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METHODOLOGY

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METHODOLOGY

This chapter explains the research design used in the study which serves as the blueprint for the collection, measurement and analysis of data. A research design serves as the framework for a study and it is taken as a guide in the collection and analysis of data. Hence this chapter explains the details of the sampling design used, data collection design used and the statistical methods used for data analysis. Main objectives of the study were: 1) To assess the foreign and domestic tourist expectation and satisfaction levels in relation to Kerala as a tourist destination, 2) To understand whether there is any significant relation between demographic variables of the tourists (domestic and foreign) and their satisfaction on different destination attributes, 3) To understand the important variables which determine the resident community support for tourism development, 4) To understand the effect of these different variables on resident community support for tourism development and finally 5) To develop a model of resident community support for the state of Kerala which leads to sustainable development. So the focus of the study was on the resident community at the destinations and the tourists visiting (both domestic and foreign) at these destinations in Kerala. Since data for the study had to be collected from these two groups, decisions had to be made on type of data collected, the type of data collection instrument, type of sampling method and analysis methods for each group separately.

3.1 Research Design

The study includes both exploratory and conclusive research designs. The exploratory research included the steps such as literature review, finalization of objectives, identification of variables, the formulation of hypothesis etc. During the second phase of research, the conclusive research design was used and this stage includes both descriptive research design and the causal research design. The exploratory research design was conducted at the initial part of research, to understand the problem in clear terms, to finalize the objectives, to identify the variables, to formulate the hypothesis etc. Descriptive research design was used to explain the characteristics of the population and the causal research design was used to find out the
causal relationship among the variables. Details of the work carried out under each research design are explained below.

3.1.1 The Exploratory Research

Exploratory research serves as the basis of a good study (Churchill and Iacobucci 2004) and it has to be normally flexible, unstructured and qualitative (Burns and Bush 2002). The exploratory research is often conducted to define a problem more clearly or to uncover the real scope of the problem. The exploratory research in this study was done by reviewing available literature on the area selected for the study, the questionnaire design and it was followed by pilot study for testing the questionnaire. The reliability and validity of the questionnaire was then tested to check whether the questionnaire needs any modification to measure the desired outcome. Based on the results of reliability test and validity test, necessary changes were made in the questionnaire. Then the suitable sample design and data collection designs were finalised during this phase.

a) Literature review

The major objective of the study was to develop a model for tourism for the state of Kerala. So the first aim was to check whether there exists a model for tourism for the state of Kerala. The review on major studies conducted in Kerala revealed that no study was conducted to develop a model for tourism for the state of Kerala. Thus a decision was made to develop a model for tourism which ensures sustainable development. In order to develop a sustainable development model it was important to consider all stakeholders who influence or benefited by tourism industry like the tourist, tourism business operators, resident community and the government and its agencies (Peter E & Ann E, 2006). Among the four stakeholders, a decision was made to find out the most important stakeholder based on pilot study conducted and research reviews. There by the resident community was found to play a decisive role in the

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sustainable development of tourism at a destination. The initiative of Kerala government also supports this view. So the study was intended to develop a model from the resident’s perspective. As tourist is the main actor of the industry, the study also tries to find out the satisfaction of tourist with the tourism industry in Kerala. Thus the present study was intended to explain about two important areas in tourism, first is the importance of “community support for tourism development” and second is to understand the expectation and satisfaction levels of tourist regarding Kerala as a tourist destination. A thorough literature review was conducted on both the areas of study namely community support and tourist satisfaction. The review provided a strong basis for the further research process. The “Perceived Costs of Tourism”, “Perceived Benefits of Tourism”, “Perceived role of Government” and “Overall Community Satisfaction” were the major variables which affect the “Support for tourism development”. The review showed that the satisfaction of tourist visiting a destination was a mix of satisfaction on different destination attributes including both tangible and intangible products (Qu & Li, 1997; Ryan, 1999). So in order to measure the satisfaction of tourists visiting a destination, the experience on all the activities that tourist are involved during their whole trip were included (Augustyn & Ho, 1998). The attributes thus developed were grouped under five major headings viz ‘Accommodation’, ‘Accessibility’, ‘Attraction’, ‘Amenities’ and ‘Attitude of service providers’. After identifying the important variables under both the areas of study, the questionnaire was developed and the next section explains the method adopted for questionnaire design.

b) Questionnaire Design

Three sets of questionnaires were developed, one for the resident community, the second one for the domestic tourists and the third one for foreign tourists. Care was taken to ensure appropriate question wording, question format and proper sequencing for easy understanding.

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i. Tourist questionnaire

One of the objectives of the study was to understand the expectation and satisfaction level of tourists (both domestic and foreign tourists). The review showed that the main questionnaire based methods which were used for measuring customer satisfaction are SERVPERF-service performance (Cronin & Taylor, 1994)\(^7\), SERVQUAL-service quality (Parasuraman, Zeithaml, & Berry, 1988\(^8\)), IPA-Importance-Performance Analysis (Martilla, J. A., & James, J. C. 1997\(^9\)) and HOLSAT-holiday satisfaction (Tribe and Snaith 1998\(^{10}\)).

SERVPERF measures the service performance of the product while the Importance-Performance Analysis measures the performance relative to importance. However SERVQUAL measure the difference between customer’s expectations for excellence and their perceptions of actual service received. SERVQUAL uses a fixed set of attributes under five dimensions-1) “Tangibles”, 2) “Reliability”, 3) “Responsiveness”, 4) “Assurance” and 5) “Empathy” in order to measure the service quality. HOLSAT is another method which is based on the dis-confirmatory paradigm. The HOLSAT model measures the tourist satisfaction based on the difference between the mean score of “expectation” and “experience” for each destination attribute. The study of Truong and Foster (2006)\(^{11}\) strongly recommends that among the four methods of measuring customer satisfaction, HOLSAT is the best tool that can be used to assess the satisfaction of tourists visiting a destination. The major features of HOLSAT model as explained by Truong and Foster (2006)\(^{12}\) are:

1) HOLSTAT does not uses a fixed menu of attributes, instead a set of attributes are developed which are most suitable for a particular destination. These

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\(^12\) ibid
attributes are developed using the secondary literature which includes brochures, government literatures, newspaper articles and other promotional materials. So the HOLSAT instrument gives the freedom to include attributes which are most suitable to a destination.

2) HOLSAT includes statements stating both positive and negative attributes about the destination. Positive attributes highlights the good qualities of the destination while the negative attributes states just the opposite.

3) In this the “expectations” and “experiences” on each destination attributes are measured in a five point Likert scale.

4) Then the difference between the mean score of “expectation” and “experience” for each destination attributes are determined and based on the value, the satisfactions of tourists are determined. The paired-sample t-tests were used to examine whether the difference between expectation and performance scores shows statistical significance.

5) Following this the results are plotted graphically. The graph is drawn by plotting the score for “expectation” against “experience” by using Microsoft Excel spread sheets. A 45° inclined line is drawn to represent “win” and “loss” segments. “Win” segment denotes those attributes where the expectations of the tourists are met or surpassed, “Loss” segment denotes those attributes where the expectations of the tourists are not met and “Draw” denotes those attributes where the expectations of the tourists met with their actual experiences. The graphical representation of results makes this model easy to understand.

The review on the methods used for the measurement of tourist satisfaction clearly shows that HOLSAT is the most appropriate tool to measure the tourist’s satisfaction visiting a destination. The HOLSAT model gives the freedom to include as many destinations attributes which are important for the area selected for the study. So the study used this instrument and the attributes for the questionnaire were developed by including the relevant attributes which are most suitable for Kerala as a tourist destination. The questionnaire contained three sections- first section seek information about the demographic profiles of the tourists and also included questions about the purpose of visit, source of information about Kerala, type of tour, place of origin, mode
of travel used, preferred accommodation facility and two ranking questions. The first ranking question finds out the reason for choosing Kerala as a tourist destination and the other finds out the role played by the Kerala government for the development of tourism. The second and the third sections rates their “expectation” and “experience” of tourists regarding each destination attribute. The order of the statements of the destination attribute were the same for both “expectation” and the “experience” statements to enable ease of use by respondents. A five-point Likert scale was used to rate each of the attributes. The questionnaire for the foreign tourist contains thirty six attributes, of which 24 were positive and 12 were negative. The thirty six key attributes were grouped under the major headings of the “Attractions”, “Accommodation”, “Attitude of the service providers”, “Amenities” and the “Accessibility”. The questionnaire for the domestic tourist contains thirty four attributes which include 24 positive and 10 negative attributes. The pilot study conducted at Fort Kochi gave more insight to the problems under study and was of great benefit in finalising the questionnaire.

ii. Resident Community questionnaire

The literature review on the area of community support for tourism development helped to find out the important variables which determine the “Support for tourism development” and the variables identified were “Perceived Costs of Tourism”, “Perceived Benefits of Tourism”, “Perceived role of Government” and “Overall Community Satisfaction”. Based on the review, a questionnaire was developed and it was evaluated using pilot study. The developed questionnaire contain two sections. The first section included questions about the demographic profiles of the respondents like age, sex, marital status and educational qualification etc. Apart from these, questions related to their involvement in tourism business, their income from tourism business, their length of stay in the present community etc were also included in the first section. And the second section included questions on a five point Likert scale ranging from ‘1-strongly disagree’ to ‘5-strongly agree’ to measure the important variables of the study.
After the questionnaire was framed, the pilot study was conducted. As the data for the study has to be collected from two sample groups—the resident community at the destinations and the tourists which includes both foreign and domestic tourists, the pilot study was conducted for both groups separately. The next section explains the pilot study conducted in the study.

c) Pilot study

A pilot study is a research project that is conducted on a limited scale that helps the researchers to get a clearer idea of what they want to know and how they can best find it out without spending the money, effort and time for a full-fledged study. They are used commonly to trial survey questions and to refine research hypotheses.

i. Pilot study of tourists

A questionnaire was framed based on the review and a pilot study was conducted at Fort Kochi in Ernakulam District among 60 tourists—30 foreign tourists and 30 domestic tourists. The questionnaire was developed using the HOLSAT model (Tribe & Snaith 1998)\(^\text{13}\). It contains three sections. First section seeks information on demographic variables of the tourists, second section contains statement on a five point scale to measure the expectation levels of tourists and section three contains statements on a five point scale to measure the experience of tourists on various destination attributes. The results of the pilot study helped to finalize relevant constructs and their measurements specific to contextual setting used in the study. A structured self-administered questionnaire was used to collect data from 60 tourists in December 2012.

ii. Pilot study of resident community

The questionnaire of resident community consist of two sections, first section seeks information about the demographic variables and the second section contains questions in a five point Likert scale to measure the important variables which affects the community support. The pilot survey of resident community was conducted at Kumbalanghi village in Ernakulm district. Kumbalanghi village is promoted as the first

model tourist village in Kerala as well as in India. The data was collected from the resident community. A structured self-administered questionnaire was used to collect data from 100 households in Nov-Dec 2012.

So after the pilot survey the reliability test and validity test of the two questionnaires were analysed.

d) Testing Validity

According to Davis et al (1993)\textsuperscript{14}, “A measurement scale is valid if it does what it is supposed to do and measures what it is supposed to measure”. The face validity of the three sets of questionnaires (domestic tourists, foreign tourists and resident community) were evaluated by detailed checking of the wording of the items in the questionnaire and their connection to the appropriate frame of reference used in this study. Criterion-related validity describes with the instrument’s capability to measure an item accurately and analyze it. Both the questionnaires used the five-point Likert-type scale which is a popular scaling technique and is widely used in management research. The criterion validity was ensured by using a common scale throughout the questionnaire. Construct validity explains how well the results obtained from the use of the measure fit in the theories around which the test was designed. In this study the construct validity was tested using confirmatory factor analysis. The results were well within the accepted range and thus it ensured the validity criterion.

e) Testing Reliability

Reliability is the degree to which measurements of the particular test are repeatable. Cronbach’s Alpha (R) Test of Reliability is considered as one of the most popular methods for estimating reliability. The present study also uses the Cronbach’s Alpha (R) Test of Reliability. To get a strong internal consistency, the alpha value should be 0.70 or above. The following Table 3.1 gives the alpha value for the 5 constructs used in the resident community questionnaire.

Table 3.1  
*The Cronbach alpha value (resident community)*

<table>
<thead>
<tr>
<th>Variables</th>
<th>Cronbach's Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived Benefits of Tourism</td>
<td>0.967</td>
</tr>
<tr>
<td>Perceived Cost of Tourism</td>
<td>0.947</td>
</tr>
<tr>
<td>Community support for Tourism development</td>
<td>0.895</td>
</tr>
<tr>
<td>Perceived Role of Government</td>
<td>0.797</td>
</tr>
<tr>
<td>Community Satisfaction with the tourism development</td>
<td>0.949</td>
</tr>
</tbody>
</table>

Source: Sample survey

The table shows that all the variables have got the Cronbach alpha value greater than 0.7, which show good strong internal consistency. Thus the questionnaire was further used for the main study. The following Table 3.2 gives the alpha value for the tourist’s questionnaire.

Table 3.2  
*The Cronbach alpha value (Tourists)*

<table>
<thead>
<tr>
<th>Variables</th>
<th>Cronbach's Alpha (foreign)</th>
<th>Cronbach's Alpha (Domestic)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accommodation</td>
<td>0.856</td>
<td>0.845</td>
</tr>
<tr>
<td>Accessibility</td>
<td>0.757</td>
<td>0.758</td>
</tr>
<tr>
<td>Attraction</td>
<td>0.845</td>
<td>0.835</td>
</tr>
<tr>
<td>Amenities</td>
<td>0.832</td>
<td>0.864</td>
</tr>
<tr>
<td>Attitude of service providers</td>
<td>0.920</td>
<td>0.912</td>
</tr>
</tbody>
</table>

Source: Sample survey

The table3.2 shows that Cronbach coefficient alpha value was above 0.7 for the questionnaire used to measure the expectation and satisfaction of tourists.

f) Questionnaire Revision

After the pilot survey, based on the reliability and validity results, necessary corrections were made in the questionnaire. Since the values were within the accepted...
range, not much changes were required in the questionnaires. The pilot survey helped to identify the ambiguous questions accordingly enabled the researcher to make necessary changes before final survey.

3.1.2 Conclusive Research Design

The insights gathered from exploratory research are verified or quantified by conclusive research. It is more formal and structured than exploratory research. The conclusive research may include descriptive or causal research designs. The present study uses both descriptive and causal research designs. Descriptive research is usually concerned with describing a population with respect to important variables selected for the study. There are two basic techniques of descriptive research namely cross-sectional and longitudinal. This study used the cross-sectional technique for conducting the second phase. The cause-effect relationship between variables under study was conducted using causal research design. The suggested model for resident community support includes a set of relationship among the variables and to test the relations among these variables causal research design was used. Malhotra and Birks (1999) define causal research as “conclusive research where the major objective is to obtain evidence regarding cause and effect relationships”. The Structural equation modelling (SEM) analysis was used in this study to explain the different relationship between variables and thus to develop a model for tourism for the state of Kerala. The following sections explains the work carried out under conclusive research design which includes both descriptive and causal research designs.

a) Sampling Design

The sample design explains the methodology adopted for taking the representative sample from the population. In this study there were mainly two samples and for the first sample, the population comprises of all the local residents who were 15 years old or older and are those affected by the tourism development in their community. The population for the second sample consist of all the tourists (both domestic and foreign) visiting the destinations in Kerala at the point of study. The sampling design includes the determination of the sample unit, the sample size and the

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sampling technique.

i. Sampling Design for Tourists

The sampling design adopted for the group tourists explains about the sample unit, the sample size and the sampling technique used. The sample unit is an element in the sample and in this study it was tourist (both domestic and foreign) visiting a destination in Kerala. The sample size for tourists was taken as 400. Multistage sampling method was used to form an adequate representative sample.

- At the first stage of sampling, districts which contributes more than 5% to the total tourist flow as per the Kerala tourist statistics 2010 (Annexure D) were selected and accordingly 5 districts were selected. The selected districts were Thiruvananthapuram, Alappuzha, Kottayam, Ernakulam and Idukki.

- At the second stage, from each district, destinations (Annexure E) which contribute more than 20% to the total district tourist flow (Department of tourism Kerala, 2010\(^{16}\)) were selected. Thus a total of 8 destinations were selected and the selected destinations were Thiruvananthapuram city, Kovalam, Alappuzha, Kumarakom, Munnar, Thekkady, Fort Kochi and Cochin city.

- At the third stage, from each destinations sample were drawn using convenience sampling method. From each destination, the number of sample unit was taken based on the proportion of tourist inflow and it is shown in Table: 3.3. As it is not possible to know about the details of tourists in advance, convenience method was used. But the data collection method was not based on prejudice. The selection of sample was purely by chance and not by prior decision from all the tourists present in the destination at the time of visit.

\(^{16}\) Department of tourism Kerala(2010). The Kerala tourist statistics, www.keralatourism.org
Table 3.3

The details of number of tourists sample units selected for the study

<table>
<thead>
<tr>
<th>Si no</th>
<th>Destinations</th>
<th>No of Domestic Tourists</th>
<th>No of Foreign tourists</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Thiruvanadhapuram</td>
<td>19</td>
<td>19</td>
</tr>
<tr>
<td>2</td>
<td>Kovalam</td>
<td>49</td>
<td>49</td>
</tr>
<tr>
<td>3</td>
<td>Alappuzha</td>
<td>18</td>
<td>18</td>
</tr>
<tr>
<td>4</td>
<td>Kumarakom</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>5</td>
<td>Munnar</td>
<td>9</td>
<td>9</td>
</tr>
<tr>
<td>6</td>
<td>Thekkady</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>7</td>
<td>Fort Kochi</td>
<td>29</td>
<td>29</td>
</tr>
<tr>
<td>8</td>
<td>Cochin city</td>
<td>52</td>
<td>52</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>200</td>
<td>200</td>
</tr>
</tbody>
</table>

Source: Authors data

ii. Sampling Design for Resident community

The sample unit for the study was taken as a person who is residing at a tourist destination in Kerala with an age of 15 years or more and is affected by the tourism development activities. The total sample size taken was 800. The sampling technique used was the multistage sampling method.

- At the first stage of sampling, districts which contributes more than 5% to the total tourist flow as per the Kerala tourist statistics 2010 (Annexure D) were selected and accordingly 5 districts were selected. The selected districts were Thiruvananthapuram, Alappuzha, Kottayam, Ernakulam and Idukki.

- At the second stage, from each district, destinations (Annexure E) which contribute more than 20% to the total district tourist flow (Department of tourism Kerala, 2010\(^\text{17}\)) were selected. Thus a total of 8 destinations were selected and the selected destinations were Thiruvananthapuram city, Kovalam, Alappuzha, Kumarakom, Munnar, Thekkady, Fort Kochi and Cochin city.

\(^{17}\) Department of tourism Kerala (2010). The Kerala tourist statistics, www.keralatourism.org
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- At the third stage, from the destinations 24 wards were selected where the tourism is actively promoted. From Thiruvananthapuram city ward no: 30(Palayam), ward no 39(Fort) and ward no 83 (Sanghumagham) were selected. From the Fort Kochi, ward no 1 (Fort Kochi) was selected. From Ernakulam City, ward no: 60 (Ernakulam south) and Ward no 64 (Ernakulam central) were selected. From Thekkady which comes under Kumali Grama panchayath, ward no 1 (Thekkady) was selected. From Alappuzha which comes under Alappuzha Municipality, ward no 20 (Civil Station) and ward no 17 (Boat Jetty) were selected. From the destination Munnar which comes under Munnar Grama panchayath, ward no 12 (Rajamala) and ward no 9(Munnar town) were selected. From the destination Kovalam which comes under Vizhijham grama panchayath, ward no 1(Kovalam) was selected. From Kumarakom 12 wards were selected because the responsible tourism activity is spread across the entire wards of Kumarakom. The number of households in each ward as per the panchayath level statistics 2006 are shown in Table:3.4

- At the fourth stage, from the wards selected, based on the total number of households, samples were drawn using random sampling approach. Thus a total of 800 households were selected out of the 24062 households.

Table No 3.4
The details of sampling units selected from resident community

<table>
<thead>
<tr>
<th>Si No</th>
<th>Destination</th>
<th>Ward</th>
<th>Total no of households</th>
<th>No of sample units</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Fort Kochi (Kochi Munci. Corp)</td>
<td>Ward no:1</td>
<td>1835</td>
<td>100</td>
</tr>
<tr>
<td>2</td>
<td>Ernakulam City (Kochi Munci. Corp)</td>
<td>Ward no: 60</td>
<td>2157</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ward no 64</td>
<td>1564</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Thekkady (Kumali Grama panchayath)</td>
<td>Ward no:1</td>
<td>464</td>
<td>100</td>
</tr>
<tr>
<td>4</td>
<td>Alappuzha (Alappuzha Municipality)</td>
<td>Ward no 20</td>
<td>723</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ward no 17</td>
<td>581</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Munnar (Munnar Grama panchayath)</td>
<td>Ward no 12</td>
<td>824</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ward no 9</td>
<td>852</td>
<td></td>
</tr>
</tbody>
</table>
Table No 3.4 Continued....

The details of sampling units selected from resident community

<table>
<thead>
<tr>
<th>Si No</th>
<th>Destination</th>
<th>Ward</th>
<th>Total no of house holds</th>
<th>No of sample units</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>Thiruvandhapuram city (M Corp.)</td>
<td>Ward no:30</td>
<td>1830</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ward no:39</td>
<td>2343</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ward no:83</td>
<td>5251</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Kovalam (Vizhijham Grama panchayath)</td>
<td>Ward no 1</td>
<td>518</td>
<td>100</td>
</tr>
<tr>
<td>8</td>
<td>Kumarakom (Kumarakom Grama panchayath)</td>
<td>Entire 12 wards</td>
<td>5120</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TOTAL</td>
<td>24062</td>
<td>800</td>
</tr>
</tbody>
</table>

Source: Kerala Panchayath level statistics 2006

b) Data collection Design

As this study includes two samples groups, the tourists and resident community, data were collected from these two groups separately.

i. Data collection Design for Tourists

The questionnaire was personally administrated to tourists. The sample units were selected on a random basis after visiting the selected destinations without any prejudice on considering or rejecting a particular respondent. The randomness was achieved as selection from all the tourists present in the destination at the time of visit. It was purely by chance and not by prior decision. The respondents were met at the destinations and only those who offered readiness to participate in the survey were considered. The survey was conducted during the period November 2012 to January 2013.

ii. Data collection Design for Resident Community

Random sampling method was used to select the houses and the data was collected from one person from each house selected. The data collection was done personally by meeting the respondents individually. A structured self-administered

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questionnaire was used to collect data from 800 households selected. The survey was conducted during the period February 2013 to May 2013.

c. Data Analysis

As the study includes three sets of questionnaires, each questionnaire has to be analysed separately to achieve the objective of study.

i. Analysis of Tourist Data

The HOLSAT model (Tribe and Snaith 1998) was used in the questionnaire. The second and third sections questionnaire was developed based on the HOLSAT model. The first section contains questions on demographic data and some general questions about the visit. The domestic as well as foreign tourist’s data analysis helps to understand about their purpose of visit, their source of information about Kerala, type of tour conducted, place of origin, mode of travel used, preferred accommodation facility etc. Analysis also resulted in explaining the reason for choosing Kerala as a tourist destination and the roles of the Kerala government for the development of tourism. The section two and section three contains statements on a five point scale, describing the different destination attributes of Kerala. The HOLSAT model questionnaire contains both positive and negative attributes about the destination. Positive attributes highlights the good qualities of the destination and negative attributes states just the opposite. After checking the reliability, the next step in the analysis of HOLSAT model was to find out the mean score of the entire positive and all the negative attributes. Then the differences between the mean scores were calculated. The paired-sample t-test was used to test the degree of significance between the “expectation” and “experience” scores at the 1:1000 level. The result of the paired-sample t-test helps to test the statistical significance of the difference between “expectation” and “experience” scores and also helps to make an evaluation of the influence of administering the questionnaire only once. Then a graph is drawn by plotting the score for “expectation” against “experience” by using Microsoft Excel spread sheets. A 45° inclined line is drawn to represent “win” and “loss” segments. “Win” segment denotes those attributes where the expectations of the tourists are met.

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or surpassed, “Loss” segment denotes those attributes where the expectations of the tourists are not met and “Draw” denotes those attributes where the expectations of the tourists met with their actual experience. The graphical representation of results makes this model easy to understand. The interpretation are reverse for the negative attributes since the “experience” scores for negative attributes shows that, the actual performance of the attribute was not as bad as initially thought by the tourist. Thus the HOLSAT result measures the satisfaction of tourists with the destination attributes of Kerala.

ii. Analysis of Resident Community Data

This study was concerned to find out the causal relationships between “Perceived Costs of Tourism”, “Perceived Benefits of Tourism”, “Perceived role of government”, “Overall Community Satisfaction” and “community support”. Thus the study was intended to develop a model of resident community support for tourism development for the state of Kerala. After the data collection, data was screened to avoid incomplete questionnaire. The first section of the questionnaire seeks information about the demographic profiles of the residents like the age groups in which they were included, their educational qualifications, marital status, information about the years lived in the present community, income from the tourism business etc. The second section contains questions on a five point Likert scale. The items ‘perceived benefits of tourism’, ‘perceived cost of tourism’, ‘perceived role of government’ and ‘community support for tourism’ were measured on five point Likert scale where 1 represented ‘strongly disagree’ and 5 ‘strongly agree’. Then after checking the reliability, an EFA (exploratory factor analysis) was conducted to find out the factors under each construct. Then the next attempt was to develop measurement models for all latent constructs considered for the study.

Using Confirmatory factor analysis (CFA) and by testing the goodness of fit measurement models were developed and final indicators capable of measuring the constructs were finalized. Then using Structural Equation Modelling the final model of the study was developed. The study used a four-step approach to develop a model and it is as follows:
1. Underlying constructs measuring the “Perceived Costs of Tourism”, “Perceived Benefits of Tourism”, “Perceived role of government”, “Overall Community Satisfaction” and “Community Support” were examined by using Cronbach reliability (Cronbach & Meehl, 1955).20

2. Underlying constructs measuring the “Perceived Costs of Tourism”, “Perceived Benefits of Tourism”, “Perceived role of government”, “Overall Community Satisfaction” and “Community Support” were identified by using an exploratory factor analysis (EFA);

3. Then a confirmatory factor analysis (CFA) was done to validate the underlying constructs measuring the “Perceived Costs of Tourism”, “Perceived Benefits of Tourism”, “Perceived role of government”, “Overall Community Satisfaction” and “Community Support”; and

4. A theoretical model was suggested and tested to examine the relationships between these variables. The structural equation modelling was used to develop a model for resident community support for tourism development.

d. Structural Equation Modeling

According to Hoyle (1995)21 “SEM is a comprehensive statistical approach to testing hypotheses about relations among observed and latent variables”. According to MacCalum & Austin, (2000)22, SEM helps to test hypothesized patterns of direct and indirect relationships among the observed and unobserved variables. The observed variables are the measured variables and the latent variables are the unobserved variables. Structural equation models are an extension to the regression models as it tests the relationship between multiple independent and dependent variables. SEM is a useful method for testing the set of relationships among observed and unobserved variables. One of the important characteristics of structural Equation Modeling is that

Chapter 3

Methodology

it uses several statistical tests (e.g., “chi-square”, “Comparative Fit Index (CFI)”, “Bentler-Bonett Nonnormed Fit Index (NNFI)”, “Root Mean Squared Error of Approximation (RMSEA)” to determine the significance of the analysis. The present study aims to find out the important factors which affect the resident support for tourism development and also to find out the relationship among these factors. Since this study required the hypothesized model to be tested for the best-fit of the data, SEM seemed to be the appropriate analysis method as it produces more comprehensive overall goodness-of-fit. As the SEM provides a graphical representation of the model, it is a suitable and powerful way to show composite relationships.

There are two approaches for doing Structural Equation Modelling namely “covariance-based SEM” and “component-based SEM”.

1. The Covariance-based approach was developed by Karl Jöreskog. The main objective of using this is to validate a model and a large sample is required to do this approach. The full information methods like “Maximum Likelihood (ML)”, “Unweighted Least Squares (ULS)” etc are various methods of estimation used for conducting covariance-based SEM. There are various software developed for performing this type of SEM like AMOS, LISREL, EQS etc.

2. The “component-based SEM” approach was developed by Herman Wold and this is known under the name "PLS" (Partial Least Squares). This method is a partial information method and is a two-step method. During the first step, using the PLS algorithm the scores of latent variables are computed and then for estimating the structural equations, OLS regressions are done on the LV scores. There are various software developed for performing this type of SEM like PLS-Graph, Smart PLS, Warp PLS etc. If the sample size is small or if the normal distribution are not met or if the main aim of the study is to make a prediction than parameter estimation, then the best suitable method is the “Partial Least Squares method”.

The reviews on the area community support for tourism shows that most of the studies had used the covariance-based SEM. Some studies used AMOS and some used LISREL to develop the model. So the present study also uses the covariance-based
SEM (AMOS) to test the relationship among the variables. According to Kline (2005)\textsuperscript{23} there are five distinct steps for using Covariance based SEM. They are:

1. Model specification;
2. Model identification;
3. Measure selection, data cleaning and preparation;
4. Model analysis and evaluation; and
5. Model re-specification

The diagrammatical or mathematical representation of all the hypothetical relationship between the variables is termed as Model specification. The specified model is theoretically identifiable. That means there should have a unique solution possible for the model and each of its parameters. If a model is not identifiable, then it has no unique solution and SEM software will fail to converge. Thus the present study suggests a diagrammatical model which represented all the hypothetical relationship between variables which were identified from the literature review (“Perceived Costs of Tourism”, “Perceived Benefits of Tourism”, “Perceived role of government”, “Overall Community Satisfaction” and “Community Support”). After the model specification and model identification, the next question was how to measure the variables under study. At least two observed variables are needed to measure each latent construct. So the next step was to examine whether sufficient observed variables were there to measure all the latent variables under study. In the present study, the “perceived role of Government” was consisted of 16 items, the “perceived benefits of tourism” consisted of 11 items, the “community satisfaction” consisted of 10 items, the “perceived cost of tourism” with 14 items and the “community support” consisted of 6 items. The EFA on these variables resulted many factors under each except the “community support” which was measured as a single factor. Thus in this study, more than two observed variables were identified to explain each latent construct under the main variables. Then the outliers, normality, missing variables etc should be identified and properly treated in this stage. The next stage was ‘Model analysis’ and ‘evaluation’.

The AMOS software uses a set of significance tests to assess the adequacy of model fit during the Model evaluation stage. The present study also used the AMOS software for model analysis and evaluation. Fit refers to the ability of a model to reproduce the data. The following Table 3.5 gives the acceptable values for the fit indices.

Table 3.5

Fit Indices and their acceptable thresholds

<table>
<thead>
<tr>
<th>Fit Index</th>
<th>Acceptable Threshold Levels</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Absolute Fit Indices</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chi-Square $X^2$</td>
<td>Low $X^2$ relative to degrees of freedom with an insignificant p value($p&gt;0.05$)</td>
<td></td>
</tr>
<tr>
<td>Relative $X^2/(X^2/df)$</td>
<td>$2:1$ (Tabachnik and Fidell, 2007) $^{24}$ $3:1$ (Kline, 2005)</td>
<td>Adjusts for sample size</td>
</tr>
<tr>
<td>Root Mean Square Error of Approximation (RMSEA)</td>
<td>Values less than 0.07 (Steiger, 2007) $^{25}$</td>
<td>Has a known distribution. Favours parsimony. Values less than 0.03 represent excellent fit.</td>
</tr>
<tr>
<td>GFI (Goodness-of-fit)</td>
<td>Values greater than 0.95</td>
<td>Scaled between 0 and 1, with higher values indicating better model fit. This statistic should be used with caution.</td>
</tr>
<tr>
<td>AGFI (Adjusted Goodness-of-fit)</td>
<td>Values greater than 0.95</td>
<td>Adjusts the GFI based on the number of parameters in the model. Values can fall outside the 0-1.0 range.</td>
</tr>
<tr>
<td>RMR (Root Mean Square Residual)</td>
<td>Good models have small RMR (Tabachnik and Fidell, 2007) $^{26}$</td>
<td>Residual based. The average squared differences between the residuals of the sample covariances and the residuals of the estimated covariances.</td>
</tr>
<tr>
<td>SRMR (Standardised Root Mean square Residual)</td>
<td>SRMR Less than 0.08 (Hu and Bentler, 1999) $^{27}$</td>
<td>Standardised version of the RMR. Easier to interpret due to its standardised nature</td>
</tr>
</tbody>
</table>

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$^{26}$ Ibid.

### Table 3.5 Continued....

**Fit Indices and their acceptable thresholds**

<table>
<thead>
<tr>
<th>Fit Index</th>
<th>Acceptable Threshold Levels</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Incremental Fit Indices</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NFI (Normed-fit index)</td>
<td>Values greater than 0.95</td>
<td>Assesses fit relative to a baseline model which assumes no covariances between the observed variables. Has a tendency to overestimate fit in small samples.</td>
</tr>
<tr>
<td>NNFI (TLI) (Non-Normed Fit Index Or Tucker-Lewis Index)</td>
<td>Values greater than 0.95</td>
<td>Non-normed, values can fall outside the 0-1 range. Favours parsimony. Performs well in simulation studies( Sharma et al.2005; McDonald and Marsh, 1990)</td>
</tr>
<tr>
<td>CFI (Comparative fit index)</td>
<td>Values greater than 0.95</td>
<td>Normed, 0-1 range</td>
</tr>
</tbody>
</table>

*Source: Hooper, Coughlan and Mullen (2008)*

If the values of the goodness of fit indices were within the accepted range then no need of model re-specification. The model re-specification is required when goodness of fit is not achieved in the initial evaluation. Re-specification is done on the basis of modification indices to finalize a good-fitting model. Based on the value of fit indices the present study also succeeded in finalising a good-fitting model. Thus the SEM analysis acts as a valuable tool for representing, estimating and testing a network of relationships between the variables under study.

### 3.2 Chapter Summary

This chapter explains the methodology adopted for the study. The chapter provides the detailed description of the sampling design, questionnaire design, data collection design and the analysis design used in the study. Thus this chapter provides the clear insight of the different steps used in the study. The next chapter presents the report of analysis done with the data collected.

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