**MODULE 1 BUSINESS RESEARCH**

The word research is composed of two syllables, ***re*** and ***search***. The dictionary defines the former as a prefix meaning again, anew or over again and the latter as a verb meaning to examine closely and carefully, to test and try, or to probe. Together they form a noun describing a careful, systematic, patient study and investigation in some field of knowledge, undertaken to establish factsor principles.

According to Robert Ross, “research is essentially an investigation, a recording and an analysis of evidence for the purpose of gaining knowledge.” It can generally be defined as a systematic method of finding solutions to problems.

A research need not lead to ideal solution but it may give rise to new problems which may require further research. In other words research is not an end to a problem since every research gives birth to a new question. It is carried on both for discovering new facts and verification of old ones.

### Features of Research

* It means the discovery of new knowledge
* Is essentially an investigation
* Is related with the solution of a problem
* It is based on observation or experimental evidences.
* It demands accurate observation or experimentation.
* In research, the researchers try to find out answers for unsolved questions
* It should be carefully recorded and reported

### Business Research

Business research refers to systematic collection and analysis of data with the purpose of finding answers to problems facing management. It can be carried out with the objective to explore, to describe or to diagnose a phenomenon. It involves establishing objectives and gathering relevant information to obtain the answer to a business issue and it can be conducted to answer a business- related question, such as: What is the target market of my product? Business research can also be used to solve a business-related problem, such as determining how to decrease the amount of excess inventory on hand

When deciding whether business research is to be conducted or not, the firm keeps in mind factors like the availability of data, time constraints and the value of the research information to the company. Adequate planning and information-gathering are essential to derive results for business.

### Social Research

Social research refers to research conducted by social scientists. It is the scientific investigation conducted in the field of social sciences and also in the behavioral sciences. Social research methods can generally vary along a quantitative/qualitative dimension. While various methods may sometimes be classified as quantitative or qualitative, most methods contain elements of both. Social scientists employ a range of methods in order to analyse a vast breadth of social phenomena; from census survey data derived from millions of individuals, to the in-depth analysis

of a single agents' social experiences; from monitoring what is happening on contemporary streets, to the investigation of ancient historical documents.

The social science research is a systematic method of exploring, analyzing and conceptualizing social life in order to expand, correct or verify knowledge whether that knowledge aids in the construction of theory or in the practice of an art.

### Educational Research

Educational Research is that activity which is directed towards development of a science of behaviour in educational situations. The ultimate aim of this research is to provide knowledge that will permit the educator to achieve his goals by most effective methods. Educational research refersto a variety of methods, in which individuals evaluate different aspects of education including: “student learning, teaching methods, teacher training, and classroom dynamics”.

Educational researchers have come to the consensus that, educational research must be conducted in a rigorous and systematic way although what this implies is often debated. There are avariety of disciplines which are each present to some degree in educational research. These include psychology, sociology, anthropology, and philosophy. The overlap in disciplines creates a broad range from which methodology can be drawn. The findings of educational research also need to be interpreted within the context in which they were discovered as they may not be applicable in everytime or place.

### Need For Research (Importance of Research)

The main importance of research is to produce knowledge that can be applied outside a research setting. Research also forms the

foundation of program development and policies everywhere around the universe. It also solves particular existing problems of concern. Research is important because we are able to learn more about things, people, and events. In doing research, weare able to make smart decisions.

Marketing research is important because it allows consumers and producers to become morefamiliar with the products, goods, and services around them. Research is important to society because it allows us to discover more and more that might make are lives easier, more comfortable, and safer. It presents more information for investigation. This allows for improvements based on greater information and study. It is very important. Research encourages interdisciplinary approaches to find solution to problems and to make new discoveries. Research is a basic ingredient for development and therefore serves as a means for rapid economic development.

The main importance or uses may be listed as under:

* It provides basis for government policies
* Helps in solving various operational and planning problems of business and industry
* Research helps in problem solving
* Is useful to students, professionals, philosophers, literary men, analysts and intellectuals.

### Purpose / Aims / Objectives of Research

1. To find out the truth which is hidden and which has not been discovered so far.
2. Aims at advancing systematic knowledge and formulating basic theories about the forces influencing the relation between groups as well as those acting on personality development and is adjustment with individuals.
3. Try to improve tools of analysis or to test these against the complex human behaviour and institutions.
4. To understand social life and thereby to gain a greater measure of control over social behaviour.
5. To provide an educational program in the accumulated knowledge of group dynamics, in skills of research, in techniques of training leaders and in social action.

### Qualities / Characteristics of A Good Research

* + A good research must be systematic
  + A good research must be logical
  + A good research must be empirical
  + A good research must be verifiable
  + As far as possible common concepts must be used
  + Procedure followed in research must be sufficiently described
  + Research procedure should be so described that objective of research can be achieved.

### Limitations of Research

1. Conclusions in research are based upon data collected. Therefore when the data collected are not valid or adequate, the conclusion will not be conclusive or appropriate.
2. Research results in theory
3. Activities in a society are influenced by various internal and external factors Small organizations cannot afford to have research on various issues
4. Many people in society depend on customs, traditions, routines and practices for takingdecision; instead of going for research.

Research is usually based on sample studies. But in many cases samples are not true representatives. Therefore the research reports based on these samples may not be accurate.

### Theory and Concept

Theory is defined as a set of systematically interrelated concepts, definitions and propositions that are advanced to explain and predict a phenomenon. It may also specify causal relationship among variables. A theory is an integrated body of definitions, assumptions, and general propositions covering a given subject matter from which a comprehensive and consistent set of specific and testable principles can be deducted logically. This theory provides a basis for studying consumer behaviour and formulating appropriate marketing strategies.

### Requisites (Criteria) of Theory

Theory starts out as ideas. The criteria to be met by the set of ideas are:

* + They must be logically consistent.
  + They must be interrelated.
  + The statements must be exhaustive.
  + The propositions should be mutually exclusive.
  + They must be capable of being tested through research

### Role of Theory in Research

1. Theory narrows the range of facts to be studied
2. Theory provides a conceptual framework for a study
3. Summarizes concisely what is already known about the object of study.
4. Theory states a general uniformity beyond the immediate observations.
5. Theoretical generalization can be used to predict further facts.

### General Principles Regarding the Use of Theory in Research

1. Knowledge of the existing theory in one’s area of research is essential for conducting research.
2. Concepts are crucial components of theory and so their clear definitions are essential to thedesigning of the study.
3. One should view theory as hypothetical proposition and not as conclusive fact.
4. One should pay attention to all odd and puzzling unexpected observations in one’s research and enquire into them. They may be a source for new theoretical approaches.

### Methods of Formation of Theory

**Deduction:** It is one of the important methods employed in theory building. It is a process of drawing generalizations, through a process of reasoning on the basis of certain assumptions which are either self evident or based on observation. By deduction, is meant reasoning or inference fromthe general to particular or from the universal to the individual.

Eg., All men are mortal (Major Premise) A is a man (Minor premise)

Therefore A is mortal **(**Conclusion)

The conclusion follows from the two premises logically. Therefore it is valid. The deduction is the logical conclusion obtained by deducting it from the statements, called premise of the argument. The argument is so constructed that if the premises are true, conclusion must also be true. The logical deduction derives only conclusions from given premises and it cannot affirm the truth of given statements. It serves in connecting different truths and thus logical derivation is nota means to find ultimate truth.

**Induction:** It is the process of reasoning from a part to the whole, from particular to general or from the individual to the universal. It gives rise to empirical generalizations. It is a passage from observed to unobserved. It involves two processes namely observation and generalization. Induction may be regarded as a method by means of which material truth of the premises is

established. Generating ideas from empirical observation is the process of induction. As a matter of fact, concepts can be generated from experience which justifies the description of particular situations towards theory- building. It is generally observed that experience is regarded as a sum of individual observations held together by the loose tie of association and constantly extended by theidea of inductive inferences.

It is generally stated that knowledge is based on the foundations of particular facts. In empirical sciences, we start from the consideration of a single case, go on to prove many cases. Consider the following illustration.

“I saw a raven in black colour. Other revens seen by me were also black in colour”.“All ravens are therefore black”.

Inductive method is classified into two types- enumerative induction and analytical induction.

**Retroduction:** It is a technique of successive approximation by which, the concepts and assumptions of theories are brought into closer alignment with relevant evidence. At the same time it maintains the logical consistency required of deductive systems.

The purpose of theory is to systematize the data of every experience. The three methods- deduction induction and retroduction based on the relationships among the observed data, conceptsand theoretical assumptions are adopted for generating theory.

### Concept

A concept symbolizes a phenomenon and helps to communicate its finding. For instance labour is a concept. Concepts are logical constructs created from sense impression or complex

experiences. It symbolizes the empirical relationship and phenomena which are indicated by facts. Thus, concepts and facts are not the same. A fact is a logical construct of concepts. The process of conceptualization arises out of abstraction and generalization of sense impression.

### Types of concepts

On the basis of origin, concepts may be classified into two categories:

1. **Postulational Concepts:** It has meaning only with reference to some deductively postulatedtheory. Its meaning will be different when it will be used in some other context or theories. For instance, the concept ‘function’ has one meaning in Economics and another meaning in Physics.
2. **Intuitive Concepts:** It has a particular meaning. The meaning is never changed by the people who use it. This type of concept denotes something, which is immediately understood. For example, ‘black’ as a colour, its meaning is abstracted from a wider and empirical context.

Intuitive concepts are divided into two forms (a) those by sensation and (b) those byintrospection. Similarly, Postulational concepts are divided into (a)those by imagination and (b)those by intellection. However, for the matter of social science research, such classification does not convey any special significance.

### Requisites of a concept

1. In every field of study, concepts are used to convey special meaning.
2. Concepts should be precise, comprehensive and clear. There should be no misunderstandingabout them.
3. Concepts must not have multiple meaning. It is possible that different terms may refer to thesame phenomenon; and there may be danger of overlapping of meaning.
4. Concepts should be well understood. A concept may have a very complex series of references. Ultimately there may be an empirical reference. If one empirical reference is not immediate then the concepts will less well be understood.

### How to use concepts

In research, the proper concept has to be carefully chosen and its usage should be explained thoroughly. The meaning of a concept does not remain fixed all the time. The meaning of the concept is modified with the accumulation of knowledge. In course of time, some concepts may become outmoded and irrelevant, and therefore, they are to be discarded.

Theory is a statement of the meaningful relation between concepts. Therefore the first stage in the development of a theory is concept formation. A scientific theory is a statement of a specific type of invariance in the conceptual representation of a phenomenon. Therefore, the choice we make in the representation of phenomenon is a critical step in the development of scientific theory.

Theory implies an explanatory relationship. The development and validity of a theory is dependent on the conceptual apparatus used. Concepts are the medium of scientific explanations. Conceptual definition and theory formulation are two major requirements of unified process of scientific explanation. Formulation of concepts is therefore a major step of one unified process of complex scientific inquiry towards theory building.

### Types of Research

Research may be broadly classified as (1) Fundamental and Applied Research (2) Descriptive and Analytical Research or (3) Quantitative and Qualitative Research or (4) Conceptual and Empirical Research

### Fundamental (or Basic) and Applied Research

Fundamental research is mainly concerned with generalization with the formulation of a theory. It is a research concerning principles or laws or rules. It aims at the achievement of knowledge and truth. Research studies concentrating on some natural phenomenon or relating to pure mathematics are examples of fundamental research. It aims at some theoretical conclusions. It may verify the old theory or establish a new one. It tries to explain the cause and effect relationship in social phenomena. It is essentially positive and not normative. That is, it explains the phenomenaas they are and not as they should be.

Applied research is concerned with the solution of particular problems. It aims at finding a solution for an immediate problem facing a society or an industrial organization. It is empirical and practical. It is concerned with applied aspects of life. Research to identify social, economic or political trends that may affect a particular institution or the marketing research are examples of applied research.

### Descriptive Research and Analytical Research

Descriptive research includes survey and fact finding enquiries of different kinds. It describes the state of affairs as it exists at present. The researcher has no control over the variables. He can only report what has happened or what is happening. In Analytical research one has to use facts or information already available and analyse these to make a critical evaluation of the material.Quantitative Research and Qualitative Research

Quantitative research is applicable to phenomena that are measurable so that they can be expressed in terms of quantity. Qualitative research is concerned with qualitative phenomenon. Research designed to find out how people feel or what they think about a particular subject is a qualitative research. Qualitative research is especially important in the behavioural sciences where the aim is to discoverunderlying motives of human behaviour.

### Conceptual Research and Empirical Research

Conceptual research is that related to some abstract ideas or theory. It is generally used by philosophers and thinkers to develop new concepts or to interpret existing ones. Empirical research relies on experience or observation alone. It is data based research coming up with conclusions capable of being verified by observation or experiment. It can be experiment research. In empirical research, the researcher has to first set up a hypothesis or guess as to the probable results. He then works out to get enough facts to prove or disprove his hypothesis.

Empirical studies have a great potential for they lead to inductions and deductions. Thus research enables one to develop theories and principles and to arrive at generalizations. As researchis based on observations and empirical evidences it improves knowledge and understanding as well as decision making skill and ability.

### Difference between quantitative and qualitative research

|  |  |  |
| --- | --- | --- |
| Data | Verbal | Measurable |
| Inquiry | Process-oriented | Result-oriented |
| Hypothesis | Generated | Tested |

|  |  |  |
| --- | --- | --- |
| Elements of analysis | Words, pictures and objects | Numerical data |
| Objective | To explore and discover ideas used in the ongoing processes. | To examine cause and effect relationship between variables. |
| Methods | Non-structured techniques like In- depth interviews, group discussions etc. | Structured techniques such as surveys, questionnaires and observations. |
| Result | Develops initial understanding | Recommends final course of action |

**Difference between basic research and applied research**

|  |  |  |
| --- | --- | --- |
| **BASIS FOR COMPARISON** | **BASIC RESEARCH** | **APPLIED RESEARCH** |
| Meaning | Basic Research | Applied |
|  | refers to the study | Research is the |
|  | that is aimed at | research that is |
|  | expanding the | designed to solve |
|  | existing base of | specific practical |
|  | scientific | problems or |
|  | knowledge. | answer certain |
|  |  | questions. |
| Nature | Theoretical | Practical |
| Utility | Universal | Limited |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Concerned with | Developing |  | Development of |
|  | scientific |  | technology and |
|  | knowledge | and | technique |
|  | predictions |  |  |
| Goal | To add some | | To find out |
|  | knowledge to the | | solution for the |
|  | existing one. | | problem at hand. |

### Difference between exploratory research and descriptive research

|  |  |  |
| --- | --- | --- |
| Meaning | Explorartory research means a research conducted for formulating a problem for more clear investigation. | Descriptive research is a research that explore and explain an individual, group or a situation. |
| Objective | Discovery of ideas and thoughts. | Describe characteristics and functions. |
| Overall Design | Flexible | Rigid |
| Research process | Unstructured | Structured |
| Sampling | Non-probability sampling | Probability sampling |
| Statistical Design | No pre-planned design for analysis. | Pre-planned design for analysis. |

**Dependent and Independent Variables**

When changes in one variable depend upon the **c**hanges in other variable or variables, it is known as a dependent or endogenous variable, and the variables that cause the changes in the dependent variable are known as the independent or explanatory or exogenous variables. For example, if demand depends upon price, then demand is a dependent variable, while price is the independent variable. And, if more variables determine demand, like income and price of the substitute commodity, then demand also depends upon them in addition to the price of original commodity. In other words, demand is a dependent variable which is determined by the independent variables like price of the original commodity, income and price of substitutes.

### Proposition

A proposition deals with the connection between two existing concepts.

#### PLANNING OF RESEARCH AND RESEARCH PROCESS

Planning of research means deciding the question to be studied, setting the objectives of the study and determining the means of achieving those objectives. Planning research refers to determining, in advance, various steps to be followed in a research.

### Identifying, Evaluating and Formulating the Research Problems-:

After creating interest in a research work, a researcher has to think about formulating the problem related to his research work. Choosing a correct problem for study is the most

important step in the entire research process. After selecting the problem, the researcher has to formulate the problem.

### Extensive Literature Survey:-

Before formulating the research it is desirable that researcher examines all available literature, both conceptual and empirical. The conceptual literature is one which deals with concepts and theories. Empirical literature is that which contains studies made earlier and soit consists of many facts and figures observed in the earlier studies.

### Writing a Primary Synopsis:-

After formulating the problems a brief summary of it should be written down. A research worker has to write a synopsis of the topic selected for research work mentioning the summary of what is going to be done under his research.

### Indentifying and Labeling Variables: -

In any research the problem under study deals with relation between variables. The variables whose change has affected the other variable, is called independent variable. Therefore there is a cause and effect relation between the variables. The research problem must be formulated in such a manner that it highlights the nature, extent and implications of relation existing between the variables. It is only through this process of establishing the effective relation between variables that meaningful conclusions are derived from the study.

### Setting Up Of Hypothesis: -

Specification of working hypothesis is a basic step in the research process. A hypothesis is a tentative conclusion

logically drawn. The research work is conducted to test the truth of thishypothesis.

1. Preparing the Research Design:-

A research design is a plan that specifies the sources and types of information relevant to the research problem. It is a strategy which approach will be used for gathering and analyzing the data. It includes the time and cost budgets since most studies are done under these two constraints. A research design provides a rational approach to research enabling one to decide in advance what to do, how to do, in investigating the subjects.

### Determining the Sample Design:-

A sample design is a definite plan determined before any data are actually collected for obtaining a sample from a given universe.Sample design refers to the technique or the procedure which the researcher would adopt in selecting some sampling units from the universe for drawing inferences about the universe. If the proper procedure is followed to select the sample, definitely the sample will give all dependable information.

### Collecting of Data: -

There are several ways of collecting the appropriate data. Some of the methods of collecting primary data are (1) Observation method. (2) Direct personal interview method.

(3) Telephone interview method. (4) Questionnaire method.

(5) Schedule method. A choice of one of these methods.

### Execution of the Project: -

The researcher has to see that the project is executed in a systematic manner and in time. Heshould make necessary preparations for successful conduct of the project.

### Processing, Analysis and Interpretation of Data by Statistical Methods: -

The processing of data consists of classification, tabulation and coding. By classification and tabulation the unwieldy data can be condense into few manageable and purposeful groups and tables so that further analysis becomes simple. Coding converts the data into symbols and small figures so that the data can be dealt with in an easy manner. Editing improves the quality of the data since it is at this stage that data which is irrelevant can be dropped. Analysis and interpretation of data results in observation, analysis, conclusion, induction and deduction. For this various statistical measures are computed.

### Testing of Hypothesis: -

Depending upon the nature of data and conclusions to be arrived one or two of these tests can be applied. Testing of hypothesis will results in either accepting or rejecting the hypothesis. Testing of hypothesis may prove or disprove a theory and a theory facilitates formulating of a further hypothesis. Testing of hypothesis will result in contribution to existing theory or the generation of a new theory.

### Preparation of the Report or Thesis:-

A report is a detailed description of what has been done and how it has been done with respect to a particular area or topic.

The report should contain the preliminary section, the main body and the end matter. The preliminary section contains only titles, data, acknowledgement foreword and table of contents. The important section of a report is its main body. It carries introduction, methodology, statements of findings, conclusions and recommendations. The end matter includes appendix, literature selected and bibliography. The appendix includes letters, questions or other tools used. Bibliography is the list of books, journals. Reports, bulletins etc. used for reference.

### Selection and Formulation of Research Problems Research Problem

Problem means a question or an issue to be examined. A research problem refers to some kind of problem which a researcher experiences or observes in the context of either a theoretical or practical situation. The researcher has to find out suitable course of action by which the objective can be attained optimally in the context of given environment. Thus, selection of research problem has high value to the society and the researcher must be able to identify those problems that need anurgent solution.

### Requisites or Characteristics of a Good Research Problem

* clear and unambiguous
* logical and systematic
* empirical
* relation between variables
* verifiable
* interesting

### Various Aspects of a Research Problem

For an effective formulation of the problem following aspects of the problem are to be considered by the researcher.

1. **Definition of the problem: -** Before one takes up a problem for the study one needs to define itproperly. The issues for inquiry are to be identified clearly and specified in details. If any existing theoretical framework is tested, the particular theorem or theories must be identified. Similarly if there are any assumptions made and terms used the meaning of them must be made clear. As far as possible the statement of the problem should not give any scope for ambiguity.
2. **Scope of the problem: -** The research scholar has to fix up the four walls of the study. The researcher must identify which of the aspects he is trying to prove. Taking the example of sickness he should specify. (1) Whether his study extends to all types of small scale industries, or limited to only few of them. (2) Whether the study is limited to find cause for sickness oralso to prescribe certain prescriptions etc.
3. **Justification of the problem: -** Many a time research studies are put to the test of justification or relevance. In the scientific curiosity of the problems, th problem that needs urgent solution must be given preference.
4. **Feasibility of the problem: -** Although a problem needs urgent attention and is justifiable in several respects, one has to consider the feasibility of the same. Feasibility means the possibilityof conducting the study successfully. The elements

of time, data, Cost is to be taken into consideration before a topic is selected for study.

1. **Originality of the problem: -** In social sciences, particularly in commerce and management, there is no systematic compilation of the works already done or on hand. Two people may be doing a work more or less on similar topic. In such situations it is not advisable to continue work in the same manner. What is advisable is that, each of them should try to focus ondifferent aspects, so that they could enrich the field of knowledge with their studies. Another problem faced by a researcher is that a problem which he intends to do is already worked out. Should he repeat the same or not? This depends upon the situation or circumstances which engage his attention.

### Defining and Formulating a Research Problem

A research is to be defined along with the bounds in which it is to be studied. Therefore defining a problem involves the task of laying down boundaries within which a researcher shall study the problem with a predetermined objective in view. Defining a research problem and clearly is a crucial part of a research study and must in no case be accomplished hurriedly.

### Steps for Defining and Formulating a Research Problem

1. Stating the problem in a general way: - The researcher should state the problem in general terms, keeping in view either some practical concern or some scientific or intellectual interest. Often the guides put forth the problem in geneal terms and researcher narrows down the problem and phrase the problem in operational terms. The problem stated generally may contain various ambiguities which must be resolved by proper thinking and rethinking over theproblem.

There are two ways of stating a problem by way of posing questions and by way of making statements.

1. Understanding the nature of the problem: - For understanding the nature of the problem in a better way, the researcher has to hold discussions with those who have Knowledge of the problem.
2. Surveying the available literature:- This is necessary because only through such a survey, a researcher can understand the relevant theories, reports etc.studies on related problems are useful for knowing the type of difficulties that may encounter in the present study.
3. Developing the ideas through discussions: - A researcher must discuss his problem with his colleagues and those who have enough experience in the same area or in working on similar problems. People with experience can enlighten the researcher on various aspects of his study.
4. Rephrasing the research problem: - A researcher must rephrase the research problems into a working proposition. The researcher puts the research problem in as specific terms as possible so that it may become operationally viable and may help in the development of working hypothesis.

Terms defined

### Relevant Variables

A variable is a measurable concept such as height, age, income etc. it takes quantitative values. It may vary from individuals to individuals or groups to groups. When there are two variables in a study such that the values of one variable change in response to the change in the values of the other variable, then the former is

said to be depending variable and latter is said to be independent variable. A variable may be discrete or continuous. When a variable assumes only certain specified values in an interval, it is called discrete variable. But a continuous variable is one which can assume any number of values in an interval.

**Extraneous variables:** Besides the independent variable, a dependent variable can beinfluenced by other variables, which are not part of the study. They are called extraneous variable. They are variables working from outside.

**Unit of analysis:** A variable can be measured and analyzed by statistical units. The statistical units used for analysis and interpretation are known as units of analysis. Rations percentages, coefficients etc are such units. They can be used for the purpose of comparison.

### Hypothesis

Hypothesis is a tentative statement showing the relationship between two or more variables, the reliability and validity of which is to be tested and verified. It expresses the nature and degree of relationship between variables. Hypotheses are -

* Assumptions
* Tentative statements
* Propositions
* Answering the questions
* Proposed solution to a problem
* Statements which are to be tested
* To be accepted of rejected
* To be verified empirically on the basis of sample

### Why Hypothesis

* + Gives the direction of research
  + Specifies the sources of data
  + Determines the data needs
  + Type of research
  + Appropriate techniques of research
  + Contributes to the development of theory

### Role of Hypothesis

* It guides the direction of the study
* It identifies facts that are relevant and those that are not
* It suggests which form of research design is likely to be most appropriate
* It provides a frame work for organising the conclusions that result

### Sources of Hypothesis

* Observation –based on the behavior pattern
* Relation between price and demand is hypothesized,
* the sales and ad may be hypothesized
* Analogies casual observations in nature
* Poor people buy more lottery
* Intuitions and personal experiences –
* The story of Newton and falling of apple,
* The wisdom of Budha under the banyan tree
* A sparking in our mind at particular occasions
* Findings of studies
* State of Knowledge – the theorems may be modified
* Culture –castes, beliefs, habits, behaviour
* Contribution of research – the rejection of certain hypothesis may lead to further research
* Theory –large concerns earn more profit, return on capital is an index of business success

### Different Types of Hypothesis

**Descriptive Hypothesis** – Describing the characteristics of a variable (may be an object, person,organisation, event, and situation)

Eg. Employment opportunity of commerce graduates is more than the arts students.

**Relational Hypothesis** – Establishes relationship between two variables. It may be positive, negative or nil relationship.

Eg. High income leads to high savings

**Causal Hypothesis** – The change in one variable leads to change in another variable i.e. Dependentand independent variables, one variable is a cause and the other one is the effect

**Statistical Hypothesis** – association or difference between two variables are hypothesized

**Null Hypothesis** – it points out there is no difference between two populations in respect of same property.

**Alternative Hypothesis-** when we reject the null hypothesis, we accept another hypothesis known as alternate hypothesis.

### Working HypothesisComplex HypothesisHow to test

* + State the two hypotheses - null and alternative
  + Decide the test statistic t, Z, F, Chi-square
  + Fix the level of significance
  + Make the computations
  + Take the decision
  + Type 1 error and Type 11 error

Degree of freedom ( based on probability, distribution