

# CHAPTER 3 THE ELEMENTS OF RESEARCH DESIGN

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# Research Design

Particular research area has-->      Research Problem defined--->      the related literature in the area have be reviewed  
been identified

-----> What is Next?

Answer is: To construct the research design

- Choosing an appropriate research design is crucially important to the success of the research project.
- It determines the quality of research results
- A faulty research design may result in misleading findings.

# Research Design

Fred Kerlinger (1986)

- Research Design is the plan, structure, strategy of investigation conceived so as to obtain answers to research question. The plan is the overall scheme or program of research. It includes an outline of what the investigator will do from writing the hypothesis and their operational implications to the final analysis of data.

J.W Creswell (2002) :

- Research design is a plan for collecting and analyzing evidence that will make it possible for the investigator to answer whatever questions he or she has posed. The design of an investigator touches almost all aspects of research from the minute details of data collection to the selection of the techniques of data analysis.

William Zikmund (2009)

- Research design is a master plan specifying the methods and procedures for collecting and analyzing the needed information.

# Essentials of a good research design

- A research design is an overall plan for the activities to be undertaken during the course of a research study.
- The research design serves as a framework for the study, guiding the collection and analysis of the data, the research instruments to be used and the sampling plan to be followed.
- It is an organized and integrated system that guides the researcher in formulating, implementing and controlling the study.
- The research design is a blueprint specifying the method to be adopted for gathering and analyzing data.
- The research design is a strategy of obtaining information for the purpose of conducting a study and making generalizations about the population

# Elements of a Research Design

Basic Elements of Research Design are:

- i) The problem
- ii) Methodology
- iii) Data gathering
- iv) Data Analysis, and
- v) Report writing

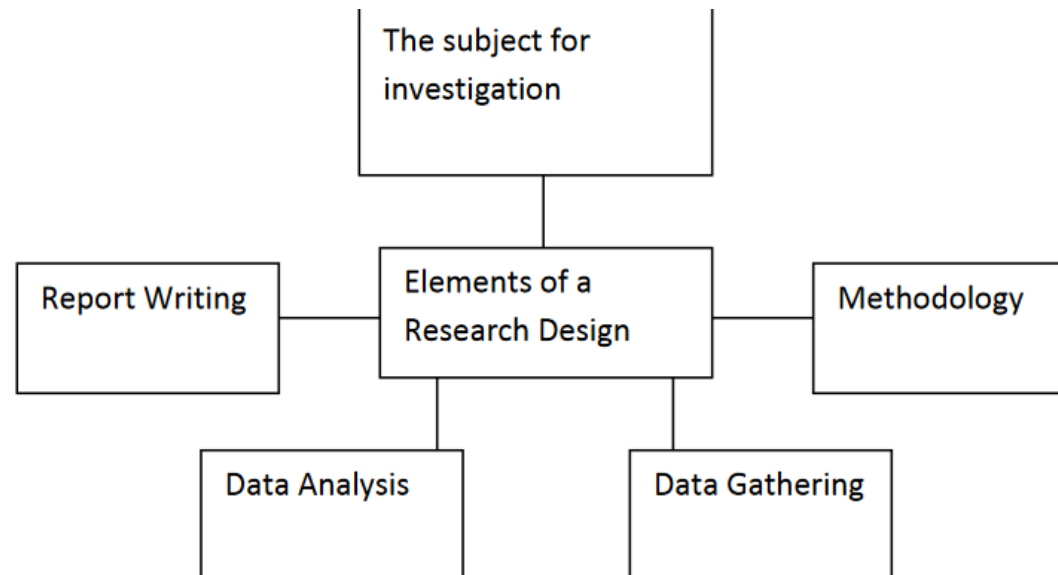


Fig: Elements of research Design.

# Elements of a Research Design

A good research design considers all the elements as shown in the figure above.

- The first element of a research design is to answer the research question or test research hypothesis.
- Every research work usually requires an explanation of the methodology and the sample description what methods were used to choose the sample? Why these methods are chosen and how they are applied?
- What were the variables in the hypothesis and how they were measured?
- Details of data collection must be explained and a discussion on the reliability and validity of the measurements included.
- It is necessary to explain how the data were analyzed?

# Types of Research Design

With a view to giving more detailed information about research designs, research designs are classified into five categories.

- 1) Exploratory research design
- 2) Descriptive research design
  - ☐ Historical research design
  - ☐ Descriptive research design
  - ☐ Developmental research design
  - ☐ Survey research design
  - ☐ Case study research design
- 3) Comparative research design
  - ☐ Correlational research
  - ☐ Causal-comparative research

# Types of Research Design

## 4) Interventional research design

- ☐ Lab-based experimental research
- ☐ Field-based

## 5) Qualitative research design

- ☐ Each Research Design includes several categories of research.
- ☐ These research studies have special purposes and features.
- ☐ Research designs become more and more complex as you move on from simple exploration to descriptive and further on to explanation and experimentation.



# Determining Whether a Problem Should Be Researched

- What are you going to produce?
- As a researcher, your priority will be to produce a defensible thesis or useful research report within your time limit

# Types of Research Problem

## 1. Theoretical Research Problem

- Theoretical explanation of a research problem
- Gives only theory and meaning of the problem
- Defines the problem theoretically
- There is no need of hypothesis and verification

### Features

- It is exploratory
- It is theoretical in nature
- It provides basic meaning

# Types of Research Problem

## 2. Applied Research Problem

- Practical use of the theoretical knowledge
- Field work and visits to problematic situation is necessary
- It has the design of hypothesis and verification

### Features

- It is practical in nature
- It has exploratory hypothesis
- It wants verification

# Types of Research Problem

## 3. Action Research Problem

- Action research problem is that one for which the immediate solution is required
- This type of research is continuous and needs quick solution in emergency basis

### Features

- It is welfare oriented
- It is service oriented
- It is sensitive and immediate decision required for solution

# Components of a Research Problem

- A research problem refers to some difficulty either of a theoretical or practical character which an individual or organization is experiencing and wants to obtain a solution for the same
- There are number of components (elements) which a problem must have before it becomes a research problem ready for study: **5-Wh**  
i.e. **Why, What, When, Where, Who**

# Components of a Research Problem

1. **Objective or aim** of the problem which is to be investigated
  - This answers the question '**why?**'
  - Why is there a need for investigation, inquiry or study?
2. Topic or theme which need to be investigated
  - This answers question 'what?'
  - What is to be researched or studied?
  - Right question needs to be addressed if research is to help decision makers
  - Decision makers can't acquire all the information, but it is often feasible to identify the factors that are critical to the existing problem
  - These factors are then included in the problem definition

# Components of a Research Problem

3. **Time dimension** of a decision problem is always the future
- The period or time of the study when the data are to be gathered
  - This answers the question '**when?**'
  - When is the research to be conducted?
  - Managers frequently run the risk of making the correct decision at incorrect time
  - It is essential that the decision maker as well as the researcher determine the right time reference for the decision

# Components of a Research Problem

4. **Area or location** in which the study is to be conducted
  - This answers the question '**where?**'
  - Where we need to conduct the study?
  - Political divisions or subdivisions, geographical divisions, biophysical divisions
  - The universe of the interest should be defined either conceptually or by enumeration
5. **Population or universe** from whom the data needs to be gathered
  - This answers the question '**who?**' or '**from whom?**'
  - Who are respondents?
  - From who are the data to be collected?
  - They may include persons, groups of persons, business establishments



# Characteristics of a Good Research Topic

- I. Research topic must be very clear & easy to understand, it should not distract people
- II. Research topic should be well defined, topic should not create doubt & double impression
- III. Easy language is a key to success, use technical words if necessary otherwise use simple words
- IV. Topic should not be obsolete & should have importance in the current day

# Conditions for Problem Formulation

- There are several conditions conducive for formation of research problem
- The conditions vary with the study area, problem theme, targeted conditions and so on Some of the important conditions for problem formulation are:
  - I. Knowledge about the selected area
  - II. Knowledge about the problem
  - III. Critical mind of the researcher
  - IV. Availability of the resources
  - V. Research equipment and tools
  - VI. Analysis experience
  - VII. Findings and report writing

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# Research Resources

- During the selection of research problem, a researcher will see to the resources available
- If these resources like money, time, laboratory facilities, equipments and tools, data availability, accommodation, transport etc. are available to the selection place, then the selection of the problem easy

## Time-lines of the Problem

- Some problems take little time for its solution while others take more time
- So it depends on the time in which we have to complete his/her research work

## Data Availability

- If the desired data is available to the researcher, then the problem would be selected

*Thank You.*  
*for listening.....*