TOPIC TWO - FORMULATING THE RESEARCH TOPIC.

IDENTIFICATION OF RESEARCH AREA

The research process starts by formulating a research problem that can be investigated through research procedures.

Formulating the research topic

A research topic or idea is a difficulty which a researcher experiences in the context of either theoretical or practical situations and wants to obtain a solution for the same.

It does not necessarily mean that something is seriously wrong with a current situation that needs to be rectified immediately but rather it could simply indicate an interest in an issue, observation, curiosity, life experiences where finding the right answers might help improve an existing situation, or simply get answers to the questions.

A researcher first identifies a broad area of interest to him or related to him or related to his professional interest and goals, thereafter he identifies a specific problem within the broad area that will form the basis for his research study.

Guidelines for selecting a research topic

1. A subject which is overdone should be avoided
2. Avoid controversial subjects.
3. Avoid narrow and vague problems.
4. Subjects or topics selected should be feasible and familiar.
5. A preliminary study should be conducted where the field of inquiry is new.
6. It must lead to findings with a wide spread implication.
7. It must be analytically meaningful.
8. It should challenge some commonly held truth.
9. Time money and other resources should be considered when selecting a research topic.

Defining the research problem

A research problem refers to some difficulty which the researcher experiences in the context of either a theoretical or practical situation and wants to obtain a solution for the same. A research problem exists if the following conditions are meet: -

- There must be an individual or a group which has some difficulty or the problem.
- There must be some objective(s) to be attained.
- There must be alternative means or courses of action for obtaining the objective(s) one wishes to attain.
- There must be some doubt in the mind of a researcher with regard to the selection of alternatives.
- There must be some environment(s) to which the difficulty pertains.

It involves the task of laying down boundaries within which a researcher shall study the problem with a predetermined objective in view. The following steps can be followed: -

- Statement of the problem in a general way
- Understanding the nature of the problem: Understand the origin and nature of the problem e.g. by discussing it with those who raised it in order to find out how the problem originally came about. The researcher should keep in view the environment within which the problem is to be studied and understood.
- Surveying the available literature: the researcher must be well conversant with relevant theories in the field, reports and records as also all other relevant literature.
- Developing ideas through discussions:
- Rephrasing the research problem: Its putting the research problem in as specific terms as possible so that it may become operationally viable and may help in the development of working hypotheses.

The following should also be observed when defining a research problem:

- Technical terms and words or phrases with special meanings used in the statement of the problem, should be clearly defined.
- Basic assumptions or postulates if any relating to the research problem should be clearly stated.
- A straight forward statement of the value of the investigation should be provided.
- The suitability of the time-period and the sources of data available must also be considered by the researcher in defining the problem.
- The scope of the investigation or the limits within which the problem is to be studied must be mentioned explicitly in defining a research problem.

Certain factors determine the scope of a research study. These include:

- The time available to carry it out
- The money available to carry it out
- The availability of equipment if needed to carry it out
- The availability of subjects or the units of study.

Identifying a research problem

- Step 1 – identify a broad field or subject area of interest to you. The first step in selecting a research problem is to identify the broad area that one is interested in. Such an area should be related to the professional interests and goals of the researcher e.g. low-cost housing, productivity of workers, small-scale businesses etc.
- Step 2 – dissect the broad area into subareas. The second step is to identify a specific problem within it that will form the basis of the research study. The research problem should be an important one i.e. it should
    - Lead to findings that have widespread implications in a particular area
    - Challenge some commonly held truism
    - Review the inadequacies of existing laws, views or policies
    - Cover a reasonable scope e.g. not too narrow or too general.
- Step 3 – select what is of interest to you. Your interest should be the most important determinant for selection. One way to do this is by elimination. Go through your subareas and delete all the areas that are not of interest to you. Continue this process until you are left with something which is manageable considering the time you have, level of expertise and other resources needed to undertake the study.
- Step 4 – raise research questions. At this step ask yourself, what is it that I want to find out about in this subarea? Make a list of whatever questions come to mind, relating to your chosen subarea and if you think there are too mant to be manageable, go through the process of elimination.
- Step 5 – formulate the objectives. Both your objectives and subobjectives now need to be formulated, which grow out of your research questions. The main difference between research questions and objectives is the way they re written. Research questions are questions whereas objectives transform the questions into behavioural aims by using action oriented words i.e. to find out, to determine, to ascertain, to establish etc.
- Step 6 – assess your objectives. Now ascertain your objectives to ascertain feasibility of achieving them through your research endeavour. Consider them in light of time, resources (financial or human) and technical expertise at your disposal.
- Step 7 – double check. Go back and give final consideration to whether or not you are sufficiently interested in the study, and have adequate resources to undertake it. Ask yourself, am I really enthusiastic about this study? Do I really have enough resources to undertake it?

Selecting the problem

The following points must be observed by a researcher in selecting a research problem or a subject of study:

- Subject which is overdone should not be normally chosen, for it will be a difficult task to throw any new light in such a case.
- Controversial subject should not become the choice of an average researcher.
- Too narrow or too vague problems should be avoided.
- The subject selected for research should be familiar and feasible so that the related research material or sources of research are within one's reach.
- The importance of the subject, the qualifications and the training of a researcher, the costs involved and the time factor must be considered.
- The selection of a study must be preceded by a preliminary study.

Ways of identifying a specific research problem from the broad area

(a) Existing literature
(b) Existing theories
(c) Discussions with experts
(d) Previous research studies
(e) Replication
(f) The media
(g) Personal experiences.

Stating the Problem

A research study starts with a brief introductory section. The researcher introduces briefly the general area of study, and then narrows down to the specific problem to be studied.

Characteristics of a good problem statement

- It should be written clearly and in such a way that the reader's interest is captured immediately.
- The specific problem identified in the problem statement should be objectively researchable
- The scope of the specific research problem should be indicated
- The importance of the study in adding new knowledge should be stated clearly
- The problem statement must give the purpose of the research.

Components of a research problem

1. There must be an individual or a group with some difficulty/issue
2. There must be some objectives to be attained
3. There must be an alternative means of obtaining the objectives
4. There must be some doubt in the mind of the researcher with regard to the selection of the alternatives
5. There must be some environment with which the problem pertains.

Considerations in selecting a research problem

When selecting a research problem/topic there are a number of considerations to keep in mind which will help to ensure that your study will be manageable and that you remain motivated. These considerations are:-

- **Interest** – interest should be the most important consideration in selecting a research problem. A research endeavour is usually time consuming, and involves hardwork and possibly unforeseen problems. If you select a topic that does not greatly interest you, it could become extremely difficult to sustain the required motivation and put enough time and energy to complete it.
- **Magnitude** – you should have sufficient knowledge about the research process to be able to visualize the work involved in completing the proposed study. Narrow the topic down to something manageable, specific and clear. Its extremely important to select a topic that you can manage within the time and with the resources at your disposal.

- **Measurement of concepts** – if you are using a concept in your study (in quantitative studies), make sure you are clear about the indicators and their measurement. Eg. If you plan to measure the effectiveness of a health promotion programme, you must be clear as to what determines effectiveness and how it will be measured. Do not use concepts in your research problem that you are not sure how to measure.
- **Level of expertise** – make sure you have adequate level of expertise for the task you re proposing. Allow for the fact that you learn during the study and may receive help from your research supervisors and others, but remember that you need to do most of the work yourself.
- **Relevance** – select a topic that is of relevance to you as a professional. Ensure that your study adds to the existing body of knowledge, bridges the gaps or is useful in policy formation. This will help you to sustain interest in the study.
- **Availability of data** – if your topic entails collection of information from secondary sources (office records, client records, census or other already published reports etc.) make sure that this data is available and in the format you want before finalizing the topic.
- **Ethical issues** – in the course of conducting a research study, the study population may be adversely affected by some of the questions (directly or indirectly); deprived of an intervention; expected to share sensitive and private information; or expected to be simply experimental guinea pigs. How ethical issues can affect the study population and how ethical problems can be overcome should be thoroughly examined at the problem formulation stage.

STATING THE PURPOSE/JUSTIFICATION/RATIONALE

It conveys the focus of the research study.
It crystallizes the researcher's inquiry into a particular area.
It is a justification or r the reason why the research is being conducted
It must be accurately expressed so that the research problem is carried out with ease.
Only neutral verbs should be used to state the purpose of the research

With sufficient planning, reading and inquiry into a problem area a purpose/ rationale can be formulated to meet the following criteria

1. The purpose must be indicated clearly and ambiguously and in a declarative manner.
2. It should indicate the concepts/ variables in the study.
3. Where possible the relationship among the variables should be stated.
4. The purpose should state the target population.
5. The variables and target population in the purpose should be consistent with those in the method section

In stating the purpose of the study, the researcher should choose the right words to convey the focus of the study effectively. Use of subjective or biased words or sentences should be avoided.

Examples

Biased	**Neutral**
To show	To determine
To prove	To compare
To confirm	To investigate
To verify	To differentiate
To check	To explore
To demonstrate	To find out
To indicate	To examine
To validate	To inquire
To explain	To establish
To illustrate	To test

STATING THE OBJECTIVES

These are specific issues within the research purpose that define the research statements. They are specific aspects of a phenomenon under study that a researcher wants to focus upon in the course of the study.
They help a researcher to stay within the scope of the study.
They are formulated from the topic/ purpose of the study.
They guide a researcher in formulating testable hypothesis.
Only neutral verbs/words should state the objectives.

Characteristics of a good objective

- Specific:
- Measurable
- Achievable
- Reliable
- Time bound

Objectives guide the researcher in formulating testable hypotheses.
In stating the objectives of the study, the researcher should choose the right words to convey the focus of the study effectively. Use of subjective or biased words or sentences should be avoided.

DEVELOPING WORKING HYPOTHESIS

An assumption or a supposition to be tested. It is a proposition or a set of proposition set forth as an explanation for the occurrence of some specified group of phenomena.

It is a predictive statement capable of being verified or tested by scientific methods.

It is an expected but unconfirmed independent variable.

It is an educated guess that relates an independent variable to some dependent variable. Hypothesis are derived from or based on existing theories, previous research, personal observation or experiences.

In formulating a good hypothesis, a researcher should generate as many ideas as possible and then examine each statement critically before stating his/her hypothesis.

CHARACTERISTICS

1. A hypothesis must be clearly and briefly expressed stating the expected relationship between variables.
2. They must be based on a sound rationale derived from theory, previous research or professional experience.
3. They must be consistent with common sense or generally accepted truths.
4. Must be testable-data must be collected to support or fail to support a hypothesis.
5. They must be tested within a reasonable time.
6. They must be related to empirical phenomena (must be commonly observable)
7. must be clear simple and precise
8. Variables stated in the hypothesis must be consistent with the purpose statement and the objectives.

PURPOSE OF STATING A HYPOTHESIS

1. They provide direction and bridge the gap between the problem and the evidence needed for its solution.
2. They ensure the collection of the evidence necessary to answer the question paused in the statement of the problem.
3. They enable the investigator to access the information he/she has collected from the standard point of both relevance and organization.
4. They sensitize the investigator to certain aspects of the situation that are relevant regarding the problem at hand.
5. Hypothesis permit the researcher to understand the problem with greater clarity and use the data collected to find solutions to problems.
6. Hypothesis guide the collection of data and provide the structure….
7. They form the framework for the ultimate conclusions as solutions. Therefore researchers base their conclusions on the results of the tests of the hypothesis.

TYPES OF HYPOTHESIS

1. Null hypothesis.
2. Alternative directional hypothesis.
3. Alternative non-directional hypothesis.

1) NULL HYPOTHESIS

It is also known as *statistical hypothesis*. It always states that there is no real relationship or differences that exist between two or more variables. If there is any relationship or difference between variables it is merely due to change or error. It is the one that a researcher wishes to disapprove.

For example, there is no difference in the performance of private and public universities.

Statistically the above can be written as:

Ho: U = U
(Private) (Public)

2) ALTERNATIVE DIRECTIONAL HYPOTHESIS

It specifies the nature of the relationship or differences between variables. A relationship
May be stated as being greater than, less than, increased, decreased, higher than, lower than.
Where a researcher is not sure of the form of relationship he should not use a directional hypothesis especially where there is a chance of obtaining an opposite relationship from the one hypothesized.
For example, private universities perform better than public universities

3) ALTERNATIVE NON- DIRECTIONAL HYPOTHESIS

It is also called the *research hypothesis*
It states that there is a relationship or difference between variables or groups but the researcher does not know the nature of such relationship or difference.
It is the one a researcher wishes to prove.
It is suitable where strong research findings are conflicting or where strong rationale to support a predicted relationship does not exist.
Stating a hypothesis in this form is a conservative approach where the researcher avoids commitment to a specific outcome.
For example, there is a difference in the performance of MBA students in public and private universities.

Statistically it can be written as:

TYPES OF ERRORS IN TESTING HYPOTHESIS

1. The study designed or selected may be faulty.
2. Sampling procedures adopted may be faulty.
3. Methods of data collection may be inaccurate.
4. Wrong analysis due to wrong computations or wrong choice of statistical tools or analysis.
5. The statistical procedures applied may be inappropriate. The conclusion drawn may be incorrect.

Assumptions and Limitations

- An assumption is any fact that a researcher takes to be true without actually verifying it. It puts some boundary around the study and provides the reader with vital information, which influences the way results of the study are interpreted.
- A limitation is an aspect of a research that may influence the results negatively but over which the researcher has no control. A common limitation in social science studies is the scope of the study, which sometimes may not allow generalizations. Sample size may also be another limitation.