



Research Methodology

(Lecture 5)

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Previous Lecture

- Research Process
- Step 2: Literature Review:
 - What is Literature Review
 - Why need Literature Review
 - How to review the literature
 - How write the Literature Review



Outline

- Research Process
 - Step 3: Developing The Objectives
 - Step 4: Developing Research Design



Research Process

– Typical Steps of research process:

Define research problem

literature Review

Developing the objectives

Preparing the research design

Data collection

Data analysis

Generalization and Interpretation

Writing Report



Research Objectives

❖ What are research objectives?

- Description of what is to be achieved by the study.
- Objectives are the aims you set out to attain in your study.
- Objectives inform a reader what you want to attain through the study. It is extremely important to word them clearly and specifically.



Research Objectives

– Importance of research objectives:

1. Narrows and focus the study
2. Guides information to be collected
3. Facilitate development of METHODOLOGY



– Types of research objectives:

1. Broad/ main objective (aims of OBJECTIVES)
2. Specific objectives (sub-objectives)





Research Objectives

- **Types of research objectives:**

- 1. Broad/ main objective (aims of study)**

- States what is to be achieved by the study in general terms.
- The main objective is an overall statement of the thrust of your study.
 - It is also a statement of the main associations and relationships that you seek to discover or establish.
- Usually only one per study
- Related to core problem and topic of the study Shows target population and place
- Use action verb



Research Objectives

- **Types of research objectives:**

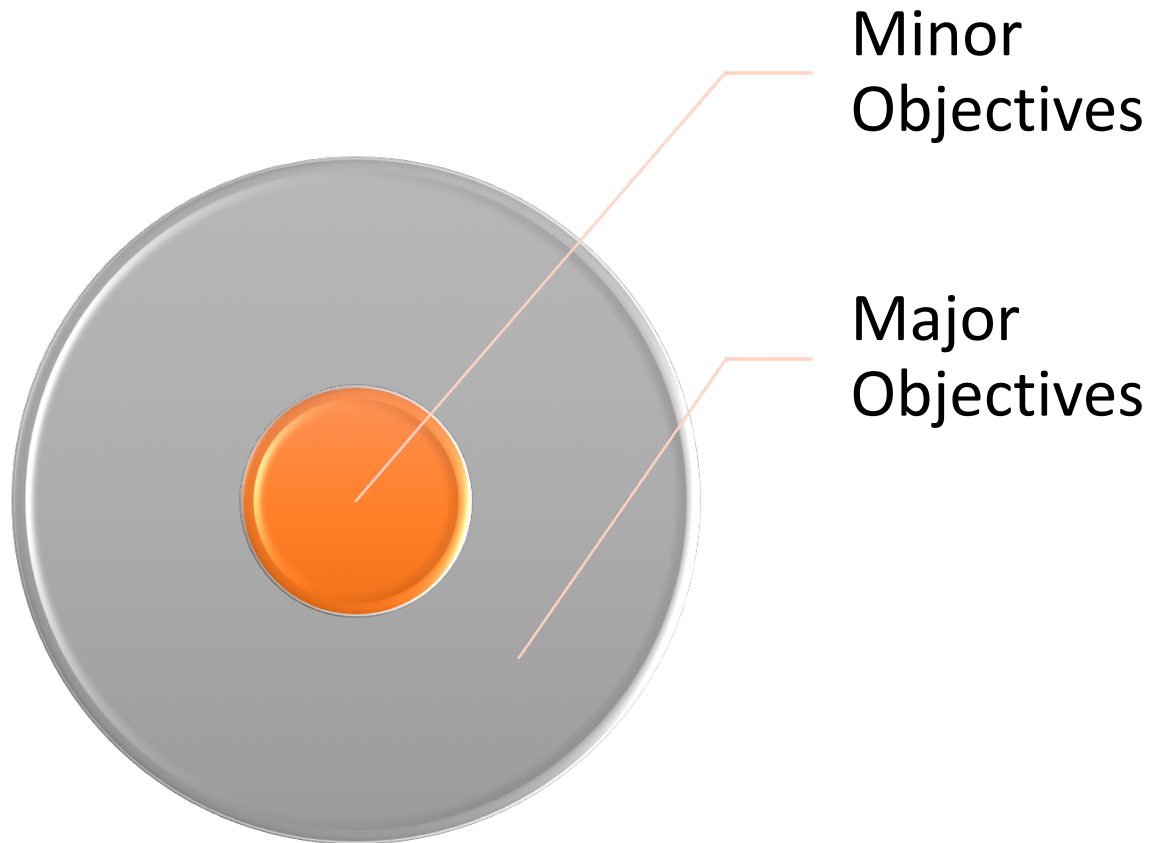
- 2. Specific objectives (sub-objectives)**

- Describe the variables that are measured by the study.
 - The sub-objectives are some specific aspects of the topic that you want to investigate within the main framework of your study.
 - Several in one study
 - Use action verb





Research Objectives



Research Objectives

- Formulating research aim and objectives in an appropriate manner is one of the most important aspects of your thesis (research).
- This is because research aim and objectives determine the scope, depth and the overall direction of the research.
- Research question is the central question of the study that has to be answered on the basis of research findings.



Research Objectives

- Achievement of research aim provides answer to the research question.
- Research objectives divide research aim into several parts and address each part separately.
- Moreover, research aim specifies WHAT needs to be studied and research objectives comprise a number of steps that address HOW research aim will be achieved.
- As a rule of thumb, there would be one research aim and several research objectives to facilitate the achievement of this aim.





Research Objectives

- Wording should clearly, completely and specifically Communicate to your readers your intention and Each objective should contain only one aspect of the Study.
- The objectives should start with words such as:
 - To identify, To find out, To establish, To describe, To determine, To ascertain, To estimate, To measure, To develop, To compare, To analyze, To collect, To determine, To explore,...etc.
- The wording of objectives determines the type of research (descriptive, correlational and experimental) and the type of research design you need to adopt to achieve them.



Research Objectives

- **Examples:**
- Descriptive studies:
 - To describe the types of activates & transactions provides by different ATM machines in Erbil.
 - To find out the opinion of the ATM users about the bank facilities provided by different banks offering such a service.





Research Objectives

- **Examples:**
- Correlational studies:
 - To ascertain the impact of training on employee retention.
 - To compare the effectiveness of different Internet access methods on university students' usage.
- Hypothesis –testing studies:-
 - To ascertain if an increase in study load on students will decrease the overall attendance percentage.
 - To demonstrate that the provision good after-sales service will increase the overall sales.



Research Objectives

- **Homework:**
- Write the research questions and research objectives (Major and Minor) For the following:
 - **Topic 1:** The use of smart phone instead of laptop.
 - **Topic 2:** Using public transportation instead of personal car.
 - **Topic 3:** Studying one day before an exam.





Research Process

– Typical Steps of research process:

Define research problem

literature Review

Developing the objectives

Preparing the research design

Data collection

Data analysis

Generalization and Interpretation

Writing Report



Research Design

❖ What are research Design?

- Research design is the conceptual structure within which research would be conducted.
- The function of research design is to provide for the collection of relevant information with minimal expenditure of effort, time and money.
- 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”.



Research Design

- The design includes an outline of what the researcher will do from writing the hypothesis and its operational implications to the final analysis of data
- The design decisions happen to be in respect of:
 - (i) What is the study about?
 - (ii) Why is the study being made?
 - (iii) Where will the study be carried out?
 - (iv) What type of data is required?
 - (v) Where can the required data be found?
 - (vi) What periods of time will the study include?
 - (vii) What will be the sample design?
 - (viii) What techniques of data collection will be used?
 - (ix) How will the data be analysed?
 - (x) In what style will the report be prepared?



Research Design

- The overall **research design into the following parts:**
 1. **Sampling design:** which deals with the method of selecting items to be observed for the given study.
 2. **Observational design:** which relates to the conditions under which the observations are to be made.
 3. **Statistical design:** which concerns with the question of how many items are to be observed and how the information and data gathered are to be analyzed.
 4. **Operational design:** which deals with the techniques by which the procedures specified in the sampling, statistical and observational designs can be carried out.



Research Design

- The features of a good research design
- A research design appropriate for a particular research problem, usually **involves the following features:**
 1. The methods of obtaining information;
 2. The availability and skills of the researcher and his staff, if any;
 3. The objective of the problem to be studied;
 4. The nature of the problem to be studied; and
 5. The availability of time and money for the research work.

Research Design

– Important concepts related to research design

1. Dependent and independent variables:

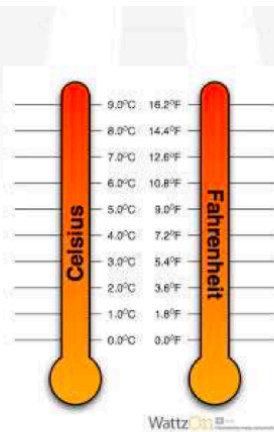
- A variable is defined as anything that has a quantity or quality that varies.
- Ex:



Height



Weight



Temperature



Pressure



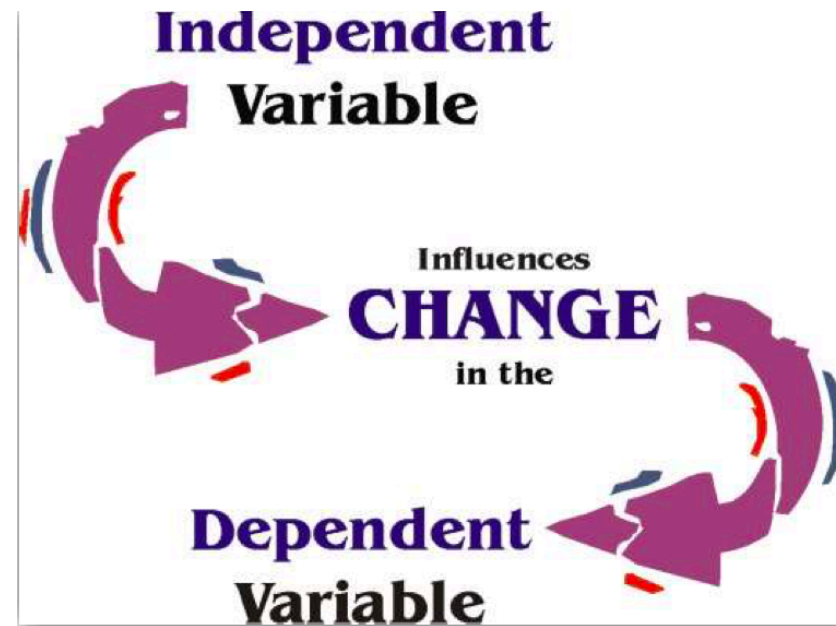
Time

Research Design

– Important concepts related to research design

1. Dependent and independent variables:

- Ex:
- if we say that height depends upon age, then height is a dependent variable and age is an independent variable





Research Design

– Important concepts related to research design

2. Extraneous Variables:

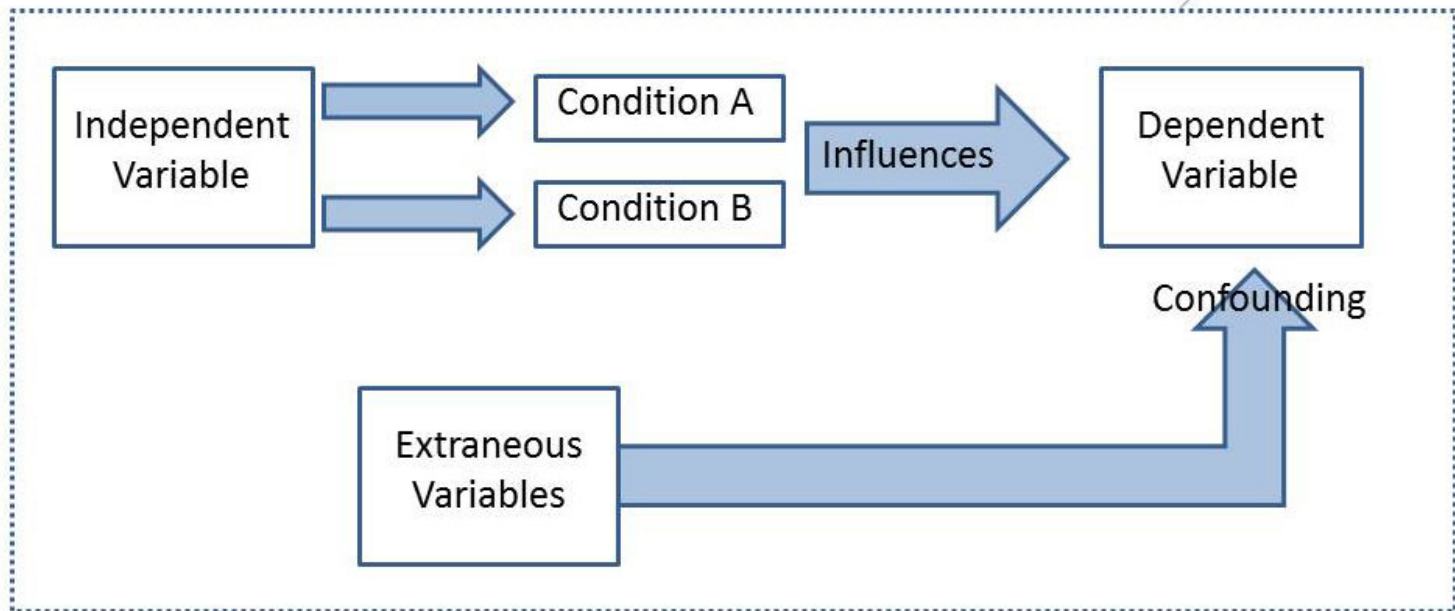
- Extraneous Variables are undesirable variables that influence the relationship between the variables that an experimenter is examining (it is that these are variables the influence the outcome of an experiment, though they are not the variables that are actually of interest)
- These variables are undesirable because they add error to an experiment.
- A major goal in research design is to decrease or control the influence of extraneous variables as much as possible.

Research Design

- Important concepts related to research design

2. Extraneous Variables:

- Ex:



Research Design

- Important concepts related to research design

2. Extraneous Variables:

- Ex:

EXTRANEOUS VARIABLE





Assignment 2

- **SAME** Students group of **Assignment 1** (2-3 members), do the following:
 - Title : Big Data
 - Find **5 papers** from (2015-2018) **MUST BE** related to Title

Title	year	issues	Their opinion	Your opinion

- No handwriting, submitted Hardcopy
- Deadline (**23/05/2018**)



Questions & Answers



THANK
YOU