UNIT 5 : RESEARCH PLAN

UNIT STRUCTURE

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5.1 LEARNING OBJECTIVES

After going through this unit, you will be able to -

- define Research Plan and identify its contents
- define Research Problem
- analyse the process of identification of a research problem
- discuss the criteria for selection of a research problem
- define Formulation and its process
- define hypothesis, characteristics and its types
- discuss the concept of Research Design

5. **Objective of the study:** The specific objectives of the study should be stated clearly. These refer to the questions to which the researcher proposes to seek answer through the study. Although there is no limit to the number of research objectives, it is desirable to limit the objectives to reasonable number.
6. **Conceptual model:** This section is the heart of the research plan. This is where the researcher formulates and develops the structure of relationships among the variables he is investigating.
7. **Hypothesis:** These are logically deduced from the theoretical framework above. These refer to the anticipated outcome or possible answer to the research question. They should be conceptually clear, specific and simple.
8. **Operational definition of concepts:** The major concepts used in the title of the study, is its objectives. The investigative questions and the hypothesis should be identified.
9. **The significance of the study:** It is important to point out the relevance and significance of the investigation.

There are other important contents of a research plan, viz, geographical area to be covered, reference period, methodology, sampling plan, tool for gathering data, plan of analysis, chapter scheme, time budget, financial budget and so on.

This research plan with modifications made at implementation stage and a description of the experiences of the field work will form part of the report under the title "The Design of the study".

While discussing a research plan, first it is very important to discuss about a research problem.

5.4 RESEARCH PROBLEM

A research problem, in general, refers to some difficulty, which a researcher experiences in the context of either a theoretical or practical situation and wants to obtain a solution for the same. Research work is oriented towards a solution of a problem or seeks an answer of questions. Hence, the first step of a research process is to identify the research problem.

There are various components of a research problem and they are:

1. There must be an individual or a group, which has some difficulty or problem.

2. Controversial subject should not become the choice of an average researcher.
3. The subject selected for the research should be familiar and feasible so that the related research material; or source of research are within one's reach. Even then, it is quite difficult to supply definite ideas concerning how a researcher should obtain his/her research. For this purpose they make contact with university professors or experts and they may well read of articles published in current literature available in the subject. They may discuss with others what they have in mind concerning the problem.
4. Too narrow or too vague problem should be avoided.
5. The important subject matter, the qualification and the training of the researcher, the cost involved, the time factor are few other criteria that must also be consider while selecting a problem.
6. The selection of the problem must be preceded by a preliminary study. This may not be necessary when the problem requires the conduct of a research closely similar to one that has already been done. But the field of enquiry is relatively new and does not have available set of well-developed technique, for this a brief feasible study must always be undertaken.

If the subject for research is selected properly by observing the above-mentioned point, the research will not be a boring drudgery; rather it will be an interesting one. The subject or the problem selected must involve the researcher and must have an upper most place in their mind so that they may undertake all pains needed for the study.

5.4.2 Process of identification of a research problem

The process of identification of problem for academic research may consist of following steps:

1. Selection of discipline: The discipline or subject in which one proposes to do research may be selected e.g., Economics, Management, Commerce etc., etc,.

(4) Feasibility

(5) Facilities,

(6) Usefulness and social relevance, and

(7) Research personal.

- **Researcher's interest:** The problem should be interesting for the researchers and challenging to them. Without interest and curiosity, they may not develop sustain perseverance. Even a small difficulty may become an excuse for discounting the study.
- **Researcher competence:** The researchers must be competent to plan and carry out the study of the problem. They must have the ability to grasp and deal with it. They must have adequate knowledge, methodology, and statistical procedures.
- **Researcher's own resources:** In the case of a research to be done by a researcher on his own, consideration of his own financial resources is pertinent.
- **Researchability:** The problem should be researchable, i.e., amenable for finding answers to the questions involved in it through scientific method. "Although every problem in science involves a question or a series of questions, not every question qualifies as a scientific problem." To be researchable, a question must be one, of which observation or other method of collection in the real world can provide the answer.
- **Importance and urgency:** Problems required for investigation is unlimited, but available research efforts is very much limited. Therefore selecting problem for research, their relative importance and significance should be considered. An important urgent problem should be given top priority over an unimportant one.
- **Novelty and originality:** The problem must be novel. There is no use of wasting one's time and energy on a problem already studied thoroughly by others. This does not mean that replication is always needless. In social sciences in some cases, it is appropriate to replicate a study in order to verify validity of its findings to different situations.



CHECK YOUR PROGRESS

Q.1: What is a research plan?

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Q.2: What is a research problem?

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Q.3: What are the two criteria for selection of a research problem?

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5.5 FORMULATION OF THE SELECTED PROBLEM

Introduction:

For selecting a feasible and researchable problem, which is interesting and also has some importance and social relevance, formulation of the selected problem is essential. The problem selected in research may initially be vague topic. The question to be studied or the problem to be solved may not be known. Why the answer/solution is wanted also is not known. Hence, the selected problem should be defined and formulated.

What is formulation?

Formulation means translating and transforming the selected research problem topic into a scientifically researchable question. It is concerned with exactly what the research problem is and why is it studied.

Merton identifies three principle components in the progressive formulation of a problem for research.

1. The originating question (what want and what to know).
2. The rational (why aspect).
3. The specifying questions (possible answer to the originating question).

The originating question: It indicates what the problem is. It may be of different kinds. It may call for discovering new and more decisive facts relating to the subject matter of the study; it may put to the question the adequacy of certain concepts, may be related to empirical validity; or it may be related to the structure of an organization.

The objective may be specified in form of either statements or questions.

Illustration: The profitability of the commercial bank has tended to decline year after year even though the business- deposits and deployment of the funds- has been increasing. How a researcher may formulate a problem when he/she views the problems?

- Title of the research problem: An enquiry into the declining trend in the profitability of commercial banks.
- Objectives of the study:

  The objectives of the study are
  - To identify the major factors affecting banks profitability.
  - To determine the major causes of the declining trend in its profitability, and
  - To develop a strategy for improving banks profitability.

    The above objectives may be stated in question form
  - What are the factors affecting banks profitability?
  - What are the major causes of the declining trend in its profitability?
  - What strategy can be adopted for improving the bank's profitability?

    The successful research will provide answer to these questions.

5.6 HYPOTHESIS

Hypothesis is one of the important components included in a research plan. Hypothesis is a tentative proposition formulated for empirical testing. It is a declarative statement of combining concepts. It is a tentative answer to the research question. It is tentative, because its variety can be evaluated only after it has been tested empirically. On the other hand, it is one simply means of a mere assumption or some supposition to be proved or disproved. But for a researcher, hypothesis is a formal question that he intended to resolve. Thus a hypothesis may be defined as a proposition or a set of propositions set forth as an explanation for the some specified group of phenomenon either asserted merely as a provisional conjecture to guide some investigation or accepted as highly probable in the light of established facts.

divide them on the basis of the level of abstraction. They may be distinguished into three broad categories (1) Simple description (2) Logical derivation, and (3) Abstraction. Accordingly there are three types of hypothesis (a) Common-sense hypothesis (b) Complex hypothesis, and (c) Analytical hypothesis.

But when we test the hypothesis we generally form two types of hypothesis, they are Null hypothesis and Alternative hypothesis. Null hypothesis generally assumes happening of the assumption and alternative hypothesis to define, if it is true or not. There are two types of error occurs when we test the hypothesis (1) type one error, and (2) type two error. Type one error occurs when we reject null hypothesis when it is true, and type two error occurs when we accept null hypothesis but it actually false.



CHECK YOUR PROGRESS

Q.4: What is formulation?

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Q.5: Mention three principle components in the progressive formulation of a problem for research as identified by Merton.

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Q.6: What is hypothesis? Discuss the types of hypothesis.

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Q.7: What types of error occur when hypothesis is tested?

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5.7 RESEARCH DESIGN

An important step of any scientific research is to prepare a research design.Research design is a mapping strategy which is based on sampling techniques. A research design is a logical and systematic plan prepared for

5.7.2Nature of research design

A research design is indispensable for a research project. However it is not a precise and specific plan like building plan to be followed without deviations, but rather a series of guideposts to keep one going in the right direction. It is a tentative plan which undergoes modifications, as circumstances demand, when the study progresses, new aspects, new conditions and new relationships come to light and insight into the study deepens. For example, the scope of a study may be narrowed down, when it is discovered that certain kinds of data are not available; the sampling method may be modified from 'random sampling with probability proportional to size is not readily available' and so on.

Besides, a research study cannot be as extensive and intensive as the researcher may like it to be. It has to be geared to the availability of data and the cooperation of the information. It has also to kept within the manageable limits, i.e., within the researcher's mental ability to grasp the implications, his competence and the amount of time and other resources available for the purpose.

5.7.3 Classification of research design

There are a number of crucial research choices, various writers advance different classification schemes, some of which are:

1. Experimental, historical and inferential designs (American Marketing Association)
2. Exploratory, descriptive and causal designs (Selltiz, Jahoda, Deutsch and Cook)
3. Experimental, and ex-post facto (Kerlinger)
4. Historical method, and case and clinical studies (Goode and Scates)
5. Sample survey, field studies, experiments in field settings, and laboratory experiments (Festinger and Karz)
6. Exploratory, descriptive and experimental studies (Body and Westfall)

instances of the phenomenon in which one is interested.

2. **Research design in case of descriptive and diagnostic research studies:** 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.
3. **Research design in case of hypothesis-testing research studies:** Hypothesis-testing research studies (generally known as experimental studies) are those where the researcher tests the hypothesis of causal relationship between variables. Such studies require procedures that will not only reduce bias and increase reliability, but will permit drawing inferences about causality. Usually experiments meet this requirement. Hence, when we talk of research design in such studies, we often mean the design of experiments.

5.7.4 Preparation of the research design

Planning involve deciding things in advance. Accordingly, the preparation of a research of a plan involves a careful consideration of the following questions and making appropriate decision on them:

1. What the study about?
2. What is the study made?
3. What is its scope?
4. What are the objectives of the study?
5. What are the propositions of the tested?
6. What are the major concepts to be defined operationally?
7. On the basis of what criteria or measurements, the operational definition to be made?
8. When or in what place the study will be conducted?
9. What is the reference period of the study?
10. What kinds of data are needed?
11. What are the sources of data?
12. What is the sample size?
13. What sampling technique can be used?

investigation to establish facts or principles or to collect information on a subject.

- A research problem, in general, refers to some difficulty, which a researcher experiences in the context of either a theoretical or practical situation and wants to obtain a solution for the same.
- The process of identification of problem for academic research may consist of-(a)selection of discipline,(b) demarcating the broad area or a particular aspect of the selected subject and(c) identifying two or more specific topics in the selected broad area.
- Formulation means translating and transforming the selected research problem topic into a scientifically researchable question. It is concerned with exactly what the research problem is and why is it studies.
- Merton identifies three principle components in the progressive formulation of a problem for research - the originating question (what want and what to know), the rational (why aspect) , and the specifying questions (possible answer to the originating question)
- Hypothesis is one of the important components included in a research plan. Hypothesis is a tentative proposition formulated for empirical testing. It is a declarative statement of combining concepts.
- Hypothesis should state the relationship between variables, if it happens to be a rational hypothesis.
- Hypothesis should be limited in scope and must be specific. A researcher must remember that narrow hypothesis are generally more testable and he should test such hypothesis.
- With reference to their function, there are two types of hypothesis (a) Descriptive hypothesis (b) Relational hypothesis. Another approach is to classify them into (a) Working hypothesis (b) Null hypothesis (c) Statistical hypothesis. Third approach is to divide them on the basis of the level of abstraction. They may be distinguished into three broad categories (1) Simple description (2) Logical derivation, and (3) Abstraction. Accordingly there are three types of hypothesis (a) Common-sense hypothesis (b) Complex hypothesis, and (c) Analytical hypothesis.
- When we test the hypothesis we generally form two types of hypothesis, they are Null hypothesis and Alternative hypothesis. Null hypothesis

5.10 ANSWERS TO CHECK YOUR PROGRESS

Ans to Q No 1: A Research Plan is a document written by a researcher that provides a detailed description of the proposed programme. It is a systemic investigation to establish facts or principles or to collect information on a subject. The purpose of the research plan is to describe what, why and how of the proposal.

Ans to Q No 2: A research problem, in general, refers to some difficulty, which a researcher experiences in the context of either a theoretical or practical situation and wants to obtain a solution for the same.

Ans to Q No 3: The two criteria for selection of a research problem are- internal criteria/factor and external criteria/factor. Internal criteria consist of researcher's interest, researcher's competence and researcher's own resource, viz finance and time. External criteria or factor includes researchability of the problem, its importance and urgency, novelty of the problem, feasibility, facilities, usefulness and social relevance and research personal.

Ans to Q No 4: Formulation means translating and transforming the selected research problem topic into a scientifically researchable question. It is concerned with exactly what the research problem is and why is it studies.

Ans to Q No 5: Merton identifies three principle components in the progressive formulation of a problem for research. They are- (a)The originating question (what want and what to know), (b) The rational (why aspect) and (c)The specifying questions (possible answer to the originating question).

Ans to Q No 6: Hypothesis is a tentative proposition formulated for empirical testing. A hypothesis may be defined as a proposition or a set of propositions set forth as an explanation for the some specified group of phenomenon either asserted merely as a provisional conjecture to guide some investigation or accepted as highly probable in the light of established facts.

On the basis of function, hypothesis can be divided into (a)



5.11 POSSIBLE QUESTIONS

Q.1: Identify a research problem and accordingly prepare a research plan clearly stating the different sections.

Q.2: State the different components of a research problem.

Q.3: What are the characteristics of hypothesis?

Q.4: 'An important step of any scientific research is to prepare a research design'- Elucidate the statement with examples.

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