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THE IMPLEMENTATION OF CONJOINT ANALYSIS TO MEASURE THE ATTRIBUTES OF XCARET PARK

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ABSTRACT

Tourism businesses offer a variety of products and services. Consumers have a wide range of products to choose from. Entrepreneurs wish to identify products or services that are most preferred. Because Xcaret Park has a variety of recreational activities, we wish to identify which are favored by the consumer to determine the best service strategies. The objective of this research is to find which park itineraries consumers, residents of Cancun and Playa del Carmen, prefer. A quantitative study was performed, using conjoint analysis, which measures the relative value of every attribute of a product or service. By this method, we determine the optimal combination of attributes of choice for consumers, with the intent to establish competitive strategies for services.

JEL: M, M3, M31

KEYWORD: Strategic, Service, Tourist, Preference, Conjoint Analysis

INTRODUCTION

Quintana Roo is a state in Mexico that receives more than two million tourists every year (SECTUR, 2016). It is well known for its natural beauty, archeological zones, vacation destinations, night life and gastronomy. One of Cancun's attractions is the eco archeological Xcaret Park, which offers shows, gastronomy and a diversity of flora and fauna. Xcaret is located beside the sea in the Riviera Maya, near Cancun. It has attractions for all types of clients and it is entirely a family park, distinguished by the conservation of the Mexican culture (Xcaret, 2015). Xcaret is characterized by unique and unforgettable tourist experiences for its clients, often exceeding their expectations in products, services and quality. It receives more than a million visitors each year from which 42.2% are domestic, 27.1% from Central and South America and the Caribbean, 13.4% are from United States and 17.3% from the rest of the world (Santaolaya, 2012). Xcaret offers a wide variety of services, making it necessary to ask: Which is the best set of products or services to choose from? To create more competitive and accurate strategies, the objective of this investigation is to identify which products or services consumers, residents from Cancun and Playa del Carmen, prefer from the Xcaret Park. The study is organized in the following way: In first section we discuss the relevant literature related to basic aspects of tourism, products and services. Next we discuss the conjoint methodology used in the analysis. Next, we present results of the study. We close the paper with some conclusions and suggestions for future research.

LITERATURE REVIEW

Tourism is one of the largest driving economic forces in the world. It is multifaceted and geographically complex, with diversified products and services that foster competition. The challenge is to recognize value and understand consumer behavior with the intention of optimizing service and product offerings (Dominique y Barbosa, 2012). Tourism is a social and economic phenomenon. It consists of the movement of people through time and space. The quantity of people working in tourism and its ample geographical

distribution defines tourism as a socioeconomic phenomenon of vital importance to society (Pasquotto, Milton, Monfort, De Oliveira, 2012). Tourism has great potential in Mexico due to generous weather that allows Mexico to receive travelers year around. It has a well-known gastronomical diversity. Destinations with sun and beach are known internationally in part because they are included in the UNESCO Worldwide Heritage List (BANCOMEXT, 2013).

Mexico has ideal places for green and adventure tourism that respond to a growing worldwide demand for these sort of services (BANCOMEXT, 2013). Mexico has the best raw materials for this type of tourism. This market is characterized by clients that enjoy nature and wish to experience new emotions (Rocha, 2007). The diversity of products and services in this sector allow the consumer to have a wider diversity of choices, which makes it necessary to better understand consumer behavior with the intent of optimizing the services offer (Dominique y Barbosa, 2012). Products can be defined as anything that can be offered in a market for attention, acquisition, use or consumption that could satisfy a wish or need. This includes physical objects, services, people, places, organizations and ideas (Kotler y Armstrong, 2003). A tourism product compromises the resources contained in the arriving space that fulfill needs impossible to satisfy at home. This makes it necessary to move or travel to live and enjoy these resources as a tourist experience. It also involves the role of instrumental, complementary and auxiliary resources (González 2009).

Services are economic activities offered from one party to another in exchange for money, time and effort. Clients wish to obtain value by accessing goods, professional abilities, premises, networks and systems. Even though, generally they do not acquire the property of the physical elements involved (Lovelock, 2004). Walker, Boyd, Mullins y Larréche (2002) note that services are essentially intangible activities or benefits that one party can offer to another. Marketing has developed to promote the exchange of physical goods where it is easier to fix a price, develop a product, promote it and distribute it. It is the service's own characteristics which make it difficult to develop diversified marketing strategies and to apply the most important marketing tools to services, specifically to tourism services (Meroño y Bueno, 2014). Due to the growing supply of goods and services, before any type of marketing can affect consumers they must be exposed to it. Exposure refers to the process through which a consumer comes across stimuli. Marketing stimuli are messages or information about the attributes of the product, service or brand that influence at the moment of choosing. Exposure is crucial to influence the consumer's thoughts and feelings (Hoyer y Maclnnis, 2010). In most of today's markets it is practically impossible to satisfy every consumer with a single product or service. Exposure reflects if the consumer meets with stimuli. Attention reflects how much mental activity is payed to the stimuli. A certain amount of attention is necessary for the information to be perceived so the feelings of the person are activated (Hoyer y Maclnnis, 2010).

After being exposed to a stimuli and dedicating at least a little attention, the possibility of being perceived is measurable. Perception occurs when stimuli are registered by one of the five senses: sight, hearing, taste, smell and touch (Hoyer y Maclnnis, 2010). In the context of service, the provision, or meeting of client and corporation, is the origin of value that builds into satisfaction (Ravald y Grönroos, 1996) and its subsequent consequences (Moliner, Gil y Ruiz, 2009). Some research proposes a cognitive and affective model of client satisfaction that integrates psychological variables. This allows a market analysis to identify visitor profiles and their choices of recreation in natural spaces (Bingé y Andreu, 2004; Osorio, y cols. 2011). Several authors propose inclusion of emotions in the idea of client satisfaction. This is done because the majority of services have, as a base, the experience, participation or adventures of the client (Bingé y Andreu, 2004; Osorio y cols. 2011).

Consumer preferences transfer tastes and the possibility of election between several options. It is therefore fundamental that organizations establish strategies to capture the consumer's attention. Doing so positively influences the decision of buying, based on the knowledge of consumer's tastes. It is necessary to create value for the client to have profitable relations (Kotler, Bowen, Makens, Garcia and Flores, 2011) through

an action plan that develops and maintains a mixture of strategies that produces satisfactory exchanges with consumers (Lamb, Hair, and Mc Daniels, 2011).

DATA AND METHODOLOGY

A descriptive quantitative analysis was done, with the goal of describing market characteristics and functions (Malhotra, 2008). Central measures like fashion, mean and median were calculated as generated by pure data analysis (Hair, Bush and Ortinau, 2004). Frequencies, which are mathematical distributions that count the answers associated with different values from a variable were determined (Malhotra, 2008). Finally, a conjoint analysis was performed to determine the relative importance that consumers assign to outstanding attributes, and the utility that they assign to the levels of attributes (Malhotra, 2008). This is a multivariate, robust, simple and flexible technique which allows the evaluation and analysis of the expressed consumer's preferences for services (Varela & Braña, 1996; Varela, Rial & García, 2003; Picón, Varela & Braña, 2006; Ferreira, Rial, Picón & Varela, 2009).

The conceptual frame to evaluate a subject's preferences is utility, a measure of overall preference. The more useful a product or service is the more attractive it will be for consumers, and the higher the probability the product or service will be chosen by consumers. Through utility, it is possible to quantify and ponder every level of attribute in the final buying decision of a product (Ferreira, 2011). The conjoint analysis consists of information about the preference structure that clients manifest for the different characteristics of a product or service. These preferences are directly related to benefits consumers expect from a product's attributes (Picón y Varela, 2000). Conjoint analysis allows businesses to work out and quantify the hidden rules people use to make choices between different products and services, and to quantify the values they place on different features or components parts of the offer (Conjoint analysis, s/f). The analysis is based on offers and best options. It helps us understand precisely what consumers want, and evaluate the different parts of the product or service. The goal is to maximize the value from products or services the business offers (Conjoint analysis, s/f). Conjoint analysis starts by breaking a product or service down into its constituent parts (called attributes and levels). Then the profess involves testing combinations of these parts to identify customers preferences. This study uses statistical analysis to work out the value, or utility score, of each part of the product or service in terms of its contribution to customer decisions.

The first stage in conjoint analysis is to create a set of product profiles (possible combinations of attributes and levels) to produce a set of options from which customers are then asked to choose. At the moment of choosing the number of attributes and levels, a balance between activities is looked for. Information overflow and simplification on both ends of the balance are taken into account, in to select three attributes with seven levels in each. The orthogonal procedure generated a fractioned factorial design which selected 11 profiles form all possible combinations. Study subjects were asked to order items in each of the park's activities according to their preference. Subjects must also answer a series of closed questions to obtain information about their demographic, psychographic and socioeconomic characteristics. The research was done using a questionnaire with 17 questions from which six were on an ordinal scale, in which numbers are assigned to objects to indicate the relative extension of a characteristic. Thus it is possible to determine if a product has more or less the same characteristics as another (Malhotra, 2008). The other 11 questions were on an interval scale, which includes not only the assigned properties and the order of scale, but also the length property. All the answers from the scale have a known absolute difference between points (Hair, Bush, and Ortinau, 2004). The sample was not probabilistic. The sampling technique did not use random selective procedures, but is based on the personal judgement of the investigator. In this case 309 people were questioned from which 235 were Cancun residents and 73 were Playa del Carmen residents. The questionnaire was applied by students from science summer schools (Dolphin Program and The Mexican Science Academy). Every interview took approximately five minutes and was made from the 10th to the 27th of July 2015.

RESULTS AND DISCUSSION

The results show that 76.3% of residents were from Cancun and 23.7% were from Playa del Carmen. Some 50.6% were women and 49.4% were men. The average age of the participants was 29 years. The minimum age was 15 years old and the maximum was 64 years. From the total of participants 83.4% have visited the Xcaret Park; while 16.6% have not visited the park. From the 83.4% that have visited the park, 43.8% have visited it only once a year, 26.3% have visited it twice and 13.3% have visited it more than three times in a year. The conjoint analysis was carried out in two different stages. The first sage consisted on an octagonal matrix, a sub group of all the possible combinations that allows the simulation of partial values for all principal effects. The final number of remaining profiles from all the possible combinations of levels allows participants to be able to classify or grade all of them in a way that has meaning, as shown on Table 1.

Tabla 1: Octagonal Matrix Profiles

Octagonal Matrix Profiles
Attend artistic and cultural activities - Taste international Food - Enjoy the Flora
Attend artistic and cultural activities - Taste international Food - Enjoy the Flora
Attend artistic and cultural activities –taste food in the snack – Enjoy the Flora
Attend artistic and cultural activities – taste food in the snack – Enjoy the Fauna
Attend artistic and cultural activities – Taste Mexican regional food – Enjoy the Flora
Take part in water activities- Taste international Food - Enjoy the Fauna
Take part in water activities - Taste international Food - Enjoy the Flora
Take part in water activities – taste food in the snack – Enjoy the Flora
Take part in water activities – taste food in the snack – Enjoy the Fauna
Take part in water activities – Taste Mexican regional food – Enjoy the Flora
Take part in water activities – Taste Mexican regional food – Enjoy the Fauna

This table shows the eleven octagonal matrix obtained through the Statistical Package for the Social Sciences (SPSS). The interview consisted on the interviewed putting in order from the 1 to 11 the profiles marked on the table, one being the highest preference and 11 the lowest preference.

The second part consisted of interviewing the 309 residents about the profiles obtained from the octagonal matrix. The results are presented in Table 2. Higher values of utility show a higher preference. This means that residents prefer water activities (0.166), tasting international food (0.193) and watching the fauna (0.063).

Table 2: Utility Range

Attribute	Level	Utility Estimation
Activities	Water	0.166
	Artistic and cultural	-0.166
Restaurants	International	**0.193**
	Snack	-0.155
	Mexican Regional	-0.038
Natural Attractions	Flora	-0.063
	Fauna	**0.063**

The utility range (form higher to lower) for each factor gives a measure of the importance that a determined factor is relevant to the global preference. Factors that show higher ranges of utility take a more important role than those who with a lower range. Restaurants with international food show a greater preference (0.193), followed by aquatic activities (0.166) and finally natural attractions and fauna (0.063).

The conjoint analysis also showed importance values, relative measures of each denominated factor or importance points. Values are measured using the utility range for each factor separated and divided by the sum of the utility ranges of all factors. The values are shown in percentages and have the property of adding up 100, as shown in Table 3.

Table 3: Importance Values

Attributes	Importance Value
Activities (water, cultural, atistic)	26.896
Restaurants	49.488
Natural Attractions	23.616

Importance means from a determined factor relevant to global preference. Values are calculated for each value separately and divided by the sum of the ranges of utility of all the factors, adding 100. These results show that restaurants have a high value of importance (49.488), followed by aquatic, cultural and artistic activities (26.896) and finally by natural attractions (23.616).

CONCLUSION

The goal of this research was to understand the preferred consumer´s itinerary (residents from Cancún and Playa del Carmen) in Xcaret Park, using a quantitative approach with the technique of conjoint analysis. This technique allows measurement of the relative value of each of product or service attribute. This in turn permits determination of the best combination of choice attributes for consumers. The study's variables were determined in reference to aquatic, artistic, cultural and ecological activities, in addition to restaurant services offered by Xcaret Park to visitors. A descriptive quantitative analysis was undertaken using central tendency measures. Conjoint analysis produced eleven types of possible profiles that consumers would be able to choose from. Xcaret Park is one of the main attractions of the State of Quintana Roo, in Mexico. It offers diverse possibilities for adventure and green tourism like water activities, artistic, cultural and ecological activities, etc. To be able to determine the variables from the study these activities were considered. Eleven types of profiles that the consumer can choose from stand out were obtained from the octagonal matrix. Some 80% of the people interviewed had visited the park.

The results show that clients prefer the following aspects: a) The results show that 26% feel attracted to water activities; b) restaurants, especially international food and beverages is decisive for the clients. Some 49% of the participants chose it as a main aspect; and c) natural attractions, essentially related to the fauna. From this aspect we can deduct that it is important for the client, because there is a constant concern on their part to look after and preserve nature. This is not surprising as participants are residents). This is related with the cognitive-emotional model, in which options chosen in the park by the sample of this study are related with affective and sensory experiences, particularly with pleasure. A cognitive evaluation of the service experience was also undertaken. Knowing the ideal combination of attributes, marketing placement, or product or service placement, can be done. Doing so will encourage the organization to evaluate how to increase those qualified attributes. The business's concern lies in offering a number of services and goods that will be attractive for the consumers. Being able to find these preferences can help identify more assertive publicity and promotions, where the message captures attention through relevant information for the clients.

The knowledge of client's preferences will help position products, services and brands in a way that connects the company and the consumer. Such knowledge can help the efficiency of resources. In the same way knowing the client's perception allows us to generate instruments that make it possible to measure the client's acceptance of new or substitute products or services. In sum, the analysis of representative attributes of a company is a primary input to consider when evaluating factors that impact an organization, to be able to design the necessary strategies to increase market share. The restrictions faced in this project were related with the definition of profiles. In the beginning, they were disaggregated. This caused a much larger list of profiles (more than 1,000 combinations). Such an amount is impractical for the gathering of information. From this study related investigations can be carried out with image, placement and length investigations to determine possible changes relevant to consumer's preferences and tastes. Psychological studies about consumers can be carried out with the goal of trying to understand buying conduct and deepen research about the perception of clients to better plan the marketing strategy of the organization.

APPENDIX

The present survey is done with academic purposes; thank you for your participation and honesty

	Identification:			Date:	Interviewer:	
1	Sex:	F	M	2	Age	

Identification: Date: _____   Interviewer: _____
1. Sex: F ( ) M ( )   2. Age: _____   3. Place of residence: Cancun ( )   Playa del Carmen ( )
4. Order from 1 to 11 the itinerary that you prefer when visiting Xcaret Park.
Attend artistic and cultural activities - Taste international Food - Enjoy the Flora
Attend artistic and cultural activities - Taste international Food - Enjoy the Flora
Attend artistic and cultural activities –taste food in the snack – Enjoy the Flora
Attend artistic and cultural activities – taste food in the snack – Enjoy the Fauna
Attend artistic and cultural activities – Taste Mexican regional food – Enjoy the Flora
Take part in water activities- Taste international Food - Enjoy the Fauna
Take part in water activities - Taste international Food - Enjoy the Flora
Take part in water activities – taste food in the snack – Enjoy the Flora
Take part in water activities – taste food in the snack – Enjoy the Fauna
Take part in water activities – Taste Mexican regional food – Enjoy the Flora
Take part in water activities – Taste Mexican regional food – Enjoy the Fauna
Frequency:
5. Have you visited Xcaret Park?:   Yes ( ) No ( )
6. With what frequency do you visit Xcaret Park every year?   0   1   2   3 o More
Thanks ☺

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