

## THE INFLUENCE OF ENVIRONMENTAL ASPECTS ON THE HOTEL PERFORMANCE IN ROMANIA

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### ABSTRACT

*The purpose of this research is focused on the perception of environmental aspects in hotel industry and reporting the results of the survey carried out within the Romanian hotel companies. The results of this research highlights the influence of various environmental management practices, both at the level of appreciation and at the level of usage, over financial performance, this being expressed through the annual average level of employment, based on a sample of hotels in Romania. The influence relationship is empirically tested. The results indicate that the relationship is statistically significant, but not all environmental management practices positively affect the level of employment. We consider appropriate the approach for promoting these practices in today's economic environment of Romania, by building corporate management on the basis of sustainability, which will allow the development of a framework for implementing environmental management in Romanian hotels, considering the necessity of tourism development in Romania.*

**KEY WORDS:** *performance, sustainability, environmental management, empirical analysis*

### INTRODUCTION

Economic, social and environmental transformations that affects our society, exacerbated by the global economic crisis, have increasingly become the target of the discussions and concerns of international organizations, governments, investors and corporations in terms of increasing responsibility and corporate sustainability (Radu, 2012).

Sustainability takes a place of great importance in researches surrounding businesses and organizations, by stimulating the need for corporate responsibility (Gray, 2007). As a first stage of sustainability or as a plus for sustainable development, corporate social responsibility is associated with a smart investment, because it affects the profitability of the company, but also the prosperity of the whole community. Optimizing the relationships with the community (customers, suppliers, authorities), influencing the target audience, positioning the company on a higher place in society, the company's good reputation, consumer's loyalty to the company and its products, motivating employees, and building excellence in business that is giving a real competitive advantage,

all are important contributions of corporate social responsibility. Social responsibility represents, in general, the vital link with the society, and, in particular, the link with the community in which the business is located. This is essential to the long-term prosperity of companies because it shows the human dimension of businesses (Dinu, 2011).

Sustainable actions of organizations means giving a higher importance to the impact of environmental, social and economic factors, to bring an extra value and information to stakeholders and is reflected in the reporting of sustainable performance (Radu, 2012).

The paper empirically analyzes the influence of managerial environmental practices (exogenous variables) over performance expressed as the degree of occupation (endogenous variable). The data used for hotel management have as a source the replies of the hotels in Romania to a questionnaire. The hotel sector is oriented exclusively on the client, and changing lifestyles and the rising claims of clients calls from the hotel industry creativity and innovativeness in adopting and using modern technologies to improve and differentiate offered services (Radu et al., 2013).

The research is structured into the following main parts: the first part presents a review of the literature regarding the importance of environmental management in terms of theory and practical, the second part describes the research methodology and analysis model of environmental management practices and the last part includes results and conclusions of the empirical research.

### LITERATURE REVIEW

Research of the literature sought to stimulate evolving thinking on the sustainability through studies. Samimi et al. (2011) carried out an empirical study on the relationship between human development and environmental performance, through a regression model in the panel. His findings support a positive relationship between the two indicators for the countries considered for study, the human development influencing environmental performance significantly. Differentiation is made between developed countries and developing countries; the latter requires more public awareness and more support from international organizations (Samimi et al., 2011). Cimpoeru (2015) also demonstrate a positive relationship between sustainable prosperity, as measured by the index of global competitiveness, control of corruption and budget's transparency. Governments, civil society, academics, communities, corporations and international organizations should be involved in the formulation and implementation of development policies and solid environmental protections, together with relevant researches, education, training, awareness and change in social values, as set out in the Chart of the Earth, to support sustainable development actions (Ahmad et al., 2011).

The conditions for sustainable development are heavily influenced by today's global climate changes. The scale and intensity of the impact on environment have established positions and actions at the international, national, regional, local and individual level.

Thus, climate change followed by natural disasters sensitized the public awareness and interest in environmental and social issues, so it increased the number of requests and pressure on companies to be responsible and report on these issues. Corporate commitment to CSR by corporate management participation in social and environmental innovation strategies should be the purpose of reporting social and environmental movement whether it is due to regulation, community pressure, voluntary

philanthropy or corporate citizenship strategy oriented businesses (Chung and Parker, 2010).

Hotel business have environmental and social impact, experienced through energy consumption, water consumption, waste and residual water generation, chemical and atmospheric contamination, purchasing/procurement and local community initiatives. On one hand, hotels are large consumers of water utility and on other hand, for swimming pools, golf courses, etc. In the areas where there is a shortage of water, this is a real problem. Excessive consumption of electricity, due to heating / cooling, lighting, cooking and so on, is putting a pressure on the local resources and increases the costs. Thus, measurements for energy and water conservation have a direct and powerful impact on the overall cost of hotel consumption. Solid waste management, due to responsible practices, can bring financial benefits through reduction and reuse of materials, that could reduce costs, and recycling can help supplement wages by payments made for recyclable materials recycling firms (Kasim, 2006).

Andonova (2003) argues that environmental management's strategies and practices of industrial companies with foreign capital in Central and Eastern Europe tend to adopt green technologies faster than other companies. Competition on the international market is an incentive for modernization and adoption of green technologies and hence for voluntary environmental management standards. Corporate governance also has a role in stimulating environmental management, through business leaders who initiate the adoption of cleaner technologies and the introduction of environmental management, in terms of predicting economic and reputational benefits, but, if there is a lack of transparency, this tends to be associated with continuing failure of environmental issues (Andonova, 2003).

Reducing energy, natural gas and water consumption represents the major requirements in the transformation of a hotel in order to be recognized as "green". The hotel industry is recognized as a big consumer of such resources, and the energy saving is much easier and more cost-effective than ever before. That's exactly why large hotel brands (e.g. InterContinental Hotels & Resorts, Starwood Hotels and Resorts, Hilton Worldwide and Choice Hotels International) are implementing strategies to reduce the carbon footprint and energy, water and gas consumption, to become more accountable to the community and the environment. Us Green Building Council describes as "green" a hotel that: uses 26% less energy, makes 33% less carbon dioxide, uses 30% less water and reduce solid waste by 50%

compared to hotels without a sustainable strategy (Parisi, [www.hotelexecutive.com](http://www.hotelexecutive.com)).

Heating, ventilation and conditioning air systems (HVAC), lighting, and water heating systems require large expenses in a hotel. Therefore, smart solutions are to be found for these energy and money consuming systems. Lighting consumes about 30% of the electricity (Parisi, n.d.). Saving solutions consist on using energy saving lamps CFL (Compact Fluorescent Light), which consume 5 times less and have a lifespan 4 times higher than those offered by the similar light bulbs and LED bulbs that provide better light quality, consumes less energy and also have a higher lifetime (<http://www.consumredus.ro>). The operation and the automation of HVAC energy management systems, only in the occupied rooms, make a 15-30% saving of heating and cooling costs (Parisi, n.d.).

Heating, ventilation and conditioning air systems are the most appropriate measures of a hotel manager that could solve the energy conservation problems, through control and optimal function. Objective functions of optimization problems in the HVAC energy management are usually related to the operation and results of energy management, but also to reducing annual energy consumption, minimizing costs or maximizing annual energy savings lifecycle (Fong *et al.*, 2009). Establishing appropriate operating parameters (e.g. water and air temperature) have an immediately effect on saving energy without any sacrifice of thermal comfort. An efficient and effective energy management identifies opportunities on energy saving measures, using appropriate schemes for operating parameters and automatic or computer control of HVAC equipment (Fong *et al.*, 2006).

Water heating for showers, cooking and laundry can be up to 50% of the natural gas costs. Minimization solutions for energy consuming of a number of hotel turned on installation cost management systems for central heating domestic premises (Boiler Energy Cost Management Systems) that automates water recirculation (circling pump starts when the flow sensor indicates a request and turns off when there is no demand), Ozone laundry systems, solar thermal systems and heat recovery in HVAC system and refrigeration systems (Parisi, n.d.).

**RESEARCH METHODOLOGY**

In this study we empirically test the relationship between hospitality performance

expressed by occupation degree (endogenous variable) and environmental management practices (exogenous variables) both in terms of the use and importance. The database for hospitality management has as source the responses based on a questionnaire sent to the Romanian hotels. The hospitality companies were asked to answer questions on how to realize the sustainable management. The response rate is approximately 14% of the questionnaires sent in the period 1 September 2012 - 01 August 2013.

Practices used by hotel companies and those for which the assessment were named as follows (Table 1):

*Table 1. Environmental practices for studied companies*

Criteria which received importance	Symbol used in Eviews	Used practices	Symbol used in Eviews
Energy consumption	im1	The purchase of organic products	pm1
Water consumption	im2	Reducing the use of environmentally hazardous products	pm2
Pollution of soil, water and air	im3	Practice to save water and energy	pm3
Recycling of material resources	im4	Quantify the cost and environmental savings	pm4
Storage and waste disposal	im5	Selective collection of solid waste	pm5
The emission of greenhouse gases	im6	Using ecological arguments in marketing campaigns	pm6
Investments in green technologies	im7	The Company prepares its employees in environmental issues	pm7
Environmental costs	im8		

The data has been introduced in a multiple regression model: for the used practices of the environment, the regression model was made up of four exogenous variables, and for those appreciated, two variables. We will include in the models the dichotomy variable for each type of practice. The dichotomy variable is 1 when a hotel is using this practice or is given importance and value 0 when is not using this practice or not given importance.

Introduction of qualitative variables in the econometric models contribute to a more complete explanation of the phenomena (Radu et al., 2013).

*Hypothesis:* There is a positive relationship between hospitality performance expressed by occupancy degree (GRD) and environmental management practices at both the utilization level (M1) and the level of assessment (M2).

The econometric model of endogenous variable Y function of exogenous variables binary X is of the form:

$$y_i = a + b_1 * x_{1i} + b_2 * x_{2i} + \dots + b_n * x_{ni} + \varepsilon_i, i = 1, \dots, n$$

where:

- $y_i$  - average annual occupancy of hotel  $i$ ;
- $x_i$  - binary variable corresponding to each practice
- $x_i = 0$  - if the hotel does not use that practice;
- $x_i = 1$  - if the hotel uses that practice;
- $\varepsilon_i$  - the residual variable that satisfies all the hypotheses of the econometric model.

The equation is run through the Eviews application. Too high probabilities associated with some variables have led to the elimination of those variables which are untrusted, the equations were restricted and estimated as follows:

(M1):  $GRD = C(1) + C(2)*PM1 + C(3)*PM2 + C(4)*PM3 + C(5)*PM5$

$GRD = 48.5101 + 8.6035*PM1 + 15.2131*PM2 - 10.2046*PM3 + 9.3251*PM5$

(M2):  $GRD = C(1) + C(2)*IM2 + C(3)*IM8$

$GRD = 42.5848 + 8.9363*IM2 + 16.5757*IM8$

The results of model parameters estimation are presented in table 2 and table 3.

**Table 2. The results of model parameters estimation M1**

Dependent Variable: GRD				
Method: Least Squares				
Sample: 1 34				
Included observations: 34				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	48.51019	5.271164	9.20293	0.0000
PM1	8.603571	5.044478	1.70554	0.0988
PM2	15.21320	5.355110	2.84087	0.0081
PM3	-10.20463	6.786479	-1.50367	0.1435
PM5	9.325126	5.106573	1.82610	0.0781
R-squared	0.334906	Mean dependent var	53.2805	
Adjusted R-squared	0.243169	S.D. dependent var	15.6719	
S.E. of regression	13.63398	Akaike info criterion	8.19806	
Sum squared resid	5390.678	Schwarz criterion	8.42252	
Log likelihood	-134.3670	F-statistic	3.65071	
Durbin-Watson stat	2.018542	Prob(F-statistic)	0.01582	

**Table 3. The results of model parameters estimation M2**

Dependent Variable: GRD				
Method: Least Squares				
Sample: 1 34				
Included observations: 34				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	42.58485	4.351074	9.787206	0.0000
IM2	8.936391	5.050443	1.769427	0.0867
IM8	16.57573	5.216075	3.177817	0.0034
R-squared	0.317532	Mean dependent var	53.28059	
Adjusted R-squared	0.273501	S.D. dependent var	15.67195	
S.E. of regression	13.35797	Akaike info criterion	8.106201	
Sum squared resid	5531.499	Schwarz criterion	8.240880	
Log likelihood	-134.8054	F-statistic	7.211672	
Durbin-Watson stat	1.837201	Prob(F-statistic)	0.002681	

## RESULTS AND DISCUSSION

Testing the validity of regression models by associated probabilities to Student t-test coefficient shows that for exogenous variables coefficient and for the free term, the probabilities are below 10% excluding variable PM3 (14%).

Rejection of the null hypothesis shows that the slopes of regression for both models are significantly different from zero. F statistics associated probability is 0.00, models are valid. Exogenous variables exert an influence of 33% on occupancy degree in used environmental practices and by 31% in the case of importance given to environmental practices.

It is noted that environmental practices embodied in purchase of green products, reducing the use of environmentally hazardous products and the selective collection of solid waste positively influence the occupancy degree while water-saving and energy practices negatively influence the occupancy degree.

Measures to save water and energy undertaken by hotels are not pleasing to customers so we deduce that environmental practices are not applied in such a way as not to affect customer satisfaction and their desire to return and recommend the respective hotel as an agreeable location.

In terms of the importance given to environmental practices, both econometric practice tested - water consumption and costs of environmental protection - positively influences the occupancy degree so that the fear of high costs for the environment and water consumption scares managers and therefore the higher more importance they grant to those the more intelligent solutions will attract customers.

## CONCLUSIONS

The study conducted on the basis of the importance granted to the environmental management practices and their use show their influence on performance. Implementation of *eco* measures for hotel managers can be influenced by the results of this study, requiring orientation and focus on those practices showing positive influences upon employment, without however ignoring the factors presented negative influences. Hotel companies must adopt those practices that fit best to their environment, must define them clearly and must

implement them correctly, and their managers had to propose other intelligent measures for implementing to achieve certain performance without diminishing customer satisfaction.

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