PASOS
Revista de Turismo y Patrimonio Cultural
www.pasosonline.org

Vol. 7 Nº2 págs. 141-161. 2009
https://doi.org/10.25145/j.pasos.2009.07.012

A Practical Application of Statistical Gap Analysis in National Park Management in Costa Rica

Juan Antonio Aguirre González [ii]
Universidad Interamericana de Costa Rica (Costa Rica)

Resumen: Si el crecimiento de turismo que se ha predicho se lleva ha cabo en Costa Rica las áreas protegidas verían los aumentos mayores de sus historia en la próxima década. Un estudio realizado en los parques nacionales Volcán Poas y Volcán Turrialba dos de los parques volcánicos mas importante del país con el fin de hacer disponible a los administradores de los parques nacionales y directores de áreas protegidas, un procedimiento, que permitiese identificar las áreas de interés de los visitantes, utilizando una forma adaptada de la teoría de las expectativas y la disconfirmacion de las expectativas de satisfacción de visitantes a los parques nacionales, y evaluar si los resultados podrían ser utilizados para establecer las áreas de la infraestructura del parque, los servicios y las opciones recreativas que necesitan mejora y una administración eficaz para aumentar la satisfacción de visitante. La muestra incluyó 1414 encuestas entre visitantes locales y extranjeros en los dos parques. Las conclusiones indican que el procedimiento se adaptó a los objetivos del trabajo y fue útil en: a) desarrollando la información para ayudar "a enfocar", las decisiones de la administración en el corto y mediano plazo y para el desarrollo de los Planes de la Administración del Turismo en los 2 sitios, b) indicando al directores de los parques un mejor proceso de asignación del recurso, bajo las condiciones de la escasez de recursos común en países en desarrollo, c) facilitando, con una metodología sencilla y rápida que puede ser utilizada para "día al día" las decisiones de manejo y el análisis estadístico ,d) identificando las áreas en que la administración de las áreas protegidas necesitan el análisis adicional y e) contribuir así al desarrollo de los programas de investigación socioeconómicas a largo plazo en parques nacionales, y f) la importancia "verdadera" del las actividades de la información y educación en parques nacionales, combinación de actividades que parece ser crítica para aumentar la satisfacción entre los visitantes a parques nacionales y especialmente para la comprensión de si las necesidades de los visitantes y sus esperanzas concuerdan con la que se esta haciendo.

Palabras clave: Análisis *gap;* Modelo de expectativas-disconfirmacion; Administración del turismo; Parques Nacionales; Costa Rica.

Abstract: If the tourism growth predicted materialized as tourism for Costa Rica protected areas would see major increases. A study conducted in Volcan Poas National Park and Volcan Turrialba National Park two of Costa Rica leading volcanic crater parks was undertaken to make available to national parks and protected areas managers, a procedure, that could be use: to measure using an adapted form of the expectations disconfirmation theory the satisfaction of visitors to Costa Rica national parks, and to evaluate if the results could be used for establishing the areas of the park infrastructure, services and recreational options that needed improvement and management decisions to enhance visitor's satisfaction. The sample included 1414 surveys The findings indicates that the procedure adapted base on the expectations-disconfirmation model was proven helpful in: a) getting the information to help "zero in", the management decisions in the short and medium term and for the development of the Tourist Management Plans that is to say being developed in the 2 sites, b) guiding park managers in the resource allocation process, under the conditions of scarcity that are so common in developing countries, c) facilitating regular monitoring of the conditions, with a simple and quick methodology that can be used for "day to day" decisions and more sophisticated statistical analysis d) identifying the areas in the management of protected areas that need further analysis and in that way is contributing to the development of the long term socio-economic research programs in national parks, e) the "real" importance of the information and education activities in national parks, combination of activities that seems to be critical to enhance "consumer satisfaction" among the visitors to national parks everywhere and particularly as a means of understanding whether visitors needs and expectations are met, whether they receive what they should and as a context for analysis of human use on the country national parks.

Keywords: Gap analysis; Expectations-disconfirmation model; Tourism management; National Parks; Costa Rica.

[ii] • Juan Antonio Aguirre PhD. Chair. Catedra de Emprendeduria. Escuela de Administracion de Negocios. Universidad Interamericana de Costa Rica. Laureate International Universities E-mail: picoaguirre@gmail.com

Introduction

In 2003/2005, Central America as a region, according to the World Commission on Protected Areas had 667 protected areas with 14,3 millions hectares of which 96 were national parks with 3,4 million hectares. The regional distribution is as follows: El Salvador.,25811, Costa Rica 1,750,857.,Honduras 2,605,818.,Nicaragua .,Belice 1,080,832., Guatemala, 2,565,171.,Nicaragua, 2,940,568., and Panamá 3,279,521. The World Tourist Organization is forecasting that by 2010, the Central American countries will be receiving between eight and 10 millions, of the forecasted growth almost 60% will come in the area of nature base tourism (UNEP, 2005).

If the tourism growth predicted materialized tourism in protected areas would see major increases, therefore it is important that protected areas managers improved the management of visitors, in order to increase their levels of satisfaction experience during the visit to the sites. The purpose of this paper is to make available to national parks and protected areas managers, a theoretical framework base in the expectations-disconfirmation theory of consumer satisfaction measurement and test its practical application for national park management.

Objectives.

The research objectives were: To measure using an adapted form of the GAP analysis base on the expectations discomfirmation theory to the satisfaction of visitors to Costa Rica national parks.

The management objectives were: To establish if the satisfaction measures derived for infrastructure, services and recreational options could be used for establishing areas of the park infrastructure, services and recreational options that need improvement and management decisions to enhance visitor's satisfaction levels.

Hypothesis.

The general hypothesis was: Significant differences exist between local and foreign visitors in satisfaction levels and the gap between the expected and the observed. for park infrastructure, services and recreational options.

Literature Review

The World Wildlife Fund reported the lack of visitor satisfaction consideration in the management of protected areas and national parks in 2004, and we quote: "One depressingly consistent problem is a failure to manage relations with people. Problems are evident in terms of both relations with local communities and indigenous people, the management of tourists, the provision of visitor's facilities, and the access to commercial tourism facilities" (WWF, 2004)

Why measure Satisfaction in National Park Visitors?

"Satisfaction is the consumer's fulfillment response. It is a judgment that a product or service feature, or the product of service itself, provide (or is providing) a pleasurable level of consumption-based fulfillment, including levels of under-or over- fulfillment…The definition proposed by Oliver, makes an important separation between consumer and customer, while consumer uses a product but may not pay for the product at the same time the customer pays for the product and uses the product. Two additional points are a) the idea of satisfaction is a feeling and b) the existence of a threshold in terms of under and over fulfillment of the feeling of satisfaction (Bittner and Hubbert, 1994: Oliver 1994: Oliver 1997: Hom, 2000; Chang et all, 2002)

Macro Models of Customer Satisfaction.

The best-known macro model of customer satisfaction links 5 elements, perceived performance, comparison standards, perceived disconfirmation, feeling of satisfaction and outcome of the satisfaction feeling and the eventual complaints if the disconfirmation level was very broad. (Woodruff and Gardial, 1996). The other important macro-model would be the linkage of overall service satisfaction, encounter, satisfaction and perceived service quality. The work in this type of modeling highlights the difference between satisfaction and quality and develops the idea of a construct of a

"global" level of satisfaction (the overall service satisfaction) in contrast to the construct of a component level of satisfaction (the encounter level of satisfaction). (Bitner and Hubbert, 1994)

Micro-Models of Customer Satisfaction

This section summarized the best-known satisfaction micro-models: 1) the expectation disconfirmation models have consumers using pre-consumption expectations in a comparison with post-consumption experiences of a product/service to form an attitude of satisfaction or dissatisfaction toward the product or service. In this model the expectations develop from a belief about a level of performance that the product/service will provide.,2) the perceived performance model is one in which expectations play a less significant role in satisfaction formation, c)the norm model is one in which the consumer compares perceived performance with some standard performance, d)the multiple process model is one in which the consumer uses it more than one standard of comparison in forming a (dis) confirmation judgment.5) the attribution model is one in which the consumer uses three factors to determine attribution's effect in satisfaction., 6) the affective models are one that goes beyond the rational processes to include emotions, liking and mood influence and 7) the equity models are one that emphasizes the attitude about fair treatment in the consumption process(Erevelles and Leavitt,1992),(
Hom,20),(Oliver,1997),(Oliver,1999),

(Mackoy and Spreng, 1995) (Parasuraman, Zeithami and Berry, 1985) and (Parasuraman, Zeithami and Berry, 1988) Applications to Park Visitors.

A study in New Zealand concluded that satisfaction research in protected areas is minimal and fragmented in that country. (Latu and Everett, 2000). Reynolds and Braithwaite, study about wildlife tourism identifies, what are its essential characteristics, identifies the product, conditions favoring its development, motivation of the participants, the type of experience, the impacts and tradeoffs and concludes that there is a real need to understand the potential conflicts and problems arising in park management due to the lack of knowledge about visitors needs and desires visiting protected areas (Reynolds and Brathwaite, 2002).

Tian-Cole et all, study confirm two essentials elements, a) improved service quality and satisfaction can result in improved visitation and b) raises question as to which of the two construct-qualities or satisfaction- is "higher in order". It remarks that "while wildlife refugee attributes are under the control of the managers, benefits that visitors obtain during the trip are not….However, to influence visitor's future decisions, managers can improve the attributes of the refuges". (Tian-Cole, Crompton and Willson, 2002)

The work on compensatory satisfaction particularly in birding may help explain, that even though some parts of the main leisure activities did not met the expectation of the visitor still by engaging in substitutes activities they end up with a pleasant experience. The study indicates that is essential in order to use the information managerially to know what are the "secondary" goals of the birder, therefore being able to provide compensation to the initial source of dissatisfaction.(Swan, Martin and Trawick, 2003).

A recent study on the international tourist satisfaction in Mongolia established the features about which the tourist were satisfied and those about, they were not satisfied and base on the areas identified as producing dissatisfaction, a series of recommendations were made to the Tourist Board on the things that need to be asses more deeply with the idea of improving them. (Yu and Goulden, 2005).

A recent study in Kenya conclude that the decline of tourist arrivals has to do more with other factors exogenous to the Kenya national parks than with the satisfaction with the parks themselves (Akama and Mukethe-Kieti, 2002).

The findings of Webb and Hassel, study indicate that the main items contributing toward visitor satisfaction and value for the money relate to those as "managerially provided" and "experientially provided" were for managerially, the type, location and number of facilities proved consistently throughout the analysis to be the strongest indicator of satisfaction. The strongest indicator of value for the money was the usefulness of information. Experientially, visi-

tor perception of the environment as being "natural and attractive and likewise providing a sense of adventure was the strongest experiential themes managerially.(Webb and Hassel, 2002).

Gaps an Important Concept

Based on the traditional definition of service quality by Parasuraman et all. the Gap Model was developed in 1985 ,were perceived service quality is base on five gaps using he disconfirmation paradigm. They conceptualize the perception of service quality as the difference between the expected level of service and the actual service performance... (Parasuraman, Zeithami, and Berry, 1985). Leminen identifies three types of gaps. A type I gap exist when one or several actors perceive the same gap phenomena, but other actors do not. A type II gap exists refers to two actors having contradictory perception phenomenon. A type III gap is identifying when a third party interprets gaps based on evidence indirectly indicating a gap (Leminen, 2002).

Visitor Satisfaction in Protected Areas

A study in Nicaragua conducted in 1998 at Volcan Masaya National Park established that on a scale of 1 to 5, the ranking of the satisfaction with the major activities was: hike the trails 4.2; picnic 3.9; see the crater 4.7; see the lava tubes 4.3; read the exhibitions in the visitors center 4.1; study nature 4.5; see the exhibitions 4.3; listening to rangers explanation 4.4; read the park brochures 4.4 and read the maps 3.6.The two major complaints were : 15 % lack of a restaurant and lack of general infrastructure 11% (Ham and Whipple, 1998) .

In Costa Rica in 1999, a study conducted among visiting tourists to national parks, compared the ranking locals and foreign visitors gave to the quality of various services, in the case of restaurants 22.8% of the locals and 30.1% of the foreign tourist rank them as excellent, in the case of the availability of information 26% of the locals and 24.2% of the foreign rank them as excellent and in the case of number of hiking trails 26.6% of the locals and 32.5% of the foreign rank them as excellent (DeShazo and Monestel, 1999).

In Panama, in a study conducted in 2000, using a sample of 727 individuals, more than 80% reported that they were satisfied or very satisfy, with their experience while visiting the parks located in the former Panama Canal Zone. (Ham and Weiler, 2000).

In the United States, if the Visitor Survey Card Data Reports are reviewed, individually in the period between 1998 and 2004, the percentage of park visitors satisfied overall with facilities, services and recreational opportunities, in 1998 was 95%, 1999 of 94%, 2000 of 95%, 2001 of 95%, 2002 of 95%, 2003 of 96% and in 2004 of 96%, values that can be regarded as highly satisfactory. During the same period, the only element that systematically fell below the 80% satisfaction level, was commercial services in the park (lodging, food services and gift shops) which in 1998 was 74%, in1999, 70%, in 2000, 71%, in 2001, 72%, in 2002, 73%, in 2003, 75% and in 2004 was 75%. (NPS, 1998, 1999, 2000, 2001, 2002, 2003 and 2004). .Another important practical contributor in the United States, to the measurement of satisfaction that cannot be overlooked is the American Customer Satisfaction Index Service. (NQRC-ASCI, 2004)

In Canada, since April 2000 , Parks Canada satisfaction standards expects that 85% of visitors at each national park under study will be satisfied and 50% will be very satisfied with their overall visit. Very satisfied visitors are the most loyal, demanding and responsive to changes in service delivery. Tracking the level of satisfaction of this group can serve as an early warning sign of required actions in national parks. Visitors to national parks (92% on average over four years) rate their overall visit as satisfactory, and at least half of them at most locations rate their visit as very satisfactory. This is consistent with the results of previous national surveys on the perceived quality of government services

where the quality of service in national parks was among the highest rated of any federal government services (Parks Canada, 2003).

Materials and Methods.

Sites Location General and Maps.

Volcan Poas National Park is an active volcano, with an elevation of 2,798 meters above sea level, a crater lagoon of about 1 million cubic meters of water, with a temperature of around 37 degrees Celsius, has 6,506.6 hectares, and it's high intensity use area is 18.7 hectares. In 2004 it received 263 thousand visitors, is located 30 km north of the city of Alajuela. The park is accessible by public transportation in a 2-hour ride from the city of San Jose. Ecologically it has been classified as a cloud forest. Since its creation in the early seventies was, declare a "model" park and presents the best infrastructure facilities of any park in Costa Rica. (Dobles Zeledon, 2001)

Volcan Turrialba National Park established in 1955, with 1257 hectares. The park consists of the volcanic edifice with very steep sides, mostly covered in montaine rain forest. It is a stratovolcano 3328 m high. On its flanks, there are several lava flows. The last eruption occurred in 1864-66 and nowadays there is solfataric activity. The access road is very steep in the upper part and so four-wheeled drive vehicles are required. The park receives around 6000 visitors a year mostly local and has very limited and rustic facilities. (Herrera Sibaja, 2004).

Sample Selection Procedure.

The interviews were conducted in the case of Turrialba by the park rangers, given to each visitor entering the park during the high season for a period of a month. Spanish and English copies of the survey were available. Visitors were ask return them once they were completed to the entrance personnel as they departed. In the case of Poas, bi-lingual students administered the survey during two periods of one week during the high season. The non-response rate was less than 1%. 1414 usable surveys were collected in the two sites.

The model adapted was the expectation disconfirmation model. "The model has consumers using pre-consumption expectations in a comparison with post-consumption experiences of a facility, service or recreational opportunity or a combination to form an attitude of satisfaction or dissatisfaction toward the facility, service or recreational opportunity. In this model the expectations develop for a facility, service or recreational opportunity comes from a comparison of perceived performance with some "ideal" standard performance".

The "ideal" standard was develop in the case of locals visitor's base on their "consumption" experience develop while visiting and enjoying, the country traditional "flagships" national parks and in the case of the international visitors "probably" develop during the visits to the parks in their country of origin. This makes for differential expectations, something that we have observed repeatedly in Costa Rica, Volcan Poas National Park, were locals tend to be more lenient in their evaluation of satisfaction for a facility, service or recreational opportunity than foreigners are.

Working Definitions

Satisfaction: was defined following Oliver were "Satisfaction is the consumer's fulfillment response. It is a judgment that a product or service feature, or the product of service itself, provide (or is providing) a pleasurable level of consumption-based fulfillment, including levels of under-or over- fulfillment… (Oliver, 1997)

Overall Total Visitor Satisfaction (Awarded): was defined as the degree of match between the customer expectation with the infrastructure, services and recreational options provided by the national parks and protected areas in a "holistic" way and his/her perception of the actual infrastructure, services, and recreational options received rating, directly requested in one question at the end of the survey.

Overall Individual Satisfaction rating for a facility, service or recreational options: are the individual satisfaction ratings for the components provide during the expectation–disconfirmation comparisons for each sub-component use and enjoy or experience, during the visit that is perform

by the visiting customer local or international base on their "socio demographic features, background, ethnic group and personal beliefs, and is an individual satisfaction level measurable for each of subcomponent.

Expectations: are prejudices, desires, needs, wants and individual attitudes, which are influenced base on their socio demographic features, background, ethnic group, personal beliefs and the way he or she chooses to relate with the natural environment.

Customer Visitor (Local or International): are those that in order to enter the park and obtain the service or product must pay an entrance fee or be officially exonerated of such payment.

National Parks: are those define by the country.

Satisfaction Index (SI): Is the mathematical composite construct that results from the consolidation of "grades" assign by each visitor for each sub-category of infrastructure, service and recreational option components.

Scale: the scale used was a " likert" type from one to 10 with one meaning total dissatisfaction and 10 total satisfactions. Its maximum values is arrived at when, the received infrastructure, services and recreational options was awarded a value of 10, meaning that A=E, (scale 0 to 10)*100 = 100%.

Dissatisfaction level: is the difference or "gap" from 100% and is assumed"a perceptional measure" of the customer level of dissatisfaction.

The model supply side is define by two types of variables,

The "fix and given" this variable are not under the operational control of the national park manager or administrative authority of the site, and we have called them: the Ecocentric Provision Conditions Variables (EPCV): natural beauty, biodiversity, natural resources and any special features provided by nature, which are given by the natural conditions of the site and that provided the specific recreational conditions of each site. The only real things the management can do about these variables are to "provide safe access, information and facilities for the purpose of enjoyment" whether there they are locals or international visitors.

The other group of variables is the "modifiable" variables, which are those about which the park administration and management can do something about in order to provide "satisfaction" making them available and facilitating the enjoyment by the visitor, and we have called them: the Anthropocentric Provision Conditions Variables (APCV): infrastructure, services and recreational opportunities or human made recreational conditions, conditions that when confronted with the expectation of the visitor about the infrastructure, services or condition give rise to the value assigned to the satisfaction grade between 1 and 10.

The demand or expectation side of the model is define by:

Socio Demographic Variables (SDV): age, sex, income, origin, company, education and ethical values. The ethical values are assume results from the socio-demographic characteristics of the visitors and are fix and given in the short-run.

Anthropocentric Expectations Conditions Variables (AECV): are the expected ideal conditions for infrastructure, services and recreational opportunities, that the visitors "brings" to the national park base on some sort of standards that he has already develop prior to its arrival.

Therefore the possible results of the model application in its simplest form are:

EV+APCV = SDV+ AECV, the park is at a 100% match, between expectations and the provisions of infrastructure, services and recreation options. Managerially under ideal conditions, park management would not need to make any corrections in the short term.

If EV+APCV > SDV +AECV in this condition, park management does not need to make any managerial corrections for the time being.

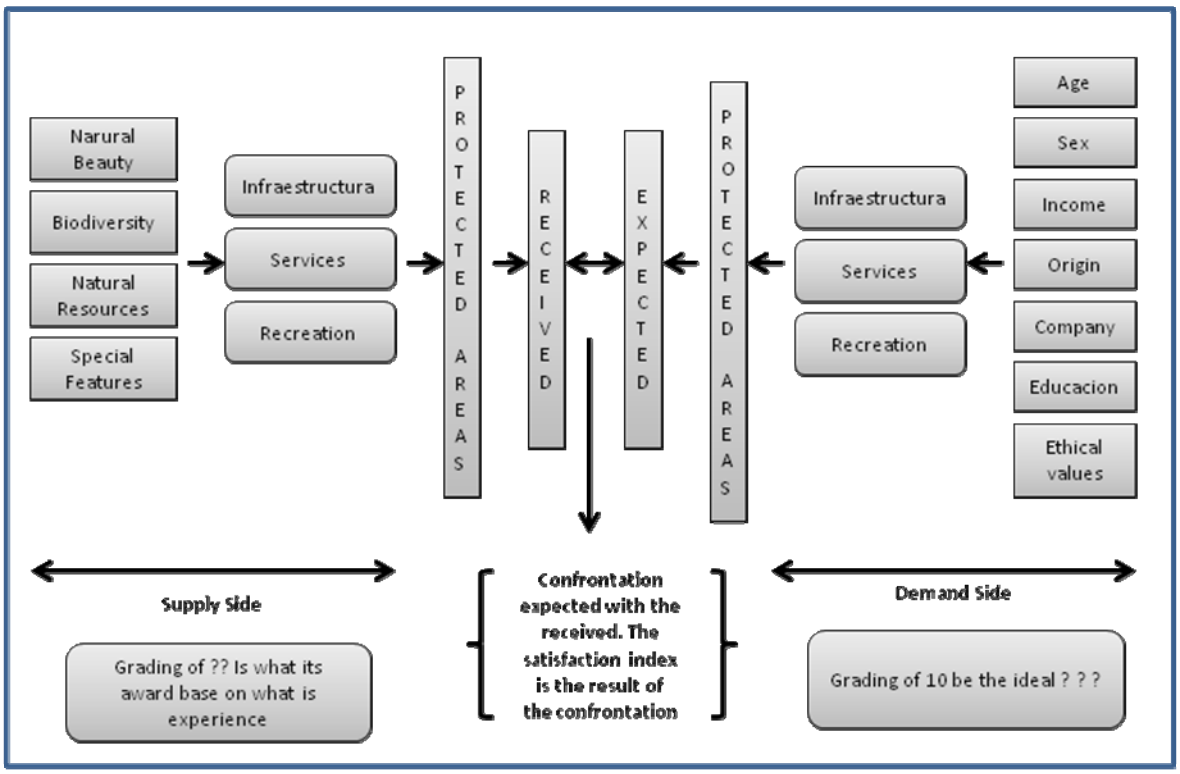
If EV+APCV < SDV + AECV in this condition the park administrator as park management will need to know as a where the "short terms broad dissatisfaction gaps" exist and make the necessary corrections.

Process of Operationalization of the Model.

The first part of the process of operationalization of the adapted model was a very long consultation process with park manager and rangers of Volcan Poas National Park, the most visited and best-equipped national parks in Costa Rica and Volcan Turrialba National Park one of the least visited in order to have information on the two extremes.The main conclusions from the consultation process were: a) that it was impossible to think of "pleasing" all the visitors, since they come from at least 50 countries, not including the locals, b) the process to be developed had to be simple, so that they could not only apply but understand it, c) have the potential of applying it other parks so that they can compare their results with those of others units in the system, d) had to be management oriented and that meant, oriented to identify areas park management needed to improve, in the "hope" that the problems (gaps) identified can be " improve" quickly with the idea that such actions will increase the "satisfaction" of the visitors and "hopefully" will provide the park with a good image locally and internationally , "a good word-of mouth propaganda" and possibly a returning customer and e) they wanted something that they could use to improve budget allocation.The socio-demographic variables included age, nationality, gender, years of schooling (degree equivalent), monthly family income in the local currency for nationals, converted later to US$ using the going exchange rate for the period of the interview, in the case of foreigners in US$ equivalent, travel company (alone, couple or group) in the case of groups the size of the group.

The mega components and subcomponents were developed base on what Volcan Poas National Parks had available since this park has been since its creation "a model" park for the National System of Conservation Areas Organization the agency that administers all the national park in Costa Rica.

For infrastructure mega-component, the sub-components were 12 in total: visitor center, restrooms, exhibitions and museums, trails, access roads, picnic areas, parking areas, public transportation to the park, lookouts points, souvenir shops, cafe-



Graph 1. Graphical representation of the M.A.M. model to measure visitor satisfaction in Protected Areas for management purposes

teria and signage.

For the park services mega-component, the sub-components were six in total: park rangers, entrance personnel, trail map, park information material, park technical publications and park maps.

For the recreational options mega-component, the subcomponent were 9 in total: observe nature, see the volcanic crater, walk the trails, observed birds and animals, walk with friends, walk with family, learn about the park, learn about biodiversity and rest and relax.

Two additional questions were added: a) in a scale of 1 to 10 evaluated the overall satisfaction from the visit, 1 means totally un-satisfy and 10 totally satisfy and b) was there something that you expected to find and did not found and that finding it would have made your visit more enjoyable and satisfying.

The Idea of the Gap (Maximum Awarded Satisfaction Rating –Estimated Satisfaction Rating) in the Statistical Analysis

One interesting feature of the consultation process since its beginning, was the fact that as the survey was being pretested, the resulting overall satisfaction level rating awarded to the visit was superior to the overall estimated satisfaction level averaging all the sub components of the three mega- subcomponent. It was concluded after long conversations with the park personnel and other people knowledgeable of the day to day running of the parks, that what was important was not what influence the overall satisfaction rating being awarded but "the Gap in Satisfaction between the Overall Awarded Rating and the Overall Estimated Rating", which the idea of the GAP capture. (Parasuraman, Zeithamy and Berry, 1985) and (Leminen, 2001)

The final survey length after all the refinements was one page, took on the average about 10 minutes to fill, was administered during the "high visitation" season which runs from Mid December to Mid May, and coincides with the "dry season in each location. The selection was done randomly in each location. Statistical Analysis

The key dependent variable was the GAP in satisfaction. The steps in the statistical analysis were: a) development of the satisfaction index for each mega and subcomponent, b) correlation matrix: to identify those variables highly correlated with the key dependent variable, c) ANOVA estimation verify groups differences, d) standardizing the variables and estimating the multiple regression equations with standardized variables, to mean zero and variance one in order to determine the rank order of the variables using version No 12 of Minitab, e) evaluating the standardized equations at each stage removing those independent variables whose regression coefficients showed p values not significant at the 95% probability level and running the equation again, f) Verification of the logic of the models at each step against the practical experience gained during the surveys and discussions with each of the chief administrators in the two sites. This last step proved to be essential in the understanding of the "logic" and potential application for park management purposes, but particularly if the results made any sense for operational purposes in the running and managing tourist in the two locations.

Results

Analysis of Variance: Differences between and within types of visitors between National Parks.

Between the two parks for foreign and local visitors combine.

The analysis of variance (ANOVA) was conducted at two level. The first level was between the ratings given by all the visitors, in order to test the equality of means values, for each variable between the 2 national parks, Turrialba (T) and Poas (P) and second level was to test the within each park, local and foreign visitors equality of means.

The results presented in Table 1, indicate that between all visitors in the two locations, the only socio-demographic variables that were not significantly different were , sex and size of the group at the 95% probability level. In infrastructure, all the variables were significantly different in the satisfaction ranking. In park services provided, with the exception of park rangers, which was detected as non-significant dif-

ferences between the two sites all the others were significantly different inn the ranking level for satisfaction. In recreational options, all the variable were significantly different in the satisfaction ranking.

In so far, as the values of the awarded satisfaction index, the 2 sites were not significantly different at the 95% probability level, receiving all values between 8.4 and 8.7 out of a possible "perfect satisfaction score" of 10. The estimated satisfaction index was in the case of Turrialba, lower than the value of the awarded satisfaction index in the case of Poas. The values of the GAP (Awarded-Estimated) were 3.3 points for Turrialba, and 0.4 for Poas.

Between the parks for local visitors.

The results presented in Table 2, indicate that the in the socio-demographic characteristic, non-significant differences between the two sites at the 95% probability level were detected, in sex, and number of persons in the group. In infrastructure, all the variables were significantly different in the sub-component. In terms of the park services provided, all the variables were detected as significantly different with the exception of park rangers. In recreational options, all the variables were significantly different.

The values of the estimated satisfaction index for local visitors, in the two sites were significantly different from each other, at the 95% probability level. The estimated satisfaction indexes were in the case Turrialba, 5.0, and Poas 9.0. The values of the GAP Awarded-Estimated were 2.8 points for Turrialba, and 0.3 for Poas.

Between the parks for foreign visitors.

The results presented in Table 3, indicate that in the socio-demographic variables non-significant differences between the two sites at the 95% probability level were detected, in sex and persons in-group.

In infrastructure, the analysis detected significant differences in all the variables, but trails and lookouts. In terms of the park services provided, the analysis detected significant differences in all the variables but park rangers. In recreational options, the analysis detected significant differences in all the variables. The values of the estimated satisfaction index for foreign visitors, in the two sites were significantly different from each other, at the 95% probability level. The values of the GAP Awarded –Estimated, were 3.1 points for Turrialba, and 0.5, for Poas.

Satisfaction Index: Passing or failing grade.

The unanimous request was from the very beginning by park managers was to know and understand why, how did the park "do" in satisfying their customer the visitor, did they "pass or failed" the examination, are visitors satisfy or not. The result was the development of a scale, very similar to the "school" scale were anything below a 60% was "flunk" or failed, therefore the managers needed to worry about those sub-components and immediately find out was wrong, between 70% and 90% was "OK" for the time being and anything over 90% meant that whatever they were doing in those areas, satisfy the visitor at least in the short term.

The results of this "management decision oriented" scale seem to have been what the administrators and park personnel were waiting for. Table 4, presents the results, which by the way coincide with the analysis of variance of the "likert" scale values ratings. The issue here was to translate science into a "lay" person language. Base on the ANOVA results, all the individual ratings for local and international visitors were kept separate for each site. Table 4 summarized the results and points out for:

For Turrialba, in infrastructure, eating facilities, public transportation, souvenirs and exhibitions, parking areas, and public transportation seem to be critical, in services, information about the park, is critical and in the area of recreation options, observe birds and animals are critical.

For Poas, in infrastructure, exhibitions and museums and picnic areas, in relation with services, information seem to be a problem in Turrialba and in the area of recreation options, observe birds and animals and learn about biodiversity seem to be of concern not critical.

Table 1 All the Visitors: One Way Analysis of Variance Comparisons. Results for the 2 National Parks.

	N.P Turrialba mean value	N.P Poas mean value	F	p	TP
Socio Demographics	T	P			
Age	32	3.9	96.99	0.000	SD
Sex	0.59	0.55	1.28	0.279	NS
Nationality	0.8	0.2	464.95	0.000	SD
Education	4.8	5.9	76.98	0.000	SD
Persons in Group	7.3	7.88	21.01	0.000	NS
Infrastructure					
Visitors Center	3.6	8.2	356.78	0.000	SD
Restrooms	3.1	8.5	539.22	0.000	SD
Exhibitions/Museums	1.7	7.9	666.27	0.000	SD
Trails	6.3	8.5	146.48	0.000	SD
Access Roads	4.4	8.1	364.43	0.000	SD
Picnic Areas	6.3	7.8	129.24	0.000	SD
Parking	3.8	8.4	517.71	0.000	SD
Transportation	2.8	8.4	720.07	0.000	SD
Lookouts	7.6	9.1	65.3	0.000	SD
Souvenir	1	8.5	1866.9	0.000	SD
Cafeteria	0.8	8.1	2649.1	0.000	SD
Signage	6.1	8.4	134.45	0.000	SD
Park Services					
Park Rangers	7.8	8.1	69.8	0.000	NS
Entrance Personnel	5.6	8.2	194.4	0.000	SD
Trail Maps	2.4	8.2	633.33	0.000	SD
Information	4.9	8	290.59	0.000	SD
Park Publication	3.3	8	574.29	0.000	SD
Park Maps	2.4	8	561.57	0.000	SD
Recreation Options					
Natural Beauty	8.5	8.9	7.04	0.001	SD
Walk the Trails	7.7	8.7	80	0.000	SD
Obs Birds & Animals	6.5	7.8	36.05	0.000	SD
Walk with Friends	7.8	8.7	17.32	0.000	SD
Walk with Family	7.2	8.6	93.12	0.000	SD
Learn about Park	6.9	8.3	42.31	0.000	SD
Learn about Biodiversity	6.9	7.9	23.28	0.000	SD
Relaxation	7.3	8.4	43.67	0.000	SD
Indices					
Estimated Index Value	3.1	8.3	730.71	0.000	SD
Awarded Index Value	8.4	8.7	2.4	0.087	NS
A-D Difference	3.3	0.4	151.33	0.000	SD

TP is the Tukey's Pair wise comparisons. NS means not significantly different and SD means significantly different.

Table 2 Local Visitors: One Way Analysis of Variance Comparisons.					
Variables	N.P Turrialba mean value	N.P Poas mean value	F	p	TP
Socio Demographics	T	P			
Age	33	31	28.4	0.000	NS
Sex	0.63	0.63	17.57	0.000	NS
Education	4.84	5.3	9.55	0.000	SD
Persons in Group	7.61	9.74	29.41	0.000	NS
Infrastructure					
Visitors Center	3.5	8.8	139.59	0.000	SD
Restrooms	2.8	9.1	242.32	0.000	SD
Exhibitions/Museums	1.3	8.5	297.8	0.000	SD
Trails	5.9	9.1	105.69	0.000	SD
Access Roads	4.1	9	171.25	0.000	SD
Picnic Areas	6.2	8.2	36.75	0.000	SD
Parking	3.8	9.1	171.37	0.000	SD
Transportation	2.8	8.6	199.07	0.000	SD
Lookouts	7.3	9.4	34.21	0.000	SD
Souvenir	0.9	8.9	467.85	0.000	SD
Cafeteria	0.9	8.6	582.33	0.000	SD
Signage	5.9	9	63.54	0.000	SD
Park Services					
Park Rangers	7.9	8.2	49.9	0.000	NS
Entrance Personnel	5.5	8.8	113.87	0.000	SD
Trail Maps	2.3	8.9	241.82	0.000	SD
Information	4.7	8.7	95.51	0.000	SD
Park Publication	3.3	8.7	179.71	0.000	SD
Park Maps	2.1	8.9	250.74	0.000	SD
Recreation Options					
Natural Beauty	8.4	9.5	14.3	0.000	SD
Walk the Trails	7.7	9.3	56.19	0.000	SD
Obs Birds & Animals	6.6	8.6	32.18	0.000	SD
Walk with Friends	7.8	9.3	19.49	0.000	SD
Walk with Family	7.7	9.3	49.29	0.000	SD
Learn about Park	6.9	9	29.25	0.000	SD
Learn about Biodiversity	7.1	8.8	22.75	0.000	SD
Relaxation	7.4	9.3	58.25	0.000	SD
Indices					
Estimated Index Value	5	9	295.02	0.000	SD
Awarded Index Value	7.8	9.3	96.2	0.000	SD
A-D Difference	2.8	0.3	151.92	0.000	SD

TP is the Tukey's Pair wise comparisons. NS means not significantly different and SD means significantly different.

Table 3 Foreign Visitors: One Way Analysis of Variance Comparisons.					
	N.P Turrialba mean value	N.P Poas mean value	F	p	TP
Socio Demographics	T	P			
Age	25	41	60.88	0.000	SD
Sex	0.42	0.53	27.83	0.000	NS
Education	4.7	6.1	38.46	0.000	SD
Persons in Group	6.2	7.3	1.81	0.164	NS
Infrastructure					
Visitors Center	37	8	157.5	0.000	SD
Restrooms	4.5	8.3	138.2	0.000	SD
Exhibitions/Museums	3	7.7	138.7	0.000	SD
Trails	7.9	8.4	6.16	0.002	NS
Access Roads	5.9	7.8	120.2	0.000	SD
Picnic Areas	7.1	7.8	113	0.000	SD
Parking	4	8.3	214.1	0.000	SD
Transportation	3.1	8.3	291.9	0.000	SD
Lookouts	8.8	9	3.76	0.000	NS
Souvenir	1.2	8.4	1520	0.000	SD
Cafeteria	0.76	8.4	1980	0.000	SD
Signage	6.8	8.2	44.12	0.000	SD
Park Services					
Park Rangers	7.2	8	11.25	0.000	SD
Entrance Personnel	6	8.4	45.63	0.000	SD
Trail Maps	3	8.1	246.7	0.000	SD
Information	5.3	7.8	175.2	0.000	SD
Park Publication	3.3	7.8	271	0.000	SD
Park Maps	3.5	7.8	141.2	0.000	SD
Recreation Options					
Natural Beauty	9	8.7	10.98	0.000	NS
Walk the Trails	7.9	8.5	24	0.000	SD
Obs Birds & Animals	5.7	7.6	34.05	0.000	SD
Walk with Friends	8	8.5	7.76	0.000	NS
Walk with Family	5	8.5	91.96	0.000	SD
Learn about Park	6.7	8.1	16.38	0.000	SD
Learn about Biodiversity	6	7.7	17.4	0.000	SD
Relaxation	6.9	8.2	13.84	0.000	SD
Indices					
Estimated Index Value	5.5	8.2	300.4	0.000	SD
Awarded Index Value	8.9	8.7	1.45	0.000	NS
A-D Difference	3.1	0.5	408.9	0.000	SD
TP is the Tukey's Pair wise comparisons. NS means not significantly different and SD means significantly different.					

Rank Ordered Regression Analysis: Narrowing the focus.

In table 5, we can observed that in the case Volcan Turrialba National Park foreign visitors: visitor center with an absolute value coefficient of 0.45069 and rest and relax with an absolute value coefficient of 0,25039 were the 2 most important variables in explaining the variation in the GAP (A-E). In the case of the local visitor's park rangers with an absolute value coefficient of 0.42045, and signage with an absolute value coefficient of 0,36360 were the two most important variables in explaining the variation in the GAP (A-E).

In table 6, we can observed that in the case of the foreign visitors to Volcan Poas National Park, see the volcano crater with an absolute value coefficient of 0.24124 and park maps with an absolute value coefficient of 0,23270 were the 2 most important variables in explaining the variation in the GAP (A-E). In the case of the local visitors park maps with an absolute value coefficient of 0.43200, and see the volcanic crater with an absolute value coefficient of 0,31966 were the two most important variables in explaining the variation in the GAP (A-E).

Volcan Poas National Park: Findings to think about.

One results , that surprised us in the case of Poas was the reduction in the value of the multiple correlation coefficients of the regression models develop, while in the case of Turrialba, using the GAP(A-E) as a dependent variable, were quite robust ,while Poas presented an R2 value of 36% for locals and 21% for foreign visitors. The idea was how the R2 values could be improved. At that point, instead of using the GAP (A-E) for the Poas data, we used the Awarded Satisfaction Value instead and since we had no prior criteria, we used first the "stepwise" technique, to de-

Table 4 Satisfaction Index: Estimated and Awarded By Sub-Component.

Variables	Turrialba Locals	Turrialba Foreign	Poas Locals	Poas Foreign
Age years	34	26	32	41
Origin	81	19	20	80
Education Level	UI	UI	UI	UC
Persons in Group	8	6	10	7
Infrastructure	S.I	S.I	S.I	S.I
Visitor Center	**36**	**38**	89	81
Restrooms	**28**	**46**	91	84
Exhibitions & Museums	**14**	**30**	86	**78**
Trails	59	80	92	84
Access Roads	**41**	59	90	**79**
Picnic Areas	62	71	83	**78**
Parking Areas	**38**	**40**	91	83
Public Transportation	**28**	**31**	87	84
Lookouts Points	74	89	95	90
Souvenirs	**9**	**13**	90	84
Cafeteria	**9**	**8**	86	84
Signage	60	68	90	83
Services	S.I	S.I	S.I	S.I
Park Rangers	80	72	83	81
Entrance Personnel	56	61	89	84
Trail Map	23	31	89	81
Information a Park	48	54	88	**78**
Park Publications	33	33	87	**79**
Park Map	22	35	89	**79**
Recreation Options	S.I	S.I	S.I	S.I
See Nature	84	90	95	88
Walk Trails	77	79	93	86
Observe B & A	**67**	**58**	87	**76**
Walk w Friends	79	80	94	85
Walk w Family	78	**50**	93	85
Learn a Park	70	67	91	81
Learn a Biodiversity	71	60	89	**77**
Rest and Relax	74	69	93	82
Satisfaction Index	S.I	S.I	S.I	S.I
Estimated	51	54	89	87
Awarded	79	87	93	94
E-A Gap	-28	-33	-4	-7

velop the model. The results are presented in Table 7. The new R2 went to 83% in the case of the local visitors model and in the case of the foreign model to 66% almost 3 times what we had obtained using the gap as dependent variable.

Discussion

The two parks selected Volcan Poas National Park (VPNP) and Volcan Turrialba National Park (VTNP), are both active volcanoes, whose main attraction, is to go "see" the crater of the volcanoes "sending smokes and fumes" into the air. VPNP since its creation has been a "model" park because of the accessibility and that gives VPNP, the best national park infrastructure and services of any park in Central America, Costa Rica. VTNP because of its accessibility was provided with minimal facilities and services and is just beginning to be developed. The idea was to select very similar ecological conditions and two very different stages of the development to see if visitors to both locations could tell the difference and showed through their satisfaction rating. In the case of VPNP, facilities, services and recreational opportunities usually are "look upon" by the Costa Rica park systems as "the standard" all the parks like to have.

Table 5 Turrialba Foreign and Local Visitors Standardized Regression Analysis

Foreign GAP A-E

The regression equation is

SA-E = - 0,0000 - 0,205 SSee the Natural Beauty - 0,209 SPark Publications- 0,250 SRelajarse - 0,242 SLearn about Biodiversity - 0,451 SVisitors Center

Predictor	Coef	StDev	T	P
Constant	-0,00000	0,02223	-0,00	1,000
SSee the	-0,20525	0,02884	-7,12	0,000
SPark Pu	-0,20864	0,03130	-6,66	0,000
SRelajar	-0,25039	0,02777	-9,02	0,000
SLearn a	-0,24247	0,02871	-8,45	0,000
SVisitor	-0,45069	0,03021	-14,92	0,000

S = 0,2278 R-Sq = 95,1% R-Sq(adj) = 94,8%

F = 380,90 P = 0,000 N = 104

Local Turrialba Regression Analysis

GAP A-E

The regression equation is

SE-A = - 0,0000 - 0,244 SPicnic Areas + 0,420 SPark Rangers - 0,364 SSignage- 0,272 SVisitors Center - 0,203 SEducation Level- 0,167 SRestrooms - 0,231 SOB Aves % An + 0,350 SLearn about Park - 0,360 SLearn about Biodiversity

Predictor	Coef	StDev	T	P
Constant	-0,00000	0,03343	-0,00	1,000
SPicnic	-0,24385	0,04615	-5,28	0,000
SPark Ra	0,42045	0,04218	9,97	0,000
SSignage	-0,36360	0,04301	-8,45	0,000
SVisitor	-0,27212	0,03734	-7,29	0,000
SEducati	-0,20345	0,03560	-5,71	0,000
SRestroo	-0,16698	0,03691	-4,52	0,000
SOB Aves	-0,23063	0,04962	-4,65	0,000
SLearn a	0,34951	0,07889	4,43	0,000
SLearn a	-0,35969	0,07521	-4,78	0,000

S = 0,7053 R-Sq = 51,3% R-Sq(adj) = 50,3%

F = 50,82 P = 0,000 N = 444

Table 6 Poas Foreign and Local Visitors Standardized Regression Models

Local GAP A-E

The regression equation is

SA-E = - 0,0000 + 0,288 STrail Maps - 0,432 SPark Maps - 0,253 SSex
- 0,320 SSee the Natural Beauty + 0,236 STransportation
+ 0,185 SLearn about Park + 0,238 SInformation Material

Predictor	Coef	StDev	T	P
Constant	-0,00000	0,06127	-0,00	1,000
STrail M	0,28779	0,09918	2,90	0,004
SPark Ma	-0,43200	0,09712	-4,45	0,000
SSex	-0,25306	0,06428	-3,94	0,000
SSee the	-0,31966	0,07860	-4,07	0,000
STranspo	0,23630	0,07931	2,98	0,003
SLearn a	0,18547	0,08060	2,30	0,023
SInforma	0,2378	0,1035	2,30	0,023

S = 0,8128 R-Sq = 36,6% R-Sq(adj) = 33,9%
F = 13,84 P = 0,000 N = 175

Foreign GAP A-E

The regression equation is

SA-E = 0,0000 + 0,198 SVisitors Center - 0,167 SLookout Points
+ 0,205 SParking Areas + 0,233 SPark Maps + 0,210 SOB Aves % An
- 0,241 SSee the Natural Beauty

Predictor	Coef	StDev	T	P
Constant	0,00000	0,03385	0,00	1,000
SVisitor	0,19827	0,03945	5,03	0,000
SLookout	-0,16683	0,04006	-4,16	0,000
SParking	0,20526	0,04016	5,11	0,000
SPark Ma	0,23270	0,03942	5,90	0,000
SOB Aves	0,20986	0,03842	5,46	0,000
SSee the	-0,24124	0,04078	-5,92	0,000

S = 0,8904 R-Sq = 21,4% R-Sq(adj) = 20,7%
F = 31,09 P = 0,000 N = 691

Table 7 Poas Local Visitors Standardized Regression Models

Locals.

Index A

The regression equation is

SIndice A = 0,0000 + 0,235 SPark Maps + 0,202 STrails
+ 0,270 SSee the Natural Beauty + 0,178 SOB Aves % An
+ 0,160 SRelajarse + 0,0982 SSouvenirs Shop+ 0,158 SPark Publications

Predictor	Coef	StDev	T	P
Constant	0,00000	0,03168	0,00	1,000
SPark Ma	0,23453	0,06055	3,87	0,000
STrails	0,20155	0,03907	5,16	0,000
SSee the	0,27003	0,04054	6,66	0,000
SOB Aves	0,17797	0,04091	4,35	0,000
SRelajar	0,16031	0,03695	4,34	0,000
SSouveni	0,09823	0,03367	2,92	0,004
SPark Pu	0,15809	0,06032	2,62	0,010

S = 0,4203 R-Sq = 83,0% R-Sq(adj) = 82,3%
F = 117,53 P = 0,000 N = 175

Indice A

```
The regression equation is
SIndice A = 0,0017 + 0,139 SWalk Trails + 0,226 SLookout Points
          + 0,185 SLearn about Park + 0,170 SInformation Material
          + 0,153 SRestrooms + 0,199 SSee the Natural Beauty
          + 0,146 SRelajarse
Predictor        Coef       StDev          T        P
Constant      0,00171     0,02215       0,08    0,938
SWalk Tr      0,13902     0,03403       4,09    0,000
SLookout      0,22617     0,02401       9,42    0,000
SLearn a      0,18527     0,02840       6,52    0,000
SInforma      0,17034     0,02602       6,55    0,000
SRestroo      0,15324     0,02368       6,47    0,000
SSee the      0,19891     0,03100       6,42    0,000
SRelajar      0,14582     0,02881       5,06    0,000
S = 0,5819      R-Sq = 66,2%     R-Sq(adj) = 65,9%
F = 191,22      P = 0,000        N = 691
```

The second important element, that became obvious from the beginning of the consultations with the park personnel at VPNP was the fact that Costa Rica parks are visited not only by locals but by an immense diversity of people, in the case of Poas for example, studies conducted in 2002 and 2003 indicated that visitors came from over 50 countries, and that it was impossible to develop "conditions to please that diversity". The final agreement was to develop at best a local standard "using perhaps Poas" as a guideline for what a park should have and offered that the country could maintain and them see how the visitor's reacted, anything else everybody felt it was unaffordable base on the "normal" budget restrictions the park system regularly faces.

As it an be observed, from the data collected VPNP seems to be a national parks that appears to please "visitors from many parts of the world, whatever standards they brought to the park, base on what they have experience in other countries that they might have been before coming to Costa Rica as well as in their country of origin. In the case of VPNP , the awarded rating to the overall visit and the estimated overall rating were very close, indicating that the overall awarded rating and the estimated ratings, may be reflecting a very similar process of "intellectual" aggregation. Socio-demographically is important to remember that the non-significant differences in both groups, between parks were found in age and education, in other words both locations received similar people. Poas however received more women than Turrialba. The female interest in recreations is becoming more common and their needs will have to be seriously address in the immediate future, if the national parks are to satisfy and increasing number of women as part of their regular constituency...

For Poas management.

In the case of Poas as the best equipped national park in the country, it was the best satisfaction rated of the two sites, and the fact that the awarded satisfaction level was very close to the estimated satisfaction level rating, seem to indicate that whatever standards locals and foreign visitors brought with them to Poas in relation to national parks infrastructure, services and recreational opportunities, the location seem to meet them. Poas in fact , was the "only" of the two site that seem to meet standards the visitors had about park infrastructure, services and recreational options if one goes by the way the awarded satisfaction ratings coincidence with the estimated.

The results indicated that in cases were the estimated and awarded satisfaction values show a very small disconfirmation value, perhaps a "better" the dependent variable was the "overall awarded level of satisfaction" itself reported since what you need to know was what influence the over-

all level and not the gap since the gap was very small or did not existed in many cases. In the cases of "developing or lesser equipped in infrastructure, services and recreational option, the idea was to find the gap and what to do to close it, but that once the gap is close and A=E, one should move directly to the behavior of the value of A and identify the direct areas for intervention in the short and medium term management horizon.

For Turrialba Management

Volcan Turrialba National Park is a "new" park, although its establishment dates back many years ,it was not until recently that because of its active crater and its proximity to one of Costa Rica central highland plateau major cities Cartago, that it has began to really developed as a destination. The on going improvement of the access road will turn the site without question in the coming years, into a very important destination.

The disconfirmation that is reflected in the low values for satisfaction in the overall ratings and individual ratings and the emphasis in infrastructure and for information, express by the visitors through their ratings are the logical development in a "developing" location. The findings of this study are being given scrutiny, in the on going tourism management planning meetings at VTNP (Herrera, 2005).

In the case of VTNP, the awarded and the estimated ratings showed a very broad disconfirmation gap. The question is why the estimated rating were , yielding an overall estimated rating commensurably low and the awarded was similar to what VPNP was receiving. The explanation may rest in the socio-demographics, while in the case of VPNP; the visitors tended to be older and very educated and were able to rationalize their process of ratings in conditions that are "very" satisfactory in comparison to any parks anywhere else in the world.

In the case of VTNP visitors were "younger", and that may help explain why although they were unhappy with many specific items, because of their age and "perhaps" more adventurous disposition toward the eco-recreations, they still found VTNP, the experience satisfactory, it may be interesting to think that a "rougher" park may be what younger visitors want in the first place?. What was interesting was that both groups particularly those visiting VTNP were able to separate the " whole" from the parts and make sense base on what can be observed at VTNP and VPNP in terms of availability and "quality" of most of the infrastructure, services, and recreational options .

If one looks at the sub-components ratings, in the case of VPNP local visitors ratings are never lower than 80% in any category. The foreign visitors however indicated by the award of satisfaction ratings below 80% to, exhibitions, access road, picnic areas, and information about the park in general, observed birds and animals and learn about biodiversity, areas that deserve attention. It is hard to accept that people pass their prime may not be to enthusiastic about, roughness and difficulties, the evidence gathered is that Poas visitor's seem to want to enjoy nature but with a good doses of comfort, while the younger more adventurous VTNP visitors, are unsatisfied, say so but in the end they continue to visit the site and are probably happy with the overall visit.

Conclusions.

General Research Conclusions

a) The two sites are significantly different from each other, based on the analysis of variance conducted. This result was expected since the parks were selected to represent different stages of park development conditions in the country. Poas a model park, and Turrialba, a park that is beginning to be developed.,

b) Poas was the best rated park and the awarded satisfaction level was very close to the estimated satisfaction level rating, which confirm its model park conditions since its creation in 1971, so whatever visitors seem to have as "a satisfaction standard in their minds" in terms of expectations, Poas was the site that seem to meet standards the visitors had about park infrastructure, services and recreational options, whatever they might have been.

c) Turrialba, as expected is in need of a very real "development support" if the park

is to be properly developed, receiving the lowest ratings in many of the individual sub-components and in the overall satisfaction rating

d) The satisfaction measures for infrastructure, services and recreational options derived from the study prove useful for establishing the areas of the park infrastructure, services and recreational options that needed management decisions in relation to their improvement from the visitor's viewpoint.

Managerial Oriented Conclusions

a) Turrialba being a developing park, the main interest of both groups center in improving the visitor center facilities and signage,

b) Poas, being the volcanic crater the main attractions and lookouts being the main facility to enjoy the main attractions of the park.

c) Lookouts areas seem to be what the park managers, need to make sure that is maintained in excellent conditions in both places,

c) Information and learning, seem to critical areas and a concern by visitors, in the two parks.

Implications for long-term management national park management in the Central Americans countries.

The process outline seems to help the managers of the protected areas with:

a) Information to help "zero in", the management decisions in the short and medium term and for the development of the Tourist Management Plans that is being developed at VTNP,

b) Guidance in the resource allocation process, under the conditions of scarcity that are so common in developing countries,

c) Regular monitoring of the conditions, with a simple and quick methodology that can be used for "day to day" decisions as well as more sophisticated statistical analysis

d) The identification of areas in the management of protected areas that need further analysis and in that way is contributing to the development of the long term socio-economic visitor's research programs in national parks,

e) The "real" importance of the information and education activities in national parks, combination of activities that seems to be critical to enhance "consumer satisfaction" among the visitors to national parks and

f) Information and education as means of facilitating whether visitors needs and expectations are met, whether they receive what they should and as a context for analysis of human use on the country national parks.

g) A real application that demonstrates that even thought many criticisms have been raised against the expectations-disconfirmation theoretical framework to study the level of visitor's satisfaction in the case of national parks offers the potential to help orient management decisions substantially exist.

In terms of the general hypothesis that it was established that significant differences between local and foreign visitors in satisfaction levels in park infrastructure, services and recreational options existed and even though the two parks are different in development stages and facilities, that local and foreign visitors are different within and between parks, their needs and concerns point in very similar directions, in terms of the infrastructure, services and recreational option, logical coincidence indicating, that "sound and well oriented" management improvements will have a tendency to benefit "all" visitors and that should always be kept in mind.

One last comment that seems essential at this time. Even though, in VPNP and VTNP local and foreign visitors seem to be different. Therefore, "sound good oriented" management decisions to improve infrastructure, services and recreational options will benefit "all" of the consuming visitors that come to experience Costa Rica and Central America national parks, independent of the norms and standards they bring in their minds in their quest for eco-tourist recreational activities, in and that should always be kept in mind.

Bibliography.

Akama, J.S. and Mukethe Kiety, Damiannah
2002 "Measuring tourist satisfaction with the Kenya's wildlife safari: a case study of Tsavo West National Park". *Tourism Management*. 24: 73-81.

Bitner, M.J., and Hubbert, A.R.
1994 *Encounter Satisfaction versus Overall Satisfaction versus Quality: The Customer's Voice.* In Rust, R.T and Oliver, R.L.(Eds.). Service Quality: New Directions in Theory and Practice. Thousand Oak, CA: Sage, 72-92.

Boza, Mario
1993 "Conservation in Action: Past, Present and Future of the National Park System of Costa Rica". *Conservation Biology*. 7(2): 239-247.

Chang Chia Ming, Chen Chin Tsu and Hsu Chin Hsien
2002 "A Review of Service Quality in corporate and Recreational Sport/Fitness Programs". *United States Sports Academy Journal*. 5(3). Reprint.13 pages

Dobles Zeledon, Juan
2001 *Personal Communication.* Park Director. Volcan Poas National Park.

Erevelles and Leavitt
1992 "A Comparison of Current Models of Consumer Satisfaction/Dissatisfaction". *Journal of Consumer Satisfaction, Dissatisfaction and Complaining Behavior*, 8: 53-58.

Ham, Sam H y Whipple, Rob
1998. Volcan *Masaya National Park Visitor Profile, Nicaragua.* Department of Resource Recreation and Tourism. College of Forestry, Wildlife and Range Science. University of Idaho. Research Report. AED Order 222429-7P-068).71 pages

Ham, Sam and Weiler, Betty
2000.*Perfil de los Turistas en las Areas Protegidas de la Cuenca del Canal de Panama. Eoturismo en la Cuenca del Canal de Panama. Segunda Parte*. Department of Resource Recreation and Tourism. College of Forestry, Wildlife and Range Science. University of Idaho. Informe Final de Investigacion. Poyecto 222429-30. 38 pages

Herrera Sibaja, Horacio
2004 *Personal Communication*. Park Director . Volcan Turrialaba National Park.

Hom, Willard
2000 *.An Overview of Customer Satisfaction Models.* R P Proceedings . Chancellor's Office. Calfifornia Community College. Pages 99-110.

Latu, Tavite M and Everett, Andre M.
2000 *Review of Satisfaction Research and Measurement Approaches***.** Science and Research Internal Report No 183. Department of Conservation. Wellington .N.Z. 43 pages

Leminen, Seppo
2001 *Gaps in buyer seller-relationships.* Management Decisions. London: 2001. Vol.39.Iss. 3; pg 180

Mackoy, R.D and Spreng, R.A.
s/f *The Dimensionality of Costumer Satisfaction and Dissatisfaction; An Empirical Examination.* Journal of Consumer Satisfaction, Dissatisfaction and Complaining Behavior, 9, 104-104.

National Park Services
2001 *Visitor Survey Card: VSC Workbook. Survey Instructions and Guidelines and Survey Analysis and Reporting Guidelines*. United States Department of the Interior. Report Prepare by the University of Idaho Cooperative Park Studies Unit for the National Park Services. Washington, D.C. 80 pages

National Park Services
1998. National Park System. *Visitor Survey Card Report*. United States Department of the Interior. Report Prepare by the University of Idaho Cooperative Park Studies Unit for the National Park Services. Washington, D.C. 4 pages

National Park Services
1999 National Park System .*Visitor Survey Card Report*. United States Department of the Interior. Report Prepare by the University of Idaho Cooperative Park Studies Unit for the National Park Services. Washington, D.C. 4 pages

National Park Services
2000 National Park System .*Visitor Survey Card Report*. United States Department of the Interior. Report Prepare by the University of Idaho Cooperative Park Studies Unit for the National Park Services. Washington, D.C. 4 pages

National Park Services
2001. National Park System .*Visitor Survey Card Report*. United States Department of the Interior. Report Prepare

by the University of Idaho Cooperative Park Studies Unit for the National Park Services. Washington, D.C. 4 pages

National Park Services

2002 National Park System . *Visitor Survey Card Report*. United States Department of the Interior. Report Prepare by the University of Idaho Cooperative Park Studies Unit for the National Park Services. Washington, D.C. 4 pages

National Park Services

2003 National Park System . *Visitor Survey Card Report*. United States Department of the Interior. Report Prepare by the University of Idaho Cooperative Park Studies Unit for the National Park Services. Washington, D.C. 4 pages

National Park Services

2004 National Park System . *Visitor Survey Card Report*. United States Department of the Interior. Report Prepare by the University of Idaho Cooperative Park Studies Unit for the National Park Services. Washington, D.C. 4 pages

National Quality Research Center

2004 *American Consumer Satisfaction Index* University of Michigan Business School. Cloes Fornell International Group and Federal Consulting Group. Natural Resource Conservation Service. Environmental Quality Incentives Program. Customer Satisfaction Study. Final Report. Michigan. 20 pages

Oliver, R.L.

1994 *Conceptual Issues in the Structural Analysis of Consumption Emotion.Satisfaction, and Quality: Evidence in a Service Setting*. In Allen, C.T and John, D.R. (Eds). Advances in Consumer Ressearch, Vol. 21. Association for Consumer Research. Provo. UT, 16-22.

Oliver, R.

1997 *Satisfaction : A Behavioral Perspective on the Consumer*. Boston: McGraw-Hill, 1997.

Oliver, R.

1999 *Value as Excellence in the Consumption Experience*. In M. Holbrook (Ed.), Consumer Value: A framework for Analysis and Research. 43-62, New York: Routledge.

Parasuraman, A., Zeithami, V.A., and Berry, L.L.,

1985 *A Conceptual Model of service quality and its implications for future research.* Journal of Marketing, 49 (Fall) 41-50.

Parasuraman, A., Zeithami, V.A., and Berry, L.L.,

1988 *SERVQUAL : A multiple items scale for measuring consumer perception of service quality.* Journal of Retailing. 64 (1) . 12-37.

Parks Canada.

2003 *State of Protected Heritage Areas*. Annual Report. (e.g., http://www.pc.gc.ca/apps/links/goto_e.asp?destination=http://www.iccs-isac.org/eng/cf-02.htm).

Reynolds, P.C., and Braithwaite, Dick

2002 *Toward a conceptual framework for wildlife tourism.* Tourism Management.22 (2002), 31-42.

Shazo , I.R. y Monestel Vega, Luis.

1999 *Costa Rica. Caracterización de los Visitantes y sus Opiniones para las Principales Areas Protegidas Publicas y Privadas*. Development Discussion Papers No 689. Central American Project Series. Harvard Institute for International Development. Harvard University. 33 pages

Swan, J.E., Martin, W.S., and Trawick Jr, Frederick

2003 *Compensatory Birding: An Ethnography of Avoiding Dissapointment and Producing Satisfaction in Birding*. Journal of Consumer Sastifaction , Dissatisfaction and Complaining Behavior. Provo: 2003. Vol.16. pp 157-166

Tian-Cole, Shu., Crompton, J.L., and Willson., Victor. L.

2002 *An Empirical Investigation of the Relationships Between Service Quality, Satisfaction and Behavioral Intentions Among Visitors to a Wildlife Refugees.* Journal of Leisure Reearch. 2002. Vol 34, no. 1, pp 1-24.

Yu, Larry and Goulden, Monthuya.

2005 *A comparative analysis on international tourist's satisfaction in Mongolia*. Tourism Management. Article in Press. Accepted for Publication. 16 June 2005.

United Nations Environmental Program.

2005 *World Data base of Protected Areas. Current Site Summary. Central America.* www.sea.unep-wcmc.org/wdbpa/-

statistics/region2.cfm?a Region comtains: Belice, Costa Rica, El Salvador, Guatemala, Honduras, Nicargua, Panama. 11/25/2005.

Webb, Dave and Hassall, Kate

2002 *Measuring visitor satisfaction in Western Australia's conservation state.* Journal of Consumer Satisfaction, Dissatisfaction and Complaining Behavior.Provo: 2002.Vol. 15 pg 81

Woodruff, R.B., and Gardial, S.F.

1996 *Know Your Customer: New Approaches to Understanding Customer Value Satisfaction*. Cambridge, Massachusetts: Blackwell.

Recibido: 17 de marzo de 2008
Reenviado: 15 de noviembre de 2008
Aceptado: 28 de febrero de 2009
Sometido a evaluación por pares anónimos