



**STUDY MATERIAL**

**RESEARCH  
METHODOLOGY**

(PAPER - 1)























-Essential preliminary task in order to acquaint yourself with the available body of knowledge in your area of interest.

-Literature review is integral part of entire research process and makes valuable contribution to every operational step.

-Reviewing literature can be time-consuming, daunting and frustrating, but is also rewarding. Its functions are:

a. Bring clarity and focus to your research problem;

b. Improve your methodology;

c. Broaden your knowledge;

d. Contextualise your findings.

a. Bring clarity and focus to your research problem;

The process of reviewing the literature helps you to understand the subject area better and thus helps you to conceptualise your research problem clearly and precisely. It also helps you to understand the relationship between your research problem and the body of knowledge in the area.

b.Improve your methodology:

A literature review tells you if others have used procedures and methods similar to the ones that you are proposing, which procedures and methods have worked well for them, and what problems they have faced with them. Thus you will be better positioned to select a methodology that is capable of providing valid answer to your research questions.

c.Broaden your knowledge base in your research area:

It ensures you to read widely around the subject area in which you intend to conduct your research study. As you are expected to be an expert in your area of study, it helps fulfill this expectation. It also helps you to understand how the findings of your study fit into the existing body of knowledge.



#### d..Contextualise your findings:

How do answers to your research questions compare with what others have found? What contribution have you been able to make in to the existing body of knowledge? How are your findings different from those of others? For you to be able to answer these questions, you need to go back to your literature review. It is important to place your findings in the context of what is already known in your field of enquiry.

Procedure for reviewing the literature:

- i) Search for existing literature in your area of study;
- ii)review the literature selected;
- iii)develop a theoretical framework;
- iv)develop a conceptual framework.

Search for existing literature:

-To effectively search for literature in your field of enquiry, it is imperative that you have in mind at least some idea of broad subject area and of the problem you wish to investigate, in order to set parameters for your search.

-Next compile a bibliography for this broad area. Sources are:

1. Books
2. Journals

### **BOOKS**

Comprise a central part of any bibliography. Advantage-material published generally is of good quality and the findings are integrated with other research to form a coherent body of knowledge. Disadvantage-material is not completely up to date, as it can take a few years between the completion of a work and publication in the form of a book. Search for books in your area of interest, prepare a final list, locate these books in the libraries or borrow from other sources. Examine their content, if contents are not found to be relevant to your topic, delete it from your reading list.



## JOURNALS

Journals provide you with the most up-to-date information, even though there is a gap of two to three years between the completion of a research project and the publication in a journal. As with books, you need to prepare a list of journals for identifying literature relevant to your study. This can be done as follows:

- locate the hard copies of the journal that are appropriate to your study;
- use the internet
- look at the index of research abstracts in the relevant field to identify and read the articles.

Whichever method you choose, first identify the journals you want to look at in more detail for your review of literature. Select the latest issue, examine its content page to see if there is an article of relevance to your research topic. If you feel a particular article is of relevance to you, read its abstract. If you think you are likely to use it, photocopy or prepare a summary and record it for reference for later use.

### **Review the literature selected:**

After identifying books and articles as useful, the next step is to start reading them critically to pull together themes and issues that are associated. If you do not have a theoretical framework of themes in mind to start with, use separate sheets of paper for each article or book.

Once you develop a rough framework, slot the findings from the material so far reviewed into that framework, using a separate sheet of paper for each theme of that framework. As you read further, go on slotting the information where it logically belongs under the theme so far developed. You may need to add more themes as you go. Read critically with particular reference to the following aspects:

- Note whether the knowledge relevant to your theoretical framework is confirmed beyond doubt.



- Note the theories put forward, the criticisms of these and their basis, the methodologies adopted and the criticisms of them.
- Examine to what extent the findings can be generalized to other situations. Ascertain the areas in which little or nothing is known-the gaps that exist in the body of knowledge.



### **Develop a theoretical framework:**

As you have limited time it is important to set parameters by reviewing the literature in relation to some main themes pertinent to your research topic.

As you start reading the literature, you will realize that it deals with a number of aspects that have a direct and indirect bearing on your research topic. Use these aspects as a basis for developing your theoretical framework.

Until you go through the literature you cannot develop a theoretical framework and until you have developed a theoretical framework, you cannot effectively review the literature. Literature pertinent to your study may deal with two types of information:

- Universal;
- More specific( i.e. local trends or specific program)

In writing about such information you should start with the general information, gradually narrowing down to the specific.

### **Writing up the literature reviewed:**

In order to comply with the first function of literature review i.e. to provide theoretical background to your study:

- List the main themes that have emerged while reading literature.
- Convert them into subheadings. These subheadings should be precise, descriptive of the theme in question, and follow a logical progression.
- Now, under each subheading, record the main findings with respect to the theme in question, highlighting the reasons for and against an argument if they exist, and identify gaps and issues.

In order to comply with the second function of literature review i.e. contextualising the findings of your study- requires you to very systematically compare your findings with those made by others. Quote from these studies to show how your findings contradict, confirm or add to them. It places your findings in the context of what



others have found out. This function is undertaken when writing about your findings i.e. after analysis of your data.





## THE BIBLIOGRAPHY

The bibliography should give a clear, complete description of the sources that were used while preparing the report. It is an alphabetical list as per the author's surname.

### 1. for a Book

Surname of author, name or two initials, Title taken from title page- underlined or in italics, Edition (if more than one), volume if more than one, place of publication, publishers, date on title page or copyright date. e.g. Kothari, C.R., *Research Methods-Methods and Techniques*, 1989, New Delhi

:Wiley Eastern Limited, 4835/24 Ansari Road, Daryaganj, New Delhi 110 006.

### **Step 3 The formulation of objectives:**

-Objectives are the goals you set out to attain in your study.

-They inform a reader what you want to attain through the study.

-It is extremely important to word them clearly and specifically.

Objectives should be listed under two headings:

a) Main objectives (aims);

b) Sub-objectives.

- The main objective is an overall statement of the thrust of your study. It is also a statement of the main associations and relationships that you seek to discover or establish.

- The sub-objectives are the specific aspects of the topic that you want to investigate within the main framework of your study.

-They should be numerically listed.

-Wording should clearly, completely and specifically communicate to your readers your intention.

-Each objective should contain only one aspect of the Study.

-Use action oriented words or verbs when writing objectives.

The objectives should start with words such as 'to determine', 'to find out', 'to ascertain', 'to measure', 'to explore' etc.



The wording of objectives determines the type of research (descriptive, co relational and experimental) and the type of research design you need to adopt to achieve them.

**e.g. Descriptive studies:**

-To describe the types of incentives provides by Hotel XYZ to employees in Mumbai.

-To find out the opinion of the employees about the medical facilities provided by five star hotels in Mumbai.

**Co-relational studies:**

-To ascertain the impact of training on employee retention.

-To compare the effectiveness of different loyalty programmes on repeat clientele.

**Hypothesis -testing studies:**

-To ascertain if an increase in working hours will increase the incidence of drug/ alcohol abuse.

-To demonstrate that the provision of company accommodation to employees in Mumbai hotels will reduce staff turnover.

**CHARACTERISTICS OF OBJECTIVES**

Clear +Complete +Specific + Identify main variables to be correlated + Identify to direction of relationship

I.....Descriptive Studies.....I

I..Correlational Studies (experimental and non-experimental)...I

I.....Hypothesis testing studies.....I

**Identifying Variables:**

In a research study it is important that the concepts used should be operationalised in measurable terms so that the extent of variations in respondents' understanding is reduced if not eliminated. Techniques about how to operationalise concepts, and knowledge about variables, play an important role in reducing this variability.



Their knowledge, therefore is important in 'fine tuning' your research problem. For example:

- 'Jet Airways' is a perfect example of quality cabin service.
- Food in this restaurant is excellent.
- The middle class in India is getting more prosperous.

When people express these feelings or preferences, they do so on the basis of certain criteria in their minds. Their judgment is based upon indicators that lead them to conclude and express that opinion.

These are judgments that require a sound basis on which to proclaim. This warrants the use of a measuring mechanism and it is in the process of measurement that knowledge about variables plays an important role.

### **The definition of a variable:**

An image, perception or concept that can be measured - hence capable of taking on different values- is called a variable.

The difference between a concept and a variable:

Concepts are mental images or perceptions and therefore their meaning varies markedly from individual to individual.

A concept cannot be measured whereas a variable can be subjected to measurement by crude/refined or subjective/objective units of measurement. It is therefore important for the concept to be converted into variables.

<u>Concept</u>	<u>Variable</u>
-Subjective Impression -No uniformity as to its understanding among different people -As such cannot be measured	-Measurable though the degree of precision varies from scale to scale and variable to variable
e.g.	e.g.
Excellent	- gender (M/F)
High achiever	
Rich	-age(xYrY Month)
Satisfaction	-weight(--Kg.)



Domestic	-high (--cms)
Violence	-religion(Cath. Hindu)
	income (Rs. – Per Year)

### Concepts, indicators and variables:

If you are using a concept in your study, you need to consider its operationalisation- that is, how it will be measured. For this, you need to identify indicators- a set of criteria reflective of the concept which can then be converted into variables.

The choice of indicators for a concept might vary with researchers, but those selected must have a logical link with the concept.

Concepts\_\_>Indicators\_\_\_\_>Variables

Concepts	Indicators	Variables	Working definition
Rich	1. Income	3. Income	3. If>Rs100000
	2. Assets	4. Total value of home, car, investment	4. If>Rs250000
Effectiveness	1. No of guests	1. No. of guests served in Month / year	Diff. in before and after level -----do-----
	2. Changes in Rating a) Extent of b) Pattern of	2. No. of excellent per 100 feedback	

Types of measurement scales:

Measurement is central to any enquiry.

The greater the refinement in the unit of measurement of a variable, the greater the confidence, other things being equal, one can place in the findings. S. S. Stevens has classified the different types of into four categories:

- Nominal or classificatory scale
- Ordinal or ranking scale



- Interval scale
- Ratio scale

The nominal or classificatory scale:

A nominal scale enables the classification of individuals, objects or responses into subgroups based on a common/shared property or characteristic.

A variable measured on a nominal scale may have one, two or more subcategories depending upon the extent of variation. For example, 'water' or 'tree' have only one subgroup, whereas the variable "gender" can be classified into two sub-categories: male and female. 'Hotels' can be classified into ---- sub-categories.

The sequence in which subgroups are listed makes no difference as there is no relationship among subgroups.

The ordinal or ranking scale:

Besides categorizing individuals, objects, responses or a property into subgroups on the basis of common characteristic, it ranks the subgroups in a certain order. They are arranged either in ascending or descending order according to the extent a subcategory reflects the magnitude of variation in the variable. For example, "income can be measured either quantitatively (in rupees and paisa) or qualitatively using subcategories 'above average', 'average' and 'below average'". The 'distance' between these subcategories are not equal as there is no quantitative unit of measurement.

'Socioeconomic status' and 'attitude' are other variables that can be measured on ordinal scale.

The interval scale:

An interval scale has all the characteristics of an ordinal scale. In addition, it uses a unit of measurement with an arbitrary starting and terminating points.

For example,

Celsius scale:  $0^{\circ}\text{C}$  to  $100^{\circ}\text{C}$



Fahrenheit scale: 32°F to 212°F

Attitudinal scales: 10-20

21-30

31-40 etc

The ratio scale:

A ratio scale has all the properties of nominal, ordinal and interval scales plus its own property: the zero point of a ratio scale is fixed, which means it has a fixed starting point. Since the difference between intervals is always measured from a zero point, this scale can be used for mathematical operations. The measurement of variables like income, age, height and weight are examples of this scale. A person who is 40 year old is twice as old as one who is 20 year old.

Constructing hypotheses:

As a researcher you do not know about a phenomenon, but you do have a hunch to form the basis of certain assumption or guesses. You test these by collecting information that will enable you to conclude if your hunch was right. The verification process can have one of the three outcomes. Your hunch may prove to be:

1. right;
2. partially right; or
3. wrong.

Without this process of verification, you cannot conclude anything about the validity of your assumption.

Hence, a hypotheses is a hunch, assumption, suspicion, assertion or an idea about a phenomenon, relationship or situation, the reality or truth of which you do not know. A researcher calls these assumptions/hunches hypotheses and they become the basis of an enquiry.

In most studies the hypotheses will be based upon your own or someone else's observation.



Hypotheses bring clarity, specificity and focus to a research problem, but are not essential for a study. You can conduct a valid investigation without constructing formal hypotheses.

The functions of hypotheses:

- The formulation of hypothesis provides a study with focus. It tells you what specific aspects of a research problem to investigate.
- A hypothesis tells you what data to collect and what not to collect, thereby providing focus to the study.
- As it provides a focus, the construction of a hypothesis enhances objectivity in a study.
- A hypothesis may enable you to add to the formulation of a theory. It enables you to specifically conclude what is true or what is false.



## **Step4. PREPARING THE RESEARCH DESIGN**

Research design is the conceptual structure within which research would be conducted.

The function of research design is to provide for the collection of relevant information with minimal expenditure of effort, time and money.

The preparation of research design, appropriate for a particular research problem, involves the consideration of the following:

1. Objectives of the research study.
2. Method of Data Collection to be adopted
3. Source of information – Sample Design
4. Tool for Data collection
5. Data Analysis-- qualitative and quantitative

1. Objectives of the Research Study: Objectives identified to answer the research questions have to be listed making sure that they are:

- a) Numbered, and
- b) Statement begins with an action verb.

2. Methods of Data Collection: There are two types of data Primary Data collected for the first time

Secondary Data – those, which have already been collected and analyses by someone else.

### Methods of Primary Data Collection

#### **OBSERVATION METHOD:**

Commonly used in behavioral sciences It is the gathering of primary data by investigator's own direct observation of relevant people, actions and situations without asking from the respondent. e.g.

- A hotel chain sends observers posing as guests into its coffee shop to check on cleanliness and customer service.
- A food service operator sends researchers into competing restaurants to learn menu items prices, check portion sizes and consistency and observe point-of purchase merchandising.





- A restaurant evaluates possible new locations by checking out locations of competing restaurants, traffic patterns and neighborhood conditions.

Observation can yield information which people are normally unwilling or unable to provide. e.g. Observing numerous plates containing uneaten portions the same menu items indicates that food is not satisfactory.

Types of Observation:

1. Structured - for descriptive research
2. Unstructured – for exploratory research
3. Participant Observation
4. Non- participant observation
5. Disguised observation

Limitations:

- Feelings, beliefs and attitudes that motivate buying behaviour and infrequent behaviour cannot be observed.
- Expensive method - Because of these limitations, researchers often supplement observation with survey research.

## **SURVEY METHOD**

Approach most suited for gathering descriptive information.

**Structured Surveys:** use formal lists of questions asked of all respondents in the same way.

**Unstructured Surveys:** let the interviewer probe respondents and guide the interview according to their answers.

Survey research may be Direct or Indirect.

**Direct Approach:** The researcher asks direct questions about behaviors and thoughts. e.g. Why don't you eat at MacDonald's?

**Indirect Approach:** The researcher might ask: "What kind of people eat at MacDonald's?" From the response, the researcher may be able to discover why the consumer avoids MacDonald's. It may suggest factors of which the consumer is not consciously aware.



### **ADVANTAGES:**

- can be used to collect many different kinds of information
- Quick and low cost as compared to observation and experimental method.

### **LIMITATIONS:**

- Respondent's reluctance to answer questions asked by unknown interviewers about things they consider private.
- Busy people may not want to take the time
- may try to help by giving pleasant answers
- unable to answer because they cannot remember or never gave a thought to what they do and why
- may answer in order to look smart or well informed.

### **CONTACT METHODS:**

Information may be collected by Mail Telephone Personal interview Mail Questionnaires:

Advantages:

- can be used to collect large amounts of information at a low cost per respondent.
- respondents may give more honest answers to personal questions on a mail questionnaire
- no interviewer is involved to bias the respondent's answers.
- convenient for respondent's who can answer when they have time
- Good way to reach people who often travel

Limitations:

- not flexible
- take longer to complete than telephone or personal interview
- response rate is often very low
- Researcher has no control over who answers. Telephone Interviewing:
- quick method
- more flexible as interviewer can explain questions not understood by the respondent



- depending on respondent's answer they can skip some Qs and probe more on others
- allows greater sample control
- response rate tends to be higher than mail

Drawbacks:

- Cost per respondent higher
- Some people may not want to discuss personal Qs with interviewer
- Interviewer's manner of speaking may affect the respondent's answers
- Different interviewers may interpret and record response in a variety of ways
- under time pressure, data may be entered without actually interviewing

Personal Interviewing:

It is very flexible and can be used to collect large amounts of information. Trained interviewers can hold the respondent's attention and are available to clarify difficult questions. They can guide interviews, explore issues, and probe as the situation requires. Personal interview can be used in any type of questionnaire and can be conducted fairly quickly. Interviewers can also show actual products, advertisements, packages and observe and record their reactions and behaviour.

This takes two forms-

Individual- Intercept interviewing

Group - Focus Group Interviewing

Intercept interviewing:

Widely used in tourism research.

- allows researcher to reach known people in a short period of time.
- only method of reaching people whose names and addresses are unknown
- involves talking to people at homes, offices, on the street, or in shopping malls.
- interviewer must gain the interviewee's cooperation



-time involved may range from a few minutes to several hours( for longer surveys compensation may be offered)

--involves the use of judgmental sampling i.e. interviewer has guidelines as to whom to “intercept”, such as 25% under age 20 and 75% over age 60

Drawbacks:

-Room for error and bias on the part of the interviewer who may not be able to correctly judge age, race etc.

-Interviewer may be uncomfortable talking to certain ethnic or age groups.

### **Focus Group Interviewing:**

It is rapidly becoming one of the major research tools to understand people’s thoughts and feelings.

It is usually conducted by inviting six to ten people to gather for a few hours with a trained moderator to talk about a product, service or organization. The meeting is held in a pleasant place, and refreshments are served to create a relaxed environment. The moderator needs objectivity, knowledge of the subject and industry, and some understanding of group and consumer behaviour. The moderator starts with a broad question before moving to more specific issues, encouraging open and easy discussion to bring out true feelings and thoughts.

At the same time, the interviewer focuses the discussion, hence the name focus group interviewing.

-often held to help determine the subject areas on which questions should be asked in a later, large-scale, structured-direct interview  
Comments are recorded through note taking or videotaped and studied later to understand consumer’ buying process.

This method is especially suited for managers of hotels and restaurants, who have easy access to their customers. e.g. Some hotel managers often invite a group of hotel guests from a particular market



segment to have a free breakfast with them. Managers get the chance to meet the guests and discuss what they like about the hotel and what the hotel could do to make their stay more enjoyable and comfortable. The guests appreciate this recognition and the manager gets valuable information. Restaurant managers use the same approach by holding discussion meetings over lunch or dinner.

Drawbacks:

- Cost: may cost more than telephone survey
- Sampling: group interview studies keep small sample size to keep time and cost down, therefore it may be difficult to generalize from the results.
- Interviewer bias.

## **EXPERIMENTAL METHOD**

Also called Empirical Research or Cause and Effect Method, it is a data-based research, coming up with conclusions which are capable of being verified with observation or experiment. Experimental research is appropriate when proof is sought that certain variables affect other variables in some way. e.g.

- Tenderisers (independent variable) affect cooking time and texture of meat (dependent variable).
- The effect of substituting one ingredient in whole or in part for another such as soya flour to flour for making high protein bread.
- Develop recipes to use products.

Such research is characterized by the experimenter's control over the variables under study and the deliberate manipulation of one of them to study its effects. In such a research, it is necessary to get at facts first hand, at their source, and actively go about doing certain things to stimulate the production of desired information.

- Researcher must provide self with a working hypothesis or guess as to the probable results.



- Then work to get enough facts (data) to prove or disprove the hypothesis.

-He then sets up experimental designs which he thinks will manipulate the persons or the materials concerned so as to bring forth the desired information.

Evidence gathered through experimental or empirical studies today is considered to be the most powerful support possible for a given hypothesis.

Lowe, Belle; 1958, *Experimental Cookery*, John Willey & Sons, New York, pp 34-46

## **DETERMINING SAMPLE DESIGN**

Researchers usually draw conclusions about large groups by taking a sample A Sample is a segment of the population selected to represent the population as a whole. Ideally, the sample should be representative and allow the researcher to make accurate estimates of the thoughts and behaviour of the larger population. Designing the sample calls for three decisions:

### **Who will be surveyed? (The Sample)**

- The researcher must determine what type of information is needed and who is most likely to have it.

How many people will be surveyed? (Sample Size)

- Large samples give more reliable results than small samples. However it is not necessary to sample the entire target population.

How should the sample be chosen? (Sampling)

- Sample members may be chosen at random from the entire population (probability sample)

- The researcher might select people who are easier to obtain information from (Non-probability sample)

The needs of the research project will determine which method is most effective

## **Types of Samples**



## Probability samples

Simple random sample: Every member of the population has a known and equal chance of being selected.

Stratified random sample: Population is divided into mutually exclusive groups such as age groups and random samples are drawn from each group. Cluster (area) sample: The population is divided into mutually exclusive groups such as blocks, and the researcher draws a sample of the group to interview.

Non-probability samples Convenience sample: The researcher selects the easiest population members from which to obtain information.

Judgment sample: The researcher uses his/her judgement to select population members who are good prospects for accurate information.

Quota sample: The researcher finds and interviews a prescribed number of people in each of several categories.





## TOOL FOR DATA COLLECTION (RESEARCH INSTRUMENTS)

The construction of a research instrument or tool for data collection is the most important asp of a research project because anything you say by way of findings or conclusions is based upon the type of information you collect, and the data you collect is entirely dependent upon the questions that you ask of your respondents. The famous saying about computers- "garbage in garbage out" - is also applicable for data collection.

The research tool provides the input into a study and therefore the quality and validity of the output (the findings), are solely dependent o it.

### **Guidelines to Construct a Research Tool:**

The underlying principle behind the guidelines suggested below is to ensure the validity of your instrument by making sure that your questions relate to the objectives of your study.

Step I: Clearly define and individually list all the specific objectives or research Questions for your study.

Step II: For each objective or research questions, list all the associated questions that you want to answer through your study.

Step III: Take each research question listed in step II and list the information required to answer it.

Step IV: Formulate question(s) to obtain this information.

The Questionnaire:

Structured surveys/ interviews employ the use of a questionnaire. A questionnaire consists of a set of questions presented to a respondent for answers. The respondents read the questions, interpret what is expected and then write down the answers themselves.





It is called an Interview Schedule when the researchers asks the questions (and if necessary, explain them) and records the respondent's reply on the interview schedule.

Because there are many ways to ask questions, the questionnaire is very flexible. Questionnaire should be developed and tested carefully before being used on a large scale. There are three basic types of questionnaire:

- Closed -ended
- Open-ended
- Combination of both

#### 1. Closed -ended Questionnaire:

-Closed ended questions include all possible answers/prewritten response categories, and respondents are asked to choose among them.

-e.g. multiple choice questions, scale questions

- Type of questions used to generate statistics in quantitative research.

- As these follow a set format, and most responses can be entered easily into a computer for ease of analysis, greater numbers can be distributed.

#### 2. Open-ended Questionnaire:

-Open-ended questions allow respondents to answer in their own words.

-Questionnaire does not contain boxes to tick but instead leaves a blank section for the respond to write in an answer.

-Whereas closed -ended questionnaires might be used to find out how many people use services open-ended questionnaires might be used to find out what people think about a service.

-As there are no standard answers to these questions, data analysis is more complex.

- As it is opinions which are sought rather than numbers, fewer questionnaires need to be distributed.

#### 3. Combination of both:

-This way it is possible to find out how many people use a service and what they think of the service in the same form.



-Begins with a series of closed -ended questions, with boxes to tick or scales to rank, and then finish with a section of open-ended questions or more detailed response.

### How to construct questionnaires:

- Deciding which questionnaire to use- - closed or open ended,
  - Self or interviewer administered
- Wording and structure of questions
  - Questions should be kept short and simple--avoid double barreled i.e. two questions in one -ask two Qs rather than one.
  - Avoid negative questions which have not in them as it is confusing for respondent to agree or disagree.
  - Question should not contain Prestige Bias - causing embarrassment or forcing the respondent to give false answer in order to look good. Questions about educational qualification or income might elicit this type of response
  - Use indirect questions for sensitive issues- in indirect questions respondents can relate their answer to other people .
  - Using closed- ended questions- try to make sure that all possible answers are covered so that respondents are not constrained in their answer. "Don't know" category also needs to be added.
- Avoiding Leading Question: Don't lead the respondent to answer in a certain way. e.g. "How often do you wash your car?" assumes that respondent has a car and he washes his car. Instead, ask a filter question to find if he has a car, and then, 'If you wash your car, how many times a year?'
- Length and ordering of the Questions:
  - Keep the questionnaire as short as possible
  - Ask easy Qs. Which respondents will enjoy answering?
  - If combined questionnaire, keep open ended Qs for the end.
  - Make Qs as interesting as possible and easy to follow by varying type and length of question



- Group the Qs. Into specific topic as this it makes it easier to understand and follow.
- Layout and spacing is important as cluttered Questionnaire is less likely to be answered.

### **Piloting the Questionnaire**

Once you have constructed your questionnaire, you must pilot it. This means that you must test it out to see if it is obtaining the result you require. This is done by asking people to read it through and see if there are any ambiguities which you have not noticed. They should also be asked to comment about the length, structure and wording of the questionnaire Alter the questions accordingly

### **Step 5: COLLECTING DATA:**

Having formulated the research problem,, developed a study design, constructed a research instrument and selected a sample, you then collect the data from which you will draw inferences and conclusions for your study. Depending upon your plans, you might commence interviews, mail out a questionnaire, conduct experiments and/or make observations. Collecting data through any of the methods may involve some ethical issues in relation to the participants and the researcher:

- Those from whom information is collected or those who are studied by a researcher become participants of the study.
  - Anyone who collects information for a specific purpose, adhering to the accepted code of conduct, is a researcher.
- a) Ethical issues concerning research participants: There are many ethical issues in relation to participants of a research activity.

#### i) Collecting information:

Your request for information may put pressure or create anxiety on a respondent. Is it ethical? Research is required to improve conditions. Provided any piece of research is likely to help society directly or indirectly, it is acceptable to ask questions, if you first obtain the



respondents' informed consent. If you cannot justify the relevance of the research you are conducting, you are wasting your respondents' time, which is unethical.

ii) Seeking consent:

In every discipline it is considered unethical to collect information without the knowledge of the participant, and their expressed willingness and informed consent. Informed consent implies that subjects are made adequately aware of the type of information you want from them, why the information is being sought, what purpose it will be put to, how they are expected to participate in the study, and how it will directly or indirectly affect them. It is important that the consent should be voluntary and without pressure of any kind.

iii) Providing incentives:

Most people do not participate in a study because of incentives, but because they realize the importance of the study. Is it ethical to provide incentives to respondents to share information with you because they are giving their time? Giving a present before data collection is unethical.

iv) Seeking sensitive information:

Certain types of information can be regarded as sensitive or confidential by some people and thus an invasion to their privacy, asking for such information may upset or embarrass a respondent. For most people, questions on drug use, pilferage, income, age, marital status etc are intrusive. In collecting data you need to be careful about the sensitivities of your respondents. It is not unethical to ask such questions provided that you tell your respondents the type of information you are going to ask clearly and frankly, and give them sufficient time to decide if they want to participate, without any major inducement.

v) The possibility of causing harm to participant:



When you collect data from respondents or involve subjects in an experiment, you need to examine carefully whether their involvement is likely to harm them in any way. Harm includes research that might include hazardous experiments, discomfort, anxiety, harassment, invasion of privacy, or demeaning or dehumanizing procedures. If it is likely to, you must make sure that the risk is minimal i.e. the extent of harm or discomfort is not greater than ordinarily encountered in daily life. If the way information is sought creates anxiety or harassment, you need to take steps to prevent this.

vi) Maintaining confidentiality:

Sharing information about a respondent with others for purposes other than research is unethical. Sometimes you need to identify your study population to put your findings into context. In such a situation you need to make sure that at least the information provided by respondents is kept anonymous. It is unethical to identify an individual's responses. Therefore you need to ensure that after the information has been collected, the source cannot be known.

b) Ethical issues relating to the researcher:

i) Avoiding bias:

Bias on the part of the researcher is unethical. Bias is a deliberate attempt to either to hide what you have found in your study, or highlight something disproportionately to its true existence.

ii) Provision or deprivation of a treatment:

Both the provision and deprivation of a treatment/ intervention may pose an ethical dilemma for you as a researcher. Is it ethical to provide a study population with an intervention/ treatment that has not yet been conclusively proven effective or beneficial? But if you do not test, how can you prove or disprove its effectiveness or benefits? There are no simple answers to these dilemmas. Ensuring informed consent, 'minimum risk' and frank



discussion as to the implications of participation in the study will help to resolve ethical issues.

iii) Using inappropriate research methodology:

It is unethical to use a method or procedure you know to be inappropriate e.g. selecting a highly biased sample, using an invalid instrument or drawing wrong conclusions.

iv) Incorrect reporting:

To report the findings in a way that changes or slants them to serve your own or someone else's interest, is unethical.

v) Inappropriate use of the information:

The use of information in a way that directly or indirectly adversely affects the respondents is unethical. If so, the study population needs to be protected. Sometimes it is possible to harm individuals in the process of achieving benefits for the organizations. An example would be a study to examine the feasibility of restructuring an organization. Restructuring may be beneficial to the organization as a whole but may be harmful to some individuals. Should you ask respondents for information that is likely to be used against them? It is ethical to ask questions provided you tell respondents of the potential use of the information, including the possibility of it being used against some of them, and you let them decide if they want to participate.

## **Step 6: PROCESSING AND ANALYSING DATA**

Processing and analyzing data involves a number of closely related operations which are performed with the purpose of summarizing the collected data and organizing these in a manner that they answer the research questions (objectives).

The Data Processing operations are:

1. Editing- a process of examining the collected raw data to detect errors and omissions and to correct these when possible.





2. Classification- a process of arranging data in groups or classes on the basis of common characteristics. Depending on the nature of phenomenon involved

a) Classification according to attributes: here data is analysed on the basis of common characteristics which can either be

: Descriptive such as literacy, sex, religion etc. or

: Numerical such as weight, height, income etc.

Such classification can be either:

Simple classification: where we consider only one attribute, and divide the universe into two classes – one class consisting of items possessing the given attribute and the other class consisting of items which do not possess the given attribute.

**Table1. Hotel Employees with MBA Degree**

	Yes	No	Total
MBA Degree	21	9	30

Manifold classification: Here we consider two or more attributes simultaneously, and divide the data into a number of classes.

**Table2. Educational Qualification of Hotel Employees**

COURSE/ GENDER →	Yes		No		Total	
	M	F	M	F	M	F
MBA Degree	12	9	3	6	15	15
B.Sc. H&HA	15	15	0	0	15	15

b) Classification according to class -intervals: is done with data relating to income, age, weight, tariff, production, occupancy etc. Such quantitative data are known as the statistics of variables and are classified on the basis of class-intervals. e.g. persons whose income are within Rs 2001 to Rs 4000 can form one group or class, those with income within Rs 4001 to Rs 6000 can form another group or class and so on.



The number of items which fall in a given class is known as the frequency of the given class.

Table3. Pocket Money Received by IHM Students

Income Range	Frequency	%
Rs.1001-2000	10	50
Rs.2001-3000	8	40
Rs.3001-4000	2	10
Total	20	100

3. Tabulation-Tabulation is the process of summarizing raw data and displaying the same in compact form for further analysis. It is an orderly arrangement of data in columns and rows. Tabulation is essential because:

- a) It conserves space and reduces explanatory and descriptive statement to a minimum.
- b) It facilitates the process of comparison.
- c) It facilitates the summation of items and the detection of errors and omissions.
- d) It provides the basis for various statistical computations.

Tabulation may also be classified as simple and complex tabulation. Simple tabulation generally results in one-way tables which supply answers to questions about one characteristic of data only. Complex tabulation usually results on two-way tables (which give information about two inter-related characteristics of data), three-way tables or still higher order tables, also known as manifold tables.

## **Data Analysis Methods**

Qualitative Data Analysis:

Qualitative data analysis is a very personal process with few rigid rules and procedures. For this purpose, the researcher needs to go through a process called Content Analysis.





Content Analysis means analysis of the contents of an interview in order to identify the main themes that emerge from the responses given by the respondents'. This process involves a number of steps:

Step1. Identify the main themes. The researcher needs to carefully go through the descriptive responses given by respondents to each question in order to understand the meaning they communicate. From these responses the researcher develops broad themes that reflect these meanings. People use different words and language to express themselves. It is important that researcher select wording of the theme in a way that accurately represents the meaning of the responses categorized under a theme. These themes become the basis for analyzing the text of unstructured interviews.

Step2. Assign codes to the main themes: If the researcher wants to count the number of times a theme has occurred in an interview, he/she needs to select a few responses to an open-ended question and identify the main themes. He/she continues to identify these themes from the same question till a saturation point is reached. Write these themes and assign a code to each of them, using numbers or keywords.

Step3. Classify responses under the main themes: Having identified the themes Next step is to go through the transcripts of all the interviews and classify the responses under the different themes.

Step4. Integrate themes and responses into the text of your report: Having identified responses that fall within different themes, the next step is to integrate into the text of your report. While discussing the main themes that emerged from their study, some researchers use verbatim responses to keep the feel of the response. There are others who count how frequently a theme has occurred, and then provide a sample of the responses. It entirely depends upon the way the researcher wants to communicate the findings to the readers.



## **Quantitative Data Analysis:**

This method is most suitable for large well designed and well administered surveys using properly constructed and worded questionnaire. Data can be analysed either manually or with the help of a computer. **Manual Data Analysis:** This can be done if the number of respondents is reasonably small, and there are not many variables to analyse. However, this is useful only for calculating frequencies and for simple cross tabulations. Manual data analysis is extremely time consuming. The easiest way to do this is to code it directly onto large graph paper in columns. Detailed headings can be used or question numbers can be written on each column to code information about the question.

To manually analyse data (frequency distribution), count various codes in a column and then decode them. In addition, if you want to carry out statistical tests, they have to be calculated manually. However, the use of statistics depends on your expertise and the desire/need to communicate the findings in a certain way.

### **Data Analysis Using a Computer:**

If you want to analyse data using computer, you should be familiar with the appropriate program. In this area, knowledge of computer and statistics plays an important role.

The most common software is SPSS for windows. However, data input can be long and laborious process, and if data is entered incorrectly, it will influence the final results.

## **Step8: REPORTING THE FINDINGS:**

Writing the report is the last, and for many, the most difficult step of the research process. The report informs the world what you have done, what you have discovered and what conclusions you have drawn from your findings. The report should be written in an academic style. Language should be formal and not journalistic.

Written Research Project Report Format



Traditional written reports tend to be produced in the following format.

Title Page

-Title of the Research Project,

-Name of the researcher,

-Purpose of the research project, e.g. "A research project submitted in partial fulfillment of the requirements of National Council for Hotel Management and Catering Technology, New Delhi for the degree of B.Sc. Hospitality and Hotel Administration"

-Date of Publication

Table of Contents

In this section is listed the contents of the report, either in chapters or in subheadings e.g.

Contents

Introduction 1

Chapter I Theoretical Framework and Review of Related Literature

Chapter II Research Design

Chapter III Data Analysis and Interpretation

Chapter IV Summary and Conclusion

Suggestions for Further Research

References/ Bibliography Appendices

Appendix I Questionnaire for Employees

Appendix II Questionnaire for Managers

List of Tables

This section includes title and page number of all tables e.g.

Table No.	Title	Page
No.		
1	Income levels of Respondents	31
2	Age distribution of Respondents	35



## List of Figures

This section contains title and page number of all graphs, pie charts etc.

e.g.

Figure No. No	Title	Page
1. 33	Pie Chart showing age distribution of respondents	
2. 37	Bar Graph showing popularity of menu items	

## Acknowledgements

Here the researcher may acknowledge Institute Principal, Faculty Guide-research guide and technical guide, research participants, friends etc.

## Introduction

This section introduces the research setting out aims and objectives. It includes a rationale for the research.

## Theoretical Framework and Review of Literature

In this section is included all your background research which may be obtained from the literature review. You must indicate from where all the information has come, so remember to keep a complete record of everything you read. If you do not do this, you could be accused of plagiarism which is a form of intellectual theft. When you are referring to a particular book or journal article, use the Harvard system.

## Research design:

This section includes all practical details followed for research . After reading this, any interested party should be able to replicate the research study. The methods used for data collection, how many people took part, how they were chosen, what tool was used for data collection, how the data was analysed etc.



## **Data Analysis and Interpretation:**

If you have conducted a large quantitative survey, this section may contain tables, graphs, pie charts and associated statistics. If you have conducted a qualitative piece of research this section may be descriptive prose.

### **Summary and Conclusion:**

In this section you sum up your findings and draw conclusions from them, perhaps in relation to other research or literature.

### **Recommendations**

If you have conducted a piece of research for a hotel or any other client organization, this section could be the most important part of the report. A list of clear recommendations which have been developed from the research is included- sometimes this section is included at the beginning of the report.

### **Suggestion for Further Research**

and work-related reports to include a section which shows how the research can be continued. Perhaps some results are inconclusive, or perhaps the research has thrown up many more research questions which need to be addressed. It is useful to include this section because it shows that you are aware of the wider picture and that you are not trying to cover up something which you feel may be lacking in your own work.

### **List of References /Bibliography**

- List of references contains details only of those works cited in the text.
- A bibliography includes sources not cited in the text but which are relevant to the subject.(larger dissertations or thesis)
- Small research projects will need only a reference section. This includes all the literature to which you have referred in your report. The popular referencing system Harvard System lists books and periodicals in the following manner:

For Books



1. Authors surname ( alphabetically), followed by their initials,
2. Date of publication
3. Title of book in italics
4. Place of publication, Publisher. e.g.  
Philip, T.E.; 1986, *Modern Cookery for Teaching and Trade*,  
Mumbai, Orient Longman.

For Journal Article:

The title of the article appears in inverted commas and name of the journal comes in italics, followed by volume number and pages of the article. e.g.

Philip, T.E.; “Influence of British Raj on Indian Cuisine”; *Journal of Hospitality Education*; 5:5-11

Appendices:

If you have constructed a questionnaire or Interview schedule for your research, it may be useful to include them in your report as an appendix.

Appendices do not count towards your total number of pages/words. It is a useful way of including relevant material so that the examiner can gain a deeper understanding of your work by reading it.



Certification Page:

### CERTIFICATE

It is Certified that this research titled-----  
-----is the bonafide record of work carried out by-----  
-- for fulfillment of Doctor of Philosophy in Department of-----  
--- in Subject of ----- under technical guidance of-----.

Place-----

Date-----



## Typing and Binding of Research Project Report:

Paper: Bond Paper (need not be executive bond)

Size: 8.5inches X 11 inches

Margin: Left- 1.5 inch

Top- 1 inch

Bottom 1 inch

Right 1 inch

Font: Times New Roman

Font Size: 12

Spacing: Double

Binding: Prescribed color

Gold Embossing on Cover: Research Title

Student Name

Name of Institute

Year of Submission

### Reference:

1. Dawson, Catherine, 2002, Practical Research Methods, New Delhi, UBS Publishers' Distributors
2. Kothari, C.R., 1985, Research Methodology- Methods and Techniques, New Delhi, Wiley Eastern Limited.
3. Kumar, Ranjit, 2005, Research Methodology-A Step-by-Step Guide for Beginners, (2<sup>nd</sup>.ed.), Singapore, Pearson Education.