DEPARTMENT OF COMMERCE AND FINANCIAL STUDIES
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Meaning of Research

- Research refers to a search for knowledge.
- One can also define research as a scientific and systematic search for pertinent information on a specific topic.
- Research is an art of scientific investigation.
- Dictionary definition of research is a careful investigation or inquiry specially through search for new facts in any branch of knowledge.
- Some people consider research as a movement from the known to unknown.
- It is actually a voyage of discovery.

Definition of Research

- Research is an academic activity and as such the term should be used in a technical sense.
- According to Clifford Woody, research comprises defining and redefining problems, formulating hypothesis or suggested solutions: collecting, organising and evaluating data; making deductions and reaching conclusions; and at last carefully testing the conclusions to determine whether they fit the formulating hypothesis.
- D. Slesinger and M.Stephenson in the Encyclopaedia of Social Sciences define research as, “the manipulation of things, concepts or symbols for the purpose of generalising to extend, correct or verify knowledge, whether that knowledge aids in construction of theory or in the practice of an art.”

Objectives of Research

- The main aim of research is to find out the truth which is hidden and which has not been discovered as yet. Though each research study has its own specific purpose, we mention some general objectives of research below:
  - To gain familiarity with a phenomenon or to achieve new insights into it (studies with this object in view are termed as exploratory or formulative research studies);
  - To portray accurately the characteristics of a particular individual, situation or a group (descriptive research studies);
  - To determine the frequency with which something occurs or with which it is associated with something else(diagnostic research);
  - To test a hypothesis of a causal relationship between variables (hypothesis-testing research studies).

Types of Research

- The basic types of research are as follows:
  - Descriptive vs. Analytical
  - Applied vs. Fundamental
  - Quantitative vs. Qualitative
  - Conceptual vs. Empirical
  - Some other types of research

1. Descriptive vs. Analytical

- Descriptive research includes surveys and fact-finding enquiries of different kinds.
- The major purpose of descriptive research is description of the state of affairs as it exists at present.
- The main characteristic of this method is that the researcher has no control over the variables; he can only report what has happened or what is happening.
- The methods of research utilized in descriptive research are survey methods of all kinds, including comparative and correlational methods.
- In analytical research, on the other hand, the researcher has to use facts or information already available, and analyse these to make a critical evaluation of the material.

2. Applied vs. Fundamental

- Applied research aims at finding a solution for an immediate problem facing a society or an industrial/business organisation, whereas fundamental research is mainly concerned with generalisations and with the formulation of a theory.
- Research concerning some natural phenomenon or relating to pure mathematics are examples of fundamental research. However, research aimed at certain conclusions facing a concrete social or business problem is an example of applied research.
- Thus, the central aim of applied research is to discover a solution for some pressing practical problems, whereas basic research is directed towards finding information that has a broad base of applications and thus, adds to the already existing organised body of scientific knowledge.

3. Quantitative vs. Qualitative

- Quantitative research is based on the quantitative measurements of some characteristics. It is applied to phenomena that can be expressed in terms of quantities.
- Qualitative research, on the other hand, is concerned with qualitative phenomenon, i.e., phenomena relating to or involving quality or kind.
- Attitude or opinion research i.e., research designed to find out how people feel or what think about a particular subject or institution is also qualitative research.
- Qualitative research is specially important in the behavioural sciences where the aim is to discover the underlying motives of human behaviour.

4. Conceptual vs. Empirical

- Conceptual research is that related to some abstract idea(s) or theory. It is generally used by philosophers and thinkers to develop new concepts or to reinterpret existing ones.
- On the other hand, empirical research relies on experience or observation alone, often without due regard for system and theory. It is data-based research, coming up with conclusions which are capable of being verified by observation or experiment.
- empirical research is appropriate when proof is sought that certain variables affect other variables in someway. Empirical studies are considered to be the most powerful support possible for testing a given hypothesis.

5. Some Other Types of Research

- All other types of research are variations of one or more approaches, based on either the purpose of research, or the time required to accomplish research, on the environment in which research is done, or on the basis of some other similar factors.
- Research can be field-setting research or laboratory research or simulation research, depending upon the environment in which it is to be carried out.
- Research can as well be understood as clinical or diagnostic research. Such research follow case-study methods or in-depth approaches to reach the basic casual relations.

Process of research

- Research process consists of series of actions or steps necessary to effectively carry out research. One should remember that neither various steps involved in a research process are mutually exclusive; nor they are separate and distinct. The following order concerning various steps provides a useful procedural guideline regarding the research process:

i. Formulating the research problem	vii. Execution of the project
ii. Extensive literature survey	viii. Analysis of data
iii. Developing the hypothesis	ix. Hypothesis testing
iv. Preparing the research design	x. Generalisations and interpretations
v. Determining sample design	xi. Preparation of the report or presentation
vi. Collecting the data	

1. Formulating the research problem

- Essentially two steps are involved in formulating the research problems, viz., understanding the problem thoroughly, and rephrasing the same into meaningful terms from an analytical point of view.
- The best way of understanding the problem is to discuss it with one's own colleagues or with those having some expertise in the matter. Often, a problem is put in general terms and it is up to the researcher to narrow it down and phrase the problem in operational terms.
- The researcher must at the same time examine all available literature to get himself acquainted with the selected problem. He may review two types of literature—the conceptual literature concerning the concepts and theories, and the empirical literature consisting of studies made earlier which are similar to the one proposed.

2. Extensive literature survey

- Once the problem is formulated, a brief summary of it should be written down. It is compulsory for a research worker writing a thesis for a Ph.D. degree to write a synopsis of the topic and submit it to the necessary Committee or the Research Board for approval. At this juncture the researcher should undertake extensive literature survey connected with the problem.
- Academic journals, conference proceedings, government reports, books etc., must be tapped depending on the nature of the problem. In this process, it should be remembered that one source will lead to another. The earlier studies, if any, which are similar to the study in hand should be carefully studied. A good library will be a great help to the researcher at this stage.

3. Development of working hypotheses

- After extensive literature survey, researcher should state in clear terms the working hypothesis or hypotheses. Working hypothesis is tentative assumption made in order to draw out and test its logical or empirical consequences. As such the manner in which research hypotheses are developed is particularly important since they provide the focal point for research. They also affect the manner in which tests must be conducted in the analysis of data and indirectly the quality of data which is required for the analysis.
- How does one go about developing working hypotheses? The answer is by using the following approach:

(a) Discussions with colleagues and experts about the problem, its origin and the objectives in seeking a solution

(b) Examination of data and records, if available, concerning the problem for possible trends, peculiarities and other clues

4. Preparing the research design

- The research problem having been formulated in clear cut terms, the researcher will be required to prepare a research design, i.e., he will have to state the conceptual structure within which research would be conducted. The preparation of such a design facilitates research to be as efficient as possible yielding maximal information.
- Research purposes may be grouped into four categories, viz., (i) Exploration, (ii) Description, (iii) Diagnosis, and (iv) Experimentation.
- The preparation of the research design, appropriate for a particular research problem, involves usually the consideration of the following:

(i) The means of obtaining the information.

(ii) The availability and skills of the researcher and his staff (if any).

(iii) Explanation of the way in which selected means of obtaining information will be organized and the reasoning leading to the selection.

(iv) The time available for research and

(v) The cost factor relating to research, i.e., the finance available for the purpose.

5. Determining sample design

- All the items under consideration in any field of inquiry constitute a ‘universe’ or ‘population’. A complete enumeration of all the items in the ‘population’ is known as a census inquiry. It can be presumed that in such an inquiry when all the items are covered no element of chance is left and highest accuracy is obtained.
- The researcher must decide the way of selecting a sample or what is popularly known as the sample design. A brief mention of the important sample designs is as follows:
- (i) Deliberate sampling: Deliberate sampling is also known as purposive or non-probability sampling. This sampling method involves purposive or deliberate selection of particular units of the universe for constituting a sample which represents the universe.

5. Determining sample design (Cont.,)

- (ii) Simple random sampling: This type of sampling is also known as chance sampling or probability sampling where each and every item in the population has an equal chance of inclusion in the sample and each one of the possible samples, in case of finite universe, has the same probability of being selected.
- (iii) Systematic sampling: In some instances the most practical way of sampling is to select every 15th name on a list, every 10th house on one side of a street and so on. Sampling of this type is known as systematic sampling. An element of randomness is usually introduced into this kind of sampling by using random numbers to pick up the unit with which to start.
- (iv) Stratified sampling: If the population from which a sample is to be drawn does not constitute a homogeneous group, then stratified sampling technique is applied so as to obtain a representative sample.

5. Determining sample design (Cont.,)

- (v) Quota sampling: In stratified sampling the cost of taking random samples from individual strata is often so expensive that interviewers are simply given quota to be filled from different strata, the actual selection of items for sample being left to the interviewer's judgement. This is called quota sampling.
- (vi) Cluster sampling and area sampling: Cluster sampling involves grouping the population and then selecting the groups or the clusters rather than individual elements for inclusion in the sample. Area sampling is quite close to cluster sampling and is often talked about when the total geographical area of interest happens to be big one.
- (vii) Multi-stage sampling: This is a further development of the idea of cluster sampling. This technique is meant for big inquiries extending to a considerably large geographical area like an entire country.
- (viii) Sequential sampling: This design is usually adopted under acceptance sampling plan in the context of statistical quality control.

6. Collecting the data

- In dealing with any real life problem it is often found that data at hand are inadequate, and hence, it becomes necessary to collect data that are appropriate. There are several ways of collecting the appropriate data which differ considerably in context of money costs, time and other resources at the disposal of the researcher.
- Primary data can be collected either through experiment or through survey. But in the case of a survey, data can be collected by any one or more of the following ways:
- (i) By observation: This method implies the collection of information by way of investigator's own observation, without interviewing the respondents.
- (ii) Through personal interview: The investigator follows a rigid procedure and seeks answers to a set of pre-conceived questions through personal interviews.
- (iii) Through telephone interviews: This method of collecting information involves contacting
- the respondents on telephone itself.

6. Collecting the data (Cont.,)

- (iv) By mailing of questionnaires: The researcher and the respondents do come in contact with each other if this method of survey is adopted. Questionnaires are mailed to the respondents with a request to return after completing the same.
- (v) Through schedules: Under this method the enumerators are appointed and given training. They are provided with schedules containing relevant questions. These enumerators go to respondents with these schedules.
- 7. Execution of the project: Execution of the project is a very important step in the research process. If the execution of the project proceeds on correct lines, the data to be collected would be adequate and dependable. The researcher should see that the project is executed in a systematic manner and in time. If the survey is to be conducted by means of structured questionnaires, data can be readily machine-processed.

8. Analysis of data

- After the data have been collected, the researcher turns to the task of analyzing them. The analysis of data requires a number of closely related operations such as establishment of categories, the application of these categories to raw data through coding, tabulation and then drawing statistical inferences. The unwieldy data should necessarily be condensed into a few manageable groups and tables for further analysis. Thus, researcher should classify the raw data into some purposeful and usable categories.

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- 9. Hypothesis-testing: After analyzing the data as stated above, the researcher is in a position to test the hypotheses, if any, he had formulated earlier. 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. If the researcher had no hypotheses to start with, generalizations established on the basis of data may be stated as hypotheses to be tested by subsequent researches in times to come.
- 10. Generalizations and interpretation: If a hypothesis is tested and upheld several times, it may be possible for the researcher to arrive at generalization, i.e., to build a theory.
- 11. Preparation of the report or the thesis: Finally, the researcher has to prepare the report of what has been done by him. Writing of report must be done with great care keeping in view the following. The layout of the report should be as follows: (i) the preliminary pages; (ii) the main text, and (iii) the end matter.

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- The main text of the report should have the following parts:

(a) Introduction: It should contain a clear statement of the objective of the research and an explanation of the methodology adopted in accomplishing the research.

(b) Summary of findings: After introduction there would appear a statement of findings and recommendations in non-technical language.

(c) Main report: The main body of the report should be presented in logical sequence and broken-down into readily identifiable sections.

(d) Conclusion: Towards the end of the main text, researcher should again put down the results of his research clearly and precisely. In fact, it is the final summing up.

Research applications in business decisions

- Research: Meaning “Research refers to the systematic method consisting of enunciating the problem, formulating a hypothesis, collecting the facts or data, analysing the facts and reaching certain conclusions either in the form of solution(s) towards the concerned problem or in certain generalizations for some theoretical formulation.” (Kothari and Garg) .
- Meaning of Business Research: MEANING AND OBJECTIVE search may be defined as research activities carried out relating to the different functionaries in the business and corporate world. 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.

Importance Of Research In Business Decision Making

- The following are the importance of Business Research:

1. A research problem refers to a complexity which a researcher or a scientific community or an industry or a government organization or a society experiences. It may be a theoretical or a practical situation. It calls for a systematic understanding and possible solution.

2. Research on existing theories and concepts help us recognize their range and applications.

3. It is the bank of knowledge and provides strategy for solving problems.

4. It is important in industry and business for higher profits, output, efficiency and to improve the quality of products.

Cont.,

5. Mathematical and logical research on business and industry reduces the problems in them.

6. It leads to the identification and categorization of new materials, new living things, new stars, etc.

7. Inventions can be done through research

8. Social research helps find answers to social problems. They explain social phenomena and try to find solution to social problems.

Features of a Good Research Study

- Whatever may be the types of research works and studies, one thing that is important is that they all meet on the common ground of scientific method employed by them. One expects scientific research to satisfy the following criteria:
- 1. The purpose of the research should be clearly defined and common concepts be used.
- 2. The research procedure used should be described in sufficient detail to permit another researcher to repeat the research for further advancement, keeping the continuity of what has already been attained.
- 3. The procedural design of the research should be carefully planned to yield results that are as objective as possible.

Features of a Good Research Study (Cont.,)

- 4. The researcher should report with complete frankness, flaws in procedural design and estimate their effects upon the findings.
- 5. The analysis of data should be sufficiently adequate to reveal its significance and the methods of analysis used should be appropriate. The validity and reliability of the data should be checked carefully.
- 6. Conclusions should be confined to those justified by the data of the research and limited to those for which the data provide an adequate basis.
- 7. Greater confidence in research is warranted if the researcher is experienced, has a good reputation in research and is a person of integrity.

Features of a Good Research Study (Cont.,)

- 1. Good research is systematic: It means that research is structured with specified steps to be taken in a specified sequence in accordance with the well defined set of rules. Systematic characteristic of the research does not rule out creative thinking but it certainly does reject the use of guessing and intuition in arriving at conclusions.
- 2. Good research is logical: This implies that research is guided by the rules of logical reasoning and the logical process of induction and deduction are of great value in carrying out research.
- 3. Good research is empirical: It implies that research is related basically to one or more aspects of a real situation and deals with concrete data that provides a basis for external validity to research results.
- 4. Good research is replicable: This characteristic allows research results to be verified by replicating the study and thereby building a sound basis for decisions.

Formulation of the Research Problem and Development of the Research Hypotheses

- Formulation of research problem constitutes the first stage in the research process. Essentially, two issues are involved in formulation of research problem viz., understanding the problem thoroughly, and rephrasing the same into meaningful terms from an analytical point of view.
- Definition of the Problem Once a research problem has been identified, the research problem needs to be defined. The definition of a problem amounts to specifying it in detail and narrowing it down to workable size. Each question and subordinate question to be answered is specified at this stage and the scope and limits of investigation are determined. In this stage of research the overall plan for the research project must be set out in logical order to see if it makes sense.

Hypothesis

- After the selection and formulation of research problem, the formulation of hypothesis(es) is the next important step in the research process. A hypothesis is defined as “A tentative proposition” suggested as a solution to a problem or as an explanation of some phenomenon (Ary et. al. 1985). This step establishes the problem and the logic underlying the research study.
- Formulation and Testing of Hypothesis Hypotheses are formulated to explain observed facts, conditions, or behaviour and to serve as a guide in the research process. The statements or tentative generalisations which constitute hypotheses are partly based on facts and explanations, and partly conceptual.

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- i) Deducing a hypothesis inductively: You may deduce a hypothesis inductively after making observations of behaviour, noticing trends or probable relationships.
- ii) Limiting the problem: Here we need to state that the basic understanding of the literature pertaining to the problem under investigation also becomes essential in view of the fact that the already existing corpus of knowledge on the particular problem is too detailed to be incorporated in the process of hypothesis formulation.
- iii) Deriving a hypothesis deductively: Hypotheses are also derived deductively from the theory. Such types of hypothesis, called “deductive hypotheses” are formulated by studying a particular theory in the area of one’s interest and deducting hypothesis from this theory through logic.

Research Design: Exploratory and Descriptive

- MEANING OF RESEARCH DESIGN: The formidable problem that follows the task of defining the research problem is the preparation of the design of the research project, popularly known as the “research design”. Decisions regarding what, where, when, how much, by what means concerning an inquiry or a research study constitute a research design. “A research design is the arrangement of conditions for collection and analysis of data in a manner that aims to combine relevance to the research purpose with economy in procedure”.
- NEED FOR RESEARCH DESIGN Research design is needed because it facilitates the smooth sailing of the various research operations, thereby making research as efficient as possible yielding maximal information with minimal expenditure of effort, time and money.
- The design helps the researcher to organize his ideas in a form whereby it will be possible for him to look for flaws and inadequacies. Such a design can even be given to others for their comments and critical evaluation. In the absence of such a course of action, it will be difficult for the critic to provide a comprehensive review of the proposed study.

Research design in case of exploratory research studies

- Exploratory research studies are also termed as formulative research studies. The main purpose of such studies is that of formulating a problem for more precise investigation or of developing the working hypotheses from an operational point of view.
- Generally, the following three methods in the context of research design for such studies are talked about: (a) the survey of concerning literature; (b) the experience survey and (c) the analysis of ‘insight-stimulating’ examples.
- The survey of concerning literature happens to be the most simple and fruitful method of formulating precisely the research problem or developing hypothesis. Hypotheses stated by earlier workers may be reviewed and their usefulness be evaluated as a basis for further research. It may also be considered whether the already stated hypotheses suggest new hypothesis.

Research design in case of exploratory research studies (Cont.,)

- Experience survey means the survey of people who have had practical experience with the problem to be studied. The object of such a survey is to obtain insight into the relationships between variables and new ideas relating to the research problem.
- Analysis of ‘insight-stimulating’ examples is also a fruitful method for suggesting hypotheses for research. It is particularly suitable in areas where there is little experience to serve as a guide. This method consists of the intensive study of selected instances of the phenomenon in which one is interested.

Research design in case of descriptive

- Descriptive research studies are those studies which are concerned with describing the characteristics of a particular individual, or of a group, whereas diagnostic research studies determine the frequency with which something occurs or its association with something else.
- The design in such studies must be rigid and not flexible and must focus attention on the following:

(a) Formulating the objective of the study (what the study is about and why is it being made?)

(b) Designing the methods of data collection (what techniques of gathering data will be adopted?)

Research design in case of descriptive (Cont.,)

(c) Selecting the sample (how much material will be needed?)

(d) Collecting the data (where can the required data be found and with what time period should the data be related?)

(e) Processing and analyzing the data.

(f) Reporting the findings. Thus, the research design in case of descriptive/diagnostic studies is a comparative design throwing light on all points narrated above and must be prepared keeping in view the objective(s) of the study and the resources available.