CHAPTER 3

RESEARCH METHODOLOGY

About the chapter

This chapter had been organized to include an introduction, research design, population and determination of sample size, data collection method, questionnaire development, research general guidelines and the process of data analysis. Elaboration of the issues related to research methodology had been highlighted that include the choices of research methodology and data collection methods. The researcher’s experience throughout the data gathering process was also mentioned. This chapter describes the pilot study, participants of the study, instrumentation done for the study, data collection, and data analysis procedures of the entire study.

3.1 Introduction

This chapter details out the research methodology of the present study. It explains the research objectives and a suitable methodology to achieve those objectives. The objectives of this study were to evaluate and understand the perception and attitude of tourist’s towards climate change in Kashmir valley. This involved an exhaustive study of the demographic characteristics and knowledge and awareness of tourists with regard to climate change. Second, the evaluation of the attitude of a tourist towards the phenomenon of climate change. This was done by understanding the environmental concern and green consumerism among the respondents. Third, suggesting measures for the mitigation of climate change impacts.
3.2 Research Design

Research design shapes the plan of the research (Henn, Weinstein and Foard, 2006), that might include the entire process of research from developing a problem and making a conclusion (Creswell, 2007). It provides the stepping stone for the collection of data, analysis and subsequently indicated which research methods were appropriate for use for different types of research (Walliman, 2006).

For the purpose of this research, after going through the objectives of the study and realizing the lack of published literature, an exploratory cum descriptive research design had been chosen, because it would help to describe the characteristics of the population under study.

The exploratory and descriptive research design was adopted due to the nature of the study. Exploratory cum descriptive research would suit best the study because according to Sekaran (2000) an exploratory study research is taken up when a researcher had no information and clue on how similar problems had been addressed in the past. In addition, new ideas could surface from this type of research (Richardson, 2005). Exploratory research provides insights into and comprehension of an issue or situation. Exploratory research is a type of research where a problem has not been clearly defined. Exploratory research helps to determine the best research design, data collection method and selection of subjects. And a descriptive research on the other hand was a research that described a phenomenon (Salkind, 2000), providing a clear and crisp answer of who, what, when, where, why, and way (6 Ws) of the research and data were typically collected through a questionnaire survey, interviews or observation (Gay and Diehl, 1992). Thus, on the basis of the above, the two research designs were appropriate for the present study as it was important to understand the behavioral aspects of tourists like knowledge, awareness, understanding and environmental concern etc towards climate change.
3.3 Research Approach

A quantitative research approach fits very well with the present study for a variety of reasons. Quantitative research is an appropriate research method for researchers who are interested in hypothesis rather than discovery (Noor, 2008). Moreover, quantitative research is well suited to address certain research problems where the researcher often has little knowledge on the topic (Morse & Richards, 2002). In a quantitative study, the researcher can choose one or more strategies of inquiry.

Quantitative research generally involves survey methods of data collection, giving an emphasis on participant’s perceptions and experiences of a particular happening (Creswell, 2009). As well, quantitative research is the most appropriate way to approach such complicated subjects where the researcher needs to rely on the information that will be acquired from tourists as in the case of this study. Subsequently for the quantitative method of data collection, the self administered questionnaire was used as the instrument for the survey. An advantage of using self administered questionnaire was that it is a standardized measuring instrument because the questions were always phrased exactly in the same way for all respondents (Sapsford, 2007). One of the biggest advantages of self administered questionnaires is that it is economical and saving the researcher’s time to a great extent.

3.4 Questionnaire Development

The self administered questionnaire was the main research instrument in this study, with the objective to elicit as much related information as possible from the respondents. It would contain enough number of questions to be able to meet objectives of the study, but not so many as to be off-putting to respondents. The questions must be long enough to elicit the information that was required for achieving the objectives, but short enough to encourage an optimum response rate from the target population (Johns, 1998).
For effective data collection, survey method was used. Survey method is the most extensively used technique for data collection, especially in behavioral sciences. It provides a systematic way of looking at events, collecting data, analyzing information, and reporting the results. Thus, this method has been used widely to extract the most relevant type of information and help in better analysis of the data (Sapsford 2007).

### 3.4.1 Questionnaire Design

Bearing the research objectives in mind and equipped with an extensive literature review, discussions with the tourism stakeholders and other researchers in the same field were conducted prior to the conceptualization of the possible research instrument. This was important because of the different levels of awareness of climate change between the developed countries and India.

Discussions were also held with the supervisor of this research who had advised that if there were too many missing values from the questionnaire, this would affect the findings. The supervisor also noted that if there were too many terms that the respondents did not understand, there was a possibility that they would not pursue in answering the questionnaire. Based on the above, an existing scale was adopted from Alan., T.K.(2013) while designing the questionnaire, covering as many as possible items that might point to achieving the objectives of the study. The scale was further modified and certain items were inserted according to the requirement of the study. The framing of items in the questionnaire is also done by going through the studies of Wong (2012) and Fielding & Head (2012). The questionnaire consists of demographic profile (Part A), perception of tourists (Part B), and attitude towards climate change (Part C). There were three main categories of questions that had been asked, covering the aspects that would meet the set objectives.
Demography (Part A) had 7 variables. They were: (1) gender; (2) age; (3) occupation; (4) marital status; (5) educational level; (6) Income per year; (7) type of tourist. This section acts as background information.

Climate change perception (Part B) had 21 variables. This part covers the areas of climate change concern, awareness, knowledge and understanding.

Attitude towards climate change (Part C) had 19 items. The questions asked focus on the environmental concern of tourist, green consumerism, Low carbon behavior etc. This section wishes to solicit the tourists’ attitude on some important aspects related to climate change.

3.4.2 Content of the Questionnaire

The questionnaire, two pages long, was divided into three sections. It included Likert’s scale measurement, close-ended questions. It was designed in such a way that only straightforward, concise, and brief answers were required. Upon trial, the questionnaire could be answered within 12 - 15 minutes. The three sections were:

Part A was labeled ‘Demographic profile’ and listed variables consisting of general information on Gender, Age, Occupation, Marital status, Educational level, Income per year and type of tourist.

Part B was labeled ‘Climate Change perception’ and listed twenty one possible related items that. The items were generally about the knowledge and understanding of a tourist of the hazard of climate change.

Part C was labeled ‘Attitude’ and consisted of nineteen items about the attitude of tourist towards climate change. Tourists’ were asked questions regarding environmental attitudes and green lifestyle.
3.4.3 Pre-testing of the Instrument

It is always good and advisable to pre-test the research instrument on a small number of people before you use it on a serious basis (Walliman, 2006). Therefore, for the purpose of pre-test, the questionnaire was sent to two groups of people – four research scholars from School of Business Studies (University of Kashmir) and 6 academicians/lecturers from the Faculty of Business Studies, Central University of Kashmir, four of whom were having doctoral degree to their names. They were encouraged to give their opinion with respect to the length of the questionnaire, the words used, sentence structure and any ambiguous statements or confusing questions. The questionnaire had been modified accordingly upon receiving comments from these people. Their relevant comments had been taken into considerations. Some new elements were added while those not related were changed and deleted. As recommended by Bell (Bell, 2001), these testers were requested to answer the following questions:

1. How long did it take you to complete the questionnaire?
2. Were the instructions clear for completion of the questionnaire?
3. Were any of the questions ambiguous?
4. Did you object to answering any of the questions?
5. In your opinion, were any major topics left out of the questionnaire?
6. Was the layout clear and attractive?
7. Any other comments.

Of the ten people asked to be pilot testers, eight responded. Their main comments were:

• To clarify the wording of some of the questions;
• To suggest minor changes to some of the questions;
• To compliment the layout and look of the survey;
• To point out some minor technical problems;
• To suggest asking how participants thought climate change would affect them personally;
• That the questionnaire took around twelve minutes to complete.

3.4.4 Pilot Study

The pilot study formed the pedestal for the research. A pilot study was conducted in December 2016 on 109 tourists who visited different locations of Kashmir valley. A questionnaire was distributed personally to the respondents at Gulmarg, Pahalgam, Dal Lake and other tourist places in and around Srinagar city. They were asked to record their response on a 5 point Likert’s scale ranging from 1 “Strongly Disagree” to 5 “Strongly Agree”. As the objectives of the study is evaluation of perception and attitude of tourist towards climate change, a list of 21 items were identified for the measurement of perception towards climate change and used for the study. In the same way 19 items were identified for the measurement of attitude with regard to climate change. Based on the findings of this pilot study, the survey instrument was designed and finalized for the further study.

3.4.5 Reliability Test of the Instrument

To test the validity and reliability of the research instrument, a study was done on 109 participants in the month of December 2016. Based on the responses of the participants, reliability tests were done to check for the usability of the instrument. Cronbach’s alpha was calculated to measure the internal consistency reliability of the instrument. If the value of Cronbach’s alpha is greater than 0.7 then the instrument is considered reliable. The value of Cronbach’s alpha came as 0.853; thus, the instrument was considered reliable for the study. In addition to this, Cronbach’s Alpha was also calculated for each of the items separately to ensure the instrument is valid. KMO and Bartlett’s test was calculated and if the value of KMO is greater than 0.5 then the instrument is considered valid for further process. KMO for the sample is 0.751 which is fairly good and Sig. is 0.000. Hence the scale is accepted for further collection of data.
### Table 3.1 Reliability Statistics for the Research Instrument

<table>
<thead>
<tr>
<th>Cronbach's Alpha</th>
<th>N of Items</th>
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<td>.853</td>
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### Table 3.2 KMO and Bartlett's Test

<table>
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<th>Kaiser-Meyer-Olkin Measure of Sampling Adequacy.</th>
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<tr>
<td>Bartlett's Test of Sphericity</td>
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<td>Sig.</td>
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### 3.5 Population and Sampling

By definition, population is the group which helps a researcher to generalize the results of the study. It might be virtually any size or might cover almost a huge geographical area (Gay and Diehl, 1992). Researchers could specify an even finer distinction of population called the study population (Wolfer, 2007).

The population for this study, for quantitative method, comprised of the all types of tourists visiting Kashmir valley. As per the records of Jammu and Kashmir Tourism Department 9, 27,815 (N) tourists visited Kashmir valley in the year 2015.

#### 3.5.1 Determination of Sample Size

A sample was a subset or a representative of the population being studied (Richardson, 2005), to become the basis for estimating a fact or situation regarding the whole population (Kumar, 1996). Samples should be as large as possible, in general the larger the sample the more representative the results of the study were likely to be. Minimum, acceptable sample size for descriptive research would be 10% of population (Gay and Diehl, 1992).
To simplify the process of determining the sample size for a finite population, Krejcie & Morgan (1970), came up with a table using sample size formula for finite population. For the purpose of this study, the population sample was determined on the basis of Krejcie Morgan table 1970. By using Krejcie Morgan table of sample determination, the sample for the study is 384 (S). The sample consists of both foreign as well as domestic tourists.

The sample size representatives of the tourist in this study were 384. It is determine based on the Krejcie and Morgan's (1970) sample size calculation which is same as using the Krejcie and Morgan's sample size determination table. The sample size determination Table 3.3 is derivative from the sample size calculation which expressed as below equation (Krejcie and Morgan, 1970). The Krejcie and Morgan's sample size calculation was based on $p = 0.05$ where the probability of committing type I error is less than 5 % or <0.05.

$$s = X^2 NP(1-P) \pm d^2 (N-P)+X^2 P(1-P)$$

Where,

$s =$ required sample size.

The table value of chi-square for 1 degree of freedom at the desired confidence level (0.05 = 3.841).

$N =$ the population size.

$P$ the population proportion (assumed to be 0.50 since this would provide the maximum sample size.

$d =$ the degree of accuracy expressed as proportion (0.05).

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<td>335</td>
<td>100000</td>
<td>384</td>
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</tbody>
</table>

Source: Krejcie Morgan 1970

N=population
S=sample

### 3.6 Data Collection

The study aimed at general tourists’ visiting various tourist destinations of Kashmir valley in the state of Jammu and Kashmir in India. For the data collection the respondents were chosen randomly at Gulmarg, Pahalgam and Dal Lake.

A total of 547 respondents were approached with an invitation to participate in the research. Following a short introduction, with an emphasis on the researchers' affiliation with an academic institution, the purpose of the research was presented to potential respondents. Newmark et al. (1993) identified a high level of uncertainty on the part of tourists, regarding the affiliation of the researcher. Randomly selected tourists were approached between 8 a.m. and 5 p.m. every day of the week, in campgrounds and other accommodation platforms located in the proximity of the tourist meadows across Kashmir valley. Respondents were handed a tourist version of the survey and were left to fill out questionnaires on their own,
without the interference of the researcher. International tourists who encountered difficulties in understanding the content of the questionnaire answered questions with the assistance of the researcher. Questionnaires generally did not require more than 12-15 minutes for completion and finalized questionnaires were returned to the researcher immediately upon completion.

An honest effort was made by the researcher to make the tourists understand the purpose of the research and assure them that the data so provided will be used only for academic research. Information was finally gathered through questionnaire. Some hotel managers and other tourism providers were also contacted individually in helping in getting the questionnaires filled by the respondents. 557 filled in questionnaires were received out of which only 384 were found to be fully filled in, the rest 163 were discarded due to incomplete information. The data collection process lasts for 34 days from 02 Mar 2017 to 04 Apr 2017. Thus, with the unconditional assistance of various associates, data was collected comfortably from the respondents.

### Table 3.4 Collection of Data

<table>
<thead>
<tr>
<th>Place of data collection</th>
<th>No. of responses collected</th>
<th>No. of valid responses</th>
<th>No. of invalid responses</th>
</tr>
</thead>
<tbody>
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<td>Pahalgam</td>
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<td>Srinagar Area</td>
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<td>90</td>
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<tr>
<td>Total</td>
<td>547</td>
<td>384</td>
<td>163</td>
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</table>

Source: Prepared for the present research

### 3.7 Data Analysis Procedure

Statistical Package for the Social Sciences (SPSS) version 16.0 was religiously used for the statistical analyses for this research. The questions and responses were coded and entered in the computer using Microsoft Excel software. Required analysis was done with the aid of Statistical Package for Social Sciences 16.0 Version. Certain statistical methods were applied
on the data to get the results which were analyzed. The procedures used for the analysis of the research questions of this study are described below.

3.7.1 Part A (Demographic Profile of the respondents): The demographics of the respondents were calculated by using the descriptive analysis (Frequencies).

3.7.2 Part B (Research objective 1): Exploring the perception of a tourist towards climate change.

The analysis of this objective was done in the Second part. It was on the basis of primary data collected by using a self completion questionnaire. For the primary data analysis, factor analysis was done to extract smaller number of linear combinations out of 21 perception related items which are essentially responsible for deciding the perception of a tourist. Principal component analysis was used as the method of extraction and varimax was used as the rotation method. Three dimensions were extracted through factor analysis. After factor analysis, means and standard deviations were calculated for each of the dimensions. On the basis of their means, the perception dimensions were ranked.

3.7.3 Part C (Research Objective 2): Evaluation of Attitude of tourist with regard to climate change.

In order to identify the attitude of a tourist with regard to climate change, factor analysis was done to extract smaller number of linear combinations out of 19 items. Principal component analysis was the method of extraction and varimax was the rotation method. Three factors were extracted. After factor analysis, means and standard deviations were calculated to rank the items.

3.8 Research General Guidelines

Below were the general guidelines that the researcher had observed in the whole process:

a) Numerous discussions with the supervisor for the confirmation of the research topic.
b) Numerous discussions with the supervisor for the confirmation of the research objectives.

c) Literature review of the related materials from all sources in the fields of climate change and behaviour sciences were carried out. The extensive readings helped to consolidate researcher’s understanding and in getting an overview of the state of the art in terms of climate change knowledge, understanding, environmental attitude, awareness and low carbon behavior. At this stage, the researcher realized that while there had been so much literature on climate change behavior in other countries, specifically in the United States, United Kingdom, Australia, European Union countries and New Zealand, but similar developments were not much happening in a country like India.

d) A set of structured questionnaire was developed (bearing in mind the degree/level of understanding of the tourists during the initial literature review and field works) covering main aspects that were related to environmental attitudes and behaviors of tourists.

e) The draft of the questionnaire was pre-tested on a few research scholars and academicians to test its face validity. The scholars and academicians were also asked for their opinions on the subject matter and suggestion noted.

f) Modifications and re-adjustments were made on some of the contents and wordings used in the questionnaire.

g) The final version of the questionnaire was sent to two statistical experts.

h) Final approval of the questionnaire was obtained from the supervisor.

i) The questionnaire was sent for pilot study to 109 tourists.

j) The questionnaire was again modified after getting some feedback from the respondents.

k) Once approved by the supervisor after the modifications, the questionnaire was finally sent for the actual study.
1) The data from the questionnaire were received, coded, keyed-in and analyzed to answer the research questions.