ATINER CONFERENCE PAPER SERIES No: TOU2012-0237

Athens Institute for Education and Research
ATINER

ATINER's Conference Paper Series
TOU2012-0237

Adventure Tourism Activities Undertaken by International Tourists in Costa Rica: Socio-demographic and Travel Indicators

Daniel Villalobos-Céspedes
Escuela de Administración, Universidad Nacional,
Costa Rica

Alfredo Tolón-Becerra
Departamento de Ingeniería Rural
Universidad de Almería
Spain

Emilio Galdeano-Gómez
Departamento de Economía Aplicada
Universidad de Almería
Spain

ATINER CONFERENCE PAPER SERIES No: TOU2012-0237

Athens Institute for Education and Research
8 Valaoritou Street, Kolonaki, 10671 Athens, Greece
Tel: + 30 210 3634210 Fax: + 30 210 3634209
Email: info@atiner.gr URL: www.atiner.gr
URL Conference Papers Series: www.atiner.gr/papers.htm

ISSN **2241-2891**
19/09/2012

An Introduction to ATINER's Conference Paper Series

ATINER started to publish this conference papers series in 2012. It includes only the papers submitted for publication after they were presented at one of the conferences organized by our Institute every year. The papers published in the series have not been refereed and are published as they were submitted by the author. The series serves two purposes. First, we want to disseminate the information as fast as possible. Second, by doing so, the authors can receive comments useful to revise their papers before they are considered for publication in one of ATINER's books, following our standard procedures of a blind review.

Dr. Gregory T. Papanikos
President
Athens Institute for Education and Research

This paper should be cited as follows:

Villalobos-Céspedes D., Tolón-Becerra, A. and Galdeano-Gómez, E. (2012) "**Adventure Tourism Activities Undertaken by International Tourists in Costa Rica: Socio-demographic and Travel Indicators**" Athens: ATINER'S Conference Paper Series, No: TOU2012-0237.

Adventure Tourism Activities Undertaken by International Tourists in Costa Rica: Socio-demographic and Travel Indicators

Daniel Villalobos-Céspedes
Escuela de Administración, Universidad Nacional, Costa Rica

Alfredo Tolón-Becerra
Departamento de Ingeniería Rural
Universidad de Almería
Spain

Emilio Galdeano-Gómez
Departamento de Economía Aplicada
Universidad de Almería
Spain

Abstract

The aim of this research is to identify and analyze the number and type of adventure tourism activities that are of interest to tourists in Costa Rica. The activities analyzed included hiking, visits to volcanoes, observation of flora/fauna, bird watching and zip-lining. Data were taken from the Air Travel Survey for Non-Resident International Tourists in Costa Rica to tourists over 18 years of age leaving Juan Santamaría Airport during the first quarter of 2007 and 2010. The study comprises three dimensions: 1) the probability of demand based on the average number of activities undertaken. 2) An estimate of the influence of socio-demographic factors, reasons for travel and travel conditions on the number of activities performed using Poisson distribution. 3) The Poisson probability function models, *ceteris paribus,* tourists' intentions based on the average number of adventure tourism activities according to the variables of analysis.

Keywords: adventure tourism; socio-demographic factors; travel indicators; Poisson probability function.

Acknowledgements: This research was partially funded by Spanish MCINN and FEDER aid (project ECO2011-24930) and from Junta de Andalucía (project SEJ-5827, Consejería de Economía, Innovación y Ciencia).

Contact Information of Corresponding author: Emilio Galdeano-Gómez, Universidad de Almería (Campus Internacional, ceiA3), e-mail: galdeano@ual.es

Introduction

Adventure tourism is linked to experiences of interaction in natural settings with different degrees of risk (Galloway et al, 2008). It includes outdoor recreation (Buckley, 2004) and a way to spend short holidays (Kane & Zink, 2004). Such activities can be take the form of guided tours and may at times require the use of specialized equipment (Buckley, 2007). The diversity of activities has prompted the emergence of new concepts including eco-tourism (Carter & Lowman, 1994), adventure tourism (Carter, 2006), adventure recreation (Ewert & Hollenhorst, 1994) and wildlife tourism (Curtin, 2009). Hjalager (1996, 1997) and Kline (2001) define this adventure tourism as an innovation which responds to changes in market conditions and the demand for environmentally-friendly products and services.

The characteristics of adventure tourism in natural settings (Huang & Sarigöllü, 2008) help to define a demand profile (Weidenfeld et al, 2009). That profile has been evaluated according to tourists' socio-economic status, travel conditions and reasons for travelling. Key aspects include gender, education (Kattiyapornpong & Miller, 2008), age (Oppermann, 1995), health, civil status and family (McGehee et al, 1996) and point of departure. This analysis has been performed in countries such as Australia (Black & Rutledge, 1995), United States of America (Sung, 2004), New Zealand (Cloke & Perkins, 2005), Kenya (Beh & Bruyere, 2007), Vietnam (Truong & King, 2009), Finland (Pouta et al, 2009), and England (Weidenfeld et al, 2009).

Research on the demand of international tourists in Costa Rica has received little scientific attention in tourism literature (Miller, 2008; Villalobos et al, 2010, 2012). The aim of this research is to analyze the influence of socio-demographic and travel indicators on the average number of adventure tourism activities undertaken by international tourists in Costa Rica. Those factors refer to the motives for vacation holidays, recreation, leisure and pleasure as well as visiting family and friends (ICT, 2007, 2010).

The research objectives are:

1- Understand the tourist demand for adventure tourism activities.
2- Identify the motives, socio-demographic factors and travel conditions that have a significant influence on the average number of adventure tourism activities undertaken by tourists.
3- Classify the aforementioned variables according to their positive or negative influence on the average number of said activities demanded by international tourists.
4- Assist with public and private management supply and demand for adventure tourism in Costa Rica.

The review of tourism literature underscores aspects that are relevant to the factors that are analyzed in this study. Section three contains the analysis model used for this study based on the Poisson Probability Function (PPF).

Section four refers to the technique and data used for the analysis. The results are analyzed in section five. The conclusions are given in section six.

Literature review

The diversity of tourist travel motives allows us to segment the tourist demand and gain a better understanding of it. Devesa et al (2010) found that tourists who visit a particular destination will have a greater or lesser level of satisfaction depending on their evaluation of the aspects of their visit or destination that are most relevant to their travel motives. The tourist's perceived value can be supported by socio-demographic aspects, income, age, gender, personality, level of education, nationality, etc. (Meric & Hunt, 1998), which establish the motivation, e.g. holidays, visiting friends or family, health, training, business, rest, etc., and the travel conditions, e.g. companions, frequency of travel, activities and services demanded, etc..

The price or nominal tariffs (Stevens, 1992) and the distance from the tourist destination (Hsu et al, 2009), can influence the perceived value, but they are not determining factors. Local and national policies and actions geared toward preserving, protecting and recreating the quality of the attributes offered by the destination can have a greater effect on determining the perceived value. Motivation, whether intrinsic or extrinsic, may initiate action and produce satisfaction but preferences are what determine the decision-making process when it is rational.

Adventure tourism implies attitudes and behavior where sensations modulate a certain level of satisfaction. It includes outdoor recreation and short-term vacation or holidays (Cater, 2006), new and intense experiences (Bentley & Page, 2008), social interaction, thoughts and feelings, an escape from routine and personal situations (Galloway et al, 2008), preservation expectations (Stem et al, 2003), lifestyle and values (Glover & Prideaux, 2009).

The use of natural settings calls for certain conditions to ensure that they are enjoyed (Weidenfeld et al, 2009). Adventure tourism offers pleasant, sensory experiences for tourists (Lam & Hsu, 2006) linked to a range of differentiated and changing market segments (Sung, 2004). The attributes of the adventure (Cracolici & Nijkamp, 2008; Milman, 2009) may also have an influence on tourist's decisions. For Truong and King (2009) the tourist's perception of products aids in predicting the tourist's satisfaction and loyalty, including intentions to return and recommend products and destinations. Bigné et al (2009) found that the functional perception indicates a stronger intention to return whereas the psychological perception favors the recommendation of the destination.

Truong and King (2009) gave a solid explanation of the socio-demographic and travel condition factors in the tourist's perception, satisfaction and intention to return. Sung (2004) found that professional married women prefer moderate or light adventure tourism. Additionally, this group would be willing to travel with family and/or friends and prefers innovation in tourism.

According to the author, family trips indicate a high level of enthusiasm for adventure tourism, and Central America is one of the preferred destinations.

Teaf and Turpin (1996) found that age, among other conditions, restricts the tourist's decision in taking vacation holidays. Floyd et al (2006) argue that advanced age, female gender and socio-economic conditions prove to be disadvantageous by acting as sources of inequality. Lehto et al (2008) found that bird watching and observation of flora/fauna is not appealing to 'baby boomers' (40-60 years of age) or to the 'silent generation' (61 years of age and older). Each of those factors indicates a different interest and capacity in the intention of. In particular, this research analyzes the influence of several socio-economic and travel factors on the number of adventure tourism activities demanded by international tourists in Costa Rica.

Analysis Model

The PPF is used to determine the intention of demand according to the expected number of adventure tourism activities that would be undertaken by international tourists in Costa Rica. This technique is based on the Poisson Distribution (PD) in discrete or discontinuous probability distribution (Larson, 1969; Levine et al, 2006). The PD expresses the probability of a given number of events occurring in a fixed interval of time or given area of opportunity, which may be continuous or during specified intervals, distance, area or volume where more than one event may occur- given that the average rate of occurrence is known independently of the time that has elapsed since the last event (Levine et al, 2006).

The expected number of events at a given time is λ, the parameter of the mean or expected number of k events: $E(k) = \lambda$. The probability that there will be exactly k events ($k = 0, 1, 2, ...$), is defined as:

$$f(k / \lambda) = \lambda^k / k! * e^{-\lambda} \quad (1)$$

where:

e = the base of the natural logarithm equal to 2.71828…

k = the number of occurrences of an event whose probability is given by (1)

! = statistical expression referring to the number of ways in which an event can occur

λ = is a positive real number equal to the expected number of occurrences in an area of opportunity.

The variance of the PD is equal to λ and its standard distribution σ is equal to the square root of λ.

For PD variable a) the probability of the occurrence of an event in a time interval is proportional to the span of the interval, independent of the occurrence of other events and b) the times of occurrence between events are independent and they are distributed exponentially (Faraway, 2006). The relationship between the dependent and the explanatory variable is set out through the link function given by $g(\mu_i) = ln(\mu_i)$, where μ_i is the mean recount of the data. The model is:

$ln\ (\mu_i) = c + k_i B$
(2)
where:
c = a constant
k_i = vector of the model explanatory variables
B = vector of the model coefficients

The random component of the model, which is the variability that is not able to be explained by the relationship, follows a PD. B of a given variable corresponds to the logarithm of the division between the case count when the variable assumes the value z and the case count when the variable assumes the value $z - 1$. To interpret B in terms of the response variable scale, the value of the coefficient is raised to the exponent.

$\mu_i = E(y_i/k_i) = e^{k_i B}$
(3)

B is interpreted as the number of times when the average case count is higher, *ceteris paribus*, when changing the explanatory variable into a unit. Another interpretation is derived from $(\mu_i - 1) * 100 = \mu'_i$, which is used to define the percentage variation in the mean case count, *ceteris paribus,* when changing the explanatory variable into a unit.

To estimate B the maximum-credibility method is used. There are two tests used to evaluate the goodness of fit of the model. One of them is obtained from the credibility quotient between a reduced model and a complete model LR= – 2*ln* (reduced credibility/complete credibility). The LR statistic has a Chi-square distribution.

LR = 2 [*ln* (*l* (*B* with *x* variables)/ *ln* (*l* (*B* with $x - p$ variables)]
(4)
where *L(B)* = credibility obtained in the model. The statistic has $x - p$ variables. The degree of freedom *gl* in the distribution is the difference between the numbers of parameters of both models. Another goodness of fit test of the model is the Pearson Chi-square value, with *gl* equal to the difference between the total data and the number of parameters of the model.

$X^2 = \sum_i (y_i - \hat{\mu}_i)^2 / \text{Var}(\hat{\mu}_i)$
(5)

y_i = is the count in case i
$\hat{\mu}_i$ = the estimated value of the count of case i.

With this value, the proximity between the observed and expected values can be evaluated.

The significance of the PPF coefficients can be evaluated with the standard normal distribution:

$Z_i = B_i / ee(B_i)$
(6)
Z_i = standardized value of the standard normal distribution
B_i = estimated coefficient of the model
$ee(B_i)$ = standard error of the coefficient

PPF is used in this research because it allows to modeling the influence of the variables of interest in tourist's intentions of demand for adventure tourism activities.

Technique and data

In Costa Rica there is little diversity in adventure tourism activities given that it is a relatively new destination. The Air Travel Survey for Non-Resident International Tourists administered from 2001 to 2010 (ICT, 2010) highlighted activities including hiking, bird watching, observation of flora/fauna, visits to volcanoes, zip-lining and sport fishing. The demand for these activities has weakened since 2002. Despite an increase in tourist visits from 2002-2010, the demand for some of the aforementioned activities decreased and others came to a standstill.

The study compares the results derived from surveys during the first quarters of 2007 and 2010 which were applied over the course of 15 days by the company XLTec, Inc., to a sample of n = 1,550 international tourists over 18 years of age leaving Juan Santamaría Airport. Data were collected daily during tourist boarding periods in the morning, afternoon and evening, covering flights to all destinations. The sampling gave a confidence level of 95% and a 2.8% margin of error in both cases.

62 surveys were discarded in 2007 as they were defective, leaving 1,488 cases. The questionnaires recorded 2,257 people contributing to the tourist expenditure statistics, and were weighted according to the region of residence based on the number of people included in the expenditure. The sample was reduced to n = 1,838 cases with the following reasons for travel: 1) holidays, leisure, recreation and pleasure including weddings and honeymoons (88.2%) and 2) visiting friends and family (11.8%). By 2010 those reasons for travel represented 88% and 12% respectively of n = 4410 international tourists who were interviewed (Table 1). That database was used to determine the socio-demographic factors, motives and travel conditions that affected the intention of demand for adventure tourism activities.

Table 1. Variable distribution according to factors

	Years					
	2007	2010			2007	2010
Reasons for travel (%)						
Holidays, recreation, pleasure, rest	88.2	87.7		Visit to family and friends	11.8	12.3
Socio-demographic variables (%)						
Gender				Civil status		
Male	62.3	56.6		Single	29.5	51.0
Female	37.7	43.4		Married	63.0	44.6
Age				Divorced or widowed	4.8	4.4
Under 30	18.2	40.0		Don't know / Don't answer	2.7	0.0
30-39	17.0	22.8		Region of origin		
40-49	19.7	16.4		United States of America	59.8	34.8
50 and over	43.9	20.8		Europe	19.0	9.2
No response- Don't know	1.3	0.0		Canada	11.1	18.7
Educational level				Latin America and Caribbean	7.6	35.2
Secondary or less	17.7	16.9		Other countries	2.5	2.1
University	56.3	62.4				
Postgraduate	24.4	20.7				
Don't know / Don't answer	1.5	0.0				
Travel condition variables (%)						
First visit to Costa Rica				Traveling companions		
Yes	65.5	68.2		Couple	32.7	28.7
No	34.5	31.8		With family	31.6	17.4
Visited natural park and reserves				Alone	19.0	37.9
Yes	67.0	73.4		With friends	16.7	16.0
No	33.0	26.6				

In both cases the description of the variables that make up each type is derived from the structure of the ICT Air Travel Survey, which follows the International guidelines stipulated by the International Tourism Organization (ITO). Use of the 2007 Survey is justified as it represents the period just before the start of the current economic and financial crisis. The number of tourists in Costa Rica grew by an average of 12% from 2002-2007. In 2007 the number reached 1,979,789 tourists, 15% fewer than the previous year. 2010 represents the continuation of the crisis for three years and a total of 2,099,829 tourists, with a reduction of 8% from 2008 to 2010.

In 2010 there were significant changes in the variables' composition according to the factors of the study with respect to 2007. The percentage of tourists visiting Costa Rica for holidays, leisure, recreation and pleasure as well as visiting friends and family remained practically invariable. There was a 15% increase in the number of female tourists and a 9% decrease in male tourists. The number of tourists under 30 increased by 120%, overtaking the 50 and over group whose percentage plunged to 53% while tourists between 30 and 39 years of age increased by 34%. Tourists with a university education

represented the largest group as compared to those with other levels of education. In 2010 this group of tourists (university education) increased by 11% while the other levels declined. This fact may be explained, in part, by the rise in tourists between 30 and 39 years of age.

In 2007 married tourists dominated the international tourism scene in Costa Rica (63%), but in 2010 there were slightly more single tourists (51%). While the number of married tourists fell 41% single tourists increased by 73%. With regard to the country of origin the number of US tourists in Costa Rica decreased by 42% while Canadian tourists increased by 68% and Latin American tourists by 363%. There was a 4.4% increase in return visits and a 10% increase in visits to parks and natural reserves. The number of tourists traveling with their families fell by 45% while tourists traveling alone increased by 99.5%.

Results

Based on the information provided by the survey we found a) tourists' preferences for hiking, visits to volcanoes, observation of flora/fauna, bird-watching and zip-lining activities and b) the number of activities that tourists were willing to do. In 2007 81% of those interviewed indicated having undertaken adventure tourism, while in 2010 that figure rose to 87%. Hiking declined its demand 4% in 2010 while observation of flora/fauna rose 10%.

Demand for adventure tourism rose in 2010 compared to 2007, when tourists undertook two or more activities (Table 2). In 2007 and 2010, *ceteris paribus*, the demand for adventure tourism increased nearly 25% when tourists were willing to do up to four activities. In 2010 tourists took better advantage of their stay in Costa Rica by doing a greater possible number of activities (4 to 5) in comparison to 2007. Demand was 3.3% higher in 2010 than in 2007. Among these activities, bird-watching and observation of flora/fauna stood out, being undertaken by 40% of tourists in 2007 and 38% and 35%, respectively, in 2010.

Table 2. Adventure tourism activities undertaken by tourists

	2007					2010				
Number of activities	1	2	3	**4**	5	1	2	3	**4**	5
Visit to volcanoes	0.121	0.152	0.175	**0.335**	0.217	0.089	0.129	0.219	**0.344**	0.220
Canopy (zip-line)	0.113	0.143	0.215	0.219	**0.309**	0.085	0.162	0.194	0.256	**0.304**
Bird watching	0.020	0.077	0.257	**0.396**	0.250	0.015	0.101	0.238	**0.380**	0.266
Hiking	0.075	0.178	0.256	**0.312**	0.180	0.056	0.136	0.252	**0.340**	0.216
Observation of flora/fauna	0.029	0.097	0.250	**0.403**	0.220	0.042	0.130	0.269	**0.353**	0.206
Tourism adventure	0.205	0.192	0.225	**0.245**	0.132	0.171	0.196	0.237	**0.253**	0.142

Visits to volcanoes (34% in 2007 and 2010) and hiking (31% in 2007 and 34% in 2010) were the second most demanded activities by tourists. As compared to 2007 the demand for hiking and visits to volcanoes rose in 2010 when tourists performed 4 activities. During that year there was a favorable connection between both activities and excursions to observe flora/fauna.

In both years the demand for zip-lining rose by about 30% whenever tourists did five activities. The other activities declined in tourist demand compared to zip-lining. In comparison to 2007, there was less demand for zip-lining in 2010 when tourists did up to 3 activities, but more demand when tourists did four activities. When tourists undertook only one adventure activity, the most popular were visits to volcanoes and zip-lining. When tourists carried out two activities, hiking was preferred in 2007 as opposed to zip-lining in 2010. The probability of visits to volcanoes or zip-lining was greater when tourists only did one activity and in 2010 this difference was accentuated.

The PPD technique included a total of 10 variables: reasons for travel (2), socio-demographic factors (5) and travel conditions (3). Each of these variables includes sub-variables as well as qualitative, category or range indicators. Out of the 16 sub-variables that were analyzed in 2007, 9 (56%) were found to be significant at the 5% level, and among those, 5 refer to travel conditions (55.6%) and 4 to socio-demographic factors (44.4%). In 2010 'married' was added as a socio-demographic sub-variable.

In order to establish comparisons between the indicators of a sub-variable, one of the indicators was taken as a parameter. In the case of reasons for travel, the indicators are holidays, recreation, leisure and pleasure. The sub-variables with a significance of $p \leq 0{,}05$ (5%) are outlined in Table 3. *Ceteris paribus*, visiting friends and family showed no significance in the demand for adventure tourism as compared to those tourists whose reason for travel was holidays, recreation, leisure and pleasure in 2007 but it did show significance in 2010. This result suggests that adventure tourism may have been preferred by those who traveled to Costa Rica for holidays, recreation, leisure and pleasure in 2007, but that tendency changed in 2010.

Table 3. The regression results (μ'_i) -Years 2007 and 2010-

Socio-demographics factors	2007	2010	**Travel conditions**	2007	2010
Female	0.0724	0.0439	First visit to Costa Rica	0.2627	0.1755
Married		0.0485	Travel with partner	-0.2723	0.1832
University	-0.139	0.0550	Travel in family	-0.3685	0.1701
Post-graduated	-0.169	0.1023	Travel with friends	-0.2196	0.0851
Europe	-0.1525	0.1347	Did not visit nature parks/reserves	-0.5898	-0.5735
Reasons for travel					
Visit to family and friends		-0.1761			

To obtain the level of influence of the variables according to sub-variables and indicators on the number of adventure activities demanded, the formula (3) of the analysis model was applied. In this case k = 1; B = the value of the coefficient for each indicator. The result is subtracted from 1 to obtain $\mu'_i = \mu_i - 1$, the relative value of the influence of the indicators on the tourist's intention of demand in terms of the number of adventure activities undertaken. μ'_i indicates the direction -positive or negative sign- and magnitude of the influence of the indicators on the average number of activities undertaken by tourists.

- Socio-demographic factors. Gender indicates that adventure tourism demand by women (as compared to men), *ceteris paribus*, decreased by an average of 7.2% in 2007 and 4.4% in 2010. Compared to 2007, in 2010 there was a 2.8% increase in women's propensity to do adventure tourism. Married tourists, as compared to single tourists, did not show a significant interest in adventure tourism in 2007. However, in 2010 the demand for adventure tourism declined by 4.9% for this group of tourists. In 2007, tourists with a university-level education, as opposed to those with a secondary level or less, increased their demand for adventure tourism by 14%. In 2010 that indicator reflected a 5.5% decline. Postgraduate tourists showed similar results. In 2007 European tourists, as opposed to US tourists, had a 15% influence on the demand for adventure tourism, while in 2010 this influence fell by 13%.

- Travel conditions. In 2007 and 2010 tourists who did not visit natural parks and reserves demanded 59% and 57% fewer adventure activities, respectively, than those who did visit these areas. These tourists show very little motivation to do adventure tourism. Tourists visiting Costa Rica for the first time undertook 26.3% and 18% fewer adventure activities than tourists who had visited the country before in 2007 and 2010, respectively.

Regarding travel companions, traveling with family, partners and with friends proved more popular than traveling alone. In 2007, tourists traveling with family, compared with those traveling alone, increased by 37% the number of activities undertaken, while those traveling with partners by 27% and those traveling with friends by 22%. In 2010 fewer adventure tourism activities were undertaken by all these groups. Traveling with family/partners had the greatest impact on that indicator.

- Reasons for travel. In 2007 this factor did not show a level of significance between its variables. In 2010 tourists visiting family and friends proved to be significant for adventure tourism. This group of tourists showed 18% more demand for adventure tourism.

Conclusions, contributions and future lines of research

Adventure tourism constitutes a group of appealing activities for more than 80% of international tourists in Costa Rica who travel there for holidays, recreation, leisure and pleasure and visiting family and friends. In 2007 tourists were more inclined to do hiking activities (61%) while in 2010 they preferred

observation of flora/fauna (60%), followed by visit to volcanoes (56%). In 2010 Costa Rica's natural resources stood out for their tourist appeal as compared to 2007. Nevertheless, the increase in number of women, university students, return-visitors to Costa Rica and its parks/natural reserves showed a tendency to reduce the demand for adventure tourism.

The results may be beneficial for the further development of strategies and expectations of the national tourism sector. The derived indicators may help to improve coordination between business owners in the tourism sector if this cluster is strengthened. The government, especially the ICT, can strengthen policies and strategic actions to improve conditions that would favor the development of competitive advantages. Research centers can make contributions by facilitating research in tourism based on the indicators generated here as well as promoting others.

The main limitation of this study was data analysis for the Air Travel Survey for Non-Resident International Tourists in Costa Rica administered during the first quarter of 2007. However, this period marked the beginning of the current international financial-economic crisis and the data can be used to compare the progression of the adventure tourism sector during the crisis in 2010. Future research work should study the impact that the crisis has had on the tourism sector in general and, specifically, on adventure tourism.

References

Beh, A. & B. L. Bruyere (2007). 'Segmentation by visitor motivation in three Kenyan national reserves'. *Tourism Management* 28: 1464-1471.

Bentley, T. A. & S. J. Page (2008). 'A decade of injury monitoring in the New Zealand adventure tourism sector: A summary risk analysis'. *Tourism Management* 29: 857-869.

Bigné, A. E., G. I. Sánchez & B. S. Sanz (2009). 'The functional-psychological continuum in the cognitive image of a destination: A confirmatory analysis'. *Tourism Management* 30: 715–723.

Black, N. & J. Rutledge (1995). *Outback Tourism: The Authentic Australian Adventure*. North Queensland, Australia: James Cook University Press.

Cater, C. I. (2006). 'Playing with risk? Participant perceptions of risk and management implications in adventure tourism'. *Tourism Management* 27: 317-325.

Cloke, P. & H. C. Perkins (2005). 'Cetacean performance and tourism in Kaikoura, New Zealand'. *Environment and Planning D: Society and Space* 23: 903-924.

Cracolici, M. F. & P. Nijkamp (2008). 'The attractiveness and competitiveness of tourist destinations: A study of Southern Italian regions'. *Tourism Management* 30: 336–344.

Curtin, S. (2009). 'The Self-presentation and Self-development of Serious Wildlife Tourists'. *International Journal of Tourism Research* 12 (1): 17-33.

Devesa, M., M. Laguna & A. Palacios (2010). 'The role of motivation in visitor satisfaction: Empirical evidence in rural tourism'. *Tourism Management* 31: 547-552.

Ewert, A. & S. Hollenhorst (1994). ΄Individual and Setting Attributes of the Adventure Recreation Experience'. *Leisure Sciences* 16: 177-191.

Faraway, J. J. (2006). Extending linear models with R. Chapman & Hall/CRC, *Boca Raton, FL*.

Floyd, M. F., L. Nicholas, I. Lee, J. H. Lee & D. Scott (2006). 'Social stratification in recreational fishing participation. Research and policy implications'. *Leisure Sciences*, 28: 351-368.

Glover, P. & B. Prideaux (2009). 'Implications of population ageing for the development of tourism products and destinations'. *Journal of Vacation Marketing* 15 (1): 25-37.

Hjalager, A. M. (1996). 'Tourism and the environment: the innovation connection'. *Journal of Sustainable Tourism* 4: 201-218.

Hjalager, A. M. (1997). 'Innovation patterns in sustainable tourism: an analytical typology'. *Tourism Management* 18: 35-41.

Huang, R. & E. Sarigöllü (2008). 'Assessing satisfaction with core and secondary attributes'. *Journal of Business Research* 61: 942-949.

Instituto Costarricense de Turismo, ICT (2007, 2010). *Anuario Estadístico (1987-2010)*. San José, Costa Rica.

Instituto Costarricense de Turismo, ICT (2007, 2010). *Encuesta Aérea. 'Turistas no residentes que salieron del país por Aeropuerto Juan Santamaría'. I Trimestre*. San José, Costa Rica.

Kane, M. J. & R. Zink (2004). 'Package adventure tours: Markers in serious leisure careers'. *Leisures Studies* 23 (4): 329-345.

Lam, T. & C. Hsu (2006). 'Predicting behavioral intention of choosing a travel destination'. *Tourism Management* 27: 589-99.

Lehto, X. Y., S. Jang, F. Achana & F. T. O'Leary (2008). 'Exploring tourism experience sought: A cohort comparison of baby boomers and the silent generation'. *Journal of Vacation Marketing* 14 (3): 237-252.

Levine, M. D., C. T. Krehbiel & L. M. Berenson (2006). *Estadística para Administración*. México: Pearson.

McGehee, M., L. Loker-Murphy & M. Uysal (1996). 'The Australian international pleasure travel market: Motivations from a gendered perspective'. *Journal of Tourism Studies* 7(1): 45-57.

Meric, H. J. & J. Hunt (1998). 'Ecotourists' motivational and demographic characteristics: a case of North Carolina travelers'. *Journal of Travel Research* 36 (Spring): 57-61.

Miller, A. P. (2008). 'The high tech industry, tourism and economic growth in Costa Rica'. Paper presented at the 66th Annual Midwest Political Science Association Conference, Chicago, IL, April 3-6.

Milman, A. (2009). 'Evaluating the guest experience at theme parks: an empirical investigation of key attributes'. *International Journal of Tourism Research*11: 373-387.

Oppermann, M. (1995). 'Family life cycle and cohort effects: A study of travel patterns of German residents'. *Journal of Travel and Tourism Marketing* 4(1): 23-44.

Stevens, B. F. (1992). 'Price value perceptions of travelers'. *Journal of Travel Research* 31: 44-48.

Sung, H. H. (2004). 'Classification of adventure travelers: behavior, decision making, and target markets'. *Journal of Travel Research* 42: 343-356.

Truong, T. H. & B. King (2009). 'An evaluation of satisfaction levels among Chinese tourists in Vietnam'. *International Journal of Tourism Research* 11(6): 521-535.

Villalobos-Céspedes, D., E. Galdeano-Gómez & A. Tolón-Becerra (2010). 'Demand indicators for adventure tourism packages in Costa Rica: An exploratory analysis'. *Tourism & Hospitality Research* 10(3): 234–245.

Villalobos-Céspedes, D., E. Galdeano-Gómez & A. Tolón-Becerra (2012). 'International demand for nature-based tourism in Costa Rica: socio-demographic and travel indicators'. *Tourismos* 7(1): 269-287.

Weidenfeld, A., R. W. Butler & A. M. Williams (2009). 'Clustering and compatibility between tourism attractions'. *International Journal of Tourism Research*12: 1-16.