CHAPTER – 3
Research Methodology

3.1 PREAMBLE

The major objective of research in economic development of Kutch after the earthquake is to find out the truth about major economic parameters which effect the individual households, communities, policy makers in the local and national governments or the regional, international community as a whole. Kutchi people are popularly known as an entrepreneur people and they went outside the Kutch for the development. There was no scope of business development in Kutch before few years back. The scenario is changed in last couple of years. It is now important to highlight those economic parameters where growth is substantial. It is my humble effort to bring those facts in to the paper and it can be known to all Kutch business entrepreneurs and other business houses.

3.2 OBJECTIVE OF RESEARCH

The Primary Objectives of research are:

1) To discover new facts about Kutch.
2) To verify and test important facts of Kutch.
3) To analyze an event or process or phenomenon to identify the cause and effect relationship.
4) To develop new scientific tools, concepts and theories to solve and understand problems of Kutch.
5) To find solutions to social problems and
6) To make suggestions which may help in overcoming or solving economic problems of Kutch.

Objectives are proposed in depth study but broad guidelines can be summarized as under:

**General Issues:**
- To know the effect of five years exemption of excise duty and sales tax, announced by central and state government.
- To find out the major factors and areas contributing significantly in Economic growth of the Kutch.
- To know the statistical situation of major areas and factors affecting the Economic of Kutch.
- To become a bridge between institutions working for the benefit of Economy of Kutch and their beneficiaries.
- To create a better economic situation.
- To provide the guidelines to migrants from Kutch went to Mumbai, Ahmedabad, other metro cities and abroad.

**Specific Issues:**
- Find out the agricultural production of various commodities of all Talukas of Kutch.
- Find out the Horticulture production of various fruits and other items of all Talukas of Kutch.
- Find out commodity wise import and export data from various ports of Kutch.
- Find out mining production of each and every commodity.
• Find out the statistics of deposits and advances of all the public sector banks, private banks, gramin banks and co-operative banks of Kutch.

3.3 SCOPE OF RESEARCH

• Scope of Research is restricted to those aspects which are considered most important to economic development.

• It is difficult to survive for a longer period of time in this competitive world if proper utilization of resources and other efficiency parameters are overlooked. It is a natural cycle when you focus on growth, due weightage on other important parameters are not given. The research will provide the link to the people and commercial organizations for their mutual benefits and betterment of the district and nation as a whole.

• Many private and public institutions are working with an object of development of Kutch. They may not have due access to the resources of each other. Federal of Kutch Industrial Association (FOKIA), Bhuj Chamber of Commerce, Gandhidham Chamber of Commerce, Cojain etc. are few name of institutions working with an object of serving to the general public or group of people. The research will provide link between them for the betterment of development of the district.

• Does the development story hold lessons for future natural disasters? Tax breaks will not always work: not all areas are primed for an industrial push, as Kutch was before the quake. Economists will tell you that area-specific tax breaks are a bad idea: they are temporary and unsustainable sops, they divert rather than create industry, and lose revenue for state governments that are already in financial straits. Yet Kutch suggests that tax breaks for a disaster-hit district can catalyse a virtuous cycle of
investment and growth that is sustainable, that gains rather than loses revenue in the long run, and not only rehabilitates victims but raises them to new heights.

- Has industrialization transformed the whole of Kutch or just a few parts of it? Research on the full impact on incomes and assets is required. If this confirms that tax breaks have been a major form of R&R in Kutch, that lesson needs incorporation in to future disaster planning.

### 3.4 NEED OF RESEARCH

- Development story hold lessons for future natural disasters. Tax breaks will not always work: not all areas are primed for an industrial push, as Kutch was before the quake. Economists will tell you that area-specific tax breaks are a bad idea: they are temporary and unsustainable sops, they divert rather than create industry, and lose revenue for state governments that are already in financial straits. Yet Kutch suggests that tax breaks for a disaster-hit district can catalyze a virtuous cycle of investment and growth that is sustainable, that gains rather than loses revenue in the long run, and not only rehabilitates victims but raises them to new heights.

- It is important to know whether industrialization transformed the whole of Kutch or just a few parts of it. We urgently need research on the full impact on incomes and assets. If this confirms that tax breaks have been a major form of R&R in Kutch, that lesson needs incorporation in to future disaster planning.
In earlier years many migrants from Kutch went to Mumbai, Ahmedabad, other Metro Cities and East African Countries for employment and business purposes, are coming back to home district by attracting Socio-Economic growth of the district. The systematic research will provide the proper guidelines for employment and business purpose.

Over populations in metro cities and towns is a major constraint of economic growth of the country. It is essential for the country to develop the more number of areas rather than major development in one single area. The present development of Kutch is not restricted to the one or two town. The detailed research will give some contributions to the nation by giving right directions towards Economic growth.

3.5 HYPOTHESIS

The main Hypothesis of study is as under:

- Kutch is extremely rich region for non-metallic minerals and reserves of these minerals are significant.
- Five years exemption of excise duty and sales tax, announced by the central and state governments, had sparked massive industrialization.
- Increase of average rainfall from 300 mm to 430 mm over a period of last decade had sparked massive agriculture activities.
- Port infrastructure facilities are keep on increasing and it provides a very comfort level of import and export from Kutch.
- Kutch is now becomes the preferred tourist destination due to advertisement of brand ambassador, millennium star “Amitabh
Bachchan” and celebration of Rann-Utsav by state government every year.

3.6 RESEARCH AND RESEARCH METHODOLOGY

Research methods are the various procedures, schemes and algorithms used in research. All the methods used during a research study are termed as research methods. They are essentially planned, scientific and value-neutral. They include theoretical procedures, experimental studies, numerical schemes, statistical approaches, etc. Research methods help us collect samples, data and find a solution to a problem. Particularly, scientific research methods call for explanations based on collected facts, measurements and observations and not on reasoning alone. They accept only those explanations which can be verified by experiments.

Research methodology is a systematic way to solve a problem. It is a science of studying how research is to be carried out. Essentially, the procedures by which we will have to go about work of describing, explaining and predicting phenomena are called research methodology. It is also defined as the study of methods by which knowledge is gained. Its aim is to give the work plan of research.

3.7 IMPORTANCE OF RESEARCH METHODOLOGY IN RESEARCH STUDY

It is necessary for us to design a methodology for the problem chosen. One should note that even if the method considered in two problems is same the methodology may be different. It is important for us to know not only the research methods necessary for the research under taken but also the
methodology. For example, we not only need to know how to calculate mean, variance and distribution function for a set of data, how to find a solution of a physical system described by mathematical model, how to determine the roots of algebraic equations and how to apply a particular method but also need to know

(i) Which is a suitable method for the chosen problem?
(ii) What is the order of accuracy of the result of a method?
(iii) What is the efficiency of the method? And so on.

Consideration of these aspects constitutes a research methodology.

3.8 INTERNET AS MEDIUM OF RESEARCH

From past one decade or so the internet became an important source of knowledge and an effective medium for research. For us it is providing a range of new opportunities for collecting information, networking, conducting research, collecting data and disseminating research results.

Electronic mail, e-journal, on-line submission of articles to journals, online focus groups, online video conferencing and online questioner are some of the latest tools opened-up by the internet. We note that thousands of books and other print publications have been made available online that would be extremely difficult to locate otherwise, including out of print books, and classic literature and textbooks that would be much less accessible in their printed form.
Some of the research information available on the internet are:

- Details about various scientific and nonscientific topics.
- Titles and other relevant information of article published in various journals, possibly, from past one decade or so (full article will not be available).
- Preprint of papers submitted by researchers in certain websites.
- Information about scientific meetings to be held.
- Contact details for other researchers of our area of research.
- Databases of reference material.
- Places where one can discuss topics and ask for help.

In general, academic research that has been commercially published is not freely available on the internet.

Some of the features of conducting research through internet are:

- Short time for collecting and recording data.
- Data unknown to us can be identified and downloaded.
- The possibility of conducting interviews and focus groups by e-mail, which results in enormous saving in costs and time.
- New communities to act as the object of social scientific enquiry.

While the internet contains a virtually-unlimited wealth of information not found in traditional resources, this abundance also may hinder academic research. The following are some of the new challenges for us:

- Problems of sampling.
- Reliability and accuracy of the obtained data information.
• The ethics of conducting research into online communities.
• Physical access and skills required to use the technologies involved.
• The changed chronology of interaction resulting from asynchronous communication.

A major way to find whether an online source is credible is to determine how popular and authoritative the source is. If the site has a well-respected offline counterpart such as the Indian Port Association the site will be as credible as the original. For websites and authors which have little popularity, one must consider the credentials of the source— if those are available and valid. Even though a website may be written in a professional or academic manner, the lack of central body to determine its credibility may be a prohibitive factor for serious research.

Some of the potential advantages of online questionnaire are:

• Low-cost delivery and return.
• Wide potential coverage.
• Ease of completion.
• Submission and data capture.
• Appropriateness to particular populations.
• High respondent acceptance for some groups.

Potential difficulties include:

• The paucity of methodological literature.
• Appropriateness to research aims.
• Target population.
• Technical difficulties.
• Sampling and response rates.
3.9 STEPS FOR RESEARCH METHODOLOGY

3.9.1 Basic Research

Basic research is an investigation on basic principles and reasons for occurrence of a particular event or process or phenomenon. It is also called theoretical research. Study or investigation of some natural phenomenon or relating to pure science is termed as basic research. Basic researches sometimes may not lead to immediate use or application. It is not concerned with solving any practical problems of immediate interest. But it is original or basic in character. It provides a systematic and deep insight into a problem and facilitates extraction of scientific and logical explanation and conclusion on it. It helps build new frontiers of knowledge. The outcomes of basic research form the basis for many applied research. Working on applied research, we will have to make use of the outcomes of basic research and explore the utility of them.

Research on improving a theory or a method is also referred as fundamental research. For example, suppose a theory is applicable to a system provided the system satisfies certain specific conditions. Modifying the theory to apply it to a general situation is a basic research.

Fundamental research leads to a new theory or a new property of matter or even the existence of a new matter, the knowledge of which has not been known or reported earlier.

In a research of economic development of Kutch, following are the basic research areas:

- Talukawise population of male and female
- Statistics of available agriculture land and related crops
- Information about primary school, high school and collages in Kutch
- Information about private and government hospitals in Kutch
- Basic information of income tax payment by residents and non-residents ship owners for their trips to various ports in Kutch
- Information about new projects registered in Jilla Udyog Kendra of Kutch
- Information about number of tourist visited at business destination, religious center and leisure centre of Kutch
- No. of villages connected by all weather roads and no of kacha roads, main roads and other roads
- No. of ports, FTZ, SEZ & industrial estates (GIDC)
- Information of import and export cargo handling in bulk and container from various ports of Kutch
- Information of main crop production and horticulture production in Kutch
- No of bank branch network in Kutch
- As a mineral rich district of Gujarat, basic information about reserve and production of limestone, lignite, bauxite, china clay and silica sand
- Basic information about timber industry
- Basic information about salt industry

3.9.2 Identify the general economic parameters (i.e Bank deposits and advances)

Basic research is performed with an object to gain about the basic knowledge of Kutch. Each and every area of activity has its own way of functioning. Some of the activities are under the close supervision by district or state authorities. Some of the activities are performed at district level but monitored under the supervision of central government for e.g Kandla port is coming under the
preview of Major Port Trust Act of India and control, management accounts and administration are under the management of Shipping Ministry of India.

It is extremely difficult to gather the information of each and every activity performed from the district under one roof. It is essential to identify some benchmark parameters where every commercial activities are broadly linked. It is extremely important to know the statistics of general economic parameters such as banking sector growth which are broadly a consolidation of all business activities.

**Banking Sector Growth**

Aggregate of total deposits and advances of banks in the district is a benchmark of economic scale of activities carried out in and around the district. No of bank branches in and around the district is also representing the economic growth of that area.

**3.9.3 Identify the activities which have significant effect on economic growth parameters**

Fundamental research leads to new theory or a new property of matter or even the existence of a new matter, the knowledge of which has not been known or reported earlier. In basic research, some of the area requires immediate attention and further investigation. The area of activities which require further investigation and have significant effect on economic development of Kutch are agriculture, port sector, mining sector, industrial sector, tourism etc.

- Average rainfall has been increased from 300mm to 430 mm in last decade. Kutch has started growing some new fruits like mango, date, plums, etc. Agriculture and horticulture production of the Kutch increased significantly
As a mineral rich district of Gujarat, Kutch has largest reserves of limestone, lignite, bauxite, china clay and silica sand in the country.

Kutch is an ideal gateway to Asian, African and American markets as Mundra port offers shortest Land route from any part to hinterland of western and northern India. Growth in terms of Cargo handling activities at Mundra is phenomenal.

Five year exemption from excise duty and Sales tax, announced by the central government and state government for new investments in Kutch commencing production before due dates, had sparked massive industrialism.

A significant percentage of total salt production of India is contributed by the district Kutch.

A significant percentage of total timber import and production of India is contributed by the district Kutch.

Tourist flow at Kutch increased significantly due to celebration of Rann-Utsav every year.

3.9.4 Identify the source of data collection

A major way to find whether a source of data is credible is to determine how popular and authoritative the source is. If the source has a well respected counter support of government as the site of Indian Ports Association the source will be credible as the original. It is also necessary sometimes to cross verify the data from the other source. For e.g Statistics of Import/Export cargo handling of Kandla port is available at the website of Indian Ports Association but it is advisable to cross verify the same with data received from EXIM India. On the other way, commodity wise import & export cargo handling details of minor ports are available only from leading newspaper EXIM India. Data accuracy of
EXIM India can be reliable only when we have cross checked some data which was also available at other place.

Data collection of the research work can be broadly classified under the following 4(four) categories:

(1) **Books and journals:**
The topic Economic Development of Kutch after earthquake is a very uncommon topic but indirectly linked with social, geographical and historical issues of the Kutch. There are many books available related to above issues. ‘Kutch Sansodhan Ni Pankhe’ and ‘Smruti of Kutch’ are examples of such type of books. The books available for research are helpful for the basic research. Journals provide us most up to date information and details about the current economic issues.

(2) **Government Departments:**
The main source of data collection is various state and central government departments. Government departments are supposed to keep and share some information for the benefit of the general public.

Information available from the source of government department are mostly reliable but data accuracy will be reliable depending upon the level of computerization within the department. It is essential to cross verify the accuracy of data from the other source if data accuracy is not reliable. During the research following information are collected from government department
<table>
<thead>
<tr>
<th>SR NO</th>
<th>NAME OF THE DEPARTMENT</th>
<th>INFORMATION ABOUT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Indian Ports Association</td>
<td>Data of import &amp; export cargo handling in Kandla Port</td>
</tr>
<tr>
<td>2</td>
<td>Tourism Corporation of Gujarat Ltd.</td>
<td>Data of no of tourist visited for business, religious and leisure places of Kutch</td>
</tr>
<tr>
<td>3</td>
<td>Jilla Udyog Kendra</td>
<td>Information about new projects registered at Kutch</td>
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<td>4</td>
<td>Gujarat Maritime Board</td>
<td>Data of import and export of other than major ports such as Mundra, Mandvi, Jakhau etc.</td>
</tr>
<tr>
<td>5</td>
<td>Geology Department of Gujarat</td>
<td>Data of mining production of various mining materials</td>
</tr>
<tr>
<td>6</td>
<td>Horticulture Department Bhuj</td>
<td>Data of commodity wise details of fruits production of Kutch</td>
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(3) **Private, commercial & social organization:**

Some of the information are not related to any area of activity but directly linked with all economic indicators. It is extremely difficult to collect that information for the district part only. For e.g total deposits and advances of all nationalized private, gramin and co-operative banks of Kutch.

Dana Bank Ltd is a nationalized bank and nominated as a lead bank of Kutch region. Data of total deposits and advances are available with Regional office of Dena Bank at Bhuj. There are many organization formed with an object to promote the business and trade. Some of the organizations are regularly conducting the seminar and publishing the journals which provide useful data about economic activities in and around the Kutch. Kutch Chamber of
Commerce, Gandhidham Chamber of Commerce, Kutch Corporate Forum, etc. are classic examples of such organizations.

(4) **Internet:**
From the past one decade or so the internet became an important source of knowledge and effective medium of research. In earlier days, we used to identify required information and then search for the source of information. Scenario is totally changed due to internet. Google search is such a miracle like “Alladins Chirag” where you ask for the information and we will get the required information in addition to something more which we have never thought about and very much relevant with our subject of research. There are some websites which provides social, economic, geographical & cultural information about the Kutch. Compilation of information according to the requirement of research subject is an art but basic source of data can be easily available from the following websites:

1. [www.kutchmitradaily.com](http://www.kutchmitradaily.com)
2. [www.gujarattourism.com](http://www.gujarattourism.com)
3. [www.kutch.gujarat.gov.in](http://www.kutch.gujarat.gov.in)
4. [www.kcil.co.in](http://www.kcil.co.in)
5. [www.kutchimaady.com](http://www.kutchimaady.com)
6. [www.kutchabhiyan.org](http://www.kutchabhiyan.org)
7. [www.kutchrail.org](http://www.kutchrail.org)
8. [www.kmvs.org.in](http://www.kmvs.org.in)
9. [www.incredibleindia.org](http://www.incredibleindia.org)
10. [www.kutchyuvaksangh.org](http://www.kutchyuvaksangh.org)
11. [www.kutchvagad.com](http://www.kutchvagad.com)
12. [www.kcs-india.com](http://www.kcs-india.com)
3.9.5 Use of Excel in data collection, manipulation & data analysis

Excel spreadsheet are very user friendly and could be used for algebraic calculations and statistical analysis for many kind of economic models. Microsoft excel has the basic features of all spreadsheets, using a grid of cells arranged in numbered rows and letter named columns to organize data manipulations like arithmetic operations. It has a battery of supplied functions to answer statistical, engineering and financial needs. In addition, it can display data as line graphs, histograms and charts, and with a very limited three dimensional graphical display. It allows sectioning of data to view its dependencies on various factors for different perspectives by using a pivot table.

3.9.6 Results and conclusions

The next step after performing the actual research work on the chosen problem is preparation of results and conclusion of the performed work. Predictions, results and conclusion are ultimate goals of the research performed.
There are two indispensable rules of modern research. The freedom of creative imagination necessarily subjected to rigorous experimentation. In the beginning any experimental research on a specific subject, imagination should give wings to the thought. At the time of concluding and interpreting the facts that were collected observation, the imagination should be dominated and prevailed over by concrete results of experiments. We should analyze cause and effect. We should pay attention to minute details also. In fact keenness in observation is the hallmark of any scientific research.

Proper interpretations of the results must be made. Interpretation refers to the task of drawing inferences from the actual research work. It also means drawing of conclusion. Conclusion is based on the study performed. It would bring out relations and processes that underlie the findings. The utility of the outcome of the research greatly lie on proper interpretations and is the hardest part of solving a scientific problem. Interpretation of results is important because it

1) Links the present work to the previous,
2) Leads to identification of future problems,
3) Opens new avenues of intellectual adventure and stimulates the quest for more knowledge,
4) Makes others understand the significance of the research findings and
5) Often suggests a possible experimental verification.

The basic rule in preparing results and conclusion is to give all the evidences relevant to the research problem and its solution. A bare statement of the findings is not enough.
The researcher should not be in hurry while preparing the results and conclusion. After preparing them the researcher should ask the following questions:

1) Are the quantitative and qualitative analysis performed adequate for the conclusion drawn?
2) Are the results and conclusion general?
3) Are the results and conclusion valid only for the particular situation considered in the present work?
4) Is the conclusion too broad considering the analysis performed?
5) Is any evidence which weaken the conclusion omitted?

The results and conclusion prepared can be revised based on the answers to the above questions.

Each and every statement made in the results and conclusion sections must be based on evidence obtained from theoretical or experimental analysis. Baseless statements should never be made.

While doing research particularly experiments, one may land up with an unexpected result or a finding contrary to the underlying theory. Such an observation should not be ignored blindly. It may be pursued to some extent to check whether it yields some useful result. As noted by Warrier the history of science records such fortuitous breaks that led to many classic discoveries.

Never yield to the temptation of fabrication of results and interpretation. Plagiarism in the form of copying data or findings from others’ report without acknowledging the source will make us in trouble. We should not attempt to
report the already reported findings of others as ours. Citing the original sources actually enhances the credibility of our work.

One should note that the observations, claims and the conclusions drawn in a research report are subjected to a criticism by the experts in the concerned field. Therefore, we have to think twice before presenting the outcomes of the research in a journal and in a scientific meeting.