

MEASUREMENT OF CULTURAL TOURISM MOTIVATIONS IN WORLD HERITAGE CITIES: AN ANALYSIS USING FIMIX-PLS ALGORITHM

**Manuel Vargas Vargas, José Mondéjar Jiménez,
M^a Leticia Meseguer Santamaría, José Luis Alfaro Navarro**

*Faculty of Economics and Business Administration
University of Castilla-La Mancha, 02071 Albacete Spain
Manuel.Vargas@uclm.es*

Abstract

Cultural tourism has traditionally been approached from the perspective of scientific literature in terms of its appeal to visitors wishing to find out about or get involved in places or to extend their education, or simply to enjoy historical buildings and heritage managed for tourism. This is the form of tourism that has most encouraged activities to preserve the environment and historical/artistic heritage, getting away from mass tourist models, destination impact and seasonality. This paper undertakes a study of the motivations that prompt tourists to choose a particular destination, along with an empirical analysis centred on the town of Cuenca, declared a World Heritage site by UNESCO in 1996. The results obtained using the partial least square (PLS) method allow us to confirm the proposed correlations and to validate a model that may serve as a guide for best practice in this segment of tourism.

Keywords: Cultural tourism, motivations, latent factors, structural equations.

1. INTRODUCTION

Tourism is an economic activity that is regarded as a means of access to culture, and culture, in turn, attracts tourism, which is now a well-established expression of globalization. Moreover, culture and heritage generate tourism flows with uneven and irregular geographic distribution, with tourist destinations dependent on cultural offerings, architectural riches, museums, etc. Heritage tourism reintroduces visitors to their own cultural roots (Donert & Light, 1996; McCarthy,

1994). Culture becomes a tourist attraction and also gives a sound argument for the preservation of a given region (McKercher, Ho & du Cros, 2005).

Thus as towns compete in the promotion and development of resources for tourism, only those singled out for special distinction have an outstanding advantage, and such is the case of towns declared World Heritage sites by UNESCO (2009). This pairing of heritage and tourism has triggered growth that has been greatest in towns or historic sites so honoured by UNESCO, which are becoming touchstones for both cultural and mass tourism, and also in the context of the growth of urban tourism and new seasonality, where it has a promising future (Troitiño, 2000). Many towns and regions have developed strategies for upgrading their cultural heritage, generally with special emphasis on pre-existing built heritage (Richards & Wilson, 2006), and this is a field of study well defined by scientific literature (Xiao & Smith, 2006).

There are many studies on tourists' cultural motivations (Chhabra, Healy & Sills, 2003; Prentice, Witt, & Hamer, 1998) that characterize the profile of such tourists as "upmarket", with high socioeconomic status (Kima, Chengb & O'Leary, 2007). Craik (1997, p. 126) argued that "Greater understanding of the diversity of the demographic profile of the distinct market shares of cultural tourists is essential if more effective development and marketing of cultural tourism is to be achieved". In keeping with this approach, there is a need to conduct a range of analyses to ascertain in detail the motivations of cultural tourists, which may be very varied, namely: visiting historic buildings, going to artistic events, getting to know other places, peoples, cultures, etc. So there is a whole range of factors related to culture, social class, enculturation and personality that influence what a tourist knows and is ready for and interested in. Thus the need arises to thoroughly investigate the relationships between the cultural motivations and behaviour of this type of tourist, allowing us in this study to develop a model that may serve as a decision-making guide in the management of such tourist destinations. In this context we propose an analysis of the covariance structure between them by the partial least square (PLS) method so as to undertake an analysis to confirm the factorial structure.

2. LITERATURE REVIEW AND HYPOTHESIS

The decision to visit a particular tourist destination is determined by cultural tourism itself, so the cultural tourism market may consider the two dimensions of focussing travel intentions and the tourist's actual experience. The main aim of this study is to develop and test a theoretical model to identify the elements that help modify the cultural tourist's main motivations: cultural factors, leisure factors,

tourist mobility and value for money. A cultural destination is greatly affected by its image, as recognized in the literature (Baloglu & McCleary, 1999; Castro, Armario, & Ruiz, 2007 and Milman & Pizam, 1995).

The influence of image in the process of destination choice has been studied by various authors (Crompton & Ankomah, 1993; Gartner, 1989 and Goodall, 1988). Accordingly World Heritage site status positively influences the decision-making process. Moreover, destination image has a positive influence on perceived quality and satisfaction (Chon, 1991; Echtner & Ritchie, 1991 and Ross, 1993).

The association between tourist satisfaction and returning to or recommending the destination has been widely addressed in the literature (Beeho & Prentice, 1997; Bramwell, 1998; Kozak, 2001 and Yoon & Uysal, 2005), but less work has been done on the motivations prompting destination choice for the first time. Accordingly we established the four paths mentioned previously in the blocks of hypotheses.

In this model, tourist motivations are influenced by cultural and leisure factors and tourist mobility factors, which are in turn conditioned by the value for money that tourists perceive in their destination. To test these correlations the following hypotheses were proposed:

H1: Value for money has a position influence on the key factors in tourist motivations

- H1.1: Value for money on tourist mobility factors
- H1.2: Value for money on tourist leisure factors
- H1.3: Value for money on tourist cultural factors

H2: The tourist mobility factor has a direct influence on the other vital factors in destination choice

- H2.1: Mobility factor on cultural factors
- H2.2: Mobility factor on leisure factors

H3: The cultural factor has a position influence on tourism motivations

H4: The leisure factor has a position influence on tourism motivations

To confirm these hypotheses we estimated a structural model using partial least squares, as no initial assumption of normality in the variables is required, there is no firmly established theory and this is a predictive research model of the effects of some variables on others, as recommended by Anderson & Gerbing (1988), Barclay *et al.* (1995) or Chin *et al.* (2003).

3. METHODOLOGY

3.1 DESCRIPTION OF THE SAMPLE AND PROCEDURE FOR OBTAINING INFORMATION

The study was undertaken by means of interviews conducted over the months from January to December 2005 with visitors to the town of Cuenca, declared a World Heritage site by UNESCO in 1996 and a member of Spain's exclusive World Heritage Cities Group. Given the large number of foreign visitors, the questionnaire was provided both in Spanish and in English translation.

The tourists interviewed were selected at random from among visitors to tourist offices, seeking to cover the widest possible spectrum as regards place of origin, age, sex, etc. The final number of questionnaires deemed valid once incomplete ones had been ruled out was 1,075, so the error margin is $\pm 3.03\%$, as indicated in the study brief.

Tab.1: Study brief.

Universe	Tourists aged above 18
Sample unit	Individuals asking for information in tourist offices
Geographic scope	Cuenca, a town declared a World Heritage site
Methodology	Face-to-face interview with a structured questionnaire
Sample size	1,075 valid interviews
Sampling error	$\pm 3.03\%$
Significance level	95% ($p=q=0.5$)
Field work date	January to December 2005

3.2 PARTIAL LEAST SQUARES

Although the questionnaire's statistical and psychometric properties are justified in the original study by Mondéjar and Gómez (2009), no further work was done on the correlation between the factors obtained. Accordingly, with the aim of carrying out a confirmatory factorial analysis, this study undertook an estimation of a structural equation model showing the conformation of the covariance matrix. For the measurement submodel we used the study's factorial structure, which allows us to decide which items are used as indicators of each latent variable (factor), as shown in figure 1. For the structural submodel, following the theoretical framework set out in the previous section, the value for money variable was regarded as exogenous, liable to affect the other factors, and these in turn act on motivations.

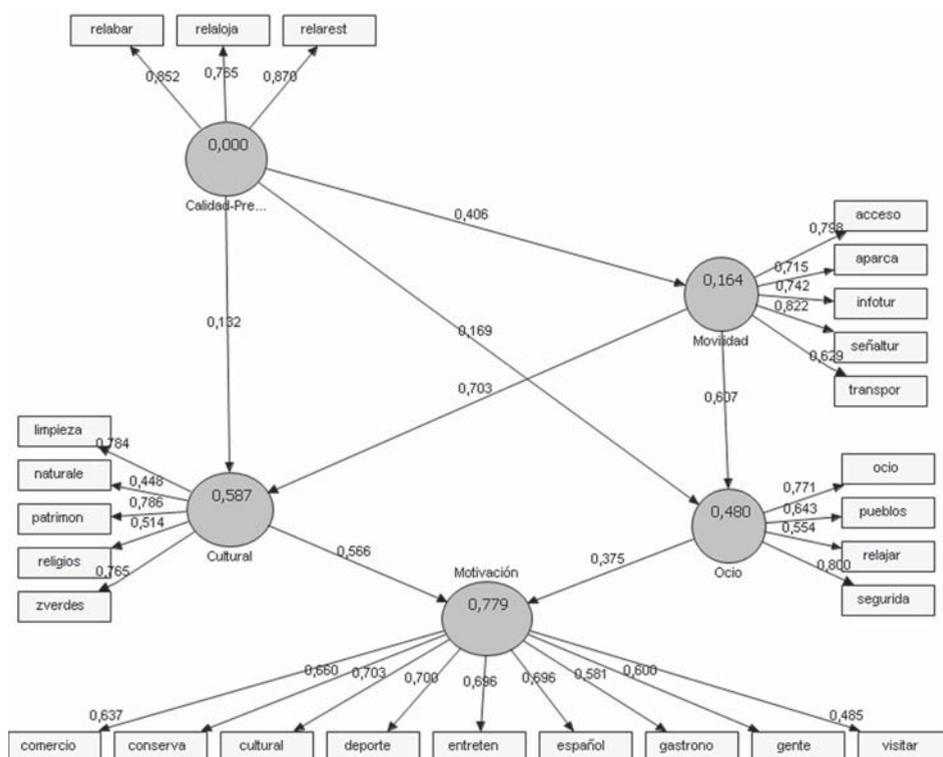


Fig. 1: Estimation of the structural equation model.

The estimate was made using the partial least square (PLS) method with the program SmartPLS 2.0.M3 (Ringle *et al.*, 2005).

The results obtained for the submodel bear out the choice of indicators. This outcome also constitutes a measure of the validity of the questionnaire used to capture the four latent dimensions. The usual goodness of fit measure, proposed in Tenenhaus *et al.* (2005), is the geometric mean of the average communality (outer model) and the average R^2 (inner model), with a value of 0.512.

As to the reliability of the instrument of measurement, the Cronbach's alpha value for all the latent variables is greater than or very near to 0.7, the standard criterion given in Nunnally and Berstein (1994), as shown in table 2. The composite reliability indices are also greater than 0.8 in all cases.

As regards convergent validity (AVE), the values of the four constructs are near to or greater than 0.5, as recommended in Fornell and Larcker (1981). Likewise, the cross-loads are always greater for the latent variables on which the respective items are loaded.

Tab. 2: Reliability measurements.

	AVE	Composite Reliability	R Square	Cronbach's Alpha	Communality	Redundancy
Value for money	0,689547	0,869161		0,773938	0,689547	
Cultural	0,468425	0,808985	0,591480	0,706048	0,468425	0,040986
Motivation	0,415690	0,863373	0,779176	0,822097	0,415690	0,207164
Mobility	0,553941	0,860285	0,164515	0,795893	0,553941	0,091307
Leisure	0,500413	0,798454	0,443029	0,667124	0,500413	0,055472

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

$$AVE_i > \rho_{ij}^2$$

$$AVE_j > \rho_{ij}^2$$

Tab. 3: Matrix of correlation between latent variables.

	Value for money	Cultural	Motivation	Mobility	Leisure
Value for money	1,000000				
Cultural	0,413012	1,000000			
Motivation	0,429210	0,802667	1,000000		
Mobility	0,405605	0,760526	0,655340	1,000000	
Leisure	0,407513	0,701326	0,824750	0,646328	1,000000

Regarding the structural submodel, as shown in table 2, the R² coefficients associated with latent variable regressions are significant, with values greater than 0.1 obtained in all cases (Falk & Miller, 1992). An analysis of direct and overall effects, shown in table 4, highlights the dependence existing between the latent variables and tends to confirm the initial hypotheses for the model.

Tab. 4: Direct and overall effects between latent variables.

Direct effects					Overall effects				
	Value for money	Mobility	Cultural	Leisure		Value for money	Mobility	Cultural	Leisure
Mobility	0,406				Mobility	0,405			
Cultural	0,132	0,703			Cultural	0,413	0,703		
Leisure	0,169	0,607			Leisure	0,407	0,607		
Motivation			0,566	0,375	Motivation	0,392	0,609	0,566	0,375

3.1 IDENTIFICATION OF DIFFERENT GROUPS OF TOURISTS

A large portion of the literature recognizes that some tourists are more highly motivated by cultural tourism than others. So various levels have been identified in tourists who visit historic sites, showing different behaviour and consumption patterns depending on whether their degree of cultural interest and big differences are detected even between “specific” and “general” cultural tourists (McKercher & du Cros, 2003). The assumption that all the cultural tourists are single homogeneous population is often unrealistic. Identification of different groups in connection with estimates in the inner path model constitutes a critical issue for applying the path modeling methodology.

To try to identify groups of tourists with similar behaviour (that is, *tourists segments*) we use the FIMIX-PLS algorithm (Hahn *et al.*, 2002), that combines a finite mixture procedure with an EM-algorithm (Jedidi *et al.*, 1997). This approach permits reliable identification of different tourists segments with their characteristic estimates for relationships of latent variables in the structural model.

For choosing the appropriate number of segments, is usual to repeat the FIMIX-PLS procedure with consecutive numbers of latent classes, that are compared for criteria such as the $\ln L$, the Akaike Information Criterion (AIC), the AIC Controlled (CAIC), the Bayesian Information Criterion (BIC) or the normed entropy statistic (EN). The last criterion, is a critical one for analyzing segment specific results (Ramaswamy *et al.*, 1993).

In this paper, we applied the FIMIX-PLS module of SmartPLS 2.0 to tourists segmentation. A comparison of the class-specific computations for heuristic evaluation criteria (Table 5) reveals that the choice of two groups is appropriate.

Tab. 5: Criteria for model choice.

Number of segments	$\ln L$	AIC	BIC	CAIC	EN
K = 2	-4046,6713	8138,3426	8253,8843	8253,9057	0,9549
K = 3	-4439,1520	8948,3040	9122,6067	9122,6392	0,5757
K = 4	-4585,5794	9265,1588	9499,2224	9499,2661	0,5375
K = 5	-4718,6126	9555,2252	9849,0496	9849,1045	0,5037
K = 6	-4729,1303	9600,2607	9953,8461	9953,9121	0,5342

This choice is supported by the high level of EN, 0.9549.

As illustrated in Table 6, 96.1% of all the tourists are well assigned to one of the two segments with a probability of more than 0.9. These probabilities decline for higher numbers of segments, which indicates an increased fuzziness of segmentation.

Tab. 6: Overview of tourist highest probability of assignment to a certain segment.

P_{ik}	K = 2	K = 3	K = 4	K = 5	K = 6
0.9 – 1.0	0.961	0.285	0.247	0.182	0.202
0.8 – 0.9	0.020	0.126	0.119	0.075	0.101
0.7 – 0.8	0.011	0.166	0.151	0.114	0.086
0.6 – 0.7	0.006	0.231	0.161	0.160	0.111
0.5 – 0.6	0.002	0.191	0.198	0.204	0.158
0.4 – 0.5		0.001	0.108	0.188	0.150
SUM	1.000	1.000	0.984	0.923	0.808

As shown in Table 7, the model is better adjusted for the segment 1: the composite reliability indices are greater than 0.85 in all cases, and the convergent validity (*AVE*) values are greater than 0.5. The R^2 coefficients associated with latent variable regressions are very high, with values greater than 0.95 obtained in all cases except for the mobility factor. An analysis of direct effects, shown in table 8, highlights the dependence existing between the latent variables and tends to confirm the initial hypotheses for the model.

Tab. 7: Reliability measurements.

	Segment 1 (87.98%)			Segment 2 (12.02%)		
	AVE	Composite Reliability	R Square	AVE	Composite Reliability	R Square
Value for money	0.662784	0.853357		0.666709	0.856672	
Cultural	0.748646	0.935575	0.988822	0.390879	0.748036	0.479285
Motivation	0.681479	0.950111	0.982707	0.355298	0.827589	0.713006
Mobility	0.776508	0.945327	0.319230	0.498994	0.831374	0.091113
Leisure	0.651362	0.879302	0.973296	0.452248	0.761473	0.403182

To identification of a certain variable to characterize the two uncovered tourists segments, we conducted an ex post analysis and we reviewed several potential explanatory variables (Ramaswamy *et al.*, 1993). This analysis identifies two kinds of facts: on one hand, the segment 1 is composed mostly (75.6%) by tourists whose motivation is cultural/leisure, whereas, in the segment 2, the distribution of motivation is less concentrated. On the other hand, in the second segment, there are a high proportion of tourists who have answered the maximum option (excellent) in most of the valorative items.

Tab. 8: Disaggregate results for direct effects between latent variables.

	Global (T-statistic)	Segment 1 = 87.98% (T-statistic)	Segment 2 = 12.02% (T-statistic)
Value for money à Mobility	0.406 (7.355)	0.565 (8.073)	0.302 (4.182)
Value for money à Cultural	0.132 (3.137)	0.030 (3.004)	0.110 (1.919)
Value for money à Leisure	0.169 (3.715)	0.009 (0.663)	0.164 (2.578)
Mobility à Cultural	0.703 (18.847)	0.977 (153.352)	0.651 (12.729)
Mobility à Leisure	0.607 (13.348)	0.981 (103.011)	0.556 (8.944)
Cultural à Motivation	0.566 (12.467)	0.773 (11.463)	0.527 (8.722)
Leisure à Motivation	0.375 (7.939)	0.221 (3.230)	0.389 (6.548)
Goodness of Fit	0.512	0.758	0.446

4. CONCLUSIONS

It is worth noting the questionnaire's psychometric properties and the scale's high reliability, allowing us to draw significant conclusions from the perspective of tourism management.

This study verified the covariance structure of the cultural and leisure factors plus the mobility factor. To quantify this approach we used the questionnaire analyzed in Mondéjar and Gómez (2009). The questionnaire is, in our view, better suited to the group analyzed and provides a breakdown of four latent factors affecting tourism motivations.

Regarding the first hypothesis, the regressions explaining the variables are significant, with acceptable determination coefficients for the three factors, and the first hypothesis was confirmed in its three formulations, confirming that better value for money has a positive effect on the other factors.

So the value for money variable has a direct and positive influence, of a similar degree of about 0.4 (whether directly or indirectly), on the other latent factors analyzed.

The study model includes a mobility factor allowing ease of access and public transport to be rated more highly as an increasing number of tourists plan their holidays with the aid of the internet. This factor has a major overall effect on motivations.

Regarding the mobility factor's influence on the other factors, and motivations, its direct effect on the cultural factor yields a value of 0.703 and 0.607 on the leisure factor, and indirectly a value of 0.609.

Tourists attach importance to the cultural factor that predominates over the other factors (hypothesis 4). In this respect, towns or historic sites declared to be

World Heritage by UNESCO have a really crucial added value for guaranteeing the existence of a rich historical and cultural heritage meeting the demands of such cultural tourists. Cuenca's rich offering of culture and heritage sets it apart as a cultural tourism destination of the first rank, and this factor has a major direct effect on motivations when a destination is chosen.

Moreover, one concern of cultural tourists is sustainability. Thus such tourists take a positive view of aspects such as heritage preservation or green and recreational areas, in addition to the paramount cultural attraction.

To analyze the sample heterogeneity, we apply the FIMIX-PLS algorithm to identify segment of tourist. We have identified two different groups. The first one, with the 87.98% of the sample, mainly consists of tourists who express cultural or leisure motivations, being the group most relevant to the objectives of this paper. The second one, which contains the 12.02% of the sample, consists of tourists with different motivations and there are a high proportion of tourists who have answered the maximum option (excellent) in most of the valorative items.

In the first group, the model have a goodness of fit coefficient of 0.758 and all the regression coefficients of the inner model are significant, except the relation between value for money and leisure, with high determination coefficients. Thus, the first hypothesis was partially confirmed: better value for money has a positive effect on the mobility and cultural factors, whereas this effect isn't statistically significant for the leisure factor. Also, the second hypothesis is confirmed, with significant effect of the mobility factor in the cultural and leisure ones. Finally, the tourists motivation variable is very well explained by the cultural ($\beta = 0.773$) and leisure ($\beta = 0.221$) factors, with a R^2 coefficient of 0.98. Thus, the hypothesis 3 and 4 are also confirmed.

As an overall result, we have validated a model allowing us to take measures to enhance the motivations of visitors to a heritage destination. In particular, acting upon the various factors involved should strengthen the motivations that lead to the choice of a tourism destination rated as an outstanding heritage site.

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MISURA DELLA SENSIBILITÀ AMBIENTALE DEGLI IMPRENDITORI DI TURISMO RURALE: UN'ANALISI DELLA ETEROGENEITÀ BASATA SULL'UTILIZZO DELL'ALGORITMO FIMIX-PLS

Riassunto

Nella regione spagnola di Castilla-La Mancha, le imprese di turismo rurale si sono sviluppate nelle aree rurali come un'alternativa economica alle attività tradizionali, quali l'agricoltura e l'allevamento. Vi è, inoltre, una crescente consapevolezza del forte legame tra turismo rurale, sviluppo sostenibile e conservazione dell'ambiente.

Questo lavoro ha due obiettivi principali. Il primo, è la costruzione e la validazione di un questionario finalizzato alla misurazione della sensibilità ambientale degli imprenditori nel settore del turismo rurale; il secondo, è l'integrazione di tale sensibilità nelle strategie di gestione aziendale. Tuttavia, l'ipotesi di omogeneità di strategie o del grado di sensibilità sono spesso poco realistiche. Per catturare l'eterogeneità non osservata, in un passo successivo, facciamo ricorso ad un modello ad equazioni strutturali basato sul metodo dei minimi quadrati parziali (PLS) utilizzando il software SmartPLS e l'algoritmo FIMIX. I risultati ottenuti confermano l'ipotesi di eterogeneità nella percezione individuale delle dimensioni della sensibilità ambientale e delle loro relazioni. I risultati illustrano anche come l'approccio a misture finite proposto riesca ad integrare ed offrire spunti di riflessione ulteriori rispetto a quelli derivanti da un modello ad equazioni strutturali tradizionale.

Key words: sensibilità ambientale, turismo rurale, algoritmo FIMIX-PLS

JEL codes: C49, Q51.