Int. Journal of Business Science and Applied Management, Volume 5, Issue 2, 2010

An empirical study of tourist preferences using conjoint analysis

Shalini N. Tripathi
Faculty-Marketing, Jaipuria Institute of Management,
Vineet Khand, Gomtinagar, Lucknow-226010, India
Tel: +91 (0) 522 2394296
Email: shalinit@jiml.ac.in

Masood H. Siddiqui
Faculty- Decision Sciences, Jaipuria Institute of Management
Vineet Khand, Gomtinagar, Lucknow-226010, India
Tel: +91 (0) 522 2394296
Email: masood@jiml.ac.in

Abstract

Tourism and hospitality have become key global economic activities as expectations with regard to our use of leisure time have evolved, attributing greater meaning to our free time. While the growth in tourism has been impressive, India's share in total global tourism arrivals and earnings is quite insignificant. It is an accepted fact that India has tremendous potential for development of tourism. This anomaly and the various underlying factors responsible for it are the focus of our study. The objective being determination of customer preferences for multi attribute hybrid services like tourism, so as to enable the state tourism board to deliver a desired combination of intrinsic attributes, helping it to create a sustainable competitive advantage, leading to greater customer satisfaction and positive word of mouth. Conjoint analysis has been used for this purpose, which estimates the structure of a consumer's preferences, given his/her overall evaluations of a set of alternatives that are pre-specified in terms of levels of different attributes.

Keywords: Uttar Pradesh tourism, tourist preferences, conjoint analysis, binary logistic models

1 INTRODUCTION

Tourism is a service industry; therefore, there are inherent challenges with service marketing that affect how the tourism product is communicated to the consumer public. According to Williams (2006), tourism and hospitality have become key global economic activities as expectations with regard to our use of leisure time have evolved, attributing greater meaning to our free time. This results in marketing having potentially greater importance in tourism than in other industries but sadly potential that is not always fulfilled (Morgan and Pritchard 2002). Williams (2006) believes that a major reason for such unfulfilled potential lies in most tourism marketing focusing on the destination or outlet (in other words the products being offered) and lacking focus on the consumer. Therefore, while Tourism Boards may already use a number of planned and controlled marketing activities, this paper purports that they could also exploit the destination image enhancement opportunities that exist through developing an insight about the customer/ tourist preferences and delivering the desired service package.

2 THE INDIAN TOURISM INDUSTRY

Tourism in India has registered significant growth in the recent years. In 1951, International Tourist Arrivals stood at around 17 thousand only while the same has now gone up to 3.91 million in 2005. The upward trend is expected to remain firm in the coming years. Tourism is the third largest net earner of foreign exchange for the country recording earnings of US $ 5731 million in 2005, a growth of 20.2 percent over 2004 (Tourism Overview in 2005-06). It is also one of the sectors which employ the largest number of manpower. The first ever Tourism Satellite Accounts for India compiled by NCAER for the year 2002-03 showed that tourism employed 38.8 million persons, directly and indirectly, which was 8.3 percent of the total employment in the country and who contributed 5.8 percent of the GDP (Tourism Satellite Accounts for India, NCAER). These figures are estimated to have increased to 41.85 million employed in 2003-04 with a GDP contribution of 5.9 percent. Various studies have also shown that tourism generates the highest employment per unit of investment for the skilled, semi-skilled and unskilled. The World Travel and Tourism council (WTTC) has identified India as one of the foremost growth centers in the world in the coming decade (WTTC Travel and Tourism Economy Research).

India's share in international tourist arrivals has increased from 0.46 percent in 2004 to an estimated 0.55 percent in 2007. Foreign Tourist Arrivals (FTA) has increased from 3.46 million in 2004 to an estimated 5 million in 2007. The contribution of tourism to India's foreign exchange earnings has grown from $6.17 billion (Rs. 279440 million) to an estimated $ 11.96 billion (Rs. 494130 million) in 2007. India's share in world earnings from tourism has increased from 0.98 percent in 2004 to 1.21 percent in 2006. There is a significant increase in the domestic sector also, as number of domestic tourists has increased from 366.23 million in 2004 to an estimated 462 million in 2006. (Tourism Statistics for India: Annual report on the status of tourism in India, published by Ministry of Tourism, Government of India)

While the growth in tourism has been impressive, India's share in total global tourism arrivals and earnings is quite insignificant. It is an accepted fact that India has tremendous potential for development of tourism. The diversity of India's natural and cultural richness provides the basis of a wide range of tourist products and experiences, which embrace business, leisure, culture, adventure, spirituality, eco-tourism and many other pursuits. Apart from acknowledging the traditionally recognized advantages of developing tourism for the promotion of national integration, international understanding, earning of foreign exchange and vast employment generation, it can play a major role in furthering the socio-economic objectives of nation.

The Ministry of Tourism adopted a multi-pronged approach in order to achieve this growth. Providing a congenial atmosphere for tourism development, strengthening the tourism infrastructure and hospitality related services, integrated development of identified destinations and circuits, integrating elements of tourism, emphasizing on culture and clean civic life marketing of tourism products in a focused manner along with a branding exercise and positioning India as a high value destination in the new key markets and giving thrust on the human resource development activities have been the hallmarks of this strategy. The focus of product development in the states also underwent a change by enhanced outlays for 'destination development up to an amount of Rs. 50 million and 'circuit development' up to an amount of Rs. 80million (Tourism Policy). A new proposal was moved to allocate up to Rs. 500 million for individual destinations with high tourist footfalls in order to totally redesign the experience of the tourist through greater organization and provision of civic facilities.

The important initiatives taken by the Government to improve the flow of foreign tourists into the country and thereby increasing the country's share in the world tourism included the following:-

- Beginning of cruise tourism by an international shipping firm.
- Direct approach to the consumers through electronic and print media through the 'Incredible India' Campaign called 'Colours of India' (Incredible India Campaign)
- Creation of World Class Collaterals.
- Centralized Electronic Media Campaign.
- An integrated campaign in South East Asia to promote Buddhist sites in India, etc.

Among the most favoured tourist destinations in India, Kerala for its scenic beauty, Agra for Taj Mahal, Khajuraho for its sculptures and temples, Goa for its beaches, Lucknow for its historical significance and some pilgrimages are the most important.

3 TOURISM IN UTTAR PRADESH

The state of Uttar Pradesh is situated in the northern part of India and is one of the most fascinating states of the Union of India. The state of Uttar Pradesh offers immense tourism delights and an endless array of attractions, to the visitors in the state by way of its rich and varied topography, vibrant culture and captivating festivities, monuments and ancient places of worship. Agra, Ayodhya, Sarnath, Varanasi, Lucknow, Mathura and Prayag combine religious and architectural marvels.

The state tourism department has reviewed the existing Tourism Policy and finalized the new Tourism Development Policy for the state of Uttar Pradesh (Tourism Policy for Uttar Pradesh) (www.up-**tourism**.com/**policy**/new_**policy**.htm; planningcommission.nic.in/plans/stateplan/upsdr/vol-2/Chap_b5.pdf). The objectives of the policy are:

- Providing economic benefits to the local population and enhancement of employment opportunities.
- Improving and diversifying the tourism product base, with focus on adventure, religious and monument based travel.
- Increasing the hotel capacity of the region.
- Increasing the visitation number.
- Enhancing the investment in the tourism industry.
- Increasing revenue per visitor through superior visitor profile, better facilities and value addition to the tourism product.

These aspirations as projected by the State Tourism Policy have the following strategies for development:

- Development of basic infrastructure, to be undertaken by the government bodies.
- Planning tourist circuits through a master plan.
- Enhancing and encouraging the participation of the private sector in efforts of the state government for providing necessary facilities to domestic and international tourists.
- Dovetailing development funds from different sources.
- Improving the product diversity to attract a range of tourists.
- Coordination between various government departments.
- Proper restoration of heritage properties and their publicity.
- Providing cheap, clean and satisfactory facilities to tourists in matters of transport, accommodation, food and recreation.
- Organizing cultural shows on occasion of different fairs, festivals and seminars with a view to attracting more and more tourists.
- Setting standards and quality benchmarks.
- Extensive and effective marketing.

In 2002, the foreign exchange earning for the state was Rs. 28390 million which increased to Rs. 50344 in the year 2005. (Malviya, 2008)

According to the AC Nielsen ORG-MARG "Collection of Tourism Statistics for the State of Uttar Pradesh" report (UP Tourism Statistics), the total number of tourists visiting the State of Uttar Pradesh for the period of April 2005– March 2006 was 17.8 million. Out of this, 4.5 million were domestic overnight visitors, 0.5 million foreign overnight visitors and 12.8 million were day tourists. Domestic overnight visitors spent 8.3 million bed nights and foreign overnight visitors spent 0.97 million bed nights in this period at various accommodation units in the state. Taking a holistic view, major heads of

expenditure for the visitors to the destination were accommodation services, food and beverage services as well as transport equipment rentals.

The glaring anomaly to be noted over here is that despite its rich cultural heritage and high potential for tourism, the growth of tourism in the state of Uttar Pradesh has not been very significant (UP Tourism Statistics). This anomaly and the various underlying factors responsible for it are the focus of our study.

4 MARKETING OF TOURISM

Tourism being a service industry presents inherent challenges with service marketing that affect how the tourism product is communicated to the consumer public. There is, according to Clow et al. (2006: 404), a 'difficulty in communicating effectively the attributes of a service because of the unique characteristics of services, especially intangibility'. Indeed, the intangible nature of any service presents immense challenges to marketers in so much as communicating a product's offering favourably to a potential market. Consider trying to communicate the thrill of a rollercoaster ride; the buzzing atmosphere in a busy city restaurant; the range of emotions felt while watching a theatre production. Travel-based products also have uniqueness in that they are not of a 'tangible' nature. Information constitutes the bulk of travel products and transactions.

Tourism and travel, as Zhou (2004) states, are about the experiences and memories that tourists will have for a lifetime, but there is an inherent difficulty in promoting something largely intangible in this way. 'Tangibilising the intangible' (Levitt 1981 cited in Kotler 2000) to engage your target audience is understandably complex. However, the buyer decision-making process for the service product compounds marketing challenges even further (Hoffman and Turley 2002). In the absence of being able to touch, see, or test a service, prepurchasing decisions are much riskier than for goods (Palmer 2000). In many ways, it is venturing into an unknown and untested territory unless the consumer has purchased the product before or the product has received a positive word of mouth (File and Prince 1992).

Gilmore, Carson and Ascencao (2007) discuss sustainable tourism marketing in the context of a world heritage site and contend that a strategic marketing approach for the development of sustainable tourism is vital to the management of a world heritage site. This concept of tourism incorporates social, economic and environmental perspectives in a given region.

Hence, although the various State Tourism Departments may be deploying a number of marketing activities, but this study proposes developing an in depth understanding of tourist preferences and delivering the desired tourism packages ensuring greater customer satisfaction.

5 GAINING INSIGHT INTO CUSTOMER PREFERENCES

Knowing where consumer preferences and their values reside, companies can develop the necessary marketing strategies to increase customer satisfaction, loyalty and retention, thus strengthening their competitive position. It is impossible today to remain cost competitive and offer every feature desired by customers (Pullman, Moore, and Wardell 2002). Therefore, marketing, engineering and operations need to work together to determine the profit-maximising bundle of product features.

The tourism industry has some specific characteristics that impact upon any tourism marketing management activity. Both public and private sector companies are involved in the planning, management and delivery of tourism services (Font and Ahjem 1999) and small companies often provide many fundamental services within tourism regions (Go, Milne and Whittles 1992; Dewhurst and Thomas 2003). So the industry is an amalgam of companies and organizations with different purposes and agendas and this has an influence on the overall tourism offering.

It is widely recognised that the tourism industry is fragmented and many authors have asserted the need for some form of co-operative arrangement between stakeholders (Butler 1991; D'Amore 1992; McKetcher 1993; Bramwell and Lane 1999; Boyd and Timothy 2001). Integrated, co-ordinated tourism is seen to be desirable, if not essential, for the implementation of sustainable tourism (WTO 1993).

Marketers are more likely to use conjoint analysis (CJA) to help design new product feature sets. Green and Krieger suggest the use of the CJA technique, for the detection of competitive actions and reactions in the case of introducing new products or services and extensions, through the analysis of consumers' preferences and perceptions (Green and Krieger 1997).

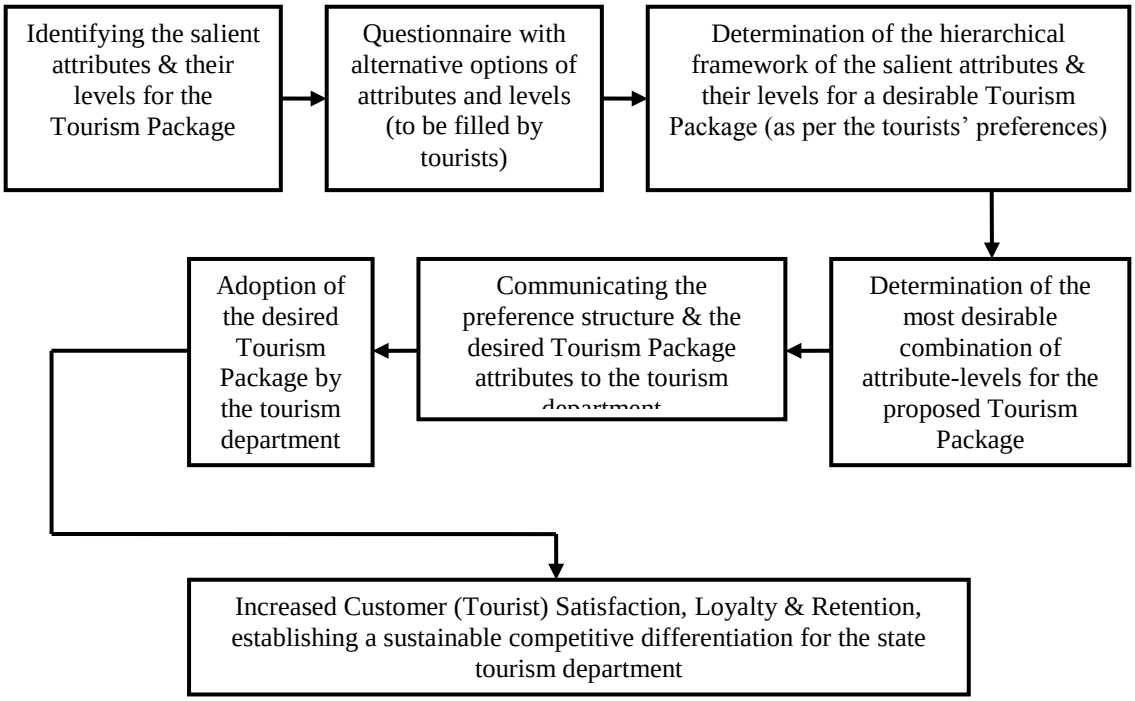
CJA is a survey-based multivariate technique that measures consumer preferences about the attributes of a product or a service. The goal is to identify the most desirable combination of features to

be offered or included in the product or the service. The underlying theoretical premise of the CJA process is that consumers simplify the complexity of a purchasing decision, selecting for themselves a subset of features/ attributes for which they give individual subject values, depending on the characteristic structure of those values.

In their working paper, Green and Rao (1969) discussed briefly the conjoint methodology. However, the first detailed consumer oriented paper appeared only in 1971 by Green and Rao. Later, Green and Srinivasan in 1978 developed it as a major set of techniques for buyer's trade-offs among multi-attributed products and services.

Conjoint broadly refers to any decompositional method that estimates the structure of a consumer's preferences, given his/her overall evaluations of a set of alternatives that are pre-specified in terms of levels of different attributes. Hence, is best suited for understanding consumers' reactions to and evaluations of predetermined attribute combinations that represent potential products or services. While maintaining a high degree of realism, it provides the researcher with insight into the composition of consumer preference. CJA is based on the simple premise that consumers evaluate the value of a product /service by combining the separate amounts of value provided by each attribute. Here, first a set of real or hypothetical products or services are constructed by combining selected levels of each attribute. These combinations are presented to respondents, who provide only their overall evaluations. Thus, the respondents are asked to perform a very realistic task- choosing among a set of products/services by rating/ranking. Because of construction of the hypothetical product/service in a specific manner, the influence of each attribute and the worth of each level as judged by respondent can be determined by the respondents' overall ratings. Figure 1 gives a proposed conceptual model for this paper, illustrating the step wise process followed to arrive at the most desirable tourism package (as per tourist preferences), so that it can be conveyed further to the state tourism department for implementation.

Figure 1: Conceptual Model for the Research Study



6 DESIGNING A CONJOINT ANALYSIS EXPERIMENT

Figure 2: Conjoint Analysis Decision Process

Specification of the objectives of Conjoint Analysis

↓

Identification of six salient attributes for Consumer Choice Process for the Tourism Package by Exploratory Identification Process

↓

Selecting levels for each attribute by interviewing tourism industry experts, tour operators and officials of the tourism department

↓

Selecting Conjoint Analysis Methodology:
- Multi-Factor Evaluation Conjoint Analysis
- Composition Rule- Additive
- Full-Profile Approach

↓

Construction of Stimuli:
- Subset of Stimuli-Fractional Factorial Design
- Orthogonal Arrays (Orthoplans)
- Orthogonality balanced
- Estimation Set (18 stimuli) and Holdout Set (4 stimuli)

↓

Data Collection:
- Selecting the Preference Measure- Metric (Rating using 9-point Likert scale)
- Survey Instrument- Closed Ended Questionnaire
- Quota Sampling
- Form of Survey Administration- Personal Interviews

↓

Model Estimation Technique- Ordinary Least Squares (OLS) Regression Parametric Mathematic Algorithm using Dummy Variables

↓

Reliability and Validity:
- Evaluating Model's Goodness of Fit- Kendall's Tau, Pearson's R, Adj R square
- Checking Predictive Accuracy and Internal Validity of the Conjoint Model –Kendall's Tau for Holdout Cases

↓

Analyzing the Conjoint Model:
- Constructing Preference Structure regarding Attributes and Attribute-levels for the Tourism Package
- Suggesting the most desirable combination for various levels of the attributes under consideration for the tourism package.

↓

Discussing the Managerial Implications and Conclusions

Specifying Attributes and Levels: Although conjoint analysis places minimal demand on the respondents in terms of both the number and types of responses needed, a number of key decisions need to be made, in designing the experiment and analyzing the results (Figure 2). The first step of the conjoint decision process is specification of objectives of the conjoint analysis. The objective of the present study was determination of customer preferences for multi attribute hybrid services like tourism, so as to enable the state tourism board to deliver a desired combination of intrinsic attributes, helping it to create a sustainable competitive advantage, leading to greater customer satisfaction and positive word of mouth. Accordingly, in formulating the conjoint analysis problem, six categories of salient attributes were identified (Table 1). These attributes were identified by a detailed identification process consisting of discussion with tourism industry experts, secondary analysis of reports of the tourism department, content analysis of the pilot survey.

After identification of salient attributes, their appropriate levels were selected. The number of attribute levels determines the number of parameters that will be estimated and also influences the number of stimuli (attribute combination) to be evaluated by the respondents. So, following the in-depth interview with tourism industry experts, tour operators and officials of Uttar Pradesh Tourism Department, the levels estimating the attributes were selected in such a way that they covered the whole spectrum of product and services that are actually offered or are plausible. We have taken three different levels for each of the six attributes (Table 1). These attribute levels satisfied all the requirements for sufficiency, appeal and application, simultaneously it was kept in mind that when operationalizing either features or levels, they should be both communicable and actionable (can be implemented).

Table 1: Investigated Attribute and their Levels

1. Information
1.1Web & Tele Media
1.2Print Media
1.3Tour Operator & Tourism Office
2. Security
2.1Luggage Safety
2.2Medical Insurance
2.3Family Safety
3. Choice
3.1Natural Sites
3.2Modern Architecture
3.3Historical/Religious Monuments
4. Access
4.1Airways
4.2Roadways
4.3Railways
5. Complaint Redressal
5.1Ombudsman
5.2Feedabck Form
5.3Govt Officials/Tourism Dept
6. Value for Money
6.1Greater Quality of Sightseeing
6.2Greater Comfort in Lodging
6.3Comfortable Lodging and Extensive Sightseeing at Premium Price

Selecting Conjoint Analysis Methodology and Construction of Stimuli: After determining the basic attribute and their levels, we have decided to use multi-factor evaluation conjoint analysis methodology (Green and Srinivasan 1990). The reason behind this choice revolved around three basic characteristics of the proposed research: number of attributes, level of analysis and the permitted model form. Here we are dealing with six attributes, our level of analysis would be aggregate; and the model form to be used would be additive. Hence, full-profile approach, involving construction of complete profiles of the service/product offerings for all the attributes, was used here. We have three levels for

each of the six attributes. Hence there will be total 3^6= 729 product descriptions (stimuli). However, number of stimuli profiles were greatly reduced from 729 to 22 stimuli by means of fractional factorial design. This appeared to be a manageable number for the respondents and also exceeds the minimum number of stimuli (Total number of levels across all attribute – Number of attributes + 1 = 13) that must be evaluated by the respondent to ensure the reliability of the estimated parameters. A special class of fractional design, called orthogonal arrays was used. It assumes that all interactions present in stimuli are negligible. It allows for efficient estimation of all main effects of interest (Green, Krieger, and Wind 2001; Kuhfeld, Tobias and Garratt 1994). Here, two sets of data were obtained. One, estimation set, consisting of 18 stimuli, was used for calculating part-worth functions for the attribute levels. The other, holdout set, consisting of four stimuli, was used to assess reliability and validity. The orthogonal arrays (orthoplan) were generated by SPSS-15.0 software. So, total 22 design cards resulted and therefore respondents (tourists) have to evaluate questionnaires consisting of 22 cards.

Deciding on the form of Input Data: For the survey purpose, we have used Metric Conjoint Analysis. Here, respondents were required to provide preference ratings for the tourism package described by 18 profiles in the estimation set and 4 profiles in the holdout set. The ratings were obtained using nine-point Likert scale (1= Least preferred, 9= Most preferred).

Survey Administration: The survey instrument was a closed ended questionnaire. The questionnaire had 22 stimuli profiles for preference rating. There were also questions related to demographic and behavioral information of the tourists. 1080 questionnaires were found complete in all respects. 'Quota Sampling' was deployed, so as to make the sample representative of the population of tourists visiting Uttar Pradesh. The quotas have been constructed on the basis of various demographic characteristics like age, gender, marital status, occupation, income, city of residence etc (Table 2). The information was collected from the tourists at different tourist places and hotels in the state of Uttar Pradesh. The questionnaires were administered personally to ensure the authenticity of information provided by the respondents. The questionnaires were pre-tested to check the orthogonality and other aspects and thereafter suitably modified.

Table 2: Demographic Characteristics of Respondents

Demographic Characteristics		**Frequency**	**Percentage**
Age	Below 25	216	20.0
	25-35	297	27.5
	36-45	291	27.0
	Above 45	276	25.5
Gender	Male	627	58.0
	Female	453	42.0
Marital Status	Single	420	39.0
	Married	660	61.0
Annual Income	Below 0.2 million	138	13.0
	0.2 million -0.4 million	411	38.0
	0.4 million -0.6 million	288	26.7
	Above 0.6 million	243	21.3
Profession	Student	114	10.5
	Services	390	36.1
	Business	399	36.9
	Housewife	177	16.5
Total		1080	100

Conjoint Analysis Procedure: The basic conjoint analysis model may be represented as (Carroll and Green 1995; Haaijer, Kamakura, and Wedel 2000):

$$U(X) = \sum_{i=1}^{m} \sum_{j=1}^{ki} \alpha_{ij} x_{ij}$$

where,

U (X) = Overall utility (importance) of an attribute

α_{ij} = part-worth utility of the jth level of the ith attribute

i= 1, 2....., m j= 1, 2…....., k_i

x_{ij} = 1, if the jth level of the ith attribute is present

= 0, otherwise.

The basic model was estimated with the ordinary least squares (OLS) regression parametric mathematic algorithm (Fox 1997) using dummy variable regression. The preference ratings were the predicted (dependent) variable and predictor variables consist of dummy variables for the attribute levels. This algorithm calculates partial values by homogenizing the rate fluctuations based on the normal distribution (Green and Krieger 1993). Partial values were then used to calculate the total mean perceptual values.

Reliability and Validity

Conjoint Analysis results should be assessed for accuracy, reliability and validity. The objective is to ascertain how consistently the model predicts the set of preference evaluations under different situations. Our results derived from the Conjoint Analysis are reliable and valid as:

1. While evaluating the goodness of fit of the estimated conjoint model, we found out that value of Kendall's tau is 0.943, value of Pearson's R is 0.977, and the value of adjusted R square is 0.843. Both these values are reasonably high and these results are significant at 5 percent level of significance (asymptotic significance =0.014) (Tables 3.1-3.3)

2. The value of Durbin-Watson statistic is 2.227 (Table 3.2), which lies in the range (1.25-2.75), showing that auto-correlation is not present.

3. The correlation table (Table 4) shows that there is small correlation among different predictors. So, multicollinearity is not present in the data.

4. We have also used four stimuli as validation or holdout stimuli to determine internal validity. Parameters from the estimated conjoint model (using 18 stimuli) were used to predict preferences for the holdout set of stimuli and then they were compared with actual responses by calculating correlation. Considering the table (Table 3.1), we have found out that value of Kendall's tau is 0.712 for the four holdout cases. This value is significantly high (asymptotic significance = 0.009).So, we can say that our conjoint model has high predictive accuracy and internal validity.

Table 3.1: Model Summary (a)

	Value	**Sig.**
Pearson's R	.977	.014
Kendall's tau	.943	.004
Kendall's tau for Holdouts	.712	.009

Table 3.2: Model Summary (b)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.977(a)	.954	.843	.15993	2.227

a. Predictors: (Constant), d12, d10, d7, d6, d1, d9, d4, d8, d3, d2, d11, d5

b. Dependent Variable: MEAN_SCORE

Table 3.3: ANOVA (b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2.645	12	.220	8.616	.014(a)
	Residual	.128	5	.026		
	Total	2.773	17			

a. Predictors: (Constant), d12, d10, d7, d6, d1, d9, d4, d8, d3, d2, d11, d5

b. Dependent Variable: MEAN_SCORE

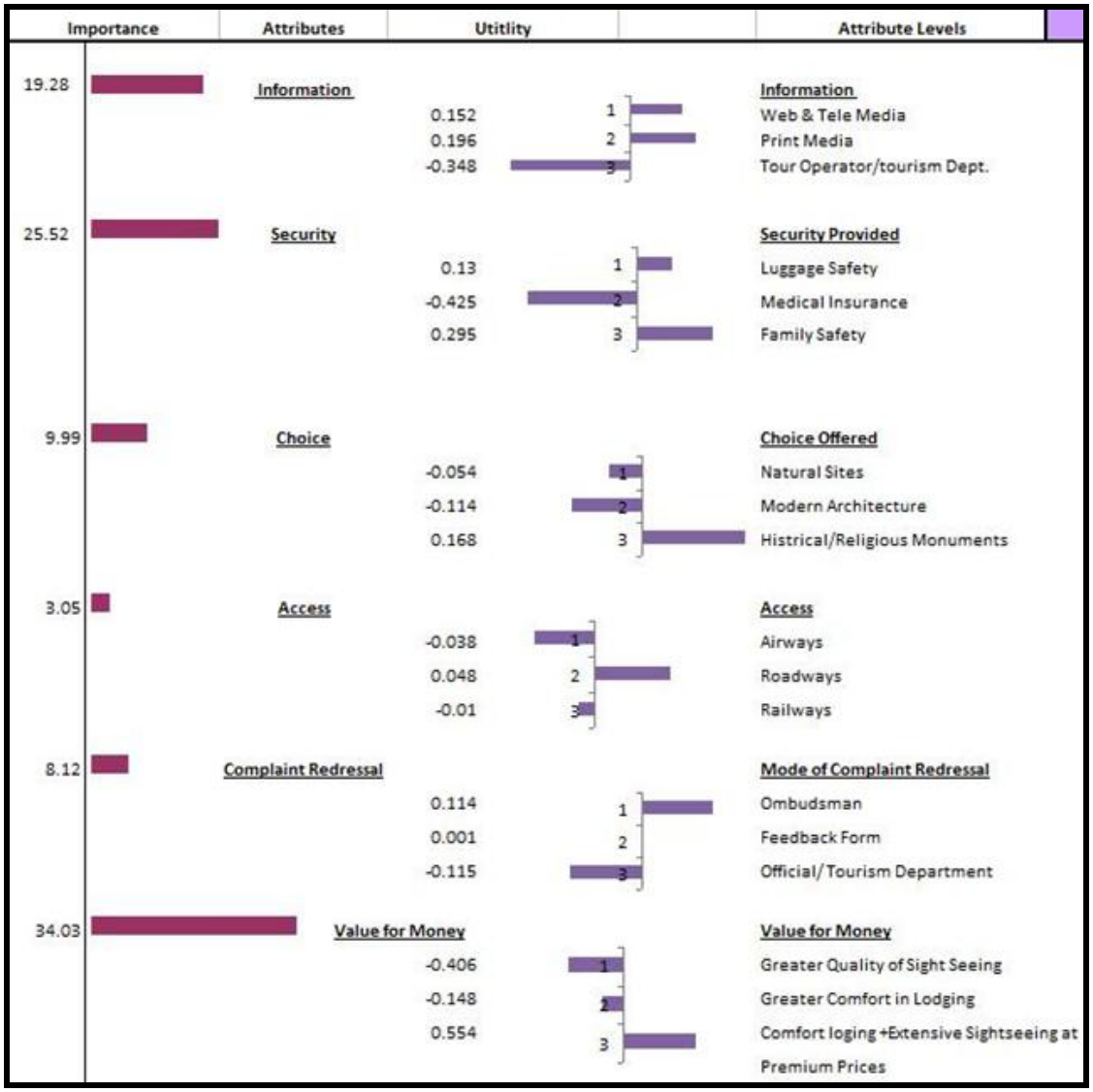
Table 4: Correlations among Predictors

Correlations														
		MEAN SCORE	**d1**	**d2**	**d3**	**d4**	**d5**	**d6**	**d7**	**d8**	**d9**	**d10**	**d11**	**d12**
Pearson Correlation	**MEAN SCORE**	1.000	0.325	0.118	-0.287	-0.212	-0.065	-0.308	-0.095	-0.149	0.181	-0.023	0.088	0.322
	d1	0.325	1.000	-0.500	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.161	0.000
	d2	0.118	-0.500	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.161	-0.250
	d3	-0.287	0.000	0.000	1.000	-0.500	0.000	0.000	0.000	0.000	0.000	0.000	0.161	-0.500
	d4	-0.212	0.000	0.000	-0.500	1.000	0.000	0.000	0.000	0.000	0.000	0.000	-0.081	0.500
	d5	-0.065	0.000	0.000	0.000	0.000	1.000	-0.500	0.000	0.000	0.000	0.000	0.645	-0.500
	d6	-0.308	0.000	0.000	0.000	0.000	-0.500	1.000	0.000	0.000	0.000	0.000	-0.322	0.000
	d7	-0.095	0.000	0.000	0.000	0.000	0.000	0.000	1.000	-0.500	0.000	0.000	-0.081	0.000
	d8	-0.149	0.000	0.000	0.000	0.000	0.000	0.000	-0.500	1.000	0.000	0.000	0.161	-0.250
	d9	0.181	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.000	-0.500	-0.081	0.000
	d10	-0.023	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-0.500	1.000	-0.081	0.000
	d11	0.088	0.161	0.161	0.161	-0.081	0.645	-0.322	-0.081	0.161	-0.081	-0.081	1.000	-0.564
	d12	0.322	0.000	-0.250	-0.500	0.500	-0.500	0.000	0.000	-0.250	0.000	0.000	-0.564	1.000
Sig. (1-tailed)	**MEAN SCORE**	.	0.094	0.320	0.124	0.199	0.399	0.107	0.354	0.277	0.236	0.464	0.365	0.096
	d1	0.094	.	0.017	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.261	0.500
	d2	0.320	0.017	.	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.261	0.159
	d3	0.124	0.500	0.500	.	0.017	0.500	0.500	0.500	0.500	0.500	0.500	0.261	0.017
	d4	0.199	0.500	0.500	0.017	.	0.500	0.500	0.500	0.500	0.500	0.500	0.375	0.017
	d5	0.399	0.500	0.500	0.500	0.500	.	0.017	0.500	0.500	0.500	0.500	0.002	0.017
	d6	0.107	0.500	0.500	0.500	0.500	0.017	.	0.500	0.500	0.500	0.500	0.096	0.500
	d7	0.354	0.500	0.500	0.500	0.500	0.500	0.500	.	0.017	0.500	0.500	0.375	0.500
	d8	0.277	0.500	0.500	0.500	0.500	0.500	0.500	0.017	.	0.500	0.500	0.261	0.159
	d9	0.236	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	.	0.017	0.375	0.500
	d10	0.464	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.017	.	0.375	0.500
	d11	0.365	0.261	0.261	0.261	0.375	0.002	0.096	0.375	0.261	0.375	0.375	.	0.007
	d12	0.096	0.500	0.159	0.017	0.017	0.017	0.500	0.500	0.159	0.500	0.500	0.007	.

7 FINDINGS AND MANAGERIAL IMPLICATIONS

The most important aspect of the relationship between service providers and customers is that the service providers lack an in depth insight into customer preferences. There is often a disconnect between what customers want and what service providers offer. This is particularly true in case of services like tourism because of the intangibility element associated with it. The present study was undertaken to determine hierarchical framework of salient attributes in a desirable tourism-package (as per tourists' preferences) and thereafter to identify the most desirable combination of attributes that can be offered to tourists visiting the state of Uttar Pradesh. The results as presented in Figure 3 represent the mean preference structure or the grading provided by the tourists visiting state of Uttar Pradesh. These preference scores are based on the data collected from 1080 tourists through a structured questionnaire.

Figure 3: Mean Preference Structure of Tourism Package



Here six salient attributes and their levels were identified for consumer choice process in the tourism package by exploratory identification process. Full Profile Conjoint Analysis was used for construction of preference structure. Analyzing the preference structure or the relative importance accorded (by tourists) to the six salient attributes, the tourists accorded the maximum utility/importance to the attribute 'value for money' (with importance as 34.03 percent). Hence the State Tourism Board needs to comprehend 'value' in customer terms and deliver the same. Taking into account the part worth functions, the tourists have primarily defined Value in terms of comfortable lodging and

extensive sightseeing (even at a price premium). Sightseeing and comfortable lodging as attributes rank very high as per tourist preferences.

The second most important attribute in the desirable tourism-package is 'security expected during the visit' (importance 25.52 percent). Ensuring safety and security of all tourists is function of paramount importance for the state tourism board. Within the purview of this attribute the tourists accorded the highest priority to family safety. In recent times, with a sudden spurt in terrorist related activities and attacks on tourists in particular, there is a sense of insecurity among tourists. Appropriate security should be steadfastly ensured by the state law enforcement authorities. In absence of requisite security measures, any substantial progress in development of tourism of a destination may not be possible.

Thereafter at the third place in the worth hierarchy is the attribute of 'information' with a utility percentage of 19.28 percent. The most preferred form of accessing the relevant and required information is 'print-media' and then 'web-media'. For informed decision making, prospective tourists seek host of information (related to accessibility, tourist packages on offer, lodging, sightseeing, etc.). And print media provides detailed and permanent (in the consumer's perception) information about the alternative tourism packages on offer. The web media is probably preferred because of its convenience and easy accessibility. This information can be made available via brochures, newspapers, travel magazines and informative websites.

Then at the fourth place of the hierarchical framework, is the attribute 'choice offered' (worth 9.99 percent) to tourists (in terms of sightseeing options). Here the tourists accorded the highest priority to historical and religious monuments. The state of Uttar Pradesh possesses as its major attractions, some important historical and religious monuments. Hence there should be coordinated efforts by the state tourism board, archaeological department and state government towards proper maintenance and upkeep of these monuments.

Next in the hierarchical preference structure is the attribute representing complaints handling and redressal mechanism for tourism and related services (worth 8.12 percent). Here tourists stressed upon a dedicated 'ombudsman', who would be empowered to suitably address tourist grievances.

The last attribute was the 'mode of access' but the tourists did not accord much important to it (3.05 percent). The decision pertaining to the mode of travel is generally governed by monetary constraints, time constraints and available options.

Binary Logistic Models

As a post hoc implementation to the application of conjoint analysis for developing a desirable tourism package, binary logistic regression model was constructed to examine the effect of demographic and socioeconomic factors upon the utilities assigned to different levels of the attributes (constituent components of the tourism package). Consumers being heterogeneous, with differing perceptions, may attach different degree of importance to various attribute-levels and this in turn would affect the nature and size of the utilities. These considerations may be incorporated while designing customized tourism service packages for different groups of customers.

In binary logistic regression models, levels of the salient attributes are taken as predicted (dependent) variables. To convert the utilities values into dichotomous variables, we have taken the value 'one' if utility of the attribute level is above the mean and 'zero' otherwise. So, the total number of binary logistic regression models to be estimated was 18. The predictor variables for each of the regression model were age, gender, marital status, family income and profession. These 18 models were estimated and the results are presented in the following table (Table 5).

Table 5: Logistic Regression Model Results for Attribute Levels

Dependent Variable	Constant	Age	Gender	Marital Status	Annual Income	Profession
Web & Tele Media	-.812 (-1.376)	.116 (2.732)*	-.088 (-.473)	-.098 (-.632)	.083 (1.679)	.078 (.634)
Print Media	.989 (1.886)	.009 (.132)	-.798 (.043)	-.031 (-.911)	-.129 (-.911)	.027 (.392)
Tour Operator & Tourism Office	.143 (.332)	.232 (.088)	-.436 (-.684)	-.009 (-.241)	-.211 (-1.112)	-.143 (-1.045)
Luggage Safety	-.430 (-.989)	.094 (1.020)	-.017 (-.563)	.435 (.678)	-.043 (-.075)	.084 (.273)
Medical Insurance	-.383 (.996)	.127 (1.746)	.005 (.032)	-.112 (-.958)	.065 (.697)	.106 (.546)
Family Safety	-.574 (-.838)	.125 (1.563)	-.057 (-2.261)*	-.066 (-1.877)	.017 (.447)	.072 (.118)
Natural Sites	.507 (1.274)	.089 (1.569)	-.008 (-.937)	-.043 (-.978)	.003 (.583)	-.149 (-.781)
Modern Architecture	-.649 (-1.029)	-.036 (-2.469)*	.087 (.390)	.038 (.769)	-.073 (-.0870	.037 (1.161)
Historical/Religious Monuments	.467 (1.243)	.049 (.889)	-.012 (-.054)	.005 (.054)	-.083 (-.278)	-.003 (-.761)
Airways	.503 (.799)	.037 (.064)	-.051 (-.286)	-.014 (-.039)	.622 (1.274)	-.032 (-.238)
Roadways	-.159 (-.756)	.318 (.137)	-.107 (-.700)	.067 (.092)	-.058 (-1.06)	-.054 (-.687)
Railways	-.892 (-.994)	.144 (.039)	-.069 (-.671)	.002 (.077)	-.062 (-1.16)	.032 (.041)
Ombudsman	.133 (.548)	.106 (.9650	.022 (.049)	-.332 (-.965)	-.159 (-.254)	-.031 (-1.43)
Feedback Form	.386 (1.003)	-.038 (-.511)	.018(.756)	-.015 (-.834)	-.139 (-.376)	.064 (.186)
Govt. Officials/Tourism Dept	-.302 (-.756)	.069 (.365)	.059 (.829)	-.068 (-.949)	-.029 (-.586)	.008 (.030)
Greater Quality of Sightseeing	-.247 (-.635)	-.522 (-.604)	.033 (.749)	-.066 (-.956)	-.069 (-.945)	.088 (1.044)
Greater Comfort in Lodging	-.139 (-.447)	-.049 (-.165)	.258 (.132)	.017 (.867)	-.035 (-.1.22)	.138 (.744)
Comfortable Lodging and Extensive Sightseeing at Premium Price	-.139 (-.292)	.382 (2.389)*	-.149 (-1.867)	.112 (1.236)	.129 (2.567)*	-.261 (-.843)

Note: 1. Figures in parentheses are t-ratios.

*2. * Significance at 5% level of significance.*

According to the above table (Table 5), most of the explanatory variables (demographic and socioeconomic characteristics) do not show significant effects on the dependent variable (utilities) barring some variables which have a significant impact and may contribute to higher perception value for certain attribute-levels. For web-media, age show significant effect upon the importance attached to web-media. The younger generation being more technically savvy, may enjoy greater comfort level using web and tele-media for accessing information in comparison to traditional methods like print media and tourism office. However the older generation may perceive information from these traditional sources as being more authentic hence greater reliance on these sources, so the utility values may vary accordingly. Gender as an explanatory factor shows significant effect on dependent variable family-safety, probably contributing to the high utility value. Females tend to assign higher importance to the family safety vis-à-vis any other factor during a holiday. Predictor age contributes to higher utility value being assigned to the sightseeing option of modern architecture, an option probably finding favor with the younger age group, whereas the timeless treasures i.e. the historical and religious monuments are equally preferred by all age groups. Family income and age as predictors have a significant effect in the model analyzing comfortable lodging and extensive sightseeing at premium prices, and are mainly responsible for contributing high utility value to this service option. The rationale being that people in the older age group (40 years and above), with higher disposable income, would prefer a tourism package incorporating extensive and exclusive sightseeing, greater comfort in lodging, with a willingness to pay a price premium for a package customized to suit their preferences.

Age appears to be most important explanatory variable or predictor, as it was found to be significant in three binary logistic regression models.

8 CONCLUSIONS AND MANAGERIAL IMPLICATIONS

The paper attempts to provide Uttar Pradesh Tourism department, with information about specific attributes to be incorporated in the tourism services provided by them, as per tourists' preferences.

The study focuses on the relative importance accorded to the identified six salient attributes Value for money, Information, Security, Choices offered, Complaint redressal and Modes of access.

The CJA results reveal that the tourists accord the greatest importance to the 'value for money' attribute, followed by 'security' and thereafter 'information'. They however place relatively less value on 'variety of sightseeing options', 'complaint redressal' and 'modes of access'.

The Binary Logistic Regression analysis results however reveal that some socio economic variables of the tourists played a significant role in shaping the importance of the underlying utilities, indicating that the utilities would probably be sensitive to the structure of these variables.

The study has important management and marketing implications. From the management perspective, the study can empower the state tourism departments with information (about tourist preferences), so that they can add value to their relationship with the tourists, by incorporating the preferred combination of features. The decision making authorities in the tourism department can also assess the information provided by the study, to appropriately bridge the gaps between their perception of value (of services provided) and the tourists' perception of value (desired services), by developing corrective action plans. Such corrective actions will ensure greater customer satisfaction as well as a differentiable competitive advantage, vis-à-vis the other tourist destinations.

Although this study focuses on tourism department of the state of Uttar Pradesh, however the premise of this paper can be successfully implemented by the tourism authorities of other national environments. Worldwide the most important factor governing the relationship between service providers and customers is the service providers' lack of insight into customer preferences. This leads to a lacuna between what customers want and what service providers' offer, especially in case of services like tourism. In order to bridge this lacuna tourism authorities (of any country) can determine the preference structure of the tourists (visiting the tourist destinations of that country), and offer customized tourism packages. The attributes and their levels used for conjoint analysis could be adapted in accordance with the socio-cultural environment of a country.

There are, however, certain limitations in the present study, as well as some avenues for further research. Specific product combinations have not been analysed in this study that could possibly end in modified or niche marketing strategies. Further research could examine the usefulness of promoting specific product characteristics in everyday practice, such as promoting an ideal tourism package. It is difficult to develop combinations with more than three levels of product characteristics as well as use of a variety of examined factor variables. This weakness is based on the difficulty that individuals had in replying to the standardized questionnaires, thus resulting in choosing variable categories very carefully and after in-depth interviews. In the present research, the limitation was six factor categories each with three analysis levels. Thus, the conclusions of CJA focus on the levels of product characteristics and on the factor variables that were used in this research.

Taking into cognizance the above limitations, the basic premise of the study was to enable the state tourism departments to not only create high absolute value, but also to develop a competitive advantage which will be perceived as a customer advantage by customers. This will in turn ensure delivery of high customer value and satisfaction.

Key Policy Implications

This study aims to provide Uttar Pradesh Tourism Department, valuable information about tourist preferences, so that they can design customized tourism packages; consequentially furthering the socio-economic objectives of the state like enhancement of revenue from tourism.

As far as the policy implications related to implementing such a study are concerned, the Ministry of Tourism, Govt. of India has a scheme/plan titled 'Market Research Study and Preparation of Perspective Plans'. The objectives of this scheme are preparation of master plans, conduct surveys & studies and accept research studies which are useful for tourism planning. It receives proposals from various state governments/ Union Territory administrations and issue guidelines stemming from various market research studies. (Tourism Policy and Schemes implemented by M/o Tourism).

Further Department of Tourism and U.P. State Tourism Development Corporation Ltd. also accept research proposals and consider relevant research studies for planning and implementation purposes.

After due deliberations, useful research proposals are accepted for implementation, for furthering development of tourism in the state. (Tourism Policy for Uttar Pradesh)

REFERENCES

Boyd, S.W. and Timothy, D.J. (2001). Developing partnerships: tools for interpretation and management of World Heritage Sites. Tourism Recreation Research, Vol. 26, No.1, pp.47–53.

Bramwell, B. and Lane B. (1999). Collaboration and partnerships for sustainable tourism. Journal of Sustainable Tourism, Vol. 7, No.1, pp.1–5.

Butler, R.W. (1991). Tourism, environment and sustainable tourism development. Environmental Conservation, Vol.18, No.3, pp.201–209.

Carroll, J. D. and Green, P. E. (1995). Psychometric Methods in Marketing Research: Part I, Conjoint Analysis. Journal of Marketing Research, 32, pp.385-391.

Clow, K. E.; James, K. E.; Kranenburg, K.E; and Berry, C. T. (2006). The Relationship of the Visual Element of an Advertisement to Service Quality Expectations and Source Credibility. Journal of Services Marketing, Vol. 20, No.6, pp.404–411.

D'Amore, L.J. (1992). Promoting sustainable tourism—the Canadian approach. Tourism Management, Vol.13 No.3, pp.258–262.

Dewhurst, H. and Thomas, R. (2003). Encouraging sustainable business practices in a non-regulatory environment: a case study of small tourism firms in a UK National Park. Journal of Sustainable Tourism, Vol.11, No.5, pp.383–406.

File, K.M. & Prince, R.A. (1992). Positive word of mouth: customer satisfaction and buyer behaviour. The International Journal of Bank Marketing (UK), Vol. 10, pp. 25–39.

Font, X. and Ahjem, T.E. (1999). Searching for a balance in tourism development strategies. International Journal of Contemporary Hospitality Management, Vol. 11, No.2/3, pp.73–77.

Fox, J. (1997). Applied Regression Analysis, Linear Models, and Related Methods. Thousand Oaks, CA: Sage.

Gilmore, A.; Carson, D. and Ascencao, M. (2007). Sustainable tourism marketing at a World Heritage site. Journal of Strategic Marketing, Vol.15, Issue: MAY–JULY, 253–264.

Go, F.M.; Milne, D. and Whittles, L.J.R. (1992). Communities as destinations: a marketing taxonomy for the effective implementation of the tourism action plan. Journal of Travel Research, Issue: Spring, pp.31–37.

Green, P. E. and Krieger, A. M.(1993). Conjoint Analysis with Product-Positioning Applications, in Eliashberg, J. and Lilien, G. L. (eds.), Marketing, pp. 467-515. Amsterdam: North-Holland.

Green, P. E. and Krieger, A. M. (1997). Using Conjoint Analysis to View Competitive Interaction through the Customer's Eyes, in Day, G. S.; Reibstein, D. J.; and Gunther, R. E. (eds), Wharton Dynamic Competitive Strategy, pp. 343–66. New York, NY: John Wiley & Sons.

Green, P. E.; Krieger, A. M. and Wind, Y. (2001). Thirty Years of Conjoint Analysis: Reflections and Prospects. Interfaces, Vol. 31, Issue: Supplement 3, pp. S56- S73.

Green, P. E. and Rao, V. R. (1969). Non-metric Approaches to Multi Variate analysis in Marketing', working paper, Wharton School, University of Pennsylvania, U.S.A. (Original not seen, cited by Green, P. E. and Srinivasan, V. (1978). Conjoint analysis in Consumer Research: Issues and Outlook. Journal of Consumer Research, Vol. 5, No.2, pp.103-123.

Green, P. E. and Rao, V. R. (1971). Conjoint Measurement for Quantifying Judgemental Data. Journal of Marketing Research, Vol. 8, No.3, pp.355-363.

Green, P. E. and Srinivasan, V.(1978). Conjoint analysis in Consumer Research: Issues and Outlook. Journal of Consumer Research, Vol. 5, No.2, pp.103-123.

Green, P. E. and Srinivasan, V. (1990). Conjoint Analysis in Marketing: New Developments with Implications for Research and Practice. Journal of Marketing, Vol. 54, No. 4, pp.3-19.

Haaijer, R.; Kamakura, W. and Wedel, M. (2000). Response Latencies in the Analysis of Conjoint Choice Experiment. Journal of Marketing Research, Vol. 37, No.3, pp. 376-382.

Hoffman, K. & Turley, L.W. (2002). Atmospherics, service encounters and consumer decision making: an integrative perspective. Journal of Marketing Theory and Practice, Vol. 10, pp. 33.

Incredible India Campaign. http://www.incredibleindiatourism.com/

Kotler, P. (2000). Marketing Management: The Millennium Edition, 10th edn. Prentice-Hall International (UK) Limited, London.

Kuhfeld, W. F.; Tobias, R. D. and Garratt, M. (1994). Efficient Experimental Designs with Marketing Applications. Journal of Marketing Research, Vol. 31, pp.545-557.

Levitt, T. (1981). Marketing intangible products and product intangibles. Harvard Business Review, May-June, pp. 95–102.

Malviya, A. K. (2008). Tapping the negelectd and hidden potential of tourism in Uttar Pradesh. Presentation in Conference on Tourism in India-Challenges Ahead, IIM-Kozhikode, May 15-17, 2008,dspace.iimk.ac.in/bitstream/2259/548/1/129-136+A.K.+Malviya.pdf

McKetcher, B. (1993). Some fundamental truth about tourism: understanding tourism's social and environmental impacts. Journal of Tourism Management, Vol. 1, No.1, pp.6–16.

Morgan, N. J. and Pritchard, A.(2002). Tourism, Promotion & Power: Creating Images, Creating Identities. Chichester: Wiley.

Palmer, A. (2000). The Principles of Marketing. Oxford University Press, Oxford.

Pullman, M. E.; Moore, W. L. and Wardell, D. G. (2002). A comparison of quality function deployment and conjoint analysis in new product design. Journal of Product Innovation Management, Vol. 19, No.5, pp.354–364.

Tourism Overview in 2005-06. http:// www.economywatch.com/business-and-economy/tourism-in-2005-06.html.

Tourism Policy. http://tourism.indiabizclub.com/info/tourism/scheme_of_rural_tourism/ scheme_for_integrated_development_of__tourist_circuits.

Tourism Policy for Uttar Pradesh. "planningcommission.nic.in/plans/stateplan/upsdr/vol-2/Chap_b5.pdf"

Tourism Policy for Uttar Pradesh. www.up-tourism.com/policy/new_policy.htm

Tourism Policy and Schemes implemented by M/o Tourism, http://www.tourism.gov.in/policy%5CPolicySchemes.htm

Tourism Satellite Accounts for India, NCAER. http://www. tourism.gov.in/survey/TSAI.pdf

Tourism Statistics for India. Annual report on the status of tourism in India, published by Ministry of Tourism, Government of India, http://tourism.gov.in/AnnualReport07-08.pdf

UP Tourism Statistics. http://www.tourism.gov.in/survey/up.pdf.

Williams, A. (2006). Tourism and hospitality marketing: fantasy, feeling and fun. International Journal of Contemporary Hospitality Management, Vol. 18, pp. 482–495.

WTO. 1993. Sustainable Tourism Development: A Guide for Local Planners. Madrid: World Tourism Planners.

WTTC Travel and Tourism Economy Research. http://www.indiandata.com/travel/travel_demand.html.

Zhou, Z. (2004). E-Commerce and Information Technology in Hospitality and Tourism, New York: Thomson Delmar Learning.