CHAPTER-4

A photo of one-horned Rhinoceros in Kaziranga National Park, Assam.
Source: Ministry of Tourism, Government of India

RESEARCH METHODOLOGY
The basic aim of this research is to study the extent and composition of uncategorized expenditures of the tourists in North East India. A research plan is designed to achieve the objectives of the study. A detailed discussion is made in the following section about the research plan and methodology followed to attain the objectives of this study.

4.0 The Research Plan:

The research plan drawn to arrive at the objectives of this study and the same has been followed throughout. A flow chart depicting the steps of the research is produced in the figure 4.0.

The first step of this research plan is to make an extensive literature survey. This is partially to achieve the 1st and 2nd objectives of this study. The first objective of this study is to find out the expenditure pattern of the tourists visiting North East India and the second objective of this study is to arrive at some broad expenditure components which are 'uncategorized.' The expenditure heads in all categories are identified for further analysis through the literature survey.

The next step is to conduct a pilot survey among a small representative group of tourists visiting the North East India. This is felt necessary to extract the variables locale to North East India. This also helps in completing the task of gathering the heads of expenditures. Thus, secondary data source is used along with primary data source in order to attain at the first two objectives of the research.

The next step is to conduct the main survey. Tourists are personally interviewed by the researcher. This is necessary to collect data from the tourists at the actual field. The data will help in measuring the extent of expenditures incurred by the tourists under different heads. There are altogether 24 expenditure heads which are extracted from both literature survey and pilot survey. As the number of expenditure variables is more, it is decided to reduce the variables in order to club them in common (categorized) and uncategorized factors. This is done by conducting factor analysis. The reduced new factors will also help to study the relationship between factors and certain classification variables.
Figure-4.0
Research Plan

**Literature Survey**
It is done to find out the expenditure pattern of the tourists visiting N.E. India and to arrive at some broad expenditure components which are ‘Uncategorized.’

**Pilot Survey**
It is conducted to unearth variables, if any, not revealed by extant literatures.

**The Survey**
The survey was conducted to determine the extent of expenditure incurred and for segmentation purposes. It fulfills the 3rd & 4th objectives of the study.

**The Factor Analysis**
It is done for data reduction & is typically applied to identify the variables which result in highly correlated responses and for further analysis at the macro level.

**Other Analytical Instruments**
Statistical tools like Frequency tables, ANOVA, Multiple comparison tables, Independent Sample T-test, Test of homogeneity of Variances, Group statistics tables are extensively used to find out the extent of expenditures incurred and for segmentation purposes.
The classification variables are used as segmentation base for establishing statistical relationship. Eight (08) classifications variables are used for this purpose. A detailed discussion is made in the Chapter-5 about the process of analysis and classification variables used for segmentation purpose.

4.1 The Survey:

For achieving the 3rd and 4th objectives of this study, a sample survey was conducted and data collected are analysed. The methodology followed for conducting survey and data analysis is narrated below.

4.1.1 Pilot Survey: Initially, a pilot survey is conducted in order to collect the expenditure variables local to North East India and to give the questionnaire a final shape. Therefore, prior to the administration of the main questionnaire, the pilot study was conducted. This is done to determine the major attributes that travelers consider most valuable. A non-probabilistic convenience sample of forty travelers (N=40) participated in the pilot survey. The sample included fifteen each from Regional and National origin and ten tourists of foreign origin. The pilot survey was conducted in Shillong, Guwahati and Kaziranga. Table 4.0 shows the distribution of samples of pilot survey. Based on the results derived from this pilot-test process, the final look to the questionnaire is incorporated after necessary modifications regarding wording, sequence, and framing of the questions. Finally, the questionnaire was printed and was made ready to be administered.

<table>
<thead>
<tr>
<th>Origin</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regional</td>
<td>15</td>
<td>37.5</td>
</tr>
<tr>
<td>National</td>
<td>15</td>
<td>37.5</td>
</tr>
<tr>
<td>Foreign</td>
<td>10</td>
<td>25.0</td>
</tr>
<tr>
<td>Total</td>
<td>40</td>
<td>100.0</td>
</tr>
</tbody>
</table>

4.1.2. Final survey: The questionnaire was administered personally by the researcher. Although the sampling procedure was non-probabilistic, additional precaution was exercised in selecting the samples from population. The survey was conducted as per the research plan designed to arrive at the objectives of exploring the extent and composition of tourists’ expenditures. The survey went on exactly as per the plan. As the survey was based on Exit survey method, only those tourists who have completed their
visit and on the way back to home were interviewed. Every precaution was undertaken to avoid sampling error. The actual survey was started in the month of October 2005 coinciding with the beginning of tourist's season in the region. The response rate was quite satisfactory. The criteria for qualifying valid survey is that all the hypothetical expenditures are rated appropriately and are being completed by travelers who stayed at least one night and less than a year in the North East India for the purpose of pleasure, pilgrimage, cultural, enjoyment of bio-diversity resources, or business. A filled-up questionnaire was cancelled if a respondent did not rate properly the question number 17 of the questionnaire. This question deals with the extent of expenditures incurred by tourists for various purposes. A total of 24 statements of expenditure are offered in this question. The distribution of samples include 124 (23.2%) from Guwahati, 87 (16.3%) from Kaziranga, 167 (29.3%) from Shillong, and 157 (29.3%) from Tezpur. The respondents included 356 (66.5 percent) married tourists and 179 (33.5 percent) unmarried tourists. The distribution of samples is reproduced in the Table 4.1.

Gender-wise the respondents include 341 (63.7 percent) male and 194 (36.3 percent) female. The distribution of samples on the basis of Gender is reproduced in the Table 4.2. The size of sample of this study is decided by taking into account the sample size of many valid studies conducted at the national and international level (a detailed discussion is offered at section 4.1g). The statistical and other details of the population in terms of element, sampling unit, study area and time are offered below.

4.1.3 Population: The tourists who have visited Northeast India during the winter of 2005 and 2006 are considered to be the population for the survey. A detailed discussion on element, sampling unit, geographical extent and time is offered in the following paragraphs.

4.1.3a Elements: The units in the population are the ‘tourist’ as defined by the WTO (1991-92) which says that any person travelling to a place other than that of his/her

<table>
<thead>
<tr>
<th>Place</th>
<th>Frequency</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Guwahati</td>
<td>124</td>
<td>23.2</td>
</tr>
<tr>
<td>Kaziranga</td>
<td>87</td>
<td>16.3</td>
</tr>
<tr>
<td>Shillong</td>
<td>167</td>
<td>31.2</td>
</tr>
<tr>
<td>Tezpur</td>
<td>157</td>
<td>29.3</td>
</tr>
<tr>
<td>Total</td>
<td>535</td>
<td>100.0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Table-4.2: Samples and Gender</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency</td>
</tr>
<tr>
<td>Male</td>
</tr>
<tr>
<td>Female</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>
usual environment for less than 12 months and whose main purpose of trip is other than the exercise of an activity remunerated from within the place visited is a tourist.

While selecting the population (tourist) for interview during the field survey the followings were insisted upon;

- That the person had travelled to any part of Northeast of India,
- That the purpose of his/her within the category of recreational, leisure, study, visiting relatives, pilgrimage, to see flora and fauna of the region, to experience local culture & people or business.
- That the purpose of trip was not to exercise any activity remunerated from within the place visited.
- That person had stayed at least single night in the place visited and the duration of stay didn’t exceed one year.
- That he/she had attained the age of 18 year.

4.1.3b Sampling Unit: Respondents interviewed for the purpose of collecting primary data are the ‘tourists’ visiting Northeast India. The tourists are broadly classified as ‘Regional’ tourists, ‘National’ tourists and ‘Foreign’ tourists. Tourists who have originated from within Northeast India are referred as to ‘Regional’ tourists. Those tourists who have originated from within other states of India (except Northeast India) are described as ‘National’ tourist and the tourists originated from outside India are named as ‘Foreign’ tourist. Thus the population includes a ‘tourist’ who has originated any part of the globe and visited any of the destinations in Northeast India.

Here only individual tourists are taken as sample rather than a group or a family so that individual opinions could be obtained.

4.1.3c Places of Survey: The issues raised in this study could have been examined in any location of India. The North East India is an integral part the country endowed with abundance resources of tourists’ attraction. The flow of tourists to this region has been increasing day-by-day. It is, therefore, decided to carry out a study in this part of India. Therefore, the area of this study is confined within North East India
comprising the states of Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland and Tripura. Although, Sikkim is considered as a part state of Northeast India, the state is excluded from the geographical parameter of the study. This is done for convenience purpose.

As the outcome of this study to a great extent relies on primary data, we have decided to conduct exist interviews of the tourists so that detail idea regarding their spending within the region especially on uncommon/uncategorized heads could be ascertained. Interviewing tourists at the beginning or at the middle of the tour wouldn't have served this purpose properly. With this in mind, we have decided to conduct the interviews in four places wherefrom it is believed that the tourist would exit the region. These places are Shillong, Guwahati, Kaziranga National Park and Tezpur. While selecting these places for conducting tourists’ interviews, the points discussed below are given due consideration. These are stated point-to-point below.

**Kaziranga National Park:** Kaziranga National Park is habitat of world's largest population of one-horned rhinoceroses, as well as many mammals, including tigers, elephants, panthers and bears, and thousands of birds. Many of the animals and birds found in this park are listed as endangered species. The park is famous among the visitors. Besides, the number of visitors is found to be the maximum here compared to any other parks or reserve forests of the region. Again, from own experiences we have observed that tour to Northeast India or to Assam is incomplete unless one visit the Kaziranga National Park. Further, incredible India, campaigning by Govt. of India included this park in its 42 days all India packaged tour road map (www.incredibleindia.org). It is, therefore, found to be more convincing to include Kaziranga National Park as a place of survey. Tourists of Regional, National and Foreign character could be interviewed in this park.

**Shillong:** Meghalaya is the state which is ranked second in terms of number of tourists visit. In the year 2004, a total number of 445902 tourists visited the state which includes 433495 domestic and 12407 foreign tourists (GOIMOT, 2007). Shillong, the capital of Meghalaya is known as the 'Scotland of the East' and is the recipient of a large number of tourists. Almost all the destinations of Meghalaya are easily accessible from this capital town. Besides, NEDFi (NER databank), the premier financial institution of
the region also showed the capital city as an exit point for tourists visiting different destinations of Northeast India. These certainly justify the inclusion of this town as a place of survey.

**Tezpur:** Tezpur is a small town located in the bank of River Brahmaputra. It is found that this tiny town is used by many tourists as exit points. Initially, the town Tezpur was not selected as a place of survey. But when the pilot survey was conducted, many tourists reported that they followed the road cycle of Guwahati-Meghalaya-Tripura-Mizoram-Manipur-Nagaland-Arunachal Pradesh-Tezpur-Kolkata. Again, foreign tourists are given a break in Tezpur after they return from Kaziranga National Park in river cruise run by a renowned British-Bengal tour operator. This town is well connected with other part of the country through bus, rail and air. Further, Tezpur is also used as transit camp by tourists on their way back from many popular destinations like Nameri National Park, Bhalukpong, Tipi, Tawang, Itanagar, Kaziranga National Park, Rajiv Gandhi National Park, Malinithan and also many other destinations of Arunachal Pradesh. Since tourists of Regional, National and Foreign could be met here on their return to the places of origin, this town is included within the places of survey.

A small selfish interest also associated in selecting Tezpur as the place of survey, as it is the home town of the researcher. However, it must be made clear that this only a very tiny reason, which can’t influence other academic interest of selecting this as a place of survey.

**Guwahati:** It is the largest commercial hub of the Northeast India and is the only gateway to all other states of the region. This town is well connected by rail, road, water, and air. Even international airlines also fly directly from this capital city. This town is also mentioned as exist point by researchers (Sarma, 2000; Dey & Dey, 2003) for tourists originated from outside the Northeastern states. As every possibility is there to meet the tourists particularly of National and Foreign origin on their return to the places of origins, the selection this town as place of survey is well justified.

4.1.3d **Time:** The data collection process was started in October, 2005 and continued till May, 2006. The time period is chosen primarily keeping in view the peak tourism season for the visitors. The flow of tourists generally remains very high during
this period because of congenial weather condition. The additional reason is that many destinations remain open for visitors during this period only. For example Kaziranga National Park remains open for the visitors from September to next May and the rest of the months it remains closed for visitors. Similarly, Meghalaya tourism does not provide transportation facilities to the visitors during the month of July every year because of heavy rain fall.

4.1.3e Data Collection Procedure: The sampling procedure to be adopted is a contentious issue and a foolproof method is often very difficult to be arrived at. As the study is exploratory and sampling frame is not available, probabilistic sampling method couldn’t be employed. Therefore, non-probabilistic convenience and judgment methods are used as the basis for selection of samples. In the cases of families and couples only one respondent was asked to complete the questionnaire. On the other hand, in case of groups one from each family was selected for the survey. The days of collecting data were randomly chosen. The study is based on an exit survey that dealt with travel purpose, experience, and expenditures as well as transition of the images about the destination. The exit survey method was used by Suh and McAvoy (2003) to analyse international visitors’ trip expenditures to South Korea.

4.1.3f Data Sources: The data sources used for the study include both the primary and secondary sources. The primary data are collected by administering structured questionnaire.

Again, the secondary data is collected through extant literature survey and from the reports released by authentic web-sites as well as annual reports of the Ministry of Tourism, Govt. of India.

4.1.3g Sample Size: The optimum size of sample remained an unsolved riddle for researchers. Evidences show that the size of sample is usually confined to 400 to 500. A total of 505 samples were accepted by Sarma (2000) in his study conducted to test the preferences and perceptions of tourist of North East India. Keown (1989) interviewed 490 tourists to suggest a model for tourists’ propensity to buy goods in vacation
destination. Kincade and Woodard (2001) collected sample of 497 tourists in their research conducted to examine the purchasing behaviour of consumers in buying souvenir clothing. In another study, Gursoy and Gavear (2003) interviewed a total of 460 leisure tourists to examine the most important determinant of consumer behaviour. Kim and Littrel (2001) limited the size of sample to 277 eligible respondents in order to evaluate the role of shopping in the total destination experience. Moscardo (2004) confined the size to 1,630 respondents as sample to examine tourists’ preference for travel activities and a variety of shopping behaviour during travel. Littrell et al (2004) collected data from 146 travellers in an attempt to identify the relationship between preferences and expenditures of tourists. Suh and McAvoy (2005) accepted a total of 420 respondents as valid size to analyse the preferences and trip expenditures of visitors to Seoul. Further, Snepenger et al (2003) interviewed 486 visitors in their study conducted to examine the tourists’ expenditure on shopping.

However, in case where the sample size is estimated with unknown population variance, the confidence interval and confidence level could be used to derive the sample size. The following formula is widely used for calculation of sample size:

\[ SS = \frac{Z^2 \cdot P \cdot (1-P)}{C^2} \]

Where,

- \( Z = Z \) value (1.96 for 95% & 2.58 for 99% confidence level)
- \( P = \) Estimated variability in the population expressed as decimal (0.5 widely used in social research)
- \( C = \) Confidence interval, expressed as decimal (e.g., .05= ± 5)

So, since confidence level set for this study is 95%, the sample size for this study can be derived as follows:

\[ (1.96)^2 \cdot 0.5 \cdot (1-0.5) \]
\[ SS = \frac{\text{-----}}{(0.05)^2} = 384.16 \]

Thus, a sample size of 384 (\( N=384 \)) can be regarded as reasonable. But the tools like Factor analysis and ANOVA (Analysis of Variance) require a big sample size so that the resultant data could be manipulated wisely while performing different iterations.
Therefore, is decided to strive for a size which is at least equal or larger than the calculated size of 384 (around N=500 plus).

It should also be remembered that the non-sampling errors associated with sample also tend to increase with the increase in the size of sample. Again, a small sample size might create sampling errors implying improper representation of the population. It is seen that researchers were interested in gathering ‘good’ information rather than putting much emphasis on sample size. Therefore, it is imperative to strike a balance. Keeping all these in view, initially a total of 800 questionnaires were distributed among the respondents. Questionnaires totaling 727 are received from the respondents and 535 (N=535) questionnaires are finally found usable. The samples include 118 (22.0%) 'Regional' tourists, 294 (55.0%) 'National' tourists and 123 (23.0 %) 'Foreign' tourists. A total of 192 questionnaires are rejected. The criterion for rejection is improper response of the variables meant for measuring the extent of expenditure. This is already discussed in section 4.1.2. The distribution of sample based on origin is reproduced in the Table 4.3.

<table>
<thead>
<tr>
<th>Origin</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regional</td>
<td>118</td>
<td>22.0</td>
</tr>
<tr>
<td>National</td>
<td>294</td>
<td>55.0</td>
</tr>
<tr>
<td>Foreign</td>
<td>123</td>
<td>23.0</td>
</tr>
<tr>
<td>Total</td>
<td>535</td>
<td>100.0</td>
</tr>
</tbody>
</table>

### 4.2 Classification Variables Tested:

Some commonly used classification variables are used for determining the extent of expenditures and for segmentation purposes. Again, literature survey is done to identify the classification and other variables that may have influence on the extent of expenditures incurred at the destination area. A few of literatures consulted for this purpose include Kim and Littrel(2001), Keown (1989), Moscardo (2004), Lehto et al (2004), Suocheng and Qu (2004), Sarma (2000, 2004) etc. To examine the factor influencing souvenirs purchase behaviours of the tourists, Kim and Littrel (2001) identified tourists’ age, education, employment, income and marital status. Again, to examine how tourists shopped in Hawaii, Keown (1989) tested the variable gender, income, length of stay, marital status and travellers’ status. The same variables were also measured by Rachel et al (1994) to investigate the determinants of leisure expenditures by households in the United States. Moscardo (2004) tested sex, marital status, daily
budget and previous travelling experience in her study conducted to contribute to extant literatures of tourists shopping. She also measured the variables like length of stay, form of transportation used to the destination and within the destination, accommodation used and trip-planning. Again, the variables such as trip purpose, travel mode, travel party, income, gender and age were measured by Lehto et al (2004) to examine tourists’ shopping preferences and behaviors. Suocheng and Qu (2004) also tested the variables such as source of information, mode of transportation, accommodation, tourists’ travel activities & tourists spending patterns to examine China’s domestic tourism expenditures: Again, Sarma (2000, 2004) tested variables such as purpose of visit, places to be visited, sources of information, modes of transportation, accommodation used, buying habit, age, gender, origin, budget, education, occupation, trip plan and previous travelling experience in his two separate studies conducted in North East India.

It is seen from the above discussions that few classification variables are commonly used by the researchers. The commonly used classification variables include the age, origin, education, occupation, previous travelling experience, daily budget, gender and marital status. These variables are also considered in measuring the effect on the extent of tourists’ expenditure in the current study. The rule-of-thumb used in defining the class intervals within each classified variables is mentioned below (if necessary) to avoid confusions.

4.2a Age: On the basis of age, the variables are into four distinct classes. These options are (a) ‘Less than 25 years’, (b) ‘Between 25-40 years’, (c) ‘40-60 years’ and (d) ‘60 and above years’.

A respondent is directed to tick the option (a) if he/she has not attained the age of 25 years. Similarly, a respondent is directed to tick option (b) if he/she has attained the age of 25 years but hasn’t completed 40 years during the period of interview. Similarly, a respondent who has completed the age of 40 years but hasn’t attained the age of 60 years is directed to tick the option (c). Further, a respondent is directed to tick the option (d) if he/she has attained age of 60 years or more

4.2b Origin: On the basis of origin, respondents are classified as Regional tourists, National tourists and Foreign tourists. The respondents who have originated from within the northeastern states (Except Sikkim) are named as Regional tourist. Similarly, those
respondents who have originated from other states of the country (including Sikkim) are regarded as National tourists and those who have come from outside India are classified as Foreign tourist.

4.2c Education: On the basis of literacy standard, the respondents are classified into four categories of (a) Graduate (b) Post-graduate (c) Professional and (d) Other. The ‘Other’ category includes the respondents who have basic educational qualification but excludes illiterates.

4.2d Occupations: On the basis of sources of income, the respondents are classified as (a) Service holder (b) Professional (c) Business and (d) Other. The ‘other’ category respondents include those who have no fixed source of income and also dependants such as students.

4.2e Previous Travelling Experience: Respondents are also classified into five meaningful categories of having travelling experience of (a) Up to 7 places (b) 7-15 places (c) 15-20 places (d) 20-30 places and (e) 30 & above places.

Respondents having past travelling experience of visiting upto 7 places are instructed to tick the option (a). Again, a respondent who has the experience of travelling seven or more place but less than 15 places (excluding the current visit) than he/she is instructed to tick the option (b). Similarly, if a person has visited 15 or more places but less than 20 places than he is to go for the option (c). The similar frequency is followed for the option (d) & (e)

4.2f Daily Budget: The following categories are drawn on the basis of daily budget of the respondents.

(a) Less than Rs.300/- (b) Between Rs.300/- and Rs.500/- (c) Between Rs.500/- and Rs.700/- (d) Between Rs.700/- and Rs.1000/- (e) Between Rs.1000/- and Rs.1500/- and (f) Rs.1500/- and above.

Here daily budget 'Between Rs.300/- and Rs.500/- means per person per day budgeted expenditure is Rs. 300/-or more but less than Rs. 500/-. Similar classification is followed for rest of the options.

The questions included in the questionnaire are the socio-demographic and travel behaviour variables and including the destinations visited, purpose of visit, exposure to the destinations of the region, use of web site, length of stay, daily budget, form of
transport used, nature of accommodation used. It then asked respondents to specify the amount of expenditure incurred on transportation, accommodation and food & beverages. This is followed by the queries like type of accommodation preferred, number of persons accompanied and attitudes towards the packaged tour. Then the respondents are asked to rate the extent of a series of trip expenditures which includes spending on categories expenditures such as expenditure on transportation to the destination, expenditure on transportation within the destination; expenditure on accommodation, food & beverages in the place stay and outside the place of stay; expenditure local textiles, other clothing, sightseeing, magazine and newspapers, books related to the destinations, film roll and accessories, refreshments, cosmetics items, gift for the people, decorative items, toiletries, entrance fee, porter, tour guides, purchase of handicraft, tips paid, mineral water and tobacco/liquor etc. It then asked respondents to rate other related variables like the frequency of visit, source of finance, age group, marital status, origin, education and occupation. Finally, the respondents are requested to give remarks about overall holiday satisfaction and the likelihood of returning and recommending the region.

Thus, a total of 25 questions are asked to the respondent and attributes like economic, demographic and expenditure related information are tried to collect. The survey is conducted in English.

Further, in this study some other variables are also tested to get deeper insight. These variables include purposes of visit, places of visit, sources of information, trip plan, exposure to internet, daily budget, duration stayed, transportation used, accommodation used, food habit and attitude towards packaged tour. These are the variables which are identified from extant literatures.

4.3. The Questionnaire:

As the main objective of this research is to explore the extent and composition of tourists’ expenditure, it is imperative to test variables affecting the spending behaviours. Thus, the foremost variables to be measured must be expenditure related. Related studies and the findings of the pilot survey are considered for identifying the variables. Initially extensive literature survey was made to identify the variables. A questionnaire is prepared with the variables thus identified through literature survey. The various
Table 4.4: Expenditure Variables

<table>
<thead>
<tr>
<th>Variables/Statements</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>On accommodation</td>
<td>WREP, 1994; Suosheng &amp; Qu (2004); Business Times (1996); Li (1999); Lleave (2005)</td>
</tr>
<tr>
<td>On transportation to the destination</td>
<td>WREP, 1994; Suosheng &amp; Qu (2004); Lleave (2005)</td>
</tr>
<tr>
<td>On transportation within the destination</td>
<td>WREP, 1994; Suosheng &amp; Qu (2004); Lleave (2005)</td>
</tr>
<tr>
<td>On foods in the place of stay</td>
<td>WREP, 1994; Suosheng &amp; Qu (2004); Business Times, (1996); Wellner (2002)</td>
</tr>
<tr>
<td>On food outside the place of stay</td>
<td>Wellner (2002); Snepenger et al (2003)</td>
</tr>
<tr>
<td>On other clothing</td>
<td>Godbey and Graefe, (1991); Keown (1989); Kim and Littrel (2001); Swanson (2004)</td>
</tr>
<tr>
<td>On sightseeing</td>
<td>Business Times (1996)</td>
</tr>
<tr>
<td>On magazine and newspaper</td>
<td>Business Times (2003)</td>
</tr>
<tr>
<td>On books related to the destination</td>
<td>Business Times (2003)</td>
</tr>
<tr>
<td>On refreshment</td>
<td>Lleave (2005); Business Times (1996)</td>
</tr>
<tr>
<td>Decorative item</td>
<td>Jung, et al(2004); Keown (1989);</td>
</tr>
<tr>
<td>On mineral water, tobacco/liquor</td>
<td>Keown (1989); Telfer and Hashimoto (2000); Lleave (2005)</td>
</tr>
</tbody>
</table>

Thus, the variables measured in the pilot survey include both the categorized and uncategorized expenditures as warranted by the objectives of this study. This is, however, not an end. The new set variables extracted through pilot survey are also given due recognition in the main survey. The newly identified variables are reproduced in the Table 4.5. These variables are expenditures on toiletries, entrance fee, porter, and tour operator. Thus, altogether 24 expenditure related variables are measured in the form of statements.

For the purpose of collecting data, the respondents were administered a structured questionnaire. The questionnaire was administered to the respondents personally by the scholar himself and in rare cases persons
having past experience were deputed only for the purpose of collecting those questionnaires which were initially distributed. There are 15 (60%) questions using Nominal scale, 2 (8%) using Ratio scale, and 4 (16%) each of Ordinal and Interval scale.

The data collection instrument is mainly consisted of closed-ended questions. Only four questions are open-ended (i.e., cost per person per day on transportation to the destination, within the destination, accommodation and food & beverages in the place of stay). The questionnaire was prepared keeping in mind the basic principle of ‘unaided understanding’.

Further, utmost care has been exercised to ensure that necessary statistical technique can be used without sacrificing the validity of the responses. This was done by adopting proper scales of measurement for the respective variables. It is well known that many statistical procedures require stronger scales like interval and ratio. In this study, statistical tools like Independent Sample T-test and Analysis of Variance (ANOVA) are extensively used. It is well known that testing of hypotheses by adopting these statistical techniques require interval scale. It is, therefore, interval scale is used to measure the extent and compositions of tourists’ expenditure. A ten point interval scale questions were used indicating ‘1’ as no expenditure and ‘10’ as highest expenditure. The respondents are specially instructed to score the variables considering the extent of expenditure incurred in the entire tour and not to score on the basis of expenditures incurred at the places of interview.

4.4 Analytical Method:

As there are 24 statements of expenditures which are to be compared and tested with eight demographic variables, the multivariate factor analysis has been applied. The factor analysis is a widely applied technique adopted by researchers (Sarma, 2000, 2004, 2007; Subburoy and Shekhar, 2007, Khan et al, 2007; Krishnan and Sakthivel, 2007; Kureshi et al, 2007; Swanson, 2004; Kim and Littrell, 2001; Littrell et al, 2004; Kincade and Woodard, 2001) in their studies conducted in different fields. The factor analysis was done to reduce the statements of expenditures into few common components and then to
determine the extent of expenditure incurred. The 24 variables were reduced to five Principal Component Analysis using the Rotation method of Varimax with Kaiser Normalization. Statistics are available for testing the appropriateness of the factor model. Variance explained is statistical tool to test the appropriateness of the factor model. The percentage of variance extracted by the factors should reach a satisfactory level. It is desirable that variance explained be at least 60% (Malhotra, 2006). However, evidence shows that the 50 percent of variance extracted by the factors can be accepted as a level of satisfaction. Awasthi (2007) considered 50% of variance as acceptable parameter in his study conducted to measure the effects of service quality and satisfaction on customer behavioural intentions. In this study the factors explained a variance of 57.96 percent.

In order to assess reliability, the Cronbach’s Alpha value is determined for each factor. Alpha value is the most widely used internal consistency reliability co-efficient (Bearden et al, 1999). However, there are differences in the opinion among the researchers about the accepted level of reliability. According to some scholars Cronbach’s Alpha value of more than 0.70 (Jham and Khan, 2007; Malhotra, 2006) can be considered acceptable. On the other hand, some other scholars advocate that a Cronbach’s Alpha higher than 0.60 can be judged as indicating reliability (Lee and Kim, 2003; Littrel et al, 1994). However, Cronbach’s alpha value of 0.50 is also considered adequate for exploratory research (Dangayach & Deshmukh, 2005). Felder and Spurlin (2005) accepted Cronbach’s Alpha of 0.50 as reliability value in their study conducted to provide the comprehensive examination of the Index Learning Styles (ILS).

It is seen that satisfactory reliability value is still controversial and opinions of researchers are not uniform.

In our study, we have decided to take $\alpha = 0.5$ as the threshold limit. However, only in case of one instance we have to take this low value as adequate internal consistency as described in Chapter-5 (page no 108). In other instances we have higher alpha value.

Hotelling’s T-squared tests of sphericity are also inspected for each factor. This is to examine the null hypothesis that the means of the variables included in each factor are
same. Hotelling’s T-squared tests, a significant value of less 0.05 or less indicates that data are acceptable for analysis as factors.

Similarly, Kaiser-Mayer-Olkin (KMO) measure of sampling adequacy is tested. KMO measure is an index to examine the appropriateness of the factor analysis. High value (between 0.5 and 1.0) is desirable to indicate that the samples are adequate for factor analysis.

The next statistical test is the Bartlett’s test of sphericity. This is conducted to test the null hypothesis that the variables are uncorrelated in the population. Bartlett’s test value of 0.05 or less is acceptable.

The statistical tests conducted to confirm the appropriateness of application of factor analysis are shown in the Figure 4.1.

Statistical tools like ANOVA (one-way) along with Levene’s Test for Equality of Variance, Descriptive Tables, Cross Tabulation, Independent Sample T-test of equality of means, Group Statistics Table are extensively used for exploring relationship and significant differences.

If the Probability value extracted by ANOVA test is found to be 0.05 or less, it indicates that there are significant differences among the means of the variables i.e., the
Null Hypothesis can be rejected. Thus, if differences are established, the Levene’s Test for Equality of Variance is to be conducted. Further, to identify the groups showing significant differences multiples Post-hoc tables are to be followed. These methods are used post-hoc analysis, viz Bonferroni and Games-Howell method. Games-Howell’s table is adopted where probability value as shown by Levene’s Test for Equality of Variance is 0.05 or less. Contrary to it, in case the probability value is more than 0.05 then Bonferroni table of multiple comparisons is followed. Further, Descriptive table is drawn to know the mean values of each variable. It helps in exploring the variables showing significantly high or low values. Again, where means of only two groupings are to be tested then Independent Sample T-test is conducted. If Null hypothesis is rejected than Group Statistic table is drawn to explore the mean value for each variables. This method of analysis is used by Sarma (2000, 2004).

The data are tabulated, processed, and analyzed by using Software Package for Social Sciences (SPSS) 8.0. This computer software is widely used by the researchers for analysing the data and to arrive at conclusions. Further, the Microsoft Excel is used extensively to draw customized diagrams and to calculate factor scores for each head of expenditures.

4.5 Perceived Limitation of the Study: There are certain limitations which may have impact on the outcome of this study. These limitations are mentioned below:

4.5a Premier Study: This is the premier study conducted in Northeast India in the field of tourists’ expenditure. Inspite of concerted efforts, no evidence could be traced regarding the conduct of in such detail in study in other parts of the country. Therefore, comparative analyses could not be forwarded. This limits the confirmation of the validity of the outcomes of this study.

4.5b Places of survey: Northeast India comprises seven states (excluding Sikkim) but field survey is conducted only in four places of the Northeast India covering two states (Guwahati, Shillong, Kaziranga and Tezpur). The selected sample may not
represent the entire tourists visiting the destinations of Northeast India. That is, responses of the populations might have been different if interviewed in other places of the region.

4.5c Sampling errors: Since sampling frame is not readily available, probabilistic sampling method could not be employed. On the other hand, the non-probabilistic sampling method has limitation as it may not represent the population as a whole. Although proper care was exercised in selecting the sample, the tourists interviewed may not represent the community they come from. This is a vexed issue for a floating population like that of tourists. Even though segmental studies are conducted to test certain hypothesis, if the sample fail to represent the group they come from, possibilities are there that the results will not be as valid as it is claimed here.

4.5d Biased response: The extent of expenditure has been measured with help of intervally scaled statements of expenditure. The importance of interval scale may be beyond the understandings of the tourists interviewed. Hence, the study result may not reflect the actual extent of expenditure of the tourists. Further, the extent of expenditure as measured can’t be expressed in terms of percentage. Tourists often don’t maintain the actual statements of expenditure. The results are just exploratory only.

4.5e Seasonal biasness: The field survey was started in October, 2005 and continued till May, 2006. That is, the survey was done during the peak season. So, the results may be different if the survey would have been conducted during low season. This might also affect the ultimate results of the study. Further, the formula used for ascertaining the Comprehensive scores is derived from the formula of calculating weighted average. The loading from factor analysis are used to assign weight to the new variables against the five principal factors. The loading for different sample drawn at different point of time may significantly differ from the derived ones.

However, the off-period is really a lean period as the region experiences tremendous rainfall and some best known attractions like National Parks are often
flooded and remain closed for tourists. Hence, barring two hill stations other destinations of the regions don't receive any leisure tourists. Therefore, tourists expenditure is almost nil during the off peak period.
References:


