King and Lenox 2000). Hence, these firms are more likely to participate in VEPs. Similarly, increased government monitoring, even in the absence of specific regulations, is known to be a significant incentive for firms to participate in VEPs (Henriques and Sadorsky 1996; Videras and Alberini 2000). Previous research also indicates that trade associations interested in maintaining a positive industry-wide environmental reputation may pressure their members to participate in VEPs (Hoffman 1999; King and Lenox, 2000). These arguments suggest the following hypotheses:

***Hypothesis 3:** Firm focus on serving environmentally aware segments of the market is positively related to participation in voluntary environmental programs.*

***Hypothesis 4:** Firm size is positively related to participation in voluntary environmental programs.*

***Hypothesis 5:** Firm brand name recognition is positively related to participation in voluntary environmental programs.*

***Hypothesis 6:** Government monitoring is positively related to participation in voluntary environmental programs.*

***Hypothesis 7:** Membership in an industry-wide trade association is positively related to participation in voluntary environmental programs.*

RESEARCH METHODS

Survey and archival data were collected from a cross-sectional sample of 164 Costa Rican hotels. The sample consisted of two groups. The first group included all 52 hotels enrolled and evaluated by the CST Program as of December 1999. The second group of 112 hotels was drawn from a stratified random survey of 250 hotels (44.8% response rate). Except for occupancy rate information available only from survey interviews, all data were verified from multiple independent sources. To test the hypotheses proposed I used a two-stage methodology widely applied to evaluate voluntary program benefits (Arora and Cason 1995, 1996; Khana and Damon 1999). In the first stage, a probit regression modeled the decision to participate in the CST Program. In a second stage, controlling for self-selection bias, two OLS regressions modeled hotel price and sales respectively.

Dependent variable

Participation in the CST Program was coded as a binary variable equal to one for enrolled hotels (probit model). Average room price per night and occupancy rates were used as measures for the hotel price and sales respectively (OLS models).

Independent variables

Dummy variables were created to identify hotel environmental ratings in the CST program. Hotels not participating in the program were used as a reference group. The CST program rates environmental performance by granting zero to five 'Green Leaves' of environmental excellence. The rating is based on compliance with 153 standards divided into four basic categories: (1) management of the physical and biological environment, (2) environmental management of hotel facilities, (3) guest environmental education, and (4) cooperation with local communities. Competitive focus: equal to three categories of hotels' location: city, park, and beach. Hotel size: equal to log of rooms. Brand name recognition: binary variable equal to one for international chain hotels. Government monitoring: binary variable equal to one for hotels officially 'declared' at the Ministry of Tourism. Industry-wide trade association membership: also coded as binary variable. Hotel quality: number of "stars." Probability of participation (self-selection bias control) determined by the first-stage probit model.

RESULTS

The majority of CST audited hotels showed low levels of environmental performance, 81% obtained 0 to 2 green leaves, 19% (10 hotels) obtained 3 to 4, and none obtained 5 green leaves. Findings of the price regression model (see model 1 in Table 1) show that coefficients on CST probability and the dummy variables for hotels with 0 to 2 green leaves are insignificant. However, the coefficient on 3-4 green leaves is positive and significant. This indicates that only CST affiliated hotels with higher levels of environmental performance (hotels receiving 3-4 green leaves) are positively and significantly associated with room prices about \$30/night higher. These results support hypothesis 1. The coefficients for environmental performance in the occupancy regression model indicate that participation in the CST program is negatively related with occupancy (see model 2, Table 1). Yet, only the coefficient for 1 green leaf hotels is significant. Results also show that this model has very poor fit ($R^2=0.14$; Adj $R^2=0.073$). Additionally, a hierarchical analysis indicates that the unique variance in occupancy accounted by the environmental performance variables was not significant. Thus, conclusive implications can not be drawn to support or reject hypothesis 2.

Model 3 reports the results from the probit participation model. The park hotel coefficient indicates that hotels located within 10 miles of National Park are significantly associated to CST participation. These hotels focus on attending visitor to national parks that have been found to be more environmental aware (INCAE 1999). Hence, this findings support hypothesis 3. The coefficient on firm size is positive but only significant at 90% confidence. This indicates only preliminary support for hypothesis 4. Brand name recognition is positively but insignificantly related to CST participation. Thus, hypothesis 5 is not supported by the results. Finally, government monitoring and trade association membership are positively and significantly related to participation in the CST Program. These findings support hypotheses 6 and 7.

DISCUSSION AND CONCLUSIONS

The findings indicate that CST affiliated hotels with higher levels of environmental performance show a significant and positive association with higher room prices. However, participation in the CST program alone is not significantly related to higher room prices. These results are consistent with the resource-based argument that firms showing credible green reputations can led to price premiums when targeting environmentally sensitive segments of the market. These conditions are met in Costa Rica where: (1) the CST Program provides a credible and clear indication of superior environmental performance, and (2) the majority of tourists to the country are interested in nature and the environment. An important implication of these results is that by rating participating hotels according to their level of environmental performance, the CST program has been able to better deal with opportunistic behavior ('green-washing') introduced by the participation of firms with low environmental performance. This is a common problem suffered by non-performance-based programs such as ISO-14000 and Responsible Care (King and Lenox 2000). However, during the first two years of the CST less than 10% of Costa Rican hotels had enrolled and 81% of certified hotels showed low environmental performance. Hence, the program can not yet be considered effective at improving industry-wide environmental performance. The program should be complemented with mandatory regulations that guarantee

compliance within a minimum socially desirable level of environmental protection across all Costa Rican hotels.

The results also show that participation in the CST is positively related to both economic and institutional rationality factors. As predicted by economic rationality, park hotels that focus on environmentally sensitive market segments are significantly related to higher levels of CST program participation (Jones et al 2001). Similarly, institutional factors such as government monitoring and trade association membership are positively and significantly related to participation in the CST Program. This implies that beyond the economic benefits of participation, supporters of voluntary initiatives can also promote firm enrollment by relying on institutional pressures exerted by the government and industry associations.

Finally, it is important to highlight three basic limitations of this research. First, this study used cross-sectional data that prevent the identification of any causal relationships. Future research can overcome this limitation by developing longitudinal analyses. Second, the sample is limited to hotels in Costa Rica, a country that has a world-wide reputation for the management of its national parks that attract environmentally aware visitors from industrialized nations. Future research should evaluate whether the findings obtained here hold for firms operating in different industries and in a wider range of developing countries. Third, the number of CST audited hotels (n=52) is still relatively small and the hotels receiving a superior rating of 3-4 green leaves (n=10) is even smaller. As the CST Program matures and the number of hotels in each rating category grows, it may be possible to discern more conclusively significant relationship with price and sales than the one identified in the present study.

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Table 1 Probit and OLS regression results

OLS models ¹		Probit model		
	Model 1 (Price)	Model 2 (Occupancy)		Model 3
Constant	11.027 (1.123)	46.058*** (7.163)	Constant	-2.870*** (0.652)
CST Probability	5.990 (0.411)	-11.464 (-1.037)	Trade association	1.077** (0.396)
Occupancy	0.238* (2.193)	Price 0.138* (2.193)	Brand name recognition	0.402 (0.656)
Not Evaluated	11.639 (1.647)	-12.771* (-2.402)	Government monitoring	1.336* (0.608)
0 Green leaves	-9.393 (-0.939)	-7.726 (-1.016)	City	0.048 (0.374)
1 Green leaf	-2.933 (-0.459)	-10.663* (-2.229)	Logsize	0.344= (0.197)
2 Green leaves	-13.915= (-1.788)	2.281 (0.381)	Park	0.947** (0.326)
3-4 Green leaves	29.897*** (3.697)	-3.353 (-0.521)	Quality	0.038 (0.192)
N	154	154	N	159
F-Value	20.603***	2.104*	-2 Log L	135.06
R2	0.615	0.140	χ^2 for	82.879***
Adj-R2	0.585	0.073	covariates	

1: OLS control variables not shown: city, logsize, park, and quality. Probit model: Standard errors are in parentheses; OLS models: t-values are in parentheses. Prob: = prob<0.10 ; * prob<0.05; ** prob < 0.01; *** prob <0.001