CHAPTER NO.IV
RESEARCH METHODOLOGY

4.1 Introduction:
To solve systematically the research problem research methodology can be used. In research methodology generally one can study the various steps that are adopted by a researcher in studying his or her research problem along with the logic behind them. The researcher requires knowing not only the research methods techniques but also the methodology. Researcher required to know how to develop certain indices or tests, how to calculate the mean, the mode, the median or the standard deviation or chi-square, how to apply particular research techniques, but they also need to know which of these methods or techniques, are relevant and which are not, and what would they mean and indicate and why. Researchers are also required to know the criteria by which they can decide that certain techniques and procedures will be applicable to certain problems and others will not. The means which is necessary for the researcher to design his or her methodology for this or her problem as the same may differ from problem to problem.

This chapter mainly focuses on research methodology for doing systematically and theoretically analyzing research for the current study. The main objective of the study was to understand the growth and development of tourism in Vasai Taluka. To understand the factors influencing for the growth and development of tourism in Vasai Taluka region. To understand the growth and development of tourism in Vasai Taluka in detailed study of tourist coming to Vasai Taluka for the purpose of tourism and visiting to the various tourist locations during their visit and also during their stay has been studied, data from different hotels present in Vasai Taluka also been collected to know the type of tourist visit to Vasai Taluka for tourism purpose and their stay in the hotels for the time period came to know and also the flow of tourist to different tourist locations during tourist season and off season and their contribution for the development of tourism in Vasai Taluka, then data is also collected from various resorts present in the Taluka which also helped immensely to know about tourist and their motives movements during weekdays and weekends. For the research data is also collected from available tour operators to understand the number of people came through tour operators to various tourist locations present in Vasai Taluka and also number of people go out of the Taluka to other tourist locations either
in India or out of India and lastly data also collected from the local people to know their various occupations and understanding contribution of tourism for the development of the local area and also employment generation due to movement of tourist. It is also helped to know the occupation of the local people and the percentage of local people engaged in local tourist centers. The contribution of tourism for the development and improvement of the various services are also been through data collection. To fulfill the requirements of research structure questionnaire data has been collected personally by visiting to various tourist centers of Vasai, Virar, Nalasopara and Naigaon. To understand the movement of tourist, positive relation between environment and growth of tourism and in to know the tour operators type of packages provided to tourist and its area of operation one sample t-test is been applied and to know the motive of tourist, positive relation between destination and movement of tourist, positive relation between location and movement of tourist and definite scope is there is present in Vasai Taluka to develop tourism Chi-square test is applied to get the proper result and in order to minimize the errors in data collection and interpretation of data.

4.2 Research Methodology:
It is an empirical research to describe the interrelations between various parameters and factors affecting tourism.

4.3 Area of Research:
The work area is Vasai Taluka which is situated in Palghar district of Maharashtra. The purpose of the study cities like Vasai, Virar, Nalasopara and Naigaon is considered for research because all the tourism activities can be clearly seen in these cities and its nearby areas. It is also consists of around 100 villages. The total population of Vasai Taluka was 12,22,233 in 2011 census out of which 6,49,535 were male and 5,71,698 were female. Data will be collected from various tourist destinations of Vasai Taluka and sample size is 1356. Data is collected from 149 hotels, 98 resorts, 464 tourists, 50 tour operators and 595 local people to get the accurate result of the study. For the research almost all the available hotels, resorts and tour operators are considered.

4.4 Research Design:
Research design is a plan, structure and strategy for doing investigation of study. Research design chosen for this study is descriptive research design. It involved survey method with the help of questionnaire. Questionnaires are made based on the
hypothesis and objectives. Data collected from five different questionnaires of tourist, local people, tour operator, hotel and resorts. Separately data is collected from these five categorized questionnaire to prove the hypothesis.

4.5 Sources of Data Collection:
The data have been collected by using both primary as well as secondary sources.

- Primary Data:
As per the objectives of the research Questionnaire is prepared by the researcher herself. For collecting actual and factual information research has been done at various tourist destinations of Vasai Taluka. It is divided into five categories of Questionnaire one for Tourists, one for Hotels, one for Resorts, one for Tour Operators and lastly for Local People.

- Secondary Data:
Secondary data will be collected from already published books basically of reference books, magazines, research journals, official documents, circulars, periodicals, Internet websites, government records, etc.

4.6 Statistical Tools and Techniques:
Accurate analysis of data using standardized statistical methods is critical in determining the validity of empirical research. Parametric test of significance such as Chi-square test, t-test, ANOVA will be used to test the validity of inference drawn and for testing of hypothesis. To study the relationship between two variables correlation, standard deviation and regression will be used. Data will be presented in the form of bar graph, tables, line graphs, etc.

- Sampling Techniques:
In Survey research a sample is drawn from the population to be surveyed and generalizations are made. The representative sample will be drawn based on the stratified random sampling methods.

- Stratified random sampling:
Stratified sampling is a method of sampling from a population. In statistical surveys when subpopulations within an overall population vary, it is advantageous to sample each subpopulation independently. Before sampling the process of stratification is the process of dividing members of population into homogeneous subgroups. The strata needed to be mutually exclusive. Every element in the population must be assigned to only one stratum. The strata should be collectively exhaustive. No elements related to
population can be excluded. Then there will be application of simple random sampling or systematic sampling within each stratum. This often improves the representativeness of the sample by reducing sampling error. It can create a weighted mean that has less variability than the arithmetic mean of a simple random sample of the population. In computational statistics, stratified sampling is a method of variance reduction when the method called Monte Carlo methods are generally used to estimate population statistics from a known population.

- **Chi-square test:**
A chi-square test, also written as $x^2$ test, is any statistical hypothesis test wherein the sampling distribution of the test statistic is chi square distribution when the null hypothesis is true. Without other qualification, 'chi-squared test' often is used as short for Pearson’s chi square test. The chi-squared test is used to determine whether there is a significant difference between the expected frequencies and the observed frequencies in one or more categories.

In the standard applications of the test, the observations are classified into mutually exclusive classes, and there is some theory, or say null hypothesis, which gives the probability that any observation falls into the corresponding class. The purpose of the test is to evaluate how likely it is between the observations and the null hypothesis.

Chi-squared tests are often constructed from, a sum of squared or through the sample variance. Test statistics that follow a chi-squared distribution arise from an assumption of independent normally distributed data, which is valid in many cases due to the central limit theorem. A chi-squared test can be used to attempt rejection of the null hypothesis that the data are independent.

- **Use of Chi-square Test:**
It can be applied in the following conditions:
- The sampling method is simple random sampling
- The variables under study are each categorical
- If sample data are displayed in a contingency table, the expected frequency count for each cell of the table is at least 5.

This approach consists of four steps:
- State the hypotheses
- Formulate an analysis plan
- Analyze sample data and
Interpret results.

For finding the significance level, often, researchers choose significance levels equal to 0.01, 0.05, or 0.10; but any value between 0 and 1 can be used.

Test method: Use the Chi-square test for independence to determine whether there is a significant relationship between two categorical variables.

P-value: The P-value is the probability of observing a sample statistic as extreme as the test statistic. Since the test statistic is a chi-square, use the Chi-square distribution calculator to assess the probability associated with the test statistic. Use the degrees of freedom computed above.

Interpretation of result: If the sample findings are unlikely, given the null hypothesis, the researcher rejects the null hypothesis. Typically, this involves comparing the P-value to the significance level, and rejecting the null hypothesis when the P-value is less than the significance level.

• **Statistical Significance (T-Test):**
The t-test is also called as student’s T Test. It compares two averages (means) and provides the information if they are different from each other. It also informs how significant the differences are, it tells if those differences could have happened by chance.

• **T-values and P-values:**
Every t-value has a p-value to go with it. A p-value is the probability that the results from the collected sample data occurred by chance. P-values are from 0% to 100%. They are generally written as a decimal. For example, a p value of 5% is 0.05. When there will be low p-values it is quite good. It mainly indicates that the data you have collected did not occur by chance. For example, a p-value of 0.01 means there is only a 1% probability that the results from an experiment happened by only chance. In most of the cases, a p-value of 0.05 (5%) is accepted to mean the data is valid.

• **Types of t-test:**
There are mainly three types of t-test:

  • An independent sample t-test which mainly compares means of two groups.
  • A paired sample t-test compares means from the same group at different times (say, one year apart).
  • A one sample t-test tests the mean of a single group against a known mean.

4.7 Questionnaire Design:
A structured questionnaire will be prepared for the survey of respondents. Predetermined questions shall be prepared. The questions will be prepared by keeping the focus on research objectives.

4.8 Details of Questionnaire:

Questionnaire is created to collect data for the research purpose. To analyze the research five different questionnaires are made like, questionnaire for tourist, questionnaire for hotel, questionnaire for resort, questionnaire for tour operators and lastly questionnaire for the local people.

- **Questionnaire for Tourist:**
  - Name of the tourist.
  - Address of the tourist to know from where they have come to visit the tourist places present in Vasai Taluka.
  - Contact number if they are ready to give it is not compulsory.
  - Age of the tourist to find out the maximum number of tourist visiting the places coming under which age group.
  - Nationality of the tourist to know number of tourist visiting different centers is from within India or out of India.
  - To know sex of the tourist as total number of male, female and others visit Vasai Taluka.
  - Average monthly family income to know their spending capacity.
  - Total number of family members present and out of which the number of members have come for tourism. To know from tourists which tourist location or locations they have selected for tourism purpose by informing them the various tourist centers present in Vasai Taluka are Jivdani temple, Tungareshwar temple, Chandika Devi temple, Jain temple, Arnala beach, Rajodi beach, Suruchi beach, Rangaon beach, Bhuigaon beach, Chinchoti water Fall, Vasai fort, Arnala fort, St. Thomas Catholic Church, Holy Spirit church, IASIA Hospital, Cardinal Gracias Hospital, Government Hospital, Four Fountain De – Stress Spa.
  - To understand motive of visit of tourist number of options given to them as they can choose based on their motive of visit to pilgrim centers, to beaches, for historic significance, to health centers, Enjoy good environment, to celebrate festival, to water fall, to Spa.
To know visit priority of tourist questions are created to understand their priority of visit.

Also asked about the various facilities available in tourist center and what the level of satisfaction was. Accessibility by road/ railway network/air, Attitude of locals, Packages available, Food / drinking water, Tourist information center, Working guides, Travel agent, Tour operators, Hotels, Resorts, Health care centre, Emergency services.

How long tourist will stay when coming for visiting tourist centers. This is to understand the motive of tourist.

Questions are also set to know from tourist from the available sources of information and what was the source for them to know about the various tourist centers which is present in Vasai Taluka and helped them to come to Vasai Taluka.

Suggestions are also asked from tourist if there is any improvement is required in the tourist center.

Questionnaire for Hotel:

Questionnaire for hotel is especially created to know the number of hotels is present in Vasai Taluka and the services generally offering to their customers. Also there is a need to know the number of tourist visiting to the available hotels and their stay. In detailed information collection is the prime aim of setting the questionnaire and collecting data.

Name of the hotel.

Address of the hotel to know the place where exactly it is situated.

Date of commencement of hotel to know from the year of operation.

Whether the hotel is classified one not and if yes then it includes in which category of hotel like Five star deluxe, Five star, Four star, Three star, Two star, One star, Heritage.

Area of operation of the hotel.

Number of people working in the hotel.

Total number of local people working in the hotel to know the employment opportunity for the local people and helping to grow and develop tourism.

What type of pricing strategy uses by the hotel to attract tourist.

To know occupancy rate of the hotel during tourist season and also on off season.
◆ The services provided by the hotel to their guest.
◆ Promotional strategies use by the hotel to promote and develop tourism. Out of the different strategies like Advertisement, Information Brochures, Websites, Publicity, Integrated packages, Participation in fairs.
◆ Services providing by the hotel to tourist and also to know the ranking of services.

**Questionnaire for Resorts:**

Questionnaire for resort is made kept in mind to collect information which is required for the research. It is needed to collect data from resorts because there is a need of collection of information of tourist traveling to resorts and number of employment generated by these resorts to local people.

◆ Name of the resort.
◆ Address of the resort to know its location.
◆ Contact number if they wish to provide.
◆ Area of operation of the resort.
◆ Total number of people working in the resort.
◆ Total number of local people working in the resort to know its contribution towards employment generation.
◆ What is the occupancy rate in week days and in weekends? This will help to know the time and day when maximum tourist visit resort.
◆ What are the services generally resort is providing to their guest. The services are Swimming pool, Food and beverages, Games, Shopping and Emergency health care.
◆ How they promote?
◆ Rating the services provided to tourist by ranking them from one to five point rating scale. Front office, Food and beverage, Housekeeping, safety measures, and Accessibility
◆ What is the future plan of the resort?

**Questionnaire for Tour Operators:**

Tour operator questionnaire is created by keeping in mind the needed data for the research. The aim is to know number of tour operators is operating in Vasai Taluka. How much tourist booking through different tour operators also number of tourist go
out of Taluka to different tourist centers present in other parts of the world. Also to find out total number of local people employed in these tour operators.

- Name of the tour operator.
- Address of the tour operator to know its location of operation.
- Asked for the contact number if they are ready to pay.
- Date of commencement.
- Area of operation means to know what type of operation they are providing to their people.
- Total number of people is employed in tour operator office.
- Total number of local people working in
- Area where they mainly arrange tourism like focus on inbound or outbound tourism.
- Do you arrange tour package for Vasai Taluka?
- The kind of package arrange by tour operators for the tourist like one day, one to two days, two to three days or any other package for the tourist.
- The kind of tourism services provided by the tour operators. Package tour (all inclusive), Hotel reservation, Guided tours, Flight bookings, Train tickets booking, Bus ticket booking.
- The services provided by tour operators and their ranking for different services on a five point rating scale.
- Number of tourists book through your company to various tourist places in India and abroad each year.
- What are the main tourism activities that your company is involved in? Like Leisure Resorts, Sightseeing Tours, Adventure Tourism, Sports, Others.

**Questionnaire for Local People:**

The aim to set up questionnaire for the local people is to know the development of local area due to tourism and contribution of tourism towards growth and development of local people. How tourism has contributed towards employment generation and all round development.

- Name of the person.
- Address of the person to know where exactly the person is staying.
- Phone number of the person if he or she is ready to give.
- Gender of the person whether the person is male or female.
Whether the person is staying in urban area or in rural area.

Residence period of the person either of less than 5 years or of more than 5 years.

Marital status of the person whether he or she is married, Single, Widows or any others.

Family sizes of the person either belonging in the category of 2, 3-4, 4-5 or above 5.

Age group of the person and coming under which category from the categories like: Below 21 years, Between 21 – 30 years, Between 31 - 40 years, Between 41 – 50 years Above 50 years.

Educational qualification of the person. The person is coming under which category of qualification like: No formal education, Primary, Secondary, Graduate, Post graduate or any other.

Yearly income of the person. From the income it can be known the standard of living of the people who is staying in the Vasai Taluka. The income category can be bifurcated into the following groups like: Zero / Nil income group, Below 1 lacs, Between 1 – 2.5 lacs, Between 2.5 – 5 lacs, Above 5 lacs.

Occupation of the person. From the occupation it can be known about the person whether he is employed in any services or in agriculture or may be in industry. Government, Private, Employed elsewhere, Agriculture, Manufacturing, Trade, Self owned, Student, Home maker, Retired or any other.

To know total number of local people you engaged in local center which will help to know the number of people engaged in different occupation.

Area of engagement of the person like: Hotel, Resort, Banking, Insurance, Transportation, Communication, Hospital, Business / Trade, Education, Self employed, Agriculture and any others.

Do you think tourism has contributed for growth and development of various services in local areas? Say in yes or no.

If yes according to you that tourism has contributed for the growth of development of the local area then please rank in a five point rating scale them according to you. Transportation, communication, banking, insurance, hospital, education, hotels, resorts, tour operators, others including business/ trade/ agriculture, etc. Questionnaires are formed by keeping in mind only onr thing to get the best and authentic result from the collected data.