

UGC NTA NET

Unit-2 Research Aptitude

Research means to search the existing thing 'something' but remains unknown to us. So, Research means to find out something new on the topic that already existed.

- It is a searching process for finding new information about the things we already know.
- It is a scientific examination for searching for important information on a specific topic.
- It can also be referred to as a 'voyage of discovery'.

So, you can summarize the meaning of research as:

- An attitude of inquiry/search/investigation,
- A scientific and objective effort made to uncover facts,
- Hence, requires the application of scientific methods.

Young PV defines it as,
"Research may be defined as the systematic method of discovering new facts or verifying old facts, their sequences, interrelationships, causal explanations and the natural laws which govern them."

Kerlinger defines it as,
"Research is a systematic, controlled, empirical and critical investigation of hypothetical propositions about the presumed relations among natural phenomenon."

John W. Best defines it as,
"Research is the systematic and objective analysis and recording of controlled observations that may lead to development of generalizations, principles or theories result in prediction and possibly ultimate control of events."

Characteristics of Research

1. Good research follows a systematic approach to capture accurate data. Researchers need to practice ethics and a code of conduct while making observations or drawing conclusions.
2. The analysis is based on logical reasoning and involves both inductive and deductive methods.
3. Real-time data and knowledge is derived from actual observations in natural settings.
4. There is an in-depth analysis of all data collected so that there are no anomalies associated with it.
5. It creates a path for generating new questions. Existing data helps create more research opportunities.
6. It is analytical and uses all the available data so that there is no ambiguity in inference.
7. Accuracy is one of the most critical aspects of research. The information must be accurate and correct. For example, laboratories provide a controlled environment to collect data. Accuracy is measured in the instruments used, the calibrations of instruments or tools, and the experiment's final result.

Characteristics of Research

Keeping this in mind that research in any field of inquiry is undertaken to provide information to support decision-making in its respective area, we summarize some desirable characteristics of research:

1. The research should focus on priority problems.
2. The research should be systematic. It emphasizes that a researcher should employ a structured procedure.
3. The research should be logical. Without manipulating ideas logically, the scientific researcher cannot make much progress in any investigation.
4. The research should be reductive. This means that the findings of one researcher should be made available to other researchers to prevent them from repeating the same research.

5. The research should be replicable. This asserts that there should be scope to confirm the findings of previous research in a new environment and different settings with a new group of subjects or at a different point in time.
6. The research should be generative. This is one of the valuable characteristics of research because answering one question leads to generating many other new questions.
7. The research should be action-oriented. In other words, it should be aimed at reaching a solution leading to the implementation of its findings.
8. The research should follow an integrated multidisciplinary approach, i.e., research approaches from more than one discipline are needed.
9. The research should be participatory, involving all parties concerned (from policymakers down to community members) at all stages of the study.
10. The research must be relatively simple, timely, and time-bound, employing a comparatively simple design.
11. The research must be as much cost-effective as possible.
12. The results of the research should be presented in formats most useful for administrators, decision-makers, business managers, or the community members.

Research is conducted with a purpose to:

- Identify potential and new customers
- Understand existing customers
- Set pragmatic goals
- Develop productive market strategies
- Address business challenges
- Put together a business expansion plan
- Identify new business opportunities

What is the purpose of research?

There are three main purposes:

1. **Exploratory:** As the name suggests, researchers conduct exploratory studies to explore a group of questions. The answers and analytics may not offer a conclusion to the perceived problem. It is undertaken to handle new problem areas that haven't been explored before. This exploratory process lays the foundation for more conclusive data collection and analysis.
2. **Descriptive:** It focuses on expanding knowledge on current issues through a process of data collection. Descriptive studies describe the behavior of a sample population. Only one variable is required to conduct the study. The three primary purposes of descriptive studies are describing, explaining, and validating the findings. For example, a study conducted to know if top-level management leaders in the 21st century possess the moral right to receive a considerable sum of money from the company profit.
3. **Explanatory:** Explanatory or causal research is conducted to understand the impact of specific changes in existing standard procedures. Running experiments is the most popular form. For example, a study that is conducted to understand the effect of rebranding on customer loyalty.

Types of Research

Fundamental Research

- Also known as basic or pure research.
- This kind of research helps to generate new information in a fundamental fashion.
- This is generally based on the principle of generalization. Sometimes, it can experiment in a laboratory also.
- Fundamental research can take shape in two ways- either in the form of a new theory or the development of some existing theory.

Applied Research

- You should know that the theories developed by fundamental research are further applied to actual operational fields or population.

- Applied research is useful because it provides convincing evidence to the usefulness of basic research or theory.
- It aims at the collection of data for verifying existing theories and models and helps to find a solution for real-life problems or situations.

Action Research

- It is action-oriented research that is undertaken to find an immediate solution to a problem. Sometimes, the researcher himself or herself can take action and sometimes an authority takes the necessary steps or action.

Descriptive Research

- It is the description of the state of affairs as they are, in their own right. This means the researcher has no control over the variables. He or she should describe it as it is.
- Some of the methods used for descriptive research are field surveys, case studies, and interviews.

Analytical Research

- Here a researcher has to do analysis using logic and reasoning on previously existing data.
- This is usually an in-depth study. This works under a constrained set of variables.
- This requires the use of critical thinking and evaluation.

Quantitative Research

- Quantitative research is concerned with numbers. It is carried out to study a phenomenon that can be expressed in numbers.
- Quantitative is usually deductive in nature and begins with a given theory.
- Statistical concepts and software (such as STATA, R) are used to carry out this kind of research.

Qualitative Research

- Qualitative research is done to study the phenomenon that can be explained beyond numbers, that is, in a qualitative manner.
- Qualitative is usually inductive in nature and begins with a social reality followed by the construction of the theory around it.

Conceptual Research

- Conceptual research is usually undertaken by philosophers or thinkers to reinterpret an existing idea. Although, some researchers use a conceptual framework to study business or market phenomena also.
- This kind of research doesn't involve conducting experiments. It is abstract in nature.

Positivism & Post-Positivism Approach to Research

Positivism:

This approach was first formulated by the french thinker Auguste Comte. Thus, he is considered the 'Father of positivism'. He first described the epistemological perspective of positivism in 'The course in positive philosophy' (1842) and 'system of positive polity' (1851). The positivism is based on scientific basis.

According to Comte, the whole universe is organised and operated by unchangeable natural laws. Thus, it can be understood through scientific methods rather than the logical or hypostatical manner. Hence, positivism is to understand and acquiring knowledge about everything with the help of scientific methods which are based on analysis, synthesis, application and classification. it's only discusses about those events which can be seen or felt directly and can be analysed. it does not use any means of imagination in any level of it. It is a scientific view which aims to explain the truth. this emphasises quantitative method.

According to Comte the following steps are used under positivism approach

1. To select a topic to study.
2. To collect the observable evidence related to the topic through evaluation.
3. After analysis classify the collected evidences on the basis of general classification
4. To give conclusion

Characteristics of positivism

1. Social events also take place on the basis of some laws in the same way as the natural events happen. Thus, these laws can be identified with the help of scientific methods.
2. Positivism is related to scientific point of view as well as science methodology

3. Positivism keeps itself away from religious and philosophical ideas.

4. Positivism is a utility science and believes in the form that knowledge gained through positivism can be used as a means of social reconstruction.

Post-Positivism

Post-positivism argues that by combining empirical comments with logical reasoning, a proper estimate can be made about an event. post-positivism believes that there is no difference between the thinking and acts of scientists and our daily affairs. The scientific logic and general logic are essentially the same process and there is no difference in between the two, only difference is in the fraction.

According to post-positivism, all observations are unstable and there is an error and all these principles are reusable. post positivism, all observation are unstable and there is an error and all these principles are reusable. post-positivism believes that the goal of science is to achieve the aim of truth with the help of correct methods either we achieve the aim or not.

Post-positivism gives emphasis on three development such as

- use of quantitative and qualitative strategies
- Desire of strategy based on question research.
- Its pattern is based on quantitative vs qualitative technique.

Research method

Experimental research

Definition:

Experimental research is research conducted with a scientific approach using two sets of variables. The first set acts as a constant, which you use to measure the differences of the second set. [Quantitative research methods](#), for example, are experimental.

If you don't have enough data to support your decisions, you must first determine the facts. Experimental research gathers the data necessary to help you make better decisions.

Any research conducted under scientifically acceptable conditions uses experimental methods. The success of experimental studies hinges on researchers confirming the change

of a variable is based solely on the manipulation of the constant variable. The research should establish a notable cause and effect.

You can conduct experimental research in the following situations:

- Time is a vital factor in establishing a relationship between cause and effect.
- Invariable behavior between cause and effect.
- You wish to understand the importance of the cause and effect.

Learn about: [Quantitative Market Research](#)

Types of experimental research design

The classic experimental design definition is, “The methods used to collect data in experimental studies.”

There are three primary types of experimental design:

- Pre-experimental research design
- True experimental research design
- Quasi-experimental research design

The way you classify research subjects, based on conditions or groups, determines the type of design.

1. Pre-experimental research design: A group, or various groups, are kept under observation after implementing factors of cause and effect. You’ll conduct this research to understand whether further investigation is necessary for these particular groups.

You can break down pre-experimental research further in three types:

- One-shot Case Study Research Design
- One-group Pretest-posttest Research Design
- Static-group Comparison

2. True experimental research design: True experimental research relies on statistical analysis to prove or disprove a hypothesis, making it the most accurate form of research. Of the types of experimental design, only true design can establish a cause-effect relationship within a group. In a true experiment, three factors need to be satisfied:

- There is a Control Group, which won't be subject to changes, and an Experimental Group, which will experience the changed variables.
- A variable which can be manipulated by the researcher
- Random distribution

This experimental research method commonly occurs in the physical sciences.

3. Quasi-experimental research design: The word “Quasi” indicates similarity. A quasi-experimental design is similar to experimental, but it is not the same. The difference between the two is the assignment of a control group. In this research, an independent variable is manipulated, but the participants of a group are not randomly assigned. Quasi-research is used in field settings where random assignment is either irrelevant or not required.

Learn about: [Market research](#)

Advantages of experimental research

It's vital to test new ideas or theories. Why put time, effort, and funding into something that may not work?

Experimental research allows you to test your idea in a controlled environment before taking it to market. It also provides the best method to test your theory, thanks to the following advantages:

- Researchers have a stronger hold over variables to obtain desired results.
- The subject or industry does not impact the effectiveness of experimental research. Any industry can implement it for research purposes.
- The results are specific.
- After analyzing the results, you can apply your findings to similar ideas or situations.
- You can identify the cause and effect of a hypothesis. Researchers can further analyze this relationship to determine more in-depth ideas.
- Experimental research makes an ideal starting point. The data you collect is a foundation on which to build more ideas and conduct more research.

What is descriptive research?

Descriptive research definition: Descriptive research is defined as a research method that describes the characteristics of the population or phenomenon studied. This methodology focuses more on the “what” of the research subject than the “why” of the research subject.

The descriptive research method primarily focuses on describing the nature of a demographic segment, without focusing on “why” a particular phenomenon occurs. In other words, it “describes” the subject of the research, without covering “why” it happens.

Gather research insights

For example, an apparel brand that wants to understand the fashion purchasing trends among New York buyers will conduct a demographic survey of this region, gather population data and then conduct descriptive research on this demographic segment. The study will then uncover details on “what is the purchasing pattern of New York buyers,” but not cover any investigative information about “why” the patterns exist. Because for the apparel brand trying to break into this market, understanding the nature of their market is the study’s objective.

Characteristics of descriptive research

The term descriptive research then refers to research questions, design of the study, and data analysis conducted on that topic. We call it an observational research method because none of the research study variables are influenced in any capacity.

Some distinctive characteristics of descriptive research are:

1. **Quantitative research:** Descriptive research is a quantitative research method that attempts to collect quantifiable information for statistical analysis of the population sample. It is a popular market research tool that allows us to collect and describe the demographic segment’s nature.
2. **Uncontrolled variables:** In descriptive research, none of the variables are influenced in any way. This uses observational methods to conduct the research. Hence, the nature of the variables or their behavior is not in the hands of the researcher.
3. **Cross-sectional studies:** Descriptive research is generally a cross-sectional study where different sections belonging to the same group are studied.
4. **The basis for further research:** Researchers further research the data collected and analyzed from descriptive research using different research techniques. The data can also help point towards the types of research methods used for the subsequent research.

Applications of descriptive research with examples

A descriptive research method can be used in multiple ways and for various reasons. Before getting into any survey, though, the survey goals and survey design are crucial. Despite following these steps, there is no way to know if one will meet the research outcome. How to use descriptive research? To understand the end objective of research goals, below are some ways organizations currently use descriptive research today:

- **Define respondent characteristics:** The aim of using close-ended questions is to draw concrete conclusions about the respondents. This could be the need to derive patterns, traits, and behaviors of the respondents. It could also be to understand from a respondent, their attitude, or opinion about the phenomenon. For example, understanding from millennials the hours per week they spend on browsing the internet. All this information helps the organization researching to make informed business decisions.
- **Measure data trends:** Researchers measure data trends over time with a descriptive research design's statistical capabilities. Consider if an apparel company researches different demographics like age groups from 24-35 and 36-45 on a new range launch of autumn wear. If one of those groups doesn't take too well to the new launch, it provides insight into what clothes are like and what is not. The brand drops the clothes and apparel that customers don't like.
- **Conduct comparisons:** Organizations also use a descriptive research design to understand how different groups respond to a specific product or service. For example, an apparel brand creates a survey asking general questions that measure the brand's image. The same study also asks demographic questions like age, income, gender, geographical location, etc. This consumer research helps the organization understand what aspects of the brand appeal to the population and what aspects do not. It also helps make product or marketing fixes or even create a new product line to cater to high growth potential groups.
- **Validate existing conditions:** Researchers widely use descriptive research to help ascertain the research object's prevailing conditions and underlying patterns. Due to the non-invasive research method and the use of quantitative observation and some aspects of qualitative observation, researchers observe each variable and conduct an in-depth analysis. Researchers also use it to validate any existing conditions that may be prevalent in a population.
- **Conduct research at different times:** The analysis can be conducted at different periods to ascertain any similarities or differences. This also allows any number of

variables to be evaluated. For verification, studies on prevailing conditions can also be repeated to draw trends.

Descriptive research methods

There are three distinctive methods to conduct descriptive research. They are:

- **Observational method**

The observational method is the most effective method to conduct this research, and researchers make use of both quantitative and qualitative observations.

A quantitative observation is the objective collection of data, which is primarily focused on numbers and values. It suggests “associated with, of or depicted in terms of a quantity.” Results of quantitative observation are derived using statistical and numerical analysis methods. It implies observation of any entity associated with a numeric value such as age, shape, weight, volume, scale, etc. For example, the researcher can track if current customers will refer the brand using a simple Net Promoter Score question.

Qualitative observation doesn't involve measurements or numbers but instead just monitoring characteristics. In this case, the researcher observes the respondents from a distance. Since the respondents are in a comfortable environment, the characteristics observed are natural and effective. In a descriptive research design, the researcher can choose to be either a complete observer, an observer as a participant, a participant as an observer, or a full participant. For example, in a supermarket, a researcher can from afar monitor and track the customers' selection and purchasing trends. This offers a more in-depth insight into the purchasing experience of the customer.

- **Case study method**

Case studies involve in-depth research and study of individuals or groups. Case studies lead to a hypothesis and widen a further scope of studying a phenomenon. However, case studies should not be used to determine cause and effect as they can't make accurate predictions because there could be a bias on the researcher's part. The other reason why case studies are not a reliable way of conducting descriptive research is that there could be an atypical respondent in the survey. Describing them leads to weak generalizations and moving away from external validity.

- **Survey research**

In survey research, respondents answer through surveys or questionnaires or polls. They are a popular market research tool to collect feedback from respondents. A study to gather useful data should have the right survey questions. It should be a balanced mix of open-ended questions and close ended-questions. The survey method can be conducted online or offline, making it the go-to option for descriptive research where the sample size is enormous.

Examples of descriptive research

Some examples of descriptive research are:

1. A specialty food group launching a new range of barbecue rubs would like to understand what flavors of rubs are favored by different people. To understand the preferred flavor palette, they conduct this type of research study using various methods like observational methods in supermarkets. By also surveying while collecting in-depth demographic information, offers insights about the preference of different markets. This can also help tailor make the rubs and spreads to various preferred meats in that demographic. Conducting this type of research helps the organization tweak their business model and amplify marketing in core markets.
2. Another example of where this research can be used is if a school district wishes to evaluate teachers' attitudes about using technology in the classroom. By conducting surveys and observing their comfortableness using technology through observational methods, the researcher can gauge what they can help understand if a full-fledged implementation can face an issue. This also helps in understanding if the students are impacted in any way with this change.

Some other problems and research questions that can lead to descriptive research are:

- Market researchers want to observe the habits of consumers.
- A company wants to evaluate the morale of its staff.
- A school district wants to understand if students will access online lessons rather than textbooks.
- To understand if its wellness programs enhance the overall health of the employees.

Gather research insights

Advantages of descriptive research

Some of the significant advantages of descriptive research are:

- **Data collection:** A researcher can conduct descriptive research using specific methods like observational method, case study method, and survey method. Between these three, all primary data collection methods are covered, which provides a lot of information. This can be used for future research or even developing a hypothesis of your research object.
- **Varied:** Since the data collected is qualitative and quantitative, it gives a holistic understanding of a research topic. The information is varied, diverse, and thorough.
- **Natural environment:** Descriptive research allows for the research to be conducted in the respondent's natural environment, which ensures that high-quality and honest data is collected.
- **Quick to perform and cheap:** As the sample size is generally large in descriptive research, the data collection is quick to conduct and is inexpensive.

Social Research: Definition

Social Research is a method used by social scientists and researchers to learn about people and societies so that they can design products/services that cater to various needs of the people. Different socio-economic groups belonging to different parts of a country think differently. Various aspects of human behavior need to be addressed to understand their thoughts and feedback about the social world, which can be done using Social Research. Any topic can trigger social research – new feature, new market trend or an upgrade in old technology.

Select your respondents

Social Research is conducted by following a systematic plan of action which includes qualitative and quantitative observation methods.

- Qualitative methods rely on direct communication with members of a market, observation, text analysis. The results of this method are focused more on being accurate rather than generalizing to the entire population.
- Quantitative methods use statistical analysis techniques to evaluate data collected via surveys, polls or questionnaires.

Social Research contains elements of both these methods to analyze a range of social occurrences such as an investigation of historical sites, census of the country, detailed

analysis of research conducted to understand reasons for increased reports of molestation in the country etc.

A survey to monitor happiness in a respondent population is one of the most widely used applications of social research. The [happiness survey template](#) can be used by researchers and organizations to gauge how happy a respondent is and the things that can be done to increase happiness in that respondent.

Learn more: [Public Library Survey Questions + Sample Questionnaire Template](#)

Types of Social Research

There are four main types of Social Research: Qualitative and Quantitative Research, Primary and Secondary Research.

Qualitative Research: [Qualitative Research](#) is defined as a method to collect data via open-ended and conversational discussions. There are five main qualitative research methods- ethnographic research, focus groups, one-on-one online interview, content analysis and case study research. Usually, participants are not taken out of their ecosystem for qualitative data collection to gather information in real-time which helps in building trust. Researchers depend on multiple methods to gather qualitative data for complex issues.

Quantitative Research: [Quantitative Research](#) is an extremely informative source of data collection conducted via mediums such as surveys, polls, and questionnaires. The gathered data can be analyzed to conclude numerical or statistical results. There are four distinct quantitative research methods: [survey research](#), [correlational research](#), causal-comparative research and [experimental research](#). This research is carried out on a sample that is representative of the target market usually using close-ended questions and data is presented in tables, charts, graphs etc.

For example, A survey can be conducted to understand Climate change awareness among the general population. Such a survey will give in-depth information about people's perception about climate change and also the behaviors that impact positive behavior. Such a questionnaire will enable the researcher to understand what needs to be done to create more awareness among the public.

Learn More: [Climate Change Awareness Survey Template](#)

Primary Research: [Primary Research](#) is conducted by the researchers themselves. There are a list of questions that a researcher intends to ask which need to be customized according to the target market. These questions are sent to the respondents via surveys, polls or questionnaires so that analyzing them becomes convenient for the researcher. Since data is collected first-hand, it's highly accurate according to the requirement of research.

For example: There are tens of thousands of deaths and injuries related to gun violence in the United States. We keep hearing about people carrying weapons attacking general public in the news. There is quite a debate in the American public as to understand if possession of guns is the cause to this. Institutions related to public health or governmental organizations are carrying out studies to find the cause. A lot of policies are also influenced by the opinion of the general population and gun control policies are no different. Hence a [gun control questionnaire](#) can be carried out to gather data to understand what people think about gun violence, gun control, factors and effects of possession of firearms. Such a survey can help these institutions to make valid reforms on the basis of the data gathered.

Learn more: [Wi-Fi Security Survey Questions + Sample Questionnaire Template](#)

Secondary Research: [Secondary Research](#) is a method where information has already been collected by research organizations or marketers. Newspapers, online communities, reports, audio-visual evidence etc. fall under the category of secondary data. After identifying the topic of research and research sources, a researcher can collect existing information available from the noted sources. They can then combine all the information to compare and analyze it to derive conclusions.

Social Research Methods

Surveys: A survey is conducted by sending a set of pre-decided [questions](#) to a [sample](#) of individuals from a target market. This will lead to a collection of information and feedback from individuals that belong to various backgrounds, ethnicities, age-groups etc. Surveys can be conducted via online and offline mediums. Due to the improvement in technological mediums and their reach, online mediums have flourished and there is an increase in the number of people depending on online survey software to conduct regular surveys and polls.

There are various types of social research surveys: [Longitudinal](#), [Cross-sectional](#), [Correlational Research](#). Longitudinal and Cross-sectional social research surveys are observational methods while Correlational is a non-experimental research method. Longitudinal social research surveys are conducted with the same sample over a course of time while Cross-sectional surveys are conducted with different samples.

For example: It has been observed in recent times, that there is an increase in the number of divorces, or failed relationships. The number of couples visiting marriage counselors or psychiatrists is increasing. Sometimes it gets tricky to understand what is the cause for a relationship falling apart. A screening process to understand an overview of the relationship can be an easy method. A marriage counselor can use a [relationship survey](#) to understand the chemistry in a relationship, the factors that influence the health of a relationship, the challenges faced in a relationship and expectations in a relationship. Such a survey can be very useful to deduce various findings in a patient and treatment can be done accordingly.

Another example for the use of surveys can be to gather information on the awareness of disasters and disaster management programs. A lot of institutions like the UN or the local disaster management team try to keep their communities prepared for disasters. Possessing knowledge about this is crucial in disaster prone areas and is a good type of knowledge that can help everyone. In such a case, a survey can enable these institutions to understand what are the areas that can be promoted more and what regions need what kind of training. Hence a [disaster management survey](#) can be conducted to understand public's knowledge about the impact of disasters on communities, and the measures they undertake to respond to disasters and how can the risk be reduced.

Learn more: [NBA Survey Questions + Sample Questionnaire Template](#)

Experiments: An [experimental research](#) is conducted by researchers to observe the change in one variable on another, i.e. to establish the cause and effects of a variable. In experiments, there is a theory which needs to be proved or disproved by careful observation and analysis. An efficient experiment will be successful in building a cause-effect relationship while proving, rejecting or disproving a theory. Laboratory and field experiments are preferred by researchers.

Interviews: The technique of garnering opinions and feedback by asking selected questions face-to-face, via telephone or online mediums is called interview research. There are formal and informal interviews – formal interviews are the ones which are organized by the researcher with structured [open-ended](#) and [closed-ended](#) questions and format while informal interviews are the ones which are more of conversations with the participants and are extremely flexible to collect as much information as possible.

Examples of interviews in social research are sociological studies that are conducted to understand how religious people are. To this effect, a [Church survey](#) can be used by a pastor or priest to understand from the laity the reasons they attend Church and if it meets their spiritual needs.

Observation: In observational research, a researcher is expected to be involved in the daily life of all the participants to understand their routine, their decision-making skills, their capability to handle pressure and their overall likes and dislikes. These factors and recorded and careful observations are made to decide factors such as whether a change in law will impact their lifestyle or whether a new feature will be accepted by individuals.

Historical research design

1. HISTORICAL RESEARCH DESIGN PRESENTED BY:LAXMI THAPA
2. [2.](#) Historical research design → Analyzing the past events and develops the present concept and conclusion. → Analyzing the previous information or events minutely and testing their validity. → The purpose of a historical research design is to collect, verify, and synthesize evidence from the past to establish facts that defend or refute a hypothesis. → Describes what occurred in the past. → Depends upon data observed by other rather than investigator.
3. [3.](#) Examples of Historical research studies → A historical research on the development of nursing in Nepal → A historical research on the development of nursing education in Nepal
4. [4.](#) Characteristics → Historical research involves the careful study and analysis of data about past events. → It is a critical investigation of events, their development, experiences of past. → The purpose is to gain a clearer understanding of the impact of past on present and future events related to life process. → Involves the review of written materials but may include oral documentation as well.

Qualitative vs. quantitative research

Quantitative research

Quantitative research is **expressed in numbers and graphs**. It is **used to test or confirm** theories and assumptions. This type of research can be used to establish **generalizable facts** about a topic.

Common quantitative methods include experiments, observations recorded as numbers, and surveys with closed-ended questions.

Qualitative research

Qualitative research is **expressed in words**. It is **used to understand** concepts, thoughts or experiences. This type of research enables you to gather **in-depth insights** on topics that are not well understood.

Data collection methods

Quantitative and qualitative data can be collected using various methods. It is important to use a [data collection](#) method that will help answer your research question(s).

Many data collection methods can be either qualitative or quantitative. For example, in surveys, observations or [case studies](#), your data can be represented as numbers (e.g. using rating scales or counting frequencies) or as words (e.g. with open-ended questions or descriptions of what you observe).

However, some methods are more commonly used in one type or the other.

Quantitative data collection methods

- **Surveys:** List of closed or multiple choice questions that is distributed to a [sample](#) (online, in person, or over the phone).
- **Experiments:** Situation in which [variables](#) are controlled and manipulated to establish cause-and-effect relationships.
- **Observations:** Observing subjects in a natural environment where variables can't be controlled.

Qualitative data collection methods

- **Interviews:** Asking open-ended questions verbally to respondents.
- **Focus groups:** Discussion among a group of people about a topic to gather opinions that can be used for further research.
- **Ethnography:** Participating in a community or organization for an extended period of time to closely observe culture and behavior.
- **Literature review:** Survey of published works by other authors.

Common qualitative methods include interviews with open-ended questions, observations described in words, and literature reviews that explore concepts and theories.

When to use qualitative vs. quantitative research

A rule of thumb for deciding whether to use qualitative or quantitative data is:

- Use quantitative research if you want to **confirm or test something** (a theory or hypothesis)
- Use qualitative research if you want to **understand something** (concepts, thoughts, experiences)

How to analyze qualitative and quantitative data

Qualitative or quantitative data by itself can't prove or demonstrate anything, but has to be analyzed to show its meaning in relation to the research questions. The method of analysis differs for each type of data.

Analyzing quantitative data

Quantitative data is based on numbers. Simple math or more advanced [statistical analysis](#) is used to discover commonalities or patterns in the data. The results are often reported in graphs and tables.

Applications such as Excel, SPSS, or R can be used to calculate things like:

- Average scores
- The number of times a particular answer was given
- The [correlation](#) or causation between two or more variables
- The [reliability and validity](#) of the results

Analyzing qualitative data

Qualitative data is more difficult to analyze than quantitative data. It consists of text, images or videos instead of numbers.

Some common approaches to analyzing qualitative data include:

- [Qualitative content analysis](#): Tracking the occurrence, position and meaning of words or phrases

- [Thematic analysis](#): Closely examining the data to identify the main themes and patterns
- [Discourse analysis](#): Studying how communication works in social contexts

Research Process: 8 Steps in Research Process

There are a variety of approaches to research in any field of investigation, irrespective of whether it is applied research or basic research. Each particular research study will be unique in some ways because of the particular time, setting, environment, and place in which it is being undertaken.

Nevertheless, all research endeavors share a common goal of furthering our understanding of the problem and thus all traverse through certain basic stages, forming a process called the **research process**.

An understanding of the research process is necessary to effectively carry out research and sequencing of the stages inherent in the process.

These 8 stages in the research process are;

1. Identifying the problem.
2. Reviewing literature.
3. Setting research questions, objectives, and hypotheses.
4. Choosing the study design.
5. Deciding on the sample design.
6. Collecting data.
7. Processing and analyzing data.
8. Writing the report.

The research process outlined above is, in essence, part and parcel of a research proposal. It is an outline of your commitment that you intend to follow in executing a research study.

A close examination of the above stages reveals that each of these stages, by and large, is dependent upon the others.

One cannot analyze data (step 7) unless he has collected data (step 6). It is also true that one cannot write a report (step 8) unless he has collected and analyzed data (step 7).

Research then is a system of interdependent related stages. Violation of this sequence can cause irreparable harm to the study.

It is also true that several alternatives are available to the researcher during each of the stages stated above. A research process can be compared with a route map.

The map analogy is useful for the researcher because at each stage of the research process, and there are several alternatives to follow.

Choosing the best alternative in terms of time constraints, money, and human resources in our research decision is our primary goal.

Before explaining the stages of the research process, we explain the term 'iterative' appearing within the oval-shaped diagram at the center of the schematic diagram. The key to a successful research project ultimately lies in iteration: the process of returning again and again to the identification of the research problems, methodology, data collection, etc. which lead to new ideas, revisions and improvements.

Often, by discussing the research project with advisers and peers, one will find that new research questions need to be added, variables to be omitted, added or redefined, and other changes to be made. As a proposed study is examined and reexamined from different perspectives, it may begin to transform and take a different shape.

This is to be expected and is an essential component of a good research study.

Besides, it is important to examine study methods and data to be collected from different viewpoints to ensure a comprehensive approach to the research question.

In conclusion, there is seldom any single strategy or formula for developing a successful research study, but it is important to realize that the research process is cyclical and iterative.

Step – 1: Identifying the Problem

The first and foremost task in the entire process of scientific research is to identify a research problem.

A well-identified problem will lead the researcher to accomplish all-important phases of the research process, starting from setting objectives to the selection of the research methodology.

But the core question is: whether all problems require research.

We have countless problems around us, but all that we encounter do not qualify as research problems, and thus, these do not need to be researched.

Keeping this point in view, we must draw a line between a research problem and a non-research problem.

Intuitively, researchable problems are those who have a possibility of thorough verification investigation, which can be effected through the analysis and collection of data, while the non-research problems do not need to go through these processes.

Researcher need to identify both;

1. Non-research Problem, and
2. Research Problem.

Non-Research Problem

A **non-research problem** is one that does not require any research to arrive at a solution. Intuitively, a non-researchable problem consists of vague details and cannot be resolved through research.

It is a managerial or built-in problem that may be solved at the administrative or management level. The answer to any question raised in a non-research setting is almost always obvious.

The outbreak of cholera, for example, following a severe flood, is a common phenomenon in many communities. The reason for this is known. It is thus not a research problem.

Similarly, reasons for the sudden rise in prices of many essential commodities following the announcement of the budget by the Finance Minister need no investigation. Hence it is not a problem that needs research.

Example #1

A recent survey in District *A* found that 1000 women were continuous users of contraceptive pills.

But last month's service statistics indicate that none of these women were using contraceptive pills (Fisher et al. 1991:4).

The **discrepancy** is that 'all 1000 women should have been using a pill, but in fact, none is doing so. The question is: why the discrepancy exists?

Well, the fact is, a monsoon flood has prevented all new supplies of pills reaching District A, and all old supplies have been exhausted. Thus, although the problem situation exists, the reason for the problem is already known.

Therefore, assuming that all the facts are correct, there is no reason to research the factors associated with pill discontinuation among women. This is thus a non-research problem.

Example #2

A pilot survey by Dhaka University revealed that in Rajpura Upazila, the goiter prevalence among the school children is as high as 80%, while in the neighboring Upazila, it is only to the extent of 30%. Why is this discrepancy?

Upon inquiry, it was seen that some three years back, UNICEF launched a lipiodol injection program in the neighboring Upazila.

This attempt acted as a preventive measure against goiter. The reason for the discrepancy is known, and hence we do not consider the problem as a research problem.

Example #3

A hospital treated a large number of cholera cases with penicillin, but the treatment with penicillin was not found to be effective. Do we need research to know the reason?

Here again, there is one single reason that *Vibrio cholera* is not sensitive to penicillin, and therefore, this is not the drug of choice for this disease.

In this case, too, as the reasons are known, it is unwise to undertake any study to find out why penicillin does not improve the condition of cholera patients. This is also a non-research problem.

Example #4

In the tea marketing system, buying and selling tea starts from bidders. Blenders purchase open tea from the bidders. It is observed over the years that marketing cost is the highest for bidders, while it is the lowest for the blenders. What makes this difference?

The fact is that the bidders pay exorbitantly higher transport costs, which constitutes about 30% of their total cost.

Blenders have significantly fewer marketing functions involving transportation, and hence their marketing cost remains at a minimum.

Hence no research is needed to identify the factors that make this difference.

Here are some of the problems we frequently encounter, which may well be considered as non-research problems:

- Rises in the price of warm clothes during winter;
- Preferring admission in public universities over private universities;
- Crisis of accommodations in sea resorts during summer
- Traffic jam in the city street after office hours;
- High sales in department stores after an offer of a discount.

Research Problem

In contrast to a non-research problem, a **research problem** is of primary concern to a researcher.

A research problem is a perceived difficulty, a feeling of discomfort, or a discrepancy between the common belief and reality.

As noted by Fisher et al. (1993), a problem will qualify as a potential research problem when the following three conditions exist:

1. There should be a perceived discrepancy between “what it is” and “what it should have been.” This implies that there should be a difference between “what exists” and the “ideal or planned situation”;
2. A question about “why” the discrepancy exists. This implies that the reason(s) for this discrepancy is unclear to the researcher (so that it makes sense to develop a research question); and
3. There should be at least two possible answers or solutions to the questions or problems.

The third point is important. If there is only one possible and plausible answer to the question about the discrepancy, then a research situation does not exist.

It is a non-research problem that can be tackled at the managerial or administrative level.

Example #1

While visiting a rural area, the UNICEF team observed that some villages have female school attendance rates as high as 75%, while some have as low as 10%, although all villages should have a nearly equal rate of attendance. What factors are associated with this discrepancy?

We may enumerate several reasons for this:

1. Villages differ in their socio-economic background.
2. In some villages, the Muslim population constitutes a large proportion of the total population. Religion might play a vital role.
3. Schools are far away from some villages. The distance thus may make this difference.

Because there is more than one answer to the problem, it is considered a research problem, and a study can be undertaken to find a solution.

Example#2

The Government of Bangladesh has been making all-out efforts to ensure regular flow of credit in rural areas at a concession rate through liberal lending policy and establishing a large number of bank branches in rural areas.

Knowledgeable sources indicate that expected development in rural areas has not yet been achieved mainly because of improper utilization of the credit.

More than one reason is suspected of such misuse or misdirection.

These include, among others:

- Diversion of credit money to some unproductive sectors
- Transfer of credit money to other people like money lenders, who exploit the rural people with this money
- Lack of knowledge of proper utilization of the credit.

Here too, reasons for misuse of loans are more than one. We thus consider this problem as a researchable problem.

Example #3

On the 20th day of December 2010, almost all the locals came up with a news headline of the form:

Dhaka Stock Exchange (DSE) observes the steepest ever fall in stock prices: several injured as retail investors clash with police, vehicles ransacked’.

Investors’ demonstration, protest and clash with police pose a problem, but it is certainly not a research problem since there is only one known reason for the problem: DSE experiences the steepest fall in stock prices. But what causes this unprecedented fall in the share market?

Experts felt that no single reason could be attributed to the problem. It is a mix of several factors, and hence it is a research problem. The following were assumed to be some of the possible reasons:

- The merchant banking system;
- Liquidity shortage because of the hike in the rate of cash reserve requirement (CRR);
- IMF’s warnings and prescriptions on the commercial banks’ exposure to the stock market;
- Increase in supply of new shares;
- Manipulation of share prices;
- Lack of knowledge of the investors on the company’s fundamentals.

The choice of a research problem is not as easy as it appears. It is generally guided by the researchers;

- a. own intellectual orientation,
- b. level of training,
- c. experience,
- d. knowledge on the subject matter, and
- e. intellectual curiosity.

Theoretical and practical considerations also play a vital role in choosing a research problem. Societal needs also guide to choose a research problem.

Once we have chosen a research problem, a few more related steps are required to be followed before a decision is taken to undertake a research study.

These include, among others, the following:

- Statement of the problem.
- Justifying the problem.
- Analyzing the problem.

A detailed exposition of these issues is undertaken in chapter ten while discussing the proposal development.

Statement of the Problem

A clear and well-defined statement of the problem is considered as the foundation for the development of the research proposal.

It enables the researcher to systematically point out why the proposed research on the problem should be undertaken and what he hopes to achieve with the findings of the study.

A well-defined statement of the problem will lead the researcher to formulate the research objectives, to understand the background of the study, and to choose a proper research methodology.

Justifying the Problem

Once the problem situation has been identified and clearly stated, it is important to justify the importance of the problem.

In justifying the problems, we ask such questions as to why the problem of the study is important, how large and widespread is the problem, can others be convinced about the importance of the problem and the like.

Answers to the above questions should be reviewed and presented in one or two paragraphs that justify the importance of the problem.

Analyzing the Problem

As a first step of analyzing the problem, critical attention should be given to accommodate the viewpoints of the managers, users, and the researchers to the problem through threadbare discussions.

The next step is to identify the factors that may have contributed to the perceived problems.

Step – 3: Setting research questions, objectives, and hypotheses

After discovering and defining the research problem, researchers should make a formal statement of the problem leading to research objectives.

An **objective** will precisely say what should be researched, to delineate the type of information that should be collected, and provide a framework for the scope of the study. The best expression of a research objective is a well-formulated, testable research hypothesis.

A **hypothesis** is an unproven statement or proposition that can be refuted or supported by empirical data. Hypothetical statements assert a possible answer to a research question.

Step -4: Choosing the study design

The **research design** is the blueprint or framework for fulfilling objectives and answering research questions.

It is a master plan specifying the methods and procedures for collecting, processing, and analyzing the collected data. There are four basic research designs that a researcher can use to conduct his or her study;

1. survey,
2. experiment,
3. secondary data study, and
4. observational study.

The type of research design to be chosen from among the above four designs depends primarily on four factors:

- The type of problem
- The objectives of the study,

- The existing state of knowledge about the problem that is being studied, and
- The resources are available for the study.

Step – 5: Deciding on the sample design

Sampling is an important and separate step in the research process. The basic idea of sampling is that it involves any procedure that uses a relatively small number of items or portions (called a **sample**) of a universe (called **population**) to conclude the whole population.

It contrasts with the process of complete enumeration, in which every member of the population is included.

Such a complete enumeration is referred to as **census**.

A **population** is the total collection of elements about which we wish to make some inference or generalization.

A **sample** is a part of the population, carefully selected to represent that population. If certain statistical procedures are followed in selecting the sample, it should have the same characteristics as the population as a whole. These procedures are embedded in the sample design.

Sample design refers to the methods to be followed in selecting a sample from the population and the estimating technique, vis-a-vis formula for computing the sample statistics.

The basic question is, then, how to select a sample?

To answer this question, we must have acquaintance with the sampling methods.

These methods are basically of two types: probability sampling and non-probability sampling. Probability sampling ensures every unit a known nonzero probability of selection within the target population.

If there is no feasible alternative, a non-probability sampling method may be employed.

The basis of such selection is entirely dependent on the researcher's discretion. This approach is variously called judgment sampling, convenience sampling, accidental sampling, and purposive sampling.

The most widely used probability sampling methods are **simple random sampling, stratified random sampling, cluster sampling, and systematic sampling**. They have been classified by their representation basis and unit selection techniques.

Two other variations of the sampling methods that are in great use are **multistage sampling and probability proportional to size (PPS) sampling**.

Multistage sampling is most commonly used in drawing samples from very large and diverse populations.

The PPS sampling is a variation on multistage sampling in which the probability of selecting a cluster is proportional to its size, and an equal number of elements are sampled within each cluster.

Step – 6: Collecting data

The gathering of data may range from simple observation to a large-scale survey in any defined population. There are many ways to collect data.

The approach selected depends on the objectives of the study, the research design, and the availability of time, money, and personnel.

With the variation in the type of data (qualitative or quantitative) to be collected, the method of data collection also varies.

The most common means for collecting quantitative data is the **structured interview**.

Studies that obtain data by interviewing respondents are called surveys. Data can also be collected by using **self-administered questionnaires**. **Telephone interviewing** is another way in which data may be collected.

Other means of data collection include the use of secondary sources, such as the census, vital registration records, official documents, previous surveys, etc.

Qualitative data are collected mainly through **in-depth interviews, focus group discussions, KII**, and observational studies.

Step-7: Processing and Analyzing Data

Data processing generally begins with the editing and coding of data. Data are edited to ensure consistency across respondents and to locate omissions, if any.

In survey data, editing reduces errors in the recording, improves legibility, and clarifies unclear and inappropriate responses. In addition to editing, the data also need coding.

Because it is impractical to place raw data into a report, alphanumeric codes are used to reduce the responses to a more manageable form for storage and future processing.

This coding process facilitates processing the data. The personal computer offers an excellent opportunity in data editing and coding processes.

Data analysis usually involves reducing accumulated data to a manageable size, developing summaries, searching for patterns, and applying statistical techniques for understanding and interpreting the findings in the light of the research questions.

Further, the researcher, based on his analysis, determines if his findings are consistent with the formulated hypotheses and theories.

The techniques to be used in analyzing data may range from simple graphical technique to very complex multivariate analysis depending on the objectives of the study, research design employed, and the nature of data collected.

As in the case of methods of data collection, an analytical technique appropriate in one situation may not be appropriate for another.

Step-8: Writing the report – Developing Research Proposal, Writing Report, Disseminating and Utilizing Results

The entire task of a research study is accumulated in a document called a proposal.

A research proposal is a work plan, prospectus, outline, an offer, a statement of intent or commitment from an individual researcher or an organization to produce a product or render a service to a potential client or sponsor.

The proposal will be prepared to keep in view the sequence presented in the research process. The proposal tells us what, how, where, and to whom it will be done.

It must also show the benefit of doing it. It always includes an explanation of the purpose of the study (the research objectives) or a definition of the problem.

It systematically outlines the particular research methodology and details the procedures that will be utilized at each stage of the research process.

The end goal of a scientific study is to interpret the results and draw conclusions.

To this end, it is necessary to prepare a report and transmit the findings and recommendations to administrators, policymakers, and program managers for the intended purpose of making a decision.

There are various forms of research reports: term papers, dissertations, journal articles, papers for presentation at professional conferences and seminars, books, and so on. The results of a research investigation prepared in any form are of little utility if they are not communicated to others.

What thesis means?

A **thesis** is an idea or theory that is expressed as a statement and is discussed in a logical way. ... A **thesis** is a long piece of writing based on your own ideas and research that you do as part of a university degree, especially a higher degree such as a PhD.

THESIS AND ARTICLE WRITING:

An article is a piece of writing written for a large audience. The main motive behind writing an article is that it should be published in either newspapers or magazines or journals as to make some difference to the world. It may be the topics of interest of the writer or it may be related to some current issues.

The topic can either be serious or not so serious, same goes for its tone and language.

Objectives:

- i. It brings out the topics or the matter of interest in the limelight.
- ii. The article provides information on the topics.
- iii. It offers suggestions and pieces of advice.
- iv. It influences the readers and urges them to think.
- v. The article discusses various topics, persons, locations, rising-issues, and technical developments.

The Format of Article Writing

An article must be organised in a proper way so as to draw the attention of the readers. The basic outline for an article writing format is –

- i. Heading/Title
- ii. A line having the writer's name
- iii. Body (The main part of the article 2-3 paragraphs)
- iv. Conclusion (Ending paragraph of the article with the opinion or recommendation, anticipation or an appeal)

Steps for Article writing Format:

Think of the topic you want to write the article about. Only after you have decided your topic you can go ahead and undertake the further steps in the process one by one.

Target Audience – Identify the concerning reading group.

Purpose – Find the objective or aim of writing article.

Collect and Select – Gather as much information as possible and also identify the details that are most significant.

Organise – Arrange the information and the facts in a logical way.

If you have followed all the above steps then you can start the final step that is writing.

While writing an article, always use proper grammar, spelling, and proper punctuations.

Use vocabulary skill.

Keep the introduction of the topic catching, interesting, and short.

Discuss the opinion and the matter in an organized and descriptive manner.

RESEARCH ETHICS:

Human beings are generally very intricate and this subtle nature is generally the subject matter of social sciences. So, one has to follow some norms or values in conducting social science research.

Ethical issues relating to participants -

First: Right to Privacy when collecting information

Second: Seeking consent when dealing about something

Third: Devoid of Intentional Harm to other

Fourth: Providing incentives because participants are giving their valuable time.