USAGE OF NEURO-TOURISM METHODS IN HOTEL PREFERENCES OF THE CONSUMERS

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Abstract

New disciplines have emerged together with starting the usage of Neuroscience in the social science. Neurotourism is one of those disciplines. Different disciplines such as medicine, sociology, and tourism mergein this discipline, and thus people's decision making processes are ensured to be interpreted in according with the disciplines. Briefly, Neurotourism is a discipline that neuroscience and tourism establish through working together. The decision making processes of the consumer in their hotel preferences is considered with EEG method and the order of importance in customer's hotel choice is identified.

The study is based on experimental methods for the purpose of exploration. A test environment has been established in an environment refined from stimulants without providing prior information to the subjects. EEG device has been used in this study. Rational and irrational criteria have been shown to volunteers for ten-second slides. Then volunteers have been asked to order the first 5 criteria that they saw in the slides in order of their importance within ten seconds. EEG results will be compared with this ranking and the most important criteria will be determined for the volunteers. This study was conducted with 15 volunteers from a random sample of 18-55 years old people living in Ankara.

When the results were analyzed, it was determined that the volunteers did not only give importance to the rational criteria but also to their hotel preferences were important in their irrational criteria. Preferences of volunteers were determined by considering the brain waves using EEG method. Although these results were obtained from Ankara, sample group was composed of persons having grown up in different cities, therefore, this can be generalized to the groups in this age range. However, a more comprehensive generalization can be reached by conducting this study in accordance with social status and other demographic features.

Keywords: Neuroscience, consumer behavior, experimental study, neuro-tourism, hospitality management.

INTRODUCTION

Neurotourism is described as the interpretation of the decisions of individuals based on disciplines by the integration of various disciplines including medicine, psychology, sociology and tourism. Neurotourism is a discipline generated by the collaboration of neuroscience and tourism. There are not adequate studies conducted in this field. With the start of application of neurosciences in social sciences, neuroscience studies are being implemented in tourism field as well. Empirical studies are taking the place of other studies such as surveys, etc.

Neurotourism investigates neural mechanisms of the behaviors of tourists for tourism research. Neuroscience tools measure some compenents in human body including happiness, satisfaction and reasons for revisiting to collect neurophysiology data. Furthermore, information on cognitive and emotional processes can be obtained and recorded during tourism experience by using neuroscience tools and this way, tourism managers can do better monitoring and programming. Hence, it is proposed that neurophysiology data should be included in the management information systems (Ma and Hu et al, 2014).

Touristic movements originate and shape up from psychological factors considerably. Motivation of people for travelling and their decision for a certain option is a psychological process significantly. Moreover, changes in thinking ways and attitudes of individuals during travelling, the effects of these on behaviors, reactions of people developed for adapting to frustrations and difficulties of travelling and holiday life, and the effects of tourism on the mental state and behavior of tourists and local people are related to psychology considerably. Therefore, touristic product purchase takes place during this psychological process in a period from the departure of people from their permanent residency until their return to their home.

In this study, decision processes of consumers for their hotel preferences were assessed by EEG method and the order of importance of customers in their hotel preferences were determined. It was found out that persons may make irrational choices not only rational ones.

It has been revealed that tourists display various types of decision making behavior for different goods and services they purchase during their vacation processes. The initial step of each decision making process is the arising of necessities. When consumers face a problem, they become aware of their needs. Necessities arise when there is a difference between the real situation (the current state of the person) and the desired situation (the state desired by the consumer). There will be no necessity occurring when there is no difference between the two situations, therefore there will be no need for making a decision (Solomon, 2007; Hawkins, Best, Coney, 2001). Therefore, touristic products must be tailored according to changing delights and fashion in time. Tourism enterprises must be ready for trying new products and tendency in demand (Kotler et al, 2003: 301).

Tourism mediators and producers must comprehend motivating factors ensuring decision making by consumers in order to render and market tourism services well. Travellers select their vacation spots for their resources and appearance as an appropriate and adequate place for "a good vacation". This behavior is called consumer behavior (Erdoğan, 1996: 74). Consumers reach a decision with the effect of psychological factors including personality, living style, perception, motivation, learning and attitude; demographic factors including age, gender, income level, occupation, educational status and family size; and socio-cultural factors including family, advisory group, social class and culture. There are a series of sub decisions in touristic purchasing behavior including vacation spot, transportation, accommodation, activities, budget and reservation. An issue that needs attention first is to find answers to the questions regarding the factors affecting selection of destination spots by tourists and what affects them in their selection process.

Hygiene and cleanness of the components of the destination is one of the significant factors for rendering a quality vacation service. Hygiene and cleanness in destinations is achieved by the overall cleanness of the destination, hygiene and cleanness of accommodation and food enterprises, cleanness of the sea and beaches and cleanness of historical and touristic places in the destination. Hospitality, among the factors affecting service quality in the destination, is a more intangible concept in comparison to the other factors. General ambience of the destination, safety feeling of tourists, attitudes and behavior of the personnel employed within and outside of the accommodation facility, and attitudes and behavior of local artisans and people determine the hospitality level in that destination (Kozak, 2001).

Various activities can be offered in a destination based on its characteristics. Adequacy of activities at the seaside, entertainment facilities at the destination (Kozak and Remmington, 2000), night life means, shopping opportunities, vacant place finding possibility in beaches, health service availability in the destination, adequacy of activities and services for children and adequacy of sportive activities show the quality of activities in a destination offering sea, sand, sun tourism generally (Kozak, 2001).

Interaction of tourists with the employees, local people and tradesmen during their vacation is a significant factor for vacation satisfaction. Moreover, posting signs for facilitating access to various regions of the destination and touristic attraction centers and the quality of these signs is critical for general satisfaction. Communication tools including brochures, maps, menu, etc., issued in the languages of tourists arriving to the destination in greatest numbers, can be considered as a crucial part of service quality of the destination (Hodson, 2007).

Costs of goods and services offered in a destination have a critical place in vacation assessment (Kozak, 2003). As long as the offered service price is in line with its quality, expectations of tourists about price are met and their general satisfaction levels increase. Total cost of the vacation spent in the destination, accommodation prices, food prices and entertainment prices make up the price evaluations in a destination in general. Tourists evaluate the total cost of their vacation based on the vacation costs in alternative vacation spots and this evaluation is based on general satisfaction (Voss, Parasuraman and Grewal 1998).

Monroe (1986) reported in his study that socio-economic characteristics affect price and quality preferences of consumers and their brand choices shape up depending on this, and there is a positive relationship between the two variables for price and quality perception, pricing is a factor determining quality in addition to the quality being a significant factor in consumer preferences, and consumers with high income level prefer high price products. It was reported that consumers compared adequacy, product or service prices, quality etc. and assessed their family budget and made choices based on these factors.

RESEARCH METHOD

This study is based on an empirical method with exploring purpose. The study aimed to determine which criteria come to the forefront when individuals select hotel enterprises by using brain imaging method. People's choices were aimed to be determined this way without asking questions and presenting prior information. In the study, an experiment setting was generated for the participants not to be affected by any stimulant. EPOC emotive 16-channel EEG device was used in the study. The analyses were read by using Test-bench and 3D brain map software.

In the qualitative part of the study, qualitative questions were answered by using Nvivo 10 program. In this section, open-ended question method was used and 'content analysis' method applied for the solution of qualitative surveys was used for the analysis of the data collected by considering the participant opinions. The main process in content analysis is to group and organize similar data in the framework of certain concepts and themes and interpret them. The main objective in content analysis is to reach concepts and relations able to explain the collected data. Data are described and the facts hidden in data are revealed this way (Yıldırım, Şimşek, 2011:227).

Oral responses of the participants were recorded and examined first in the research. Records of 15 individuals were accepted as valid based on their responses. A number was assigned for each record and Word documents were generated for the responses and the responses were analyzed by using a statistical data analysis program (Nvivo). In the analysis of the responses of the participants, they were grouped according to the similarities of the statements and themes were generated. Furthermore, the frequency values of the opinions of the participants were determined. The opinions were classified under 6 themes in the qualitative section of the research.

The criteria were shown to the participants in a computer setting in the first stage of the experiment. There was no stimulant other than the criteria in the prepared slides. Each criterion was shown in the same background and same dimension on a white slide screen. The slides shown to the participants were organized randomly. These slides were shown to the participants for ten seconds. The choices of the participants were examined and organized by the frequency distribution. Subsequently, the participants were asked to list the most important criteria for them to select a hotel within 10 seconds. These lists were compared with EEG outcomes and the most important criteria for the volunteers were determined. This study was conducted on 15 participants from the random sampling group between the ages of 18-55 living in Ankara city.

RESULTS AND CONCLUSION

Table 1: EEG Results According to the Criteria

CRITERIA SIGNIFICANCE RATE %	WAVE TYPE	WAVE RANGE Hz (MEAN)	CRITERIA
73,3	BETA	15-18	PRICE
40	THETA	7-8	LOCATION
60	BETA	13-15	COMFORT
80	BETA	15-18	SERVICE
46,60	THETA	9- 10	QUALITY

The reactions of the participants to the price, service, location, comfort and quality criteria were assessed according to the table above. The most brain activity was observed for the service criterion for 5 participants when these results were evaluated. 80% of the participants gave the most reaction (average of 15-18 Beta wavelength frequency) to the service criterion. The price criterion was rated 2nd by a rate of 73,3%. 73,3% of the participants (average of 15-18 Beta) indicated the price criterion as the 2nd most important criterion. The comfort criterion was placed in the 3rd row by a rate of 60%. The quality criterion had a 46,60% rate and the location criterion came the 5th by a rate of 40%.
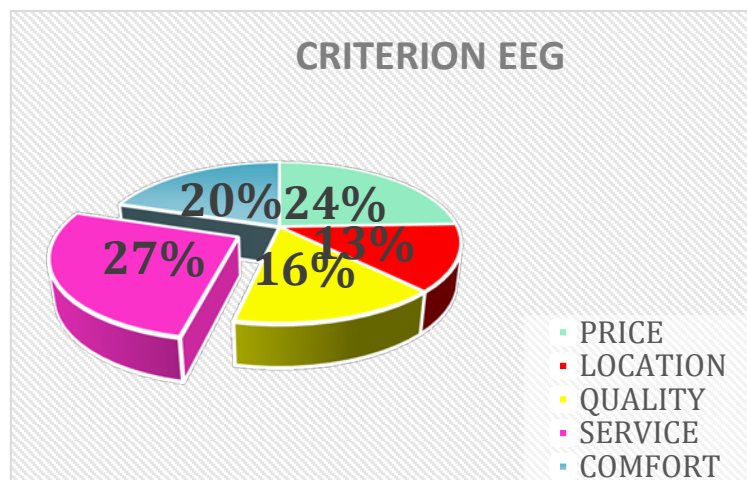

Figure 1: Percentages According to the EEG Results

The rates of the criteria are shown in the cake slices above. Service was ranked 1st, price was ranked 3rd, comfort was ranked 4th and location was ranked 5th.
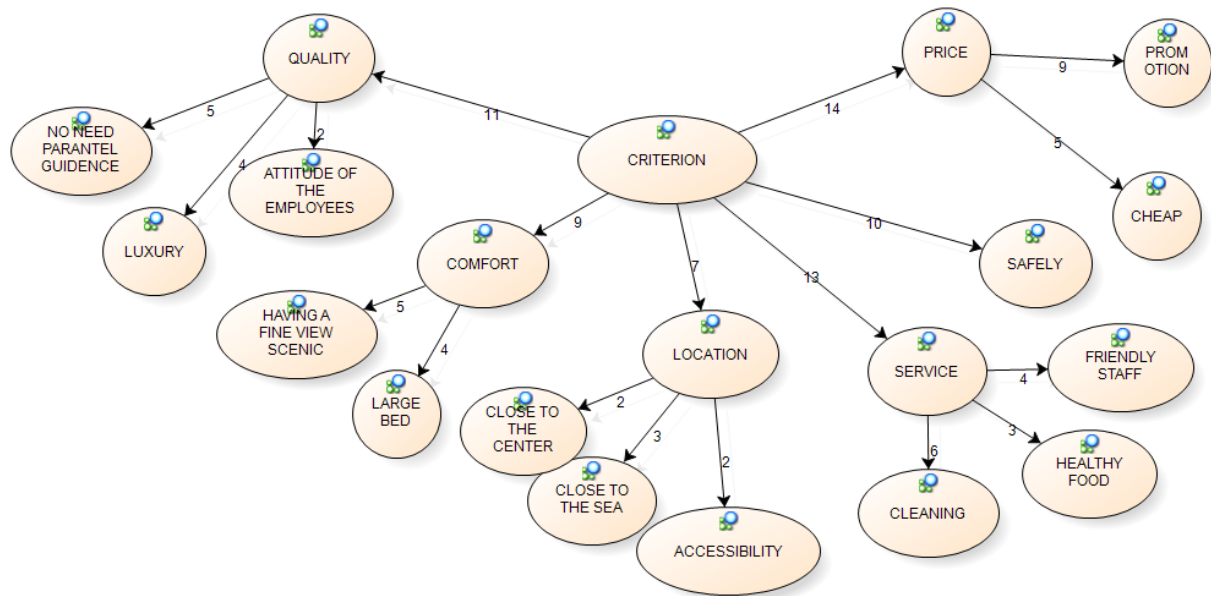
Figure 2: The Results of the Analysis Obtained with Nvivo

In the second stage of the experiment, the participants were asked 'List 5 criteria the most important for you when you select a hotel enterprise'. The participants were asked to response within 10 seconds. The main themes were categorized based on these answers. Subsequently, sub themes of these main themes were generated. The most important criterion was price for the selection of a hotel enterprise according to the participants' opinions. Price was the most important criterion according to 14 of the 15 participants. The most important sub theme was promotions in the price main theme. The most important impressive element for the selection of price was the promotions of the hotel enterprises according to 9 participants. The second most important criterion for hotel selection was the service criterion. 13 opinions were provided within this main theme. 3 criteria were indicated in the service main theme. These criteria were cleanness, healthy food and smiling personnel or a warm welcome. The most important criterion was the cleanness of the hotel. The 3rd important criterion was the quality. 11 opinions were received. The most stated sub theme under this main theme was the suitability for a family. It is inevitable for this criterion to come into prominence when the structure of Turkish society is considered. The 4th most important criterion was safety, in other words feeling safe. When the recent events were considered, this criterion was the most important one for the people. The 5th most important criterion was comfort. The participants expressed 9 opinions for this criterion. The last most important criterion was location when the participants considered when selecting a hotel enterprise.

Table 2: EEG and Quantitative Comparison of the Results According to the Percentages
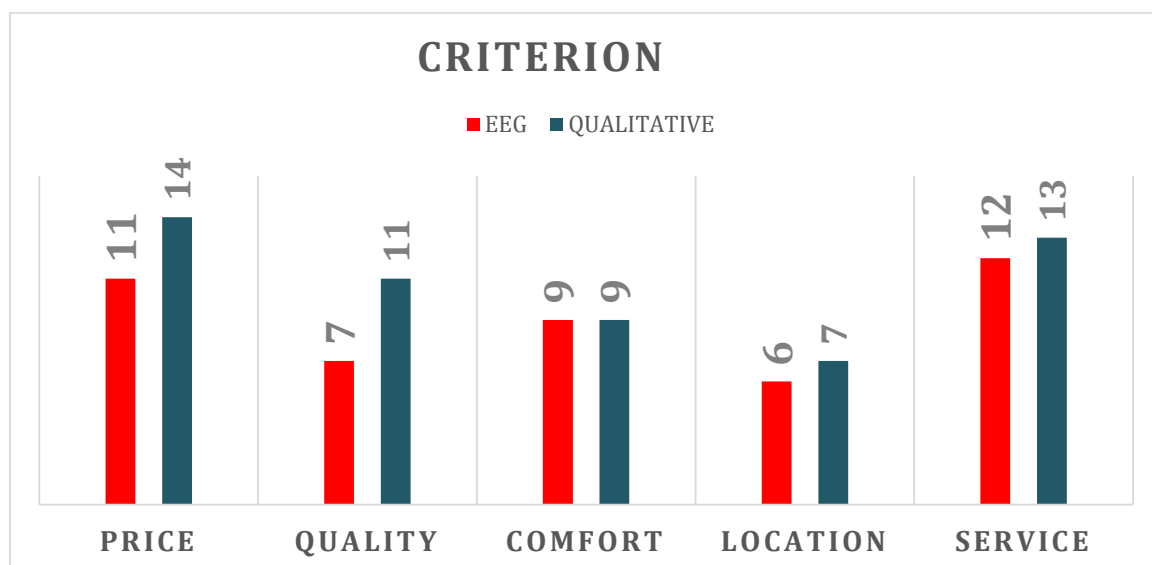
When EEG data and oral responses of the participants were compared, the importance rankings were similar for a hotel enterprise selection. The most important criterion was service according to EEG measurements, and price was the most important criterion in the oral statements. There were not significant differences between these statements and EEG results. A small rate of difference was determined. The 1st most important criterion and 2nd most important criterion changed places. The importance ranks were almost the same indicated by the persons. The data are given in the table according to the results. The most important criteria were price and service for hotel selection. These were the criteria most considered by people for hotel selection. The safety criterion was included among the most important criteria when the persons were not restricted in their criteria selections. Experienced social events and perceptions of the people vary from time to time. Human beings, as social creatures, are affected by variables existing in their surrounding including economic, political, cultural, etc. Preferences vary as well as a result of these interactions. This study was conducted on persons between the ages of 18-55 living in Ankara. The criteria were not restricted in EEG study. The outcomes of this study are valid for these criteria. When the criteria number increases, the results can also change. The importance rank of these criteria can change for people living in a different city.

BIOGRAPHY

Cevat TOSUN

Dr. Cevat Tosun is working as a full professor at Gazi University, Turkey. He obtained his master degree in tourism and hospitality management from the Institute of Social Science at Erciyes University (Turkey). Funded by a competitive government scholarship from the Turkish Higher Education Board, he earned his Master's and Doctoral degrees at the Scottish Hotel School, Business Faculty, Strathclyde University (Glasgow, UK) . He was a Fulbright Scholar and Visitor Professor at the University of Northern Iowa (USA) and a Leverhulme Fellow at The International Centre for Tourism and Hospitality Research at Bournemouth University (UK). His peer-reviewed journal articles have appeared in top tier international journals. His research interests are tourism-hospitality marketing, collaborative marketing, destination marketing, visitor satisfaction, destination image, sustainable development, etc.

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She was born in Sarıkamış in 1987. She successfully completed the Bachelor degree in Tourism Management Department at Istanbul University. Then She continued with her Master's degree in Tourism Department at Gazi University, Ankara. For the time being; she is continuing PhD degree with a common program at Gazi University- Selcuk University. While doing her academic studies, she is working at Selcuk University as a Research Assistant.

Fatma ÇUBUK

She was born in Elazığ in 1985. She successfully completed the Bachelor degree in International Relations at the University of Uludag. She started master degree at the University of Kadir Has. She has gained his master of degree title by completing master dissertation" A New Applied and Scientific Approach: Neuromarketing" (2012). She doing researches on the fields of Neuromarketing, subliminal advertising, Brand and the behaviours of consumers. She is Neuromarketing Expert and working on defense, healthcare, finance sector.

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