CHAPTER-V
RESEARCH
METHODOLOGY
CHAPTER V
RESEARCH DESIGN AND METHODOLOGY

The fifth chapter of this thesis discuss in detail the research methodology used in the current study. In this chapter, focus has been on explaining the process of research designing for the current study and the process of data collection. A brief overview of the demographic profile of respondents is also discussed. This is followed by discussing the measures which were used. The last section gives information about the statistical techniques used for data analysis.

5.1 INTRODUCTION

The aim of present research study was to explore and understand community involvement and participation, identifying limiting factors for community based tourism in selected destinations in the state of Jammu and Kashmir. The research design presented in this chapter examines the objectives of the present research study, the approach in which relevant data has been obtained and the methods involved in the quantification of data. Further, the explanation for determining the sample size and also the formulation of questionnaire is presented in this chapter.

The present research study is inclined towards finding the facts and illustrating the conclusions, by studying thoroughly the select destinations in the state of Jammu and Kashmir. The present study has attempted to assess the extent of community / local residents involvement in tourism development in their local areas. Another objective of the present study is to investigate perspectives on community based tourism development of the key stakeholders i.e. government, local political bodies, business operator group and the community group as well as empirically testing the M-O-A (Motivation, Opportunity and Ability) model for community participation in the selected sites. Findings of the present study will help to identify the limiting factors to community based tourism as perceived by the stakeholders and suggestions could be provided to policy makers to promote community based tourism.
5.2 RESEARCH OBJECTIVES

1. To assess the extent of community / local residents involvement in tourism development in their local areas.

2. To investigate perspectives on community based tourism development of the key stakeholders i.e. government, local political bodies, business operator group and the community group.

3. To empirically test the M-O-A (Motivation, Opportunity and Ability) model for community participation in the selected sites.

4. To identify the limiting factors to community based tourism as perceived by the stakeholders and suggest strategies to promote community based tourism.

5.3 HYPOTHESES

Based upon the extensive literature review the following hypothesis have been developed

H1: Motivation of the community, Opportunity to Participate and Ability of the community members significantly effect the level of participation of the community members.

H2: There exists limiting factors to community based tourism in the proposed sites.

5.4 RESEARCH DESIGN

Malhotra and Dash (2011) define research design as a framework or blueprint for conducting the marketing research project and details the procedures necessary for obtaining the information needed to structure or solve research problems. Johnson and Christensen (2004) define research design as “a specific outline, plan, or strategy that will be utilized in order to accurately answer the research questions contained in a particular study”. Research design involves specifying the methods and procedures that would be needed for acquiring the needed information and is the plan for running the experiment. Research design involves designing the overall framework of the project that explains in
detail regarding what information is to be collected, how it is to be collected from which sources and what procedures shall be employed for the same. In simple words, it is a blueprint for accurately guiding the research study towards its objectives with a specific set of research methods.

Research design is not a one-step decision but involves many decisions starting from the selection of the topic of interest to be studied with specific set of research methods.

5.4.1 Research Approach

Keeping in view to operationalize the objectives of this study, this research adopts the mixed research design i.e. both the qualitative and quantitative approach. Since the objective was to identify the barriers to community participation it was important to interact with the various stakeholders in the select destinations to identify the themes. The research process of this study was divided into two phases: qualitative and quantitative methods. According to Walle (1997), qualitative approach can provide meaningful insights especially in the context of tourism, where the objective is to study the community feeling, attitude, perception and actual behaviour. In this research, we conducted face to face semi-structured interviews with the key informants and the local tourism stakeholders in their own setting. During the discussion process the participants were allowed freely to share their opinion, attitude and perception about the tourism development process. Due care was taken to avoid guiding the participation of the informants as per the pre-defined research objectives. This ensured the emergence of the themes which were relevant to their own context.

Since English was not the first language of the respondents, the participants were allowed to speak in their native language i.e. Dogri and Hindi. The interviews were audio recorded with the prior consent of the informant. These recordings were played back, wherever required just to ensure the accuracy of the statements / themes which were used in framing the questionnaire.

In the second phase of the study, a survey based quantitative approach was adopted wherein a detailed survey instrument was circulated among the residents and the
data so collected was analyzed using statistical procedures. The details are discussed in the subsequent section.

5.4.2 Unit of Analysis

Since the objective of this study is to analyze the perceived barriers of community participation and also examine the role of motivation, opportunity and ability in community participation among the individuals, the unit of analysis for this study for local residents of the five potential destinations selected for the study.

5.4.3 Selection of Sites

The data was collected from the following select destinations of the State of Jammu and Kashmir:

1. Mansar (District Samba, Jammu and Kashmir)
2. Surinsar (District Jammu, Jammu and Kashmir)
3. Manwal / Babor (District Udhampur, Jammu and Kashmir)
4. Jhiri (District Jammu, Jammu and Kashmir)
5. Basohli (District Kathua, Jammu and Kashmir)

The reason for selecting only these five destinations was that these all five destinations are unique in their tourism product. Mansar is famous for its lake and it is a well-known destination. On the other hand Surinsar is also famous for its lake and natural beauty but it is not as much famous as Mansar. Thirdly, Basohli is widely known for its paintings called Basohli Paintings, which are considered the first school of Pahari Paintings and which has evolved into the much prolific Kangra Paintings school by mid-eighteenth century. However, tourists are still not aware of this destination and therefore Basholi despite its strong potential is yet to attract a large number of tourists. Jhiri is famous for its famous annual fair and Baba Jitto temple and Manwal is having an archaeological site known as Babor and Bhagwati Temple. All these sites have immense
potential to attract tourists and offer unique kind of products. All these sites have potential to become famous destinations.

The select areas for the study were expected to have the potential to promote community based tourism. Since the tourism product is already available, these destinations could grow fast as tourist attractions. Two of the five sites selected for the study (i.e. Surinsar and Jhiri) were also part of the Ministry of Tourism Rural Tourism Scheme project and then the assumption was they the stakeholders were having an understanding of rural tourism and their role in the promotion of tourism in their region.

<table>
<thead>
<tr>
<th>S.No.</th>
<th>District</th>
<th>Site</th>
<th>Tourism Resource</th>
<th>Level of Tourism Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Samba</td>
<td>Mansar</td>
<td>Natural Lakes, Temples, Baisakhi Fair</td>
<td>High</td>
</tr>
<tr>
<td>2</td>
<td>Jammu</td>
<td>Surinsar</td>
<td>Natural Lake, Eco Tourism</td>
<td>Low</td>
</tr>
<tr>
<td>3</td>
<td>Jammu</td>
<td>Jhiri</td>
<td>Annual Religious Fair, Temple, Border Area</td>
<td>Moderate (High during 1 week of fair)</td>
</tr>
<tr>
<td>4</td>
<td>Udhampur</td>
<td>Manwal</td>
<td>Archeological Sites</td>
<td>Low</td>
</tr>
<tr>
<td>5</td>
<td>Kathua</td>
<td>Basholi</td>
<td>Paintings, Artificial Lake Dam</td>
<td>Low</td>
</tr>
</tbody>
</table>

5.5 Data Collection

To collect the data from the respondents, the following approaches / techniques were adopted
5.5.1 Secondary Data

The data collection was based on numerous sources of evidence like, documents, interviews and related review of literature. Books, journals and articles have been the chief published material for building the basic understanding of the nature of problem, associated contemporary issues. In the present research study, other sources of evidence like guidelines of regulating bodies such as Ministry of Tourism, UNWTO etc., magazines and newspapers, presentations and working papers were referred. These sources provided valuable information with reference to the research questions and were comprehensively used in the study.

The secondary data has been gathered from number of published and unpublished sources about community based tourism and sustainable tourism development by making use of number of search engines, access to same kind of research works like academic journals, working papers and reports. The secondary data was collected from various international as well as the national journals like Journal of Travel Research, Journal of Tourism Recreation Research, Journal of Tourism Management, Annals of Tourism and also be obtained by reviewing the articles published on the internet and various business magazines. The information was also collected from the state and national bodies involved in framing policies regarding community based tourism. These secondary sources constituted a combination of a variety of experiences that facilitated in gathering the information which enhanced the understanding of issues related to community based tourism and sustainable tourism development.

5.5.2 Primary Data

The primary data was collected using the following approaches

- **Direct Observation** – During the semi – structured interviews, some of the responses were audio recorded with the prior permission of the respondents. Direct Observation enables the researcher to collect first-hand information.

- **Participant Observation** – This approach was adopted with an objective to understand the context (physical, social and cultural) wherein the respondents
live. To achieve this, the data was collected in person by visiting all the select sites and involving the local stakeholders in their own respective context.

- **In-Depth interviews** – This approach is considered useful especially when the researcher is interested to collected personal thoughts, feelings, opinions and experiences of the respondents. Also this approach for generating insights is considered to be useful especially in contexts where the researcher is looking for deeper insights. In this context of understanding the potential barriers of community participation, in-depth interviews proved to be very useful. The respondent feels more comfortable and during repeated interactions, they provide useful information. In our study, we visited each of these sites atleast 4 times and a personal rapport with the key informants was established. The key stakeholders including sarpanch, shopkeepers, students, local businessman had developed faith in the objective of the research and during the course of the action shared insights, that would have not been possible had we adopted a direct survey based approach.

- **Survey using Questionnaire** – The findings of the qualitative approaches as mentioned above cannot be generalized and therefore a detailed survey was also carried out from the local residents of all the select sites. The data was collected using a structured questionnaire which was developed based on the literature review and the findings of the qualitative approach.

### 5.6 Survey Instrument / Questionnaire

A survey research is usually done with the help of a questionnaire consisting of some relevant questions, either oral or written, which are asked to the representative sample Primary data was collected using a structured questionnaire. As per Creswell (2005) and De Vos, et. al. (2005) a questionnaire is an instrument of collecting self-report data that is filled by the respondents. To give the study an appropriate direction, the structured questionnaire was used and distributed amongst the respondents selected for the study. The questionnaire was used because it is good for measuring attitudes of respondents and extracts additional information from the respondents, gives relevant information about respondents, and make sure that the respondents are honest. The data
was collected during the period June 2012 – December 2014 during the repeated visits to the select sites.

The questionnaire was divided into Four Sections: Section A, Section B, Section C and Section D. Section A consists of demographic related information about the respondents. Section B consists of items that were asked to measure the barriers towards community participation. The study of Tosun (2006) and findings of the qualitative study were used to develop the items. The barriers were categorized under structural, cultural and operational barriers. There were a total of 20 items in this section related to different barriers. Section C included items that measured motivation, opportunity, and ability (MOA) of the respondents. There were a total of 18 items in this section based on the study of Hung et. al (2010). In addition to these 18 items, an additional 6 items were included to measure the level of participation based on Hung et al (2011) study.

The questionnaire was structured around 7 - point Likert scale, while nominal data was also collected especially in Section A where demographic information was collected. The 7-point scale was anchored as Strongly Disagree (1) to Strongly Agree (7). The questionnaire is as shown in attached Annexure.

While drafting the questionnaire care was taken regarding the language and wording. The language was administered in two languages: English and Hindi. During data collection from the respondents, essential supportive details and explanations were provided to them.

The pre-testing of the questionnaire was conducted on the select tourist destinations. The pilot study or pre-testing is recommended for viability, convenience and economic usefulness (Amin, 2005). Pre-testing was done in the two of the destinations: Jhiri and Basohli. The respondents who provided their responses during pilot study were sarpanches, shopkeepers, panchayat members, and various other stakeholders including artists, temple priests, and local people. A total of 56 respondents were asked to participate in the pre-testing of the questionnaire and responses were collected for the pre-testing of instrument.
### TABLE 5.2: MEASUREMENT OF VARIABLES IN THE STUDY

<table>
<thead>
<tr>
<th>Variable</th>
<th>No. of Items</th>
<th>Scale Used</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operational Barriers towards Community</td>
<td>07</td>
<td>Tosun (2006)</td>
</tr>
<tr>
<td>participation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Structural Barriers towards Community</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>participation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cultural Barriers towards Community</td>
<td>03</td>
<td></td>
</tr>
<tr>
<td>participation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Motivation of respondents to participate in</td>
<td>05</td>
<td>Hung et al. (2010)</td>
</tr>
<tr>
<td>Tourism Development</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Opportunity to participate in Tourism</td>
<td>04</td>
<td></td>
</tr>
<tr>
<td>Development</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ability of respondents to participate in</td>
<td>09</td>
<td></td>
</tr>
<tr>
<td>Tourism Development</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Level of Respondents Participation</td>
<td>06</td>
<td>Hung et al. (2010)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The questionnaire given to them was drafted in their local language (Hindi) and was asked to give remarks on the vocabulary, words, sequence and ambiguous questions. This facilitated in the present study in improving the questionnaire’s structure. The findings of pilot survey were proved to be in line with the instruments used for measuring the variables as indicated in the objectives of the study.

#### 5.6.1 Validity and Reliability

Validity refers to the extent to which a study perfectly reflects the specific concept that the researcher is attempting to measure. While reliability is concerned with the accuracy of the actual measuring instrument, validity deals with the measuring success of the study. Validity establishes whether the research actually measures what it is intended for or how truthful results are. There are number of criterions for assessing validity. These are content, construct and divergent validity.
5.6.2 **Content validity**

Content validity is the level to which the content of items is consistent with the construct definition. To establish the content validity of the items, extensive literature review was undertaken and discussions were held with three professors of tourism management, two government officers of the tourism department and three important stakeholders in the tourism development process. Further inputs were sought from one teacher of hindi, who helped us in the translation of English items into Hindi. Due care was taken to translate Hindi to English as well and discrepancies, if any, were sorted out before the actual data collection began.

5.6.3 **Construct validity**

Construct validity is the level to which a set of measured items actually reflects the theoretical latent construct. It deals with the accuracy of measurement. It can be established through convergent, discriminant and nomological validity.

i. **Convergent validity**

Convergent validity tests the extent to which the covariance between the two measures is uniquely explained by the trait factor. Thus, items that are indicators of a specific construct should converge or share a high proportion of variance in common. It involves the extent to which a measure correlates highly with other measures designed to measure the same construct.

This can be established in following ways:

a) **Factor loading**: Factor loading greater than 0.50 or ideally 0.70 or higher indicates level of convergence.

b) **Average Variance Extracted (AVE)**: In CFA, the average percentage of variance extracted (AVE) is a summary indicator of convergence. If AVE is above 0.50, convergent validity gets established.
ii. Discriminant validity

Discriminant validity refers to the extent to which the measure differs from other measures designed to measure different concepts. It can be examined through the evaluation of the Average Variance Extracted (AVE). The average variance extracted for each construct should be greater than the squared correlation between constructs.

5.6.4 Reliability

Reliability is the stability or consistency of scores over time or across raters. The most important role of reliability in research is critical for many parts of our lives, including manufacturing, medicine and sports. It is measured in following ways:

5.6.5 Cronbach’s alpha

It refers to the extent to which items inter-correlate with one another. Internal consistency implies that multiple items measure the same construct and inter-correlate with one another. In contrast, low inter-item correlation indicates that some items are not drawn from the appropriate domain and are unreliable (Churchill, 1979). The commonly accepted measure of internal consistency is Cronbach’s alpha. The value of an alpha is .70 is the minimum acceptable standard for demonstrating internal consistency.

5.6.6 Composite reliability

It is the measurement of reliability and internal consistency of the measured variables representing latent construct. It is easily calculated from the squared sum of factor loadings for constructs and the sum of the error terms for a construct.

5.6.7 Sampling Design

A number of different techniques can be used for choosing respondents for the study. In the current study, decisions related to sampling unit, sample population, sample size and sampling method employed were as under
5.7.1 Sampling Unit

Since the objective of this research is to study the various aspects of community participation and also identify the various barriers of local resident participation in the tourism development process. Therefore in this study, local residents of the selected five sites were included in the study. No distinction was made in terms of their present occupations, which in other words mean that respondents irrespective of whether they we involved in the tourism business were included in the study. Further respondents above the age of 18 years were included in the study who could make independent decisions with respect to their participation in the tourism development process.

5.7.2 Sample Population

The population of the select sites as per the Census 2011 or information collected from the Panchayat of the area is as under

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Site</th>
<th>Population*</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Mansar</td>
<td>3216</td>
</tr>
<tr>
<td>2</td>
<td>Surinsar</td>
<td>1850</td>
</tr>
<tr>
<td>3</td>
<td>Jhiri</td>
<td>8700</td>
</tr>
<tr>
<td>4</td>
<td>Manwal</td>
<td>2400</td>
</tr>
<tr>
<td>5</td>
<td>Basohli</td>
<td>5541</td>
</tr>
</tbody>
</table>

*The data is based on Census 2011 report / information from BDO / Village Sarpanch. The data excluded population of nearby villages which were 5 Kms away from the centre of the tourist attraction.

5.7.3 Sample Size

For determining the sample size, we first defined our sampling frame as under

- The local residents above the age of 18 years
- Only literate local residents to be included as part of the survey, as they could respond to the questions included in the questionnaire.
Based on these two criterion, the sampling frame was decided. Further to statistically determine the sample size, the margin of error was considered at 0.5 (or 7.1%) and it was estimated at 95% confidence level. The sample size for each of the five sites included in the study was calculated as:-

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Site</th>
<th>Sampling Frame*</th>
<th>Sample Size**</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Mansar</td>
<td>1548</td>
<td>170</td>
</tr>
<tr>
<td>2</td>
<td>Surinsar</td>
<td>890</td>
<td>157</td>
</tr>
<tr>
<td>3</td>
<td>Jhiri</td>
<td>4186</td>
<td>182</td>
</tr>
<tr>
<td>4</td>
<td>Manwal</td>
<td>1154</td>
<td>164</td>
</tr>
<tr>
<td>5</td>
<td>Basohli</td>
<td>2666</td>
<td>178</td>
</tr>
</tbody>
</table>

*The population of 18 years of age estimated at 70% of the total population and Literacy rate taken as 68.74% as per the Census 2011 statistics of J&K.

** The margin of error considered at 7.1% (or 0.5 on a 7 point likert scale). Confidence level considered at 95% level

5.7.4 Sampling Method

Based on this information the questionnaires were distributed in each of these regions following the stratified random sampling method. The questionnaires were distributed equally among farmers, shopkeepers, teachers, village level workers, panchayat members. Wherever possible due care was taken to distributed the questionnaire to as many households as possible. With the assistance of the panchayat members, the list of all the households in the main village and nearby sub-villages was collected which was then used for the distribution of the questionnaire. With an objective to ensure that we have a representative sample of the population, the procedure adopted by Tosun (2006) was adopted. The households selected for survey was identified using a lottery system by allotting a unique number to each household. The panchayat members were consulted at every stage of identifying and selecting the households. A total of 250 questionnaires were distributed in all these regions just to ensure we get adequate usable responses. Since the information was to be collected from the rural population, due care was taken to personally monitor the filling up of the survey form. Due assistance and clarification was provided wherever the respondents required any inputs. To get a variety
of respondent profile from the village, only one adult from a household was selected. A total of 927 responses were received with the responses as under

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Site</th>
<th>Responses Received</th>
<th>Response Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Mansar</td>
<td>197</td>
<td>78.8%</td>
</tr>
<tr>
<td>2</td>
<td>Surinsar</td>
<td>167</td>
<td>66.8%</td>
</tr>
<tr>
<td>3</td>
<td>Jhiri</td>
<td>193</td>
<td>77.2%</td>
</tr>
<tr>
<td>4</td>
<td>Manwal</td>
<td>177</td>
<td>70.8%</td>
</tr>
<tr>
<td>5</td>
<td>Basohli</td>
<td>193</td>
<td>77.2%</td>
</tr>
</tbody>
</table>

The research was conducted in conformity with the ethical standards. The objective of the research was shared with the community members and their consent was sought prior to collecting the information. Every bit of information collected was kept strictly confidential. The participation in the study was purely on volunteer basis. A total of 37 households across all the five regions refused to participate in the study and were not forced to contribute. Essential measures were kept in place to ensure that the name of the respondents are not revealed to anyone.

### 5.8 Scale Purification

#### 5.8.1 Outliers

As explained by Barnett & Lewis (1994), the outlier is used as an observation which normally is numerically away from rest of the data. Various methods can be used for recognizing and deleting outliers. Box plot has been considered as the most reliable and quantifiable approach to identify outliers. In the present research study, outliers are identified through box plot by calculating Z-scores of all the dimensions individually with the help of IBM SPSS 21.0. The outlier observations which are occurring for 3 or 4 times are deleted. Thereafter, overall Z score of all dimensions is calculated. Again outliers are identified and deleted with the help of box plot. In box plot, those points which are outside the end of the whiskers are outliers.
5.8.2 Normalcy

Normalcy is checked to establish whether a set of data is well defined by normal distribution or not. It is done before applying any parametric statistical tests. Normalcy was tested using Kolmogorov-Smirnov (KS) and Shapiro-Wilk (SW) test, which came out to be insignificant, hence it was proved that data is normal.

5.9 STATISTICAL TOOL USED

For the purpose of driving significant results from the gathered data, various statistical tools were applied for checking normality of data, data purification, reliability and validity, analysis and hypotheses testing. The collected data by administering a structured questionnaire was analyzed so as to bring out relevant results using appropriate statistical tools. The descriptive analyses of different variables have been carried out by using mean and standard deviation. Mean was used so as to find out the value of each observation. Further, to know the amount of deviation in the respondents’ view, standard deviation has been analysed (Beri, 2005). Multivariate techniques used in the study are discussed as under:

5.9.1 Exploratory Factor Analysis (EFA)

Exploratory Factor Analysis (EFA) has been used to summarize the data for further analysis. This multivariate data reduction technique of factor analysis was applied by using IBM SPSS 21.0 which is appropriate for present research study, as it involves the assessment of interrelationships among variables and reduces large number of variables into few manageable sets (Stewart, 1981). Exploratory Factor Analysis (EFA) has two main functions; these are summarizing the data and reduction of data. In summarizing the data, factor analysis derives underlying dimensions that illustrates the data in much smaller numbers of concepts than the original variables. Data reduction can be achieved by calculating scores for each underlying dimension and replacing them for original variables. This is done through factor score.

The present research study used Principal Component Analysis with Varimax Rotation, as it the most widely used orthogonal rotation procedure. Therefore, the present
research study focuses on high communalities and on high reliabilities to reduce the number of variables. The Eigen value equal to or more than one criterion has been used to determine the number of components to be extracted for further analysis. KMO measure of sampling adequacy has been used to verify the appropriateness of a factor loading, where the value greater than .50 is acceptable, values between 0.50 & 0.70 are mediocre, 0.70 & 0.80 are good, 0.80 & 0.90 great and above .90 superb. Further, Bartlett test of sphericity, which is also called zero identity matrix, has also been used to determine correlation among the variables.

The statement with factor loading less than 0.50 are ignored for subsequent analysis (Hair et al., 2007). The data reduction is performed in four steps, first inter-item correlation is checked, the items with value less than 3 are removed, in the second step, anti-image correlation matrix, the items with value less than 0.50 on the diagonal axis are deleted. In the third step, the extracted communalities are checked and items with values less than 0.50 are ignored for further analysis. In the fourth & the final step, rotated component matrix, statement with cross or multiple loading and values below 0.50 are deleted.

5.9.2 ONE-WAY ANOVA

Analysis of variance (One-Way ANOVA) is a statistical technique used to determine whether samples from two or more groups come from population with equal mean (i.e., Do the group mean differ significantly?). It is used to compare means of two or more samples. ANOVA examines one dependent variable. It is used to test the differences among at least three groups. In the present research study, one-way ANOVA was used to identify whether the mean scores of groups differ significantly or not.

5.9.3 Confirmatory Factor Analysis

Confirmatory Factor Analysis (CFA) has been used in the present research study to perform a confirmatory test using IBM AMOS™ 19.0. CFA is used to testing how well measured variables belong to a construct. To ascertain the fitness, reliability and validity of latent constructs, Confirmatory Factor Analysis (CFA) was performed. CFA technique is different from Exploratory Factor Analysis (EFA) as in EFA all measured variables are
related to every factor by a factor loading estimate, whereas in CFA researcher has to assign variables to each factor on the basis of preconceived theory. Thus, CFA statistics tells us how our specification of the factor matches the reality i.e., the actual data (Hair et al., 2009). In Confirmatory Factor Analysis (CFA), measurement model can be of two types, these are reflective or formative factor models. Reflective measurement theory is based on the idea that latent constructs is reflected through the measured variables and that the error results is an inability to fully explain these measure. In the present research study, reflective models have been derived to reflect the latent constructs.

5.9.4 Structural equation modeling

Structural Equation Modeling (SEM) involves both a measurement theory and a structural theory. SEM is accepted as one of the most widely applied data analysis techniques in the business research. It is so because of its ability to assess simultaneously the fitness of the measurement models and the structural model, where measurement models tests relationship between the measured variables and the construct, i.e., latent variables, structural model specifies relationships between latent variables. Maximum Likelihood Estimation (MLE) has been used in estimating the structural model. It is most widely used approach. One of the major benefits of using SEM techniques is that it allows for concurrent assignment of both reliability and validity by applying CFA. SEM is a more appropriate technique as compared to multiple regression and therefore has been used in the present research study.

5.9.5 Goodness of Fit Indices

Goodness of Fit Index (GFI) is normally the ability of a model to reproduce the data through what is usually known as variance-covariance matrix. A model which is consistent with the data is considered as good fitting model. Moreover, for the interpretation of the structural model, a good fit measurement model is required. To examine whether one has good model estimates, the parameters are required to be carefully determined. Also, it is important to rely that one might obtain a good fitting model, yet it is still possible to improve the model and remove specification error. The validity of the measurement model depends on the goodness of fit (GOF) of the model.
GOF points out how well the particular model reproduces the covariance matrix among the indicator items. The model fit match up the theory to reality as symbolised by the data. If the projected theory is ideal, the probable covariance matrix may be same, thus the nearer the values of these two matrices, the better is the model fit. Goodness of Fit (GOF) can be measured in following ways:

5.9.5.1 Absolute fit indices

Absolute fit indices are used to establish how well a derived model fits the data (McDonald & Ho, 2002) and show which projected model has the good number superior fit. These procedures present the most elemental clue of how well the projected theory fits the data. In contrast to the incremental fit indices, their estimates do not depend on comparison with a baseline model but is just a evaluation of how well the model fits in comparison (Joreskog & Sorbom, 1993). Under this category, the tests include Chi-square test, GFI, AGFI, RMR, SRMR and RMSEA.

i. Chi-square statistics ($\chi^2$)

The Chi-square value is the conventional measure for quantifying the model fit and evaluates the degree of inconsistency between the sample and fitted covariances (Hu & Bentler, 1999). A good model fit would give an insignificant result at a 0.05 threshold level (Barrett, 2007), thus the Chi-square value is mostly referred to as ‘badness of fit’ or ‘lack of fit’ measure. Chi-square statistics is the essential measure used for Structural Equation Modeling (SEM) to compute the variations between the estimated and observed covariance matrices. Larger value of Chi-square in relation to the degree of freedom indicates that the observed and estimated matrices vary significantly. Statistical significance level indicates the likelihood that these variations are exclusively due to variations in sampling. Thus, the p-value of Chi-square test should be large, indicating no statistical difference between the matrices. While the Chi-square statistics retains its popularity as a fit statistic, there exist a number of severe limitations in its use.

Firstly, this test assumes multivariate normality and severe deviations from normality may result in model rejections even when the model is properly
specified (McIntosh, 2006). Second, because the Chi-square statistic is in essence a statistical significance test, it is sensitive to sample size which means that the Chi-square statistic nearly always rejects the model when large samples are used. On the other hand, where small samples are used, the Chi-square statistic lacks power and because of this may not discriminate between good fitting models and poor fitting models (Kenny & McCoach, 2003). Now a days, researchers are using Chi-square and degree of freedom ratio, a value less than 5 is deemed appropriate for model to be fit.

ii. Goodness-of-fit statistics (GFI)

The Goodness-of-fit statistic (GFI) is created by Joreskog & Sorbom in 1993 as an alternative to the Chi-square test and calculates the amount of variance that is accounted for by the estimated population covariance. By looking at the variances and co-variances accounted for by the model, it shows how closely the model comes to replicating the observed covariance matrix. This statistic ranges from 0 to 1. When there are a large number of degrees of freedom in comparison to sample size, the GFI has a downward bias (Sharma et al., 2005). In addition, it has also been found that the GFI increases as the number of parameters increases and also has an upward bias with large samples. Traditionally, a collection cut-off point of 0.90 has been recommended for the GFI. However, simulation studies have shown that when factor loadings and sample sizes are low a higher cut-off of 0.95 is more appropriate (Miles & Shevlin, 1998).

iii. Adjusted GFI (AGFI)

Related to the GFI is the AGFI which adjusts the GFI based upon degrees of freedom, with more saturated models reducing fit. In addition to this, AGFI tends to increase with sample size. As with the GFI, values for the AGFI also range between 0 & 1 and it is generally accepted that values of 0.90 or greater indicate well fitting models.
iv. **Root Mean Square Residual (RMSR) and Standardised Root Mean Square Residual (SRMR)**

The RMSR and the SRMR are the square root of the difference between the residuals of the sample covariance matrix and the hypothesized covariance model. The range of the RMSR is calculated based upon the scales of each indicator, therefore, if a questionnaire contains items with varying levels (some items may range from 1-5 while others range from 1-7), the RMSR becomes difficult to interpret (Kline, 2005). The standardized RMR (SRMR) resolves this problem and is therefore much more meaningful to interpret. Values for the SRMR range from zero to 1.0 with well fitting models obtaining values less than .05, however values as high as 0.08 are deemed acceptable. A SRMR of 0 indicates perfect fit but it must be noted that SRMR will be lower when there are high number of parameters in the model and models are based on large sample sizes.

v. **Root Mean Square Error of Approximation (RMSEA)**

The RMSEA is first developed by Steiger in 1990. The RMSEA tells us how well the model with unknown but optimally chosen, parameter estimates would fit the populations’ covariance matrix. In recent years, it is regarded as one of the most informative fit indices. Recommendations for RMSEA cut-off points have been reduced considerably in the last fifteen years. Up till the early nineties, a RMSEA in the range of 0.05 to 0.10 is considered an indication of reasonable fit and values above 0.10 indicated poor fit. It is then thought that an RMSEA between 0.08 to 0.10 provides a mediocre fit and below 0.08 shows a good fit (MacCallum et al., 1999). However, more recently, a cut-off value close to .06 or a stringent upper limit of 0.07 seems to be the general consensus amongst authorities in this area. One of the greatest advantages of the RMSEA is its ability for a confidence interval to be calculated around its value. This is possible due to the known distribution values of the statistic and subsequently allows for the null hypothesis (poor fit) to be tested more precisely. In a well-fitting model, the lower limit is close to 0 while the upper limit should be less than 0.08.
5.9.5.2 Incremental Fit Indices

Incremental fit indices, also known as Comparative Fit Indices (McDonald & Ho, 2002). These are a group of indices that do not use chi-square in its raw form but compare the chi-square value to be a baseline model.

i. **Normed Fit Index (NFI)**

Values for this statistic range between 0 and 1 with values greater than 0.90 indicating a good fit. Recently, the cut-off criteria have been set as NFI ≥ .95. A major disadvantage to this index is that it is sensitive to sample size, underestimating fit for samples less than 200 and is thus not recommended to be solely relied on. This problem is rectified by the Non-Normed Fit Index (NNFI or Tucker- Lewis Index), an index that prefers simpler models. However, in situations where small samples are used, the value of the NNFI can show poor fit despite other statistics pointing towards good fit (Kline, 2005). However, it is suggested that NNFI ≥ 0.95 is the threshold level.

ii. **Comparative Fit Index (CFI)**

The Comparative Fit Index is a revised form of the Normed Fit Index (NFI), which takes into account sample size that performs well even when sample size is small. Like Normed Fit Index (NFI), this statistic assumes that all latent variables are uncorrelated and compares the sample covariance matrix with this null model. The cut-off measure of CFI ≥ 0.90 is primarily advanced. However, recent studies have shown that a value greater than 0.90 is needed in order to ensure that miss-specified models are not accepted. From this, a value of CFI ≥ 0.95 is presently recognised as indicative of good fit. Now days, CFI is used in all SEM programs and is one of the most popular fit indices (Fan et al., 1999).