

Environmental Impact And Business Management In Rural Tourism

Manuel Vargas-Vargas, University of Castilla-La Mancha, Spain

José Mondéjar-Jiménez, University of Castilla-La Mancha, Spain

ABSTRACT

The growth in rural tourism and the importance of the environment to its sustainability have given rise to a growing interest in analyzing the impact of tourist activity and in studying how the environmental resource fits into business management in the industry. But the economic characteristics of rural tourism businesses and the diversity and complexity of their environmental impacts have made it difficult for a generally accepted framework for such analyses to emerge. There is wider agreement on the key role played by entrepreneurs' environmental awareness in the adoption of eco-friendly management practice. In this context, and within the Spanish region of Castilla-La Mancha, this paper undertakes a questionnaire-based study of the environmental awareness of entrepreneurs in rural tourism using the partial least squares (PLS) method to estimate its latent dimensions and the environmental impacts perceived.

Keywords: Environmental, rural tourism, impacts of tourism.

INTRODUCTION

In recent times the widespread growth in rural tourism has been accompanied by a debate on its sustainability, both in economic terms and as regards natural resources, and on its impacts on future generations. But no broad agreement has been reached on the concept's meaning and scope, as shown by Artanaz (2002), given its multiple dimensions and interdisciplinary nature. Yet the industry's offering shows a growing awareness of the need for a commitment to the environment, given its direct responsibility in the field and also the competitive advantages that may result from this.

Many studies have analyzed businesses' environmental commitment and the possible factors behind it, such as Hart (1995), Noci and Verganti (1999), Bowen (2000), Christmann (2000), Buysse and Verbeke (2003), Bansal (2005), Sharma and Henriques (2005) or López *et al.* (2007). But business management and environmental impact in companies in the service sector have received less attention than in the industrial sector, chiefly due to the former companies' lesser direct impact and the difficulty in measuring it, though its effects are not inconsiderable in the long term, as noted by Hutchinson (1996), Pulido (2003) or Bengochea *et al.* (2006). In the case of tourism, natural resources have traditionally been regarded as freely available and only in recent years has a business culture developed in which the environment is counted as an asset or strategic factor in a business's competitiveness and sustainability. So environmental management in the tourism industry is acquiring particular significance geared to the industry's sustainability and to attracting an increasingly eco-aware sector of the population.

A key factor in tourism's development and environmental sustainability is the attitude and responsiveness of the entrepreneurs ultimately responsible for its management, as noted in Lordkipanidze *et al.* (2005). In the subsector of rural tourism this is all the more important, given the greater proportion of small family firms (Getz and Carlsen, 2005) and the effects that this kind of tourism has for regional sustainable development (Lordkipanidze, 2002). But specialized studies have focused on entrepreneurs' attitudes to specific environmental issues, such as Gössling and Hall (2006) or Hall (2006) as regards climate change, Polonsky *et al.* (2004) as regards bio-diversity, or in the hotel sector, Vargas *et al.* (2004) or Molina *et al.* (2009). There are fewer studies on how entrepreneurs perceive the impact of their activities and the measures that they take in the management of their businesses to mitigate it.

This paper is intended to be a first step in an analysis of the relationship between how entrepreneurs in the rural tourism industry perceive the sector’s environment impact and factors of business management, such as the adoption of energy-saving measures, corporate environmental policy and customers’ eco-awareness.

STUDY METHODOLOGY AND OBJECTIVES

Typical characteristics of rural tourism businesses are their modest size and the nature of their management that makes them more dependent on the entrepreneurs’ attitudes and initiatives (Shaw and Williams, 1998). These are accordingly vital to the sustainability of the business fabric and, ultimately, to regional development (Lordkipanidze, 2002). To analyze how the environmental variable fits into business management and how impacts on the environment are perceived, this paper focuses on the attitudes and views of entrepreneurs using a questionnaire proposed by Vargas *et al.* (2009) and reproduced in table 1.

Table 1: Questionnaire on business management and environmental impacts in rural tourism

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| 1.- It is useful to implement a code of environmental best practice |
| 2.- Application of ecological criteria in investments, purchases, etc. |
| 3.- Need for staff training and motivation regarding environmental goals |
| 4.- Information for customers, workers and suppliers on sustainable environmental conduct |
| 5.- Customers’ environmental attitudes are satisfactory |
| 6.- There are economic incentives for encouraging best environmental practice |
| 7.- My customers appreciate best environmental practice |
| 8.- Respect for the environment helps to attract new customers |
| 9.- In rooms and communal toilets there is information on water-saving measures, asking customers to cooperate in this |
| 10.- Importance of introducing water-saving systems |
| 11.- Water-saving toilet cisterns have been installed (e.g. with two buttons or short flush) |
| 12.- We regard the energy rating of domestic appliances as important |
| 13.- We regard the installation of energy-saving measures as important |
| 14.- We have energy control systems (thermostats, timers, etc.) |
| 15.- Bulbs that stay on for more than two hours are of the low-energy type |
| 16.- We regard the use of solar energy in our business as necessary |
| 17.- Need to use non-polluting climate control systems |
| 18.- We make sure to buy biodegradable detergents and, generally, cleaning products with a low environmental impact |
| 19.- We regard the separation of waste as important |
| 20.- We regard the treatment of toxic waste as important |
| 21.- We sort containers and packaging, separating glass, plastic, metal and paper |
| 22.- We separate special waste (batteries, toner, etc) and hand it over to an authorized waste manager |

Determining the latent factors conditioning entrepreneurs’ attitude to the environment has a twin aim: on one hand, evaluating how the need for environmental sustainability in rural tourism is perceived; on the other, analyzing how the various factors are interrelated. As we are dealing with latent constructs, covariance structure analysis needs to be undertaken with the use of structural equation modeling in which a priori theoretical knowledge is incorporated into empirical analysis. According to Barclay *et al.* (1995), the use of such covariance structure models allows us to:

- Deal with measurement error, essential when the variables of interest are latent and have to be realized through other measurable variables
- Model relationships between multiple variables, both measurable and latent, and estimate direct and indirect effects
- Combine a priori theoretical knowledge and assumptions with empirical data, facilitating the statistical confirmation of theories (so such models are confirmatory rather than exploratory)

This paper sets out to study, on one hand, how environmentally committed business management relates to two basic aspects, namely the adoption of measures to save energy and resources, and customer-oriented management. On the other hand, these three variables must influence the entrepreneur’s perception of environmental impacts. So our empirical analysis will focus on the testing of five basic assumptions on the relationships between latent factors in rural tourism businesses:

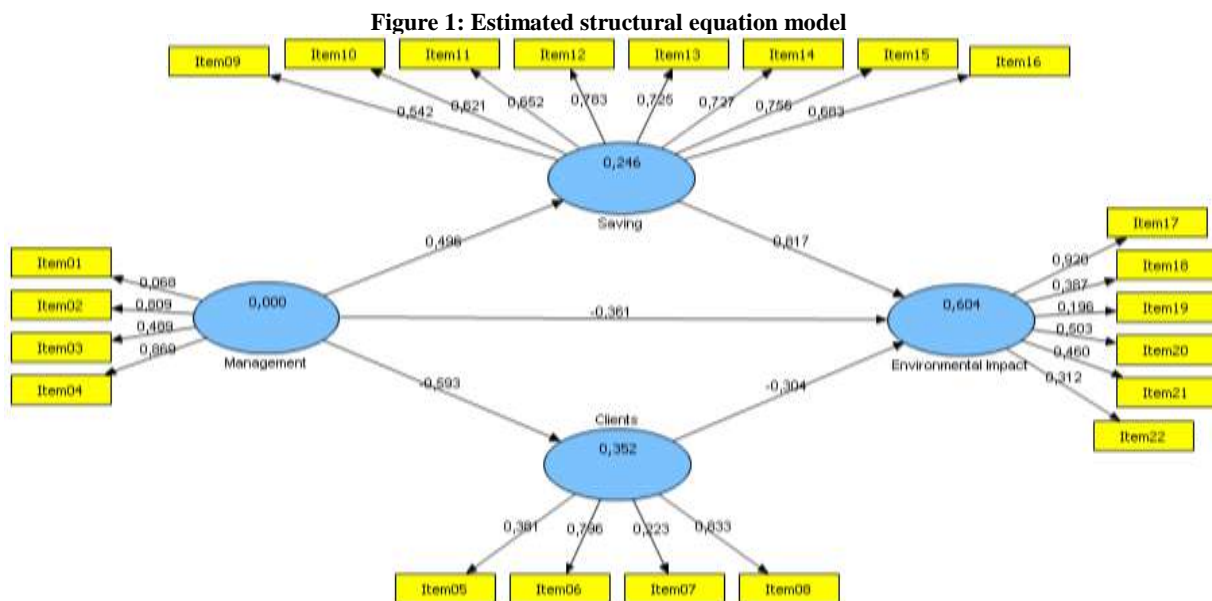
- Consideration of the environmental variable in business management determines the energy and resource-saving factor (*Assumption 1*), awareness of environmental impacts (*Assumption 2*) and the dimension of customers’ environmental commitment (*Assumption 3*).
- Moreover, awareness of environmental impacts is conditioned by the energy and resource-saving factor (*Assumption 4*) and by customers’ environmental commitment (*Assumption 5*).

To confirm these assumptions, on the basis of a reflective model, we used the partial least squares method, which requires no presupposition of normality in variables and is geared to research models that predict the effects of some variables on others. This choice is supported by papers such as Anderson and Gerbing (1988), Barclay *et al.* (1995) or Chin *et al.* (2003), which recommend it over maximum likelihood techniques in studies in which the theory is not firmly established.

EMPIRICAL FINDINGS

Our working assumptions were empirically tested on the basis of responses to a questionnaire given by rural tourism entrepreneurs in the Spanish region of Castilla-La Mancha. The choice of this geographic framework was based on the importance of rural tourism in the region as against more traditional tourism models (Gómez *et al.*, 2007), and also on its close relationship with its natural resources and landscapes (Mondéjar *et al.*, 2008).

The structural model proposed to test our five basic assumptions was estimated by the partial least squares method, using the application SmartPLS 2.0.M3 by Ringle *et al.* (2005), the results of which are set out in figure 1 below. As usual, the figure shows (observable) questionnaire items with rectangles and unobservable latent factors with ovals. The arrows indicate regression relationships, showing the relationships of items with latent factors (measurement model) and between latent factors (structural model). Corresponding partial regression coefficients are indicated next to the arrows and inside the ovals corresponding to endogenous variables, the coefficient of determination for the corresponding regression.



The measurement sub-model, determined on the general principles given in Bagozzi and Yi (1988), constitutes a measurement of the questionnaire's validity for assessing the latent dimensions.

As to the reliability of the instrument of measurement, Cronbach's alpha is acceptable in all four cases and the compound reliability indices are greater than 0.6 – the standard criteria described by Nunnally and Bernstein (1994). Regarding convergent validity (AVE), the values of the four constructs are acceptable, with three of them higher than 0.3, as recommended by Fornell and Larcker (1981). Likewise, the cross-loads are higher for the latent variables on which the respective items are loaded, except for items 16 and 19, whose load is slightly higher for other constructs.

The discriminant validity criterion (Fornell and Larcker, 1981), is also met, as for all four latent variables the corresponding AVE is higher than the square of the estimated correlation between them.

Regarding the structural submodel, as we see in figure 1, the R^2 coefficients associated with the latent variable regressions are significant, with values higher than 0.2 being obtained in all cases (Falk and Miller, 1992). Additionally, in order to analyze the model's predictive relevance, the sample reuse technique proposed by Stone (1974) and Geisser (1975) was used, and the result was that the values of Q^2 for all endogenous structural variables are positive, reflecting the model's goodness of fit.

As an overall finding, our proposed model estimation was validated. Direct effects analysis, shows the dependence between latent variables. Bootstrapping is used to measure the significance of those coefficients in order to obtain the t-statistics associated with each parameter. As can be seen, four coefficients are significant, while the relationship between customer variables and environmental impact is just short of significance.

CONCLUSIONS

This study focused on measuring the environmental attitude of rural tourism entrepreneurs, how the environmental attitude fits into business management, and how the environmental attitude is related to their perception of the industry's environmental impacts. The five basic working assumptions were tested with the estimation of a reflective structural latent model using PLS.

Regarding the first three assumptions, relating to the influence of responsible environmental management on savings, environmental impacts, and customer management, respectively, the estimated coefficients are significant. In particular, a direct relationship is appreciable between environmental awareness in business management and the adoption of measures to save energy and resources – the main impact of rural tourism businesses. Such responsible management is seen to be associated with lower environmental impacts and fewer problems with customers' environmental awareness.

Our fourth assumption is also confirmed, reflecting the high correlation between energy-saving measures and low environmental impacts. This relationship also indirectly underlines the importance of eco-friendly business management. Finally, the assumption least supported by empirical evidence is that of a relationship between customers' environmental awareness and environmental impact. Although a desirable negative coefficient is found, its magnitude is not great enough to be statistically significant, so this assumption is not conclusively confirmed.

Thus the empirical evidence shows how the reduction of environmental impact in rural tourism is largely related to business management committed to the adoption of measures to save energy and resources and customers' environmental awareness.

Subsequent analysis will provide more in-depth studies of the industry's structure. Thus a segmentation of its offering according to entrepreneurs' commitment to the preservation of natural resources or to the use made of them may lead to a clustering within the sector which would maximize the advantages and synergies of inter-company cooperation in tourism management.

AUTHOR INFORMATION

Manuel Vargas-Vargas PhD in Economics by University of Castilla-La Mancha and Degree in Mathematics by University of Granada. Associate Professor in Statistics at Statistics Department. Faculty of Economics and Business Administration of Albacete, University of Castilla-La Mancha (Spain). Research Interest: State-space models, regional analysis, educational and tourism. Phone +34 902 204 100; Fax +34 902 204 130; E-mail: Manuel.Vargas@uclm.es.

José Mondéjar-Jiménez European PhD in Economics and Degree in Business Administration by University of Castilla-La Mancha. Degree in Advanced Studies in Statistics at the same university. Assistant Professor in Statistics at Statistics Department. Faculty of Social Sciences of Cuenca. University of Castilla-La Mancha (Spain). Research Interest: State-space models, regional analysis, educational and tourism. Phone +34 902 204 100; Fax +34 902 204 130; E-mail: Jose.Mondejar@uclm.es.

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