RESEARCH METHOD
Research Method:

Introduction:

Research happens to be the fathomless quest for knowing the unknown. It is an incessant struggle to uncover the hidden truths, a scientific and systematic search for any pertinent information. Imbibing in itself it carries the innate instinct of inquisitiveness that is so natural to the humans. Redman and Mory aptly define research as a 'systematized effort to gain new knowledge'. Elaborating further Clifford Woody defines research as which comprises of defining and redefining problems, formulating hypothesis or suggested solutions; collecting, organizing and evaluating data, making deductions and reaching conclusions; and at last carefully testing the conclusions to determine whether they fit the formulating hypotheses. D.Slesinger and M.Stephenson in the Encyclopedia of Social Sciences define research as “the manipulation of things, concepts or symbols for the purpose of generalizing to extend, correct or verify knowledge, whether that knowledge aids in construction of theory or in the practice of an art.” Research is, thus, an original contribution to the existing stock of knowledge making for its advancement. It is in pursuit of truth with the help of study, observation, comparison and experiment.¹

Thus in common parlance research indicates an unending search for knowledge that goes to enrich the pool of academics. Being an academic activity the term research inherently carries a scientific connotation. The term research, hence, should be used in a technical sense. However, the travels from the known to the unknown necessitate the applications of both science and art. The systematic approach that is put to use in research activity ultimately ends up in providing generalization and theoretical formulations. These end products of the research activity both prompt and promote practical applications of the conclusions reached and therefore enhance the well being of the humans.

Objectives of research:

The purpose of research is to discover ourselves to questions to the application of scientific procedures. The main aim of research is to find out the truth which is hidden and which has not been discovered as yet. Though each research study has its own specific purpose, the research objectives fall into a number of broad groupings as under:

First, to gain familiarity with the phenomenon or to achieve new insights into it (Studies with this subject in view are termed as exploratory or formulative research studies); Second, to portray accurately the characteristics of a particular individual, situation or a group (Studies with this object in view are known as descriptive research studies); Third, to
determine the frequency with which something occurs or with which it is associated with something else (such studies are known as diagnostic research studies); Fourth, to test the hypothesis of a causal relationship between variables (such studies are known as a hypothesis-testing research and studies).²

The present study is being undertaken to gain new insights into the area of Indian foreign trade in the period 1997-2002. The emphasis being on the operational and procedural problems being faced by the exporters and importers. Thus, this study falls under the first group of exploratory studies.

Significance of Research

No less are the contributions made by the research activity in our lives. The academic enhancements and the behavioral enrichments in the form of inductive and logical habits of thinking make research an important activity. It enables one to become more proficient and thus offer lasting contributions to the field of the academics. The efficiency increment which is had in the research activity develops the pool of knowledge and the practical utilities offered by the latter. The research activity breeds a scientific, inductive and logical habit of thinking in a researcher.

Research Methods Vs Methodology

Research methods are techniques used in performing research operations. In other words, all those methods which are used by the researcher during the course of studying his research problem are termed as research methods. The research methods can be put into the following groups:

In the first we include those methods which are concerned with the collection of data. These methods will be used where the data already available are not sufficient to arrive at the required solution;

In the second group those statistical techniques are grouped which are used for establishing relationships between the data and the unknowns;

The third group consists of those methods which are used to evaluate the accuracy of the results obtained.

Research methods falling in the above stated last two groups are generally taken as the analytical tools of research.

Research methodology is a way to systematically solve the research problem. It may be understood as a science of studying how the search is done scientifically. In it we study the various steps that are generally adopted by a researcher in studying his research problem along with the logic behind them. It is necessary for the researcher to know not only the
research methods/techniques but also the methodology. Researchers not only need to know how to develop certain indices or tests, but also they needed to know which of these methods or techniques, are related and why. They also need to understand the assumptions underlying various techniques and they need to know the criteria by which they can decide that certain techniques and procedures will be applicable to certain problems and others will not. All this means that it is necessary for the researcher to design his methodology for his problem as the same may differ from problem to problem.

Research methodology is multi-dimensional and research methods constitute a part of it. The scope of research methodology is wider than of research methods. Thus, when we talk of research methodology we not only talk of the research methods but also consider the logic behind the methods we use in the context of our research study and explain why we are using a particular method or technique and why we’re not using others so that research results are capable of being evaluated either by the researcher himself or by others.3

**Scientific method**

The research activity, as discussed above, imbibes the flare of science in itself. Undoubtedly, it expresses of science an approach that is so essential to it. As a systematic and organized activity, research requires the use of logical and scientific method. It would be difficult to comprehend the nature and content of research without an appreciation of the method we designate as scientific. 4 Thus, the research cannot be thought of without making use of the scientific method. To Karl Pearson the scientific method is one and the same in the branches of science, and that method is the method of logically trained minds. He opined that the unity of all sciences consists alone in its methods, not its material; the man who classifies facts of any kind whatever, who sees their mutual relation and describes their sequences, is applying the scientific method and is a man of science.

Scientific method is the pursuit of truth as determined by logical considerations. The idea of science is to achieve a systematic integration of facts. Scientific method attempts to achieve this ideal by experimentation, observation, logical arguments from accepted postulates and the combination of these three in varying proportions. In scientific method, logic aids in formulating propositions explicitly and accurately so that their possible alternatives become clear. Further, logic develops the consequences of such alternatives, and when these are compared with observable phenomenon, it becomes possible for the researcher or the scientist to state which alternative is most in harmony with the observed facts. All this is done through experimentation and survey investigations which constitute the integral parts of scientific method. The scientific method, thus, is based on certain basic
postulates. It relies on empirical evidence and utilizes relevant concepts. It is committed to
only objective considerations and presupposes ethical neutrality. It results into probabilistic
predictions and its methodology is made known to all concerned for critical scrutiny and for
use in testing the conclusions through replication. It aims at formulating most general
axioms or what can be termed as scientific theories.

Thus, the scientific method encourages a rigorous, impersonal mode of procedure
dictated by the demands of logic and objective procedure. Accordingly, scientific method
implies an objective, logical and systematic method that is a method free from personal bias
or prejudice, the method to ascertain demonstrable qualities of a phenomenon capable of
being verified, a method of wherein the researcher is guided by the rules of logical reasoning,
the method wherein the investigation proceeds in an orderly manner and a method that
implies internal consistency. 5

It is worthwhile to consider what the scientific method is and what makes some
research more scientific than other research. Two general traits characterize the scientific
method: validity and reliability. Validity is the characteristic used to describe research that
measures what it claims to measure. Reliability is the characteristic of a research
methodology that allows it to be repeated again and again by any researcher-always with the
same results. Yet even in the highest realms of science, reliability may be hard to achieve.

Certain criteria, however, distinguish those methods which may be called scientific
from others methods . Three major differences between the scientific and non scientific
methods that affect the reliability and validity of the results are :

- First the objectivity of the investigator,
- Second, the accuracy of measurement, and
- Third, the degree to which the investigation is continuing and exhaustive.

1. **Objectivity of the investigator**: Researchers must base their judgment on the facts,
not all preconceived notions of intuition, if their work is to be scientific. If an
investigator is not completely objective in his thinking, if he's not just as anxious to
find facts supporting one outcome, of his study as another, it is unlikely his work
will be scientific.

2. **Accuracy of measurement**: The scientific method attempts to obtain the most
accurate measurements possible. As the factors to be measured and the measuring
devices available differ from one field of study to another, the accuracy of
measurements differs so widely.
3. **Continuing and exhaustive nature of investigation:** A scientific investigation considers all facts pertinent to the problem at hand. No bit of evidence is passed over because it fails to affect the previously established a pattern. But the mark of the scientific method is more than just refusal to overlook conflicting data; it is the aggressive searching for additional evidence to support, or confound, the existing conclusion. Scientists are never sure that they have found the ultimate truth. They know that many well-established conclusions have been found to be erroneous. It is this constantly challenging attitude that leads to continual progress in science.

- There are certain difficulties in applying the scientific method:
- The investigator is involved in the use of results.
- The measuring devices are imprecise
- There is influence of measurement process on results.
- There is time pressure for results.
- Difficulty is found in using experiments to test hypothesis.\(^6\)

**The Research Process:**

The scientific research process is seen to consist of a few steps that are not mutually exclusive. The steps in the process carry an interlinkage between them and do not necessarily follow any specific order. However, to be of use the research process is thought to be consisting of the following steps:

(I) **Formulation of the research problem and specification of the research objectives:** before embarking upon the research process the researcher has to spell in clear terms the problem he plans to study. The problem could relate to a study between the relationships of two variables or it could be concerned with the state of things. The problem has to be understood by the researcher and it has to be expressed in meaningful terms. The statement of the objectives of the research study must be made in the most unambiguous terms. From an analytical point of view, the research problem can be reframed and rephrased sequentially before taking up the other steps of the search process. The formulation of the research problem is in fact the destination where the research process is ultimately to reach. Therefore, utmost care must be taken in specifying the research problem. The research objectives need to be specified at this juncture. In the present study the research objectives are as under:

(I) To study the Indian foreign trade scenario in the post-liberalization period, between 1997-2002.
(2) To gain an insight as to the trends of Indian foreign trade and analyze its promotional aspects, insurance and financing of India’s foreign trade.

(3) To discuss the role of state/public sector in the Indian foreign trade and study the economic arrangements made by the country.

(4) To dwell upon the contemporary economic, operational/procedural problems faced by the Indian exporters and importers and deliberate upon the long term prospects beyond 2,001 of the Indian foreign trade and the projections/perspective planning made therein.

(II) **Survey of the existing literature:** after having stated the problem and the research objectives, the researcher needs to proceed to make an extensive survey of the existing literature that is available. Such an analysis helps the researcher to assess the relevance of the problem in hand. The present study carries a separate chapter that delineates the previous works which have been undertaken in the concerned field of the research. Attempts have been made to portray the important works that have been undertaken earlier.

(III) **Development and statement of working hypothesis:** had bought this is maybe defined as a proposition on onset of the positions set forth as an explanation for the offense off some specified group of phenomena either that asserted nearly as a provision conjecture to write some investigation or accepted as highly probable in the light of established facts. Quite often it happens to be a predictive statement capable of being tested by scientific methods that relates an independent variable to some dependent variable. It is a result of a-priori thinking and should be stated in clear terms. Occasionally, especially in case of exploratory or formulative researchers, one may not encounter a problem wherein a working hypothesis is required. Such studies and researches actually do not aim to test a hypothesis.

(IV) **Research design preparation:** The research design is the arrangement of conditions for collection and analysis of data in a manner that aims to combine relevance to the research purpose with economy in procedure. In fact, the research design is the conceptual structure within which research is conducted; it constitutes the blueprint for the collection, measurement and analysis of data. As such the design includes an outline of what the researcher will do from writing the hypothesis and its operational implications to the final analysis of the data. The research design is set to carry certain important features which are mentioned below:
RESEARCH METHOD

[1] It is a plan that specifies the sources and types of information that are relevant to the research problem.

[2] It is a strategy that specifies the approach that will be used for gathering and analyzing the data.

[3] It includes also the time and cost budgets since most studies are done under these two constraints.

In short, the research design must, at least, contain: [a] clear statement of the research of problem; [b] procedures and techniques to be used for getting information; [c] the population to be studied; And [d] methods to be used in the processing and analyzing data.

Research design is required as it facilitates the smooth sailing of the various research operations, thereby making research as efficient as possible using maximal information with minimal expenditure of the effort, time and money. It stands for and once planning of the methods to be adopted for collecting the daily went data and the techniques to be used in the end analysis, keeping in view the objective of the research and the availability of the resources. The design helps the researcher to organize his ideas in a form whereby it will be possible for him to look for flaws and inadequacies.

Types of Research Designs

One can broadly and conveniently categorize the research designs into a three categories:

[1] Research design in case of exploratory research studies;
[2] Research design in case of descriptive and diagnostic research and studies; and
[3] Research designs in case of hypothesis-testing the research studies.

(1) Research design in case of exploratory research studies: Exploratory research studies are also termed as a formulative research studies. These studies formulate a problem for more precise investigation. They emphasize on the discovery of ideas and insights. This requires that the research designed for such studies must carry enough flexibility to provide a porch and a default considering different aspects of the problem under study. It is such problem which is broadly defined in the in each of stages is transformed into one with a more precise and meaning in exploratory to the studies. Generally, the under mentioned three methods in the context of research design for such studies are considered:

(a) The survey of concerning literature: opal method of formulating precisely the research problem or developing hypothesis. The hypothesis stated in the
earlier works is reviewed and their utility is evaluated. This could form as a basis for further research. It also needs to be considered whether the already stated hypothesis suggests new hypothesis. Further a bibliographic survey of studies also needs to be made by the researchers in his area of interest. And content can also be made to apply conception duties developed in different research contracts to the area in which the researcher himself is working. Many times the works of creative writers provides a basis to formulate the hypothesis which the researcher need to look into.

Experience survey Reference to the survey of people who have had a practical experience with the problem that is to be studied. It provides insight into the relationships between the variables and the new ideas relating to the problem. This experience-collecting survey enables the researcher to define the problem more concisely.

The analysis of ‘inside-stimulating’ Examples is yet another method for suggesting hypothesis for research. This is however suitable any ideas where there is little experience which can guide the researcher. For this purpose the existing records, if any, maybe examined, off the unstructured interviewing may take place, or some other approach may be adopted. The attitude of the investigator, the intensity of the study and the ability of the researcher to the draw together diverse information into a unified interpretation are the main features which make this method an appropriate procedure for evoking insights.

The experience in this connection indicates that for particular problems certain types of instances are more appropriate than others. One can mention fear examples of ‘inside-stimulating’ Cases such as the reactions of strangers, the reactions of marginal individuals, the study of individuals in transition from one stage to another, the reactions of individuals from different social strata and the like. In general, cases that provide sharp contrasts or have striking features are considered relatively more useful while adopting this method of hypothesis formulation.

Thus, in exploratory or formulating research study that merely leads to insights or hypothesis, whatever method or research design outlined above is adopted, The only thing essential is that it must continue to remain flexible
so that many different facets of a problem may be considered as and when
the arise and come to the notice of the researcher.

(2) Research design in case of descriptive and diagnostic research studies: Descriptive
research studies described the characteristics of a particular individual, or offer
group, whereas diagnostic research studies determine the frequency with which
something occurs or its association with something else. Most of the social
research comes under this category. As regards the research design, the
descriptive as well as diagnostic studies share, requirements and as such we may
group together these two types of research studies. The design in such studies
must be rigid and not flexible. The design in these studies must formulate the
objective of the study, Design the methods of data collection, Select the sample,
collect the data, Process and analyze the data and at last report the findings.

Thus, the research design in case of descriptive/diagnostic studies is a
comparative design throwing light on all points narrated above and must be
prepared keeping into view the objective [S.] of the study and the resources
available. It is referred appropriately as a survey design.

(3) Research design in case of hypothesis-testing research studies: These studies are
also known as experimental studies in which the researcher tests the hypothesis of
causal relationships between variables. As these studies reduce the bias an increase
the reliability, the research design is often the design of experiments.

In the present study the researcher chooses to use the exploratory or
formulative research design. As the overall design requires being flexible in nature
when the problem at hand is considered this research design has been selected by
the researcher. It provides ample opportunities for considering different aspects
of the problem. As against this the descriptive/diagnostic research designs would
not suit the problem in hand as they happen to be rigid in nature.

(V) Determining the Sampling design: All items in any field of inquiry constitute the
'universe' or 'population'. The respondents from the universe should represent the
total population as far as possible. These selected respondents constitute what is
technically called a 'sample'. The selection process is called 'sampling technique'. The
survey so conducted is known as 'sample survey'.

A sample design is a definite plan for obtaining a sample from a given
population. It refers to the technique or the procedure the researcher would adopt in
selecting items for the sample. This design main lay down the number of items to be included in the sample i.e., the size of the sample.

On the basis of representation, the sampling maybe probability sampling or non-Probability sampling. The probability sampling is based on the concept of random selection, whereas non-Probability sampling is ‘non-Random’ Sampling.

Non-probability sampling: It refers to the sampling procedure which does not afford any basis for estimating the probability that each item in the population has of being included in the sample. Non-Probability sampling is also known by different names such as deliberate sampling (convenience), purposive sampling and judgment sampling. In this type of sampling, items for the sample are selected deliberately by the researcher; his choice concerning the items remains supreme. In other words, under non-Probability sampling the organizers of the inquiry purposively choose the particular units of the universe for constituting a sample on the basis that the small mass that they so select out of a huge one will be typical or representative of the whole. There is no assurance in this sampling that every element has some specifiable of being included. In such a design, personal element has a great chance of entering into the selection of the sample. The investigator may select a sample which shall yield results favorable to his point of view and if that happens, the entire inquiry may get vitiated. Thus, there is always the danger of bias entering into this type of sampling technique. However, if the researchers is impartial and hast necessary speeds, the results obtained from an analysis of daily basis a selected sample maybe tolerably reliable.

Probability sampling: It is also referred to as ‘random sampling’ or ‘chance sampling’. Under this sampling design, every item of the universe has an equal chance of inclusion in the sample. The results obtained from probability or random sampling can be assured in terms probability.

The researcher in the present research work makes use of non probability convenience sampling which happens to suit the exploratory research design. In this sampling the elements are selected for inclusion in the sample based on the ease of the access.

(VI) Methods of data collection: After having defined his problem and framing the research design, the researcher should now focus upon the methods of data collection. He has to decide the type of data that is required for his study. This
determines the method of data collection the researcher would undertake in his study.

There are usually two kinds of data which the researchers should keep in mind. They are: (a) primary data; and (B) secondary data. Primary data refers to the information which is connected a fresh and for the first time, and this happens to be original in character. The secondary data, on the other hand, refers to the information which has already been collected by someone else and has been passed through the statistical process.

Primary data collection: There are various methods to collect the primary data. They include the following:

1. Observation method: the researcher observes things around him. The respondent does not occur in the picture. There are many variants in this method such as structured and unstructured observation; participant and non-participants observation controlled and uncontrolled observation, etc.

2. Interview method: The data collection involves the presentation of oral-verbal stimuli and reply in terms of oral-verbal responses. The data can be collected through personal interviews or through telephonic interviews. The variants in this method are structured and unstructured interviews; focused interview; Clinical interview and non-directive interview.

3. Data collection through questionnaires: The questionnaire consists of a number of questions in a definite order on a form or set of forms. It is usually sent by post to the person’s concern with the request was so the questions and return the questionnaire.

4. Data collection through schedules: Carrying much similarity with the questionnaire method, the data here is collected through schedules. Schedules are pro forma containing the set of questions to be filled in by the enumerators specially appointed for the purpose. The enumerators go to the respondents, put the questions to them and record their replies.

5. Other methods: These include the warranty cards (used by channel members to collect product information); Distributor or a store audits (retail outlets Audited by salesman of the distributors); pantry audits (estimates consumption of the basket of goods at the consumer level); Consumer panels (set of consumers arranged to come to an understanding to maintain detailed daily records of their consumption and hand it over to the investigator;
mechanical devices (e.g. eye camera, pupillometric Camera, audio meter etc.); protective techniques (indirect interviewing techniques); Depth interviews; Content-analysis (analyzing the contents of documentary materials such as books, magazines, newspapers and the contents of all other verbal materials which can be the spoken or printed).

Secondary data collection:

The secondary data which has already been collected and analyzed by someone else can also be looked into. It is of two types published data or unpublished data. The published data is usually available in various publications by the government bodies, Technical and trade journals, Books, magazines, newspapers and reports and publications of various associations, and the reports prepared by different research scholars etc. As a note of caution, the researcher is supposed to use the secondary data with utmost care. He must verify the reliability of the data, its suitability to the problem in hand and the adequacy of the data.

Before selecting an appropriate method for data collection the nature, scope and object of inquiry; availability of funds; time factor; and the precision required in the research work needs to be considered.7

In the present study the researcher makes use of both the secondary and the primary data. The secondary data has been collected from various reputed and recognized data sources. The primary data collection has been made through the schedules and personal interviews.

(VII) Project execution: If the execution of the project proceeds on correct lines, the data to be collected would be adequate and dependable. The legislature has to monitor that the project is executed in a systematic and orderly manner.

In the present study proper instructions have been passed on as regards the data collection. A careful watch has been kept on the unanticipated factors in order to keep the work as much a realistic as possible.

(VIII) Analysis of the data: The data analysis requires a number of closely related operations such as establishment of categories, the application of these categories to raw data through coding, tabulation, and then drawing statistical inferences. The unwieldy data should necessarily be condensed into a few manageable groups and tables for further analysis. Thus, researchers should classify the raw data into some purposeful and a usable categories. Tabulation is a part of the technical procedure where in the classified data are put in the form of tables. The analysis work in the
post-tabulation stage is generally based on the computation of various percentages, coefficients, etc. In the present study suitable statistical tools and techniques have been put to use.

(XI) **Hypothesis-testing:** the data analysis is a followed by hypothesis testing if any hypothesis has been formulated earlier. Various statistical tests are there to test the hypothesis. In the present study this stage has been partially modified as this being an exploratory study no hypothesis was stated earlier. The study makes a certain generalizations established on the basis of the data which could serve as a hypothesis to be tested by subsequent researches in the time to come.

(X) **Generalizations and interpretation:** as the research in the present study had no hypothesis to start with, his sought to explain the findings on the on some reasonable basis. This is what is referred to as interpretation.

(XI) **Preparation of the report/thesis:** the researcher at the end has developed the present thesis work.
REFERENCES:


2. op.cit pp02

3. op.cit pp08-11


