

# Module - 1

## Business Research Fundamentals

### Research

Research is the process of **discovering new knowledge**. This knowledge can be either the development of new concepts or the advancement of existing knowledge and theories, leading to a new understanding that was not previously known.

Research is an **original and systematic investigation undertaken to increase existing knowledge and understanding of the unknown to establish facts and principles**. Some people consider research as a voyage of discovery of new knowledge.

<https://youtu.be/mV0bUQpz468>

### Business Research

**Business research** is a process of acquiring detailed information of all the areas of business and using such information in maximizing the sales and profit of the business. Such a study helps companies determine which product/service is most profitable or in demand. In simple words, it can be stated as the acquisition of information or knowledge for professional or commercial purpose to determine opportunities and goals for a business.

Business research can be done for anything and everything. In general, when people speak about business research it means asking research questions to know where the money can be spent to increase sales, profits

or market share. Such research is critical to make wise and informed decisions.

For example: A **mobile company wants to launch a new model** in the market. But they are not aware of what are the dimensions of a mobile that are in most demand. Hence, the company conducts a business research using various methods to gather information and the same is then evaluated and conclusions are drawn, as to what dimensions are most in-demand, This will enable the researcher to make wise decisions to position his phone at the right price in the market and hence acquire a larger market share.

### **Characteristics of Business 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 **repeatable**. 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.

<https://youtu.be/cVtDx5dZf1U>

### **Scope of business research**

1. **Production Management:** The research performs an important function in product development, diversification, introducing a new product, product improvement, process technologies, choosing a site, new investment etc.

2. **Personnel Management:** Research works well for job redesign, organization restructuring, development of motivational strategies and organizational development.

3. **Marketing Management:** Research performs an important part in choice and size of target market, the consumer behavior with regards to attitudes, life style, and influences of the target market. It is the primary tool in determining price policy, selection of channel of distribution and development of sales strategies, product mix, promotional strategies, etc.
4. **Financial Management:** Research can be useful for portfolio management, distribution of dividend, capital raising, hedging and looking after fluctuations in foreign currency and product cycles.
5. **Materials Management:** It is utilized in choosing the supplier, making the decisions relevant to make or buy as well as in selecting negotiation strategies.
6. **General Management:** It contributes greatly in developing the standards, objectives, long-term goals, and growth strategies.

<https://youtu.be/UD7rJcs5ovI>

To perform well in a complex environment, you will have to be equipped with an understanding of scientific methods and a way of integrating them into decision making. You will have to understand what good research means and how to conduct it. Since the complexity of the business environment has amplified, there is a commensurate rise in the number and power of the instruments to carry out research. There is certainly more knowledge in all areas of management. We now have started to develop much better theories. The computer has provided us a quantum leap in the capability to take care of difficulties. New techniques of quantitative analysis utilize this power. Communication and measurement techniques have also been improved. These developments reinforce each other and are having a substantial impact on business management.

## **Advantages**

1. Business research helps to identify opportunities and threats.
2. It helps identify problems and using this information, wise decisions can be made to tackle the issue appropriately.
3. It helps to understand customers better and hence can be useful to communicate better with the customers or stakeholders.
4. Risks and uncertainties can be minimized by conducting business research in advance.
5. Financial outcomes and investments that will be needed can be planned effectively using business research.
6. Such research can help track competition in the business sector.
7. Business research can enable a company to make wise decisions as to where to spend and how much.
8. Business research can enable a company to stay up-to-date with the market and its trends and appropriate innovations can be made to stay ahead in the game.
9. Business research helps to measure reputation

## **Disadvantages of Business research**

1. Business research can be a high-cost affair
2. Most of the time, business research is based on assumptions
3. Business research can be time-consuming
4. Business research can sometimes give you inaccurate information, because of a biased population or a small focus group.
5. Business research results can quickly become obsolete because of the fast-changing markets

## **Types of business research**

### **1. Fundamental (or Basic or Pure) Research:**

Basic research is a type of research approach that is aimed at gaining a better understanding of a subject, phenomenon (facts) or basic law of nature. This type of research is primarily focused on the advancement of knowledge rather than solving a specific problem.

Basic research is also referred to as pure research or fundamental research. The concept of basic research emerged between the late 19th century and early 20th century

The primary aim of this research approach is to gather information in order to improve one's understanding, and this information can then be useful in proffering solutions to a problem.

For Example: In education, basic research is used to develop pedagogical theories that explain teaching and learning behaviours in the classroom. Developing an theory regarding the learning of the Children on each stage of their life.

### **2. Applied Research:**

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. It is particular action related research. Its decision directly implemented into the business. It aims to discover solution for the same practical problem.

Applied business research comes out from work related problems that need timely solutions. For example a product may not be selling well and the manager might want to find the reasons for this in order to take action or

Business is facing problems in retaining employees, or there is higher degree of absenteeism in the business. All these are problems that require the business to find immediate solutions; otherwise the business would fail to run smoothly. Thus research carried out with the intention of applying the results of the findings to solve specific problems is applied business research.

### **3. Descriptive Research**

It 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.

### **4. Qualitative Research:**

Qualitative market research is an open ended questions(conversational) based research method that heavily relies on the following market research methods: focus groups, in-depth interviews, and other innovative research methods. It is based on a small but highly validated sample size.

The small size enables cost saving, while the “importance” of the samples and the lack of a defined questionnaire allows free and in-depth discussion and analysis of topics. Usually, the discussion is directed by the discretion of the interviewer or market researcher.

Qualitative market research is all about understanding people’s beliefs and point of views and what they feel about the situation and what are the deciding factors that influence their behavior.

## **5. Quantitative Research:**

Quantitative Market Research is a technique to ask questions to the target audience in an organized manner using surveys, polls or questionnaires. Received responses can be analyzed to make well-thought decisions for improving products and services, that will in turn help increase respondent satisfaction levels. Well-founded results can be achieved in case a large sample size that represents a population is surveyed.

The age of Information has transformed both selling as well as purchasing habits and norms. “Information” or “data” is now more valuable than gold. Companies rise and fall on the basis of how well they are able to collect and analyze data and make informed decisions based on the gathered insights.

## **6. Comparative Research:**

Comparative research is the act of comparing two or more things with a view to discovering something about one or all the things being compared. Comparative research or analysis is a broad term that includes both quantitative and qualitative comparison of social entities. Social entities may be based on many lines, such as geographical or political ones in the form of cross-national or regional comparisons. The underlying goal of comparative analysis is to search for similarity and variance.

## **7. Analytical Research:**

In Analytical research one has to use facts or information already available and analyze these to make a critical evaluation of the material. Analytical Research is a style of qualitative inquiry which draws from the disciplines of philosophy, history and biography. Analytical research describes and interprets the past or recent past from selected sources.



## **8. Problem Identifying Research:**

Identification of research problem refers to the sense of awareness of a prevalent social problem, a social phenomenon or a concept that is worth study – as it requires to be investigated to understand it. The researcher identifies such a research problem through his observation, knowledge, wisdom and skills. In simple the research that has been conducted for the purpose of identifying a particular problem of phenomena is known as problem identification research.

Problem-identification research helps marketing teams identify what types of problems they might have. Here, one clarification is needed when we use the term ‘Problem’, it is not a problem in true sense. It is usually a decision making dilemma or it is a need to tackle a particular business situation. It could be a difficulty or an opportunity.

## **9. Problem Solving Research:**

This type of research is done by an individual company for the problem faced by it. Marketing research and market research are the applied research. For eg:- videocon international conducts research to study customer satisfaction level, it will be problem solving research. In short, the main aim of problem solving research is to discover some solution for some pressing practical problem. This type of research is conducted by companies to understand and resolve their own problems. The problem-solving research uses applied research to find solutions to the existing problems. Problem solving covers everything from the collection of data to who to involve in the process and how to ensure that the solution achieves the desired outcomes

<https://youtu.be/GrNSoIeoiEQ>

<b>One word question answer Module-1, Chapter-1</b>		
Sr. No	Question	Answer
1	What is research?	process of discovering new knowledge
2	Process of discovering new knowledge is known as_____	research
3	What is an original and systematic investigation undertaken to increase existing knowledge and understanding of the unknown to establish facts and principles.	research
4	What is a process of acquiring detailed information of all the areas of business and using such information in maximizing the sales and profit of the business?	business research
5	How business research study helps organisation?	helps companies determine which product/service is most profitable or in demand.
6	What type of study study helps companies determine which product/service is most profitable or in demand?	business research
7	On what business research should focus on?	priority problems.
8	What emphasizes that a researcher should employ a structured procedure?	business research
9	_____ means that the findings of one researcher should be made available to other researchers to prevent them from repeating the same research.	reductive
10	What does it means when it is said 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?	research should be repeatable

11	What is the meaning of a research should be generative?	answering one question leads to generating many other new questions.
12	What does it means when we says that research should be aimed at reaching a solution leading to the implementation of its findings?	research should be action oriented
13	What is the meaning of research should follow an integrated multidisciplinary approach?	research approaches from more than one discipline are needed.
14	What does the meaning of the research should be participatory?	involving all parties concerned at all stages of the study
15	What should be included in Scope of business research?	production, personnel, marketing finance, material & general management
16	What type of research performs a function in product development, diversification, introducing a new product, product improvement, process technologies etc.	production management research
17	What type of research works for job redesign, organization restructuring, development of motivational strategies and organizational development.	Personnel management research
18	What type of research performs part in size of target market, the consumer behavior with regards to attitudes, life style, and influences of the target market	marketing research
19	_____ is the primary tool in determining price policy, selection of channel of distribution and development of sales strategies, product mix, promotional strategies, etc.	marketing research

20	Which research can be useful for portfolio management, distribution of dividend, capital raising etc?	financial research
21	What type of research is utilized in choosing the supplier, making the decisions relevant to make or buy as well as in selecting negotiation strategies?	material research
22	_____ contributes greatly in developing the standards, objectives, long-term goals, and growth strategies.	general management research
23	What helps to identify opportunities and threats?	business research
24	_____ helps identify problems and using this information, wise decisions can be made to tackle the issue appropriately.	business research
25	What helps to understand customers better and hence can be useful to communicate better with the customers or stakeholders?	business research
26	Fundamental research is also known as _____	pure research
27	Fundamental research is also known as _____	basic research
28	Which research is a type of research approach that is aimed at gaining a better understanding of a subject, phenomenon (facts) or basic law of nature?	basic research
29	_____ research is primarily focused on the advancement of knowledge rather than solving a specific problem.	fundamental research
30	The concept of basic research emerged between the _____	late 19th century and early 20th century
31	What type of research is concerned with the solution of particular problems?	applied research

32	_____ aims at finding a solution for an immediate problem facing a society or an industrial organization.	applied research
33	Which research is empirical and practical?	applied research
34	which research is concerned with applied aspects of life?	applied research
35	marketing research are examples of _____	applied research
36	_____ research comes out from work related problems that need timely solutions.	Applied business
37	Which research defined as a research method that describes the characteristics of the population or phenomenon studied?	descriptive research
38	Which method focuses more on the “what” of the research subject than the “why” of the research subject?	descriptive research
39	Which method heavily relies on focus groups, in-depth interviews, and other innovative research methods?	Qualitative research
40	_____ is based on a small but highly validated sample size.	Qualitative research
41	Which research is all about understanding people’s beliefs and point of views and what they feel about the situation and what are the deciding factors that influence their behavior?	Qualitative research
42	_____ is a technique to ask questions to the target audience in an organized manner using surveys, polls or questionnaires.	quantitative research
43	What is the sample size in quantitative research?	large

44	_____ is the act of comparing two or more things with a view to discovering something about one or all the things being compared.	comparative research
45	_____ includes both quantitative and qualitative comparison of social entities.	comparative research
46	In which research we have to use facts or information already available and analyze these to make a critical evaluation of the material?	Analytical research
47	Which type of research draws from the disciplines of philosophy, history and biography?	Analytical research
48	Which type of research refers to the sense of awareness of a prevalent social problem, a social phenomenon or a concept that is worth study – as it requires to be investigated to understand it?	problem identification research
49	How the researcher find out research problems?	observation, knowledge, wisdom and skills.
50	_____ research is done by an individual company for the problem faced by it.	problem solving

## **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. In other words, Hypothesis is a predictive statement, capable of being tested, by scientific methods, that relates an independent variable to some dependent variable.

An hypothesis is a specific statement of prediction. It describes in concrete terms what you expect will happen in your study. Not all studies have hypotheses. Sometimes a study is designed to be exploratory(done in order to find something).

A hypothesis is a possible answer to a research question. It is a presumption or a hunch on the basis of which a study has to be conducted. This hypothesis is tested for possible rejection or approval. If the hypothesis gets accepted it shows that your hunch was right if it get rejected it still does not mean that your research was not valid, but it means that it is the opposite way you thought and perceived. Whether it is approved or not it gives you some conclusion and adds to the available body of knowledge.

In simple words, it is a predictable statement that may be judged as true or false. Hypothesis is an assumption or some supposition to be proved or disproved.

<https://youtu.be/-WcyQc0x6uo>

### **Characteristics of hypothesis**

1. It must be **precise and clear**. If it is not precise and clear, then the inferences drawn on its basis would not be reliable.

2. A hypothesis must be **capable of being put to test**. Quite often, the research programmes fail owing to its incapability of being subject to testing for validity. Therefore, some prior study may be conducted by the researcher in order to make a hypothesis testable. A hypothesis “is tested if other deductions can be made from it, which in turn can be confirmed or disproved by observation” (Kothari, 1988).
3. It must **state the relationship** between two variables, in the case of relational hypotheses.
4. It must be **specific and limited in scope**. This is because a simpler hypothesis generally would be easier to test for the researcher. And therefore, he/she must formulate such hypotheses.
5. As far as possible, a hypothesis must be **stated in the simplest language**, so as to make it understood by all concerned. However, it should be noted that the simplicity of a hypothesis is not related to its significance.
6. It must be **consistent and derived from the most known facts**. In other words, it should be consistent with a substantial body of established facts. That is, it must be in the form of a statement which is most likely to occur.
7. It must be amenable to **testing within a stipulated or reasonable period of time**. No matter how excellent a hypothesis, a researcher should not use it if it cannot be tested within a given period of time, as no one can afford to spend a lifetime on collecting data to test it.
8. A hypothesis should state the facts that give rise to the **necessity of looking for an explanation**. This is to say that by using the hypothesis, and other known and accepted generalizations, a researcher must be able to derive the original problem condition. Therefore, a hypothesis should explain what it actually wants to explain, and for this, it should also have an empirical reference.



## **Importance of hypothesis**

1. States the purpose of research.
2. It helps in finding the answer.
3. It provides direction.
4. It suggests important area of studies.
5. It provides framework of analysis.
6. Hypothesis looks forward – it means it is future oriented.
7. It ensures the scientific nature of research.

## **Limitation of Hypothesis Testing**

1. The tests should not be used in a mechanical fashion. It should be kept in view that testing is not decision-making itself; the tests are only useful aids for decision-making. Hence “proper interpretation of statistical evidence is important to intelligent decisions.”
2. Test do not explain the reasons as to why does the difference exist, say between the means of the two samples. They simply indicate whether the difference is due to fluctuations of sampling or because of other reasons but the tests do not tell us as to which is/are the other reason(s) causing the difference.
3. Results of significance tests are based on probabilities and as such cannot be expressed with full certainty. When a test shows that a difference is statistically significant, then it simply suggests that the difference is probably not due to chance.
4. Statistical inferences based on the significance tests cannot be said to be entirely correct evidences concerning the truth of the hypothesis. This is specially so in case of small samples where the probability of drawing erring inferences happens to be generally higher. For greater reliability, the size of samples be sufficiently enlarged.

## **Sources of hypothesis**

### **1. Previous Study**

Previous study is also a source of developing a concrete hypothesis. If a researcher uses previous knowledge about a phenomenon for a particular place, then another researcher followed his techniques and formulates his own. For example increase in fertilizers and irrigation leads to higher production in agriculture in District Junagadh. Now another researcher studies his work and applies it to another District Rajkot

### **2. Personal Experience**

On the basis of his personal experience he uses his mind and suggests some points for the eradication of a social problem through developing a good hypothesis. Greater the researcher experience lead to higher degree of formation.

### **3. Imagination & Thinking**

Creative thinking and imagination of a researcher sometimes help in formulating a good hypothesis. Personal ideas and the thinking capabilities of a researcher would lead to greater number of hypothesis formulation as well as control over the problem..

### **4. Observation**

In consideration and undertaking a research problem, observation is necessary. The collection of previous facts and current facts related to the problem lead to the formulation of a good hypothesis.

### **5. Scientific Theory**

Theory is capable in explaining all the facts relating to the problem. Scientific theory is a fertile source of hypothesis formulation. The theory

which is used by a researcher may satisfied the needs of making it, because theory explains the known facts.

## **6. Culture**

Culture is the accumulation of ways of behaving and adoption in a particular place and time. While formulating a hypothesis for a problem, culture should be studied. If we want to study trends towards female education in a particular area, for this purpose we will study, traditions, family system, Norms, Values, region and education system of that area.

### **Types of Hypothesis**

#### **1. Descriptive Hypothesis**

Describing the characteristics of a variable (may be an object, person, organization, event, and situation). It states the existence, size, form or distribution of some variable. It is goal to obtain a complete and accurate description of events, conditions, circumstances, processes and relationships surroundings the situation under study. Researchers often use a research question rather than a descriptive hypothesis. Descriptive hypotheses encourage researchers to crystallize their thinking about the likely relationships. Descriptive hypotheses encourage researchers to think about the implications of a supported or rejected finding. Descriptive hypotheses are useful for testing statistical significance.

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

#### **2. Relational Hypothesis**

Establishes relationship between two variables. It may be positive, negative or nil relationship. Relational hypotheses aim to determine if relationships exist between a set of variables.

E.g. High income leads to high savings

### **3. Explanatory / Causal Hypothesis**

The change in one variable leads to change in another variable i.e. Dependent and independent variables, one variable is a cause and the other one is the effect. Imply the existence of, or a change in, one variable causes or leads to a change in the other variable. This brings in the notions of independent and dependent variables.

### **4. Correlational Hypothesis:**

State merely that the variables occur together in some specified manner without expressing that one causes the other. Such weak claims are often made when we believe that there are more basic causal forces that affect both variables.

For example: Level of job commitment of the officers is positively associated with their level of efficiency. Here we do not make any claim that one variable causes the other to change. That will be possible only if we have control on all other factors that could influence our dependent variables.

### **5. Null Hypothesis**

It is used for testing the hypothesis formulated by the researcher. Researchers treat evidence that supports a hypothesis differently from the evidence that opposes it. They give negative evidence more importance than to the positive one. It is because the negative evidence tarnishes(dull) the hypothesis.

It shows that the predictions made by the hypothesis are wrong. The null hypothesis simply states that there is no relationship between the

variables or the relationship between the variables is "zero." That is how symbolically null hypothesis is denoted as "H0". For example:

H0 = There is no relationship between the level of job commitment and the level of efficiency. Or

H0 = The relationship between level of job commitment and the level of efficiency is zero. Or

H0 = The two variables are independent of each other.

It does not take into consideration the direction of association (i.e. H0 is non directional), which may be a second step in testing the hypothesis. First we look whether or not there is an association then we go for the direction of association and the strength of association. Experts recommend that we test our hypothesis indirectly by testing the null hypothesis. In case we have any credibility in our hypothesis then the research data should reject the null hypothesis. Rejection of the null hypothesis leads to the acceptance of the alternative hypothesis.

## **6. Alternative Hypothesis**

when we reject the null hypothesis, we accept another hypothesis known as alternate hypothesis. It is denoted by H1 or Ha. The alternative hypothesis is what we are attempting to demonstrate in an indirect way by the use of our hypothesis test. If the null hypothesis is rejected, then we accept the alternative hypothesis.

The alternative (to the null) hypothesis simply states that there is a relationship between variables under study. In our example it could be: there is a relationship between the level of job commitment and the level of efficiency.

Not only there is an association between the two variables under study but also the relationship is perfect which is indicated by the number "1".

Thereby the alternative hypothesis is symbolically denoted as "H1". It can be written like this:

H1: There is a relationship between the level of job commitment of the officers and their level of efficiency.

### **7. Directional Hypotheses:**

These are usually derived from theory. They may imply that the researcher is intellectually committed to a particular outcome. They specify the expected direction of the relationship between variables i.e. the researcher predicts not only the existence of a relationship but also its nature.

### **8. Non-directional Hypotheses:**

Used when there is little or no theory, or when findings of previous studies are contradictory. They may imply impartiality. Do not stipulate the direction of the relationship.

[https://youtu.be/\\_Uq6OCEPCeo](https://youtu.be/_Uq6OCEPCeo)

<https://youtu.be/MEIW7Wq6MXA>

### **Type 1 & Type 2 error**

In the context of testing of hypotheses, there are basically two types of errors we can make. We may reject  $H_0$  when  $H_0$  is true and we may accept  $H_0$  when in fact  $H_0$  is not true. The former is known as Type I error and the latter as Type II error. In other words, Type I error means rejection of hypothesis which should have been accepted and Type II error means accepting the hypothesis which should have been rejected.

Type I error is denoted by  $\alpha$  (alpha) known as  $\alpha$  error, also called the level of significance of test; and Type II error is denoted by  $\beta$  (beta) known as  $\beta$  error.

## **Steps in Business Research Process**

### **1. Define Research Problem**

The business research process begins with the identification “of a problem faced by the company. The clear-cut statement of problem may not be possible at the very outset of research process because often only the symptoms of the problems are apparent at that stage. The problem may be in any department of the company. For eg. **Company is not able to achieve its targeted revenue. This may be a problem for the company. Than company has to find out why they are not able to achieve it, is it due to poor sales or high production cost.**

Clear definition of the problem helps the researcher in all subsequent research efforts including setting of proper research objectives, the determination of the techniques to be used, and the extent of information to be collected.

### **2. Extensive Literature Survey:**

A review of relevant literature is an integral part of the research process. It enables the researcher to formulate his problem in terms of the specific aspects of the general area of his interest that has not been so far researched.

Such a review, not only provides him exposure to a larger body of knowledge but also equips him with enhanced knowledge to efficiently follow the research process.

**Through a proper review of the literature, the researcher may develop the connection between the results of his study and those of the others..**

### **3. Developing Hypothesis:**

After extensive literature survey, researcher should state in clear terms the working hypothesis. Working **hypothesis is tentative assumption made in order to draw out and test** its logical or empirical consequences. Specification of working hypothesis is a basic step in the research process. The research work is conducted to test the truth of this hypothesis. Hypothesis should be very specific a limited to the piece of research in hand because it has to be tested. The role of hypothesis is to guide the researcher by delimiting the area of research and to keep him on the right track.

A review of previous documents to similar or related phenomena is essential even for the beginning researchers. To ignore the existing literature may lead to wasted effort on the part of the researchers. If the researcher is aware of earlier studies of his topic, or related topics, he will be in a much better position to assess the significance of his work and to convince others that it is important.

### **4. 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.

In other words, the function of research design is to provide for the collection of relevant evidence with minimal expenditure of effort, time



and money. But how all these can be achieved depends mainly on the research purpose.

### **5. Determining sample design:**

Sampling involves procedures that use a small number of items or parts of the 'population' (total items) to make conclusion regarding the 'population'. Important questions in this regard are— who is to be sampled as a rightly representative lot? Which is the target 'population'? What should be the sample size—how large or how small? How to select the various units to make up the sample?

### **6. Collecting the data:**

The collection of data relates to the gathering of facts to be used in solving the problem. Hence, methods of market research are essentially methods of data collection. Data can be secondary, i.e., collected from concerned reports, magazines and other periodicals, especially written articles, government publications, company publications, books, etc.

Data can be primary, i.e., collected from the original base through empirical research by means of various tools.

#### **There can be broadly two types of sources**

(i) Internal sources—existing within the firm itself, such as accounting data, salesmen's reports, etc. (ii) External sources—outside the firm.

### **7. Analysis of data:**

After the data have been collected, the researcher turns to the task of analysing them. Data analysis is defined as a process of cleaning, transforming, and modeling data to discover useful information for business decision-making. The purpose of Data Analysis is to extract

useful information from data and taking the decision based upon the data analysis.

The unwieldy data should necessarily be condensed into a few manageable groups and tables for further analysis. Thus, researcher should classify the raw data into some purposeful and usable categories.

A simple example of Data analysis is whenever we take any decision in our day-to-day life is by thinking about what happened last time or what will happen by choosing that particular decision. This is nothing but analyzing our past or future and making decisions based on it. For that, we gather memories of our past or dreams of our future. So that is nothing but data analysis. Now same thing analyst does for business purposes, is called Data Analysis.

### **8. Hypothesis-testing: (Scientific Research)**

After analysing the data as stated above, the researcher is in a position to test the hypotheses, if any, he had formulated earlier. Do the facts support the hypotheses or they happen to be contrary?

This is the usual question which should be answered while testing hypotheses. Various tests, such as Chi square test, t-test, F-test, have been developed by statisticians for the purpose. The hypotheses may be tested through the use of one or more of such tests, depending upon the nature and object of research inquiry. Hypothesis-testing will result in either accepting the hypothesis or in rejecting it.

### **9. Formulating Conclusion, Preparing & Presenting the Report**

The final stage in the business research process is that of interpreting the information and drawing conclusion for use in managerial decision. The research report should clearly and effectively communicate the research

findings and need not include complicated statement about the technical aspect of the study and research methods.

Often the management is not interested in details of research design and statistical analysis, but instead, in the concrete findings of the research. If need be, the researcher may bring out his appropriate recommendations or suggestions in the matter. Researchers must make the presentation technically accurate, understandable and useful.

### **Report**

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, and 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.

### **Links explaining business research process**

<https://www.youtube.com/watch?v=cVtDx5dZf1U>

[https://www.youtube.com/watch?v=tBXznU\\_TPJo](https://www.youtube.com/watch?v=tBXznU_TPJo)

One word question answer Module-1, Chapter-2		
Sr. No	Question	Answer
1	What is a tentative statement showing the relationship between two or more variables, the reliability and validity of which is to be tested and verified?	hypothesis
2	_____ is a predictive statement, capable of being tested, by scientific methods, that relates and independent variable to some dependent variable.	hypothesis
3	What is hypothesis?	statement of prediction
4	_____ describes in concrete terms what you expect will happen in your study.	hypothesis
5	What is tested for possible rejection or approval in research?	hypothesis
6	Why hypothesis must be clear and precise?	because inferences drawn on its basis would not be reliable.
7	Why a hypothesis must be stated in the simplest language?	so that all can understand it
8	_____ must be consistent and derived from the most known facts	hypothesis
9	_____ must be amenable to testing within a stipulated or reasonable period of time.	hypothesis
10	Why hypothesis is important?	state the purpose of study and provides direction.
11	Through which a concrete hypothesis can be developed?	previous study
12	In source of hypothesis increase in fertilizers and irrigation leads to higher production in agriculture in District Junagadh. Now another researcher studies his work and applies it to another District Rajkot is an example of _____	previous study
13	On the basis of his _____ researcher uses his mind and suggests some points for the eradication of a social problem through developing a good hypothesis.	personal experience

14	How observation can be a source of hypothesis?	through collection of facts
15	What does the scientific theory explains?	known facts
16	_____ states the existence, size, form or distribution of some variable.	descriptive hypothesis
17	_____ is goal to obtain a complete and accurate description of events, conditions, circumstances, processes and relationships surrounding the situation under study.	descriptive hypothesis
18	Employment opportunity of commerce graduates is more than the arts students is an example of which hypothesis?	descriptive hypothesis
19	Which hypothesis establishes relationship between two variables?	relational hypothesis
20	_____ aim to determine if relationships exist between a set of variables.	relational hypothesis
21	Explanatory hypothesis is also known as _____.	causal hypothesis
22	In what type of hypothesis The change in one variable leads to change in another variable i.e. Dependent and independent variables, one variable is a cause and the other one is the effect?	causal hypothesis
23	_____ type of hypothesis state that the variables occur together in some specified manner without expressing that one causes the other.	correlational hypothesis
24	How null hypothesis is used by researcher?	used for testing the hypothesis
25	_____ hypothesis simply states that there is no relationship between the variables or the relationship between the variables is "zero."	Null
26	How symbolically null hypothesis is denoted?	H <sub>0</sub>
27	H <sub>0</sub> represent _____	null hypothesis

28	What we accept when we reject the null hypothesis?	Alternative hypothesis
29	Alternative hypothesis is denoted by _____	H1 or Ha
30	H1 or Ha represents _____	Alternative hypothesis
31	_____ hypothesis simply states that there is a relationship between variables under study.	Alternative hypothesis
32	Which hypothesis specify the expected direction of the relationship between variables?	directional hypothesis
33	Which hypothesis use little or no theory, or when findings of previous studies are contradictory?	non-directional hypothesis
34	How many typrs of error are there in hypothesis?	2
35	What are the errors in hypothesis?	Type 1 & Type 2 error
36	What is type 1 error?	reject H0 when H0 is true
37	What is type 2 error?	accept H0 when H0 is not true
38	Type I error is denoted by _____ known as a error, also called the level of significance of test	a (alpha)
39	How type 2 error is denoted?	b (beta)
40	What is the first step in business research process?	Define Research Problem
41	How business research process begins?	identification “of a problem faced by the company.
42	_____ enables the researcher to formulate his problem in terms of the specific aspects of the general area of his interest that has not been so far researched.	literature review
43	What a researcher may develop through a proper review of the literature?	connection between the results of his study and those of the others..
44	What is the second step of business research proces?	Extensive Literature Survey
45	What is the third step of business reserch process?	Developing Hypothesis
46	_____ is tentative assumption made in order to draw out and test its logical or empirical consequences.	working hypothesis

47	Why research work is conducted?	test the truth of this hypothesis.
48	What is the fourth step in business research process?	Preparing the Research Design
49	Which step in business research process include gathering and analyzing the data?	Preparing the Research Design
50	_____ includes the time and cost budgets since most studies are done under these two constraints.	Preparing the Research Design
51	Which step in business research process to provide for the collection of relevant evidence with minimal expenditure of effort, time and money?	Preparing the Research Design
52	What is the fifth step in business research process?	Determining sample design
53	What procedures that use a small number of items or parts of the 'population' (total items) to make conclusion regarding the 'population' is called?	sampling
54	What is sampling?	to select small part out of total population
55	What is the sixth step in business research process?	data collection
56	Which type of data is collected from concerned reports, magazines and other periodicals, especially written articles, government publications, company publications, books, etc.	secondary data
57	How many types of data collection are there?	2 types
58	What are the types of data collection method are there?	primary and secondary
59	_____ collected from the original base through empirical research by means of various tools.	primary data
60	What are the sources of data collection?	internal and external
61	What is the seventh step in business research process?	Analysis of data

62	_____ is defined as a process of cleaning, transforming, and modeling data to discover useful information for business decision-making.	data analysis
63	What is the eighth step in business research process?	Hypothesis-testing
64	What are the different type of tests used for hypothesis testing?	Chi square test, t-test, F-test
65	_____ will result in either accepting the hypothesis or in rejecting it.	hypothesis testing
66	What is the final step in business research process?	Formulating Conclusion, Preparing & Presenting the Report
67	_____ is a detailed description of what has been done and how it has been done with respect to a particular area or topic.	report
68	What a report should contain?	preliminary section, the main body and the end matter
69	What is the important section in a report?	main body
70	_____ carries introduction, methodology, and statements of findings, conclusions and recommendations.	main body
71	_____ is the list of books, journals. Reports, bulletins etc. used for reference	bibliography