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Unit – II

OBJECTIVES,VARIABLES HYPOTHESIS, ASSUMPTIONS & LIMITATIONS

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- **RESEARCH OBJECTIVES**

RESEARCH OBJECTIVES

A Research Objective is a clear concise declarative statement which provides direction to investigate the variables.

The objective of the research project summarize what is to be achieved by the study. Objectives must be clearly related to the statement of the problem

Characteristics

A well worded objective will be SMART

S – Specific

M – Measurable

A – Attainable

R – Relevant

T – Time-Bounded.

Cont…

Research objective should be FORMUL

F – Feasible

O – Observable

R – Relevant

M – Measurable

U – Unequivocal

L– Logical.

Cont…

It is a purpose that can be reasonably achieved with the time frame & with available resources.

The objective of project summarizes what is to be achieved in study.

They are accomplishments the researcher hopes to achieve by the study.

They include obtaining answers to research questions or testing hypothesis

Need for Research Objective

The formulation of research objectives will help the researcher

Focus

Avoid

Organize

Directions

Types

- **General Objectives -** are broad goals to be achieved and usually less in number. It states what the researcher expects to achieve by the study in general terms.
- **Specific Objectives -** are for short term and narrow in focus. General objectives can be broken into small logically connected parts to form specific objectives. They should specify what the researcher will do in the study, where, and for what purpose.

Method of stating objectives

While stating the objectives of the study, the following guidelines must be taken care of:

- The objectives should be presented briefly and concisely.
- They cover the different aspects of the problem and their contributing factors in a coherent way and in a logical sequence.
- They are clearly phrased in operational terms, specifying exactly what researcher is going to do, where, and for what purpose.

- **VARIABLES**

Introduction

Variables are concepts at different level of abstraction that are concisely defined to promote their measurement or manipulation within study.

TYPES

Independent Variable

It is a stimulus or activity that is manipulated or varied by the researcher to create the effect on the dependent variable.

Dependent Variable

It is the outcome or response due to the effect of the independent variable which researcher wants to predict or explain.

Cont…

Research Variable

The variables are observed or measured in natural settings as they exist without manipulating or imposing the effect of intervention or treatment.

Cont…

Demographic Variables

In most studies, researcher makes the attempt to study the sample characteristics and present them in research findings. The characteristics and attributes of the study subjects are considered as demographic variables.

Cont…

Extraneous Variables

They are the factors which are not the part of the study but may affect the measurement of the study variables.

- **HYPOTHESIS**

HYPOTHESIS

Hypothesis is a tentative prediction or explanation of the relationship between two variables.

Hypothesis reflects the research workers guess as to the probable outcomes of their experiment.

Definition

A hypothesis is an assumption statement about the relationship between two or more variables that suggest an answer to the research question

Importance

- Powerful tool for advancement of knowledge.
- Provides objectivity to the research activity.
- Provides direction to conduct research.
- Provides clear and specific goals to the researcher.
- It provides link between theory and practical research

Cont…

- Tentative statement of anticipated results
- Stimulates thinking process of researcher
- It determines most appropriate research design
- It serves as a framework for drawing conclusions

Characteristics

- *Conceptual Clarity*
- *Empirical Reference*
- *Objectivity*
- *Specificity*
- *Relevant*
- *Testability*

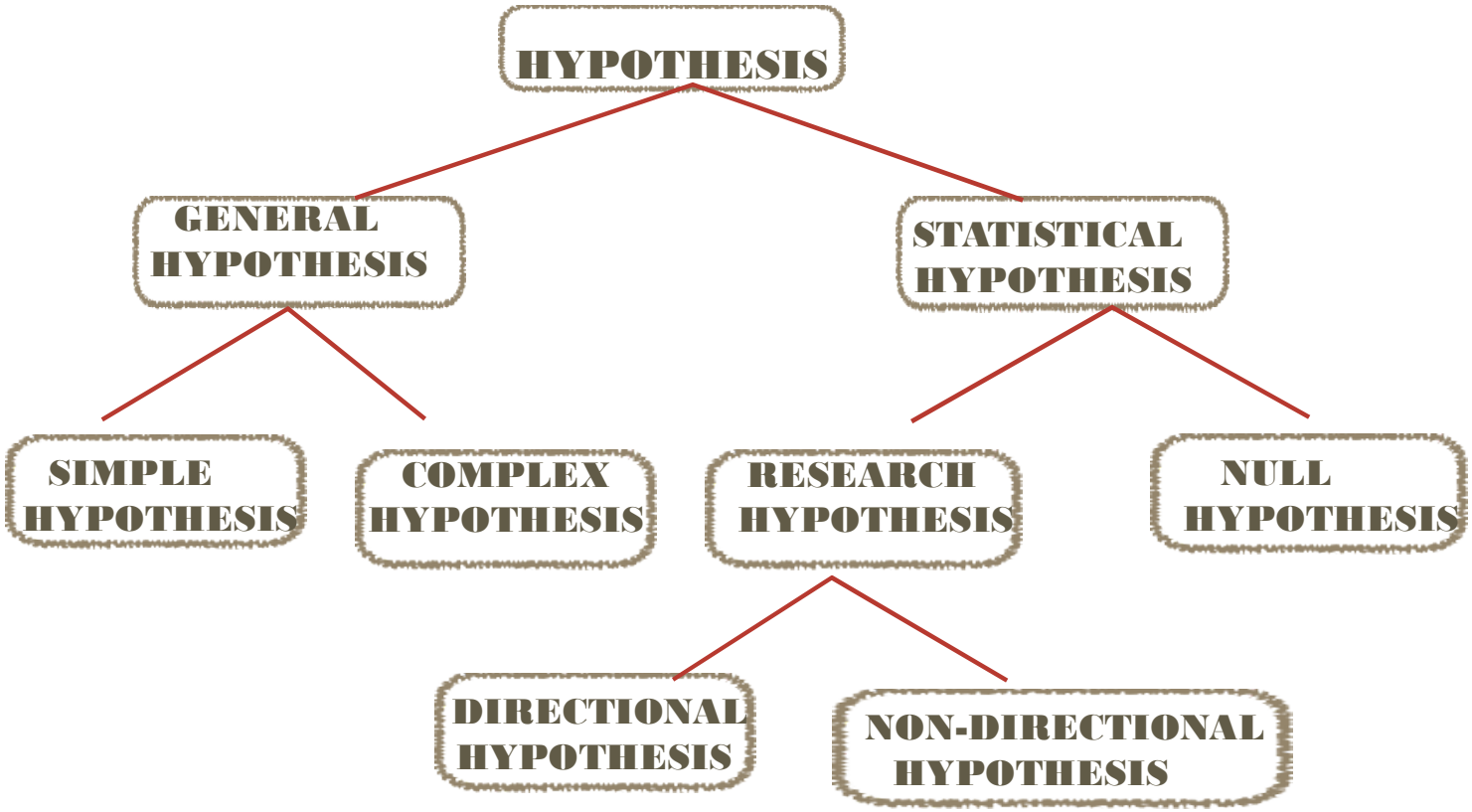
Cont…

- *Consistency*
- *Simplicity*
- *Availability*
- *Purposiveness*
- *Verifiability*
- *Profundity of effect*
- *Economical*

Sources of Hypothesis

- Theoretical or conceptual frame work.
- Previous research finding
- Real life experiences
- Academic literature

Types of Hypothesis



Types of Hypothesis

- ***Simple Hypothesis***:

  It is a statement which reflects relationship between two variables.

- ***Complex Hypothesis***:

  It is a statement which reflects relationship between more than two variables.

Cont…

- ***Associative Hypothesis***:

It reflects relationship between variables that occur or exists in natural settings without manipulation.

Cont…

- ***Casual Hypothesis***:

It predicts the cause and effect relationship between two or more dependent and independent variables in experimental or interventional settings, where independent variable is manipulated by researcher to examine the effect on the dependent variable.

Cont…

- ***Directional Hypothesis***:

It states the nature of the relationship between two or more variables such as Positive, Negative or No relationship.

Cont…

- ***Non Directional Hypothesis***:

It reflects the relationship between two or more variables, but it does not specify the anticipated direction and nature of relationship such as positive or negative.

Cont…

- ***Null Hypothesis***:

also known as Statistical Hypothesis (Ho). It is used for statistical testing and interpretation of statistical outcomes. It states the existence of no relationship between the independent and dependent variables.

Cont…

- ***Research Hypothesis***:

  It states the relationship between two or more variables

CRITERIA

- Written in a declarative sentence.
- Written in the present tense.
- Reflect the problem statement or purpose statement.
- Be empirically tested.
- Contains variables.
- Contains the population.

- **ASSUMPTIONS**

ASSUMPTIONS

Definition:

They are the statements that are taken for granted or are considered true even though they have not been scientifically tested.

Example : Prevalence of coronary artery disease is more common among urban people as compared to rural people.

USES OF ASSUMPTION

- Research is built upon assumptions since a foundation is needed to move forward.
- They may be good source of research questions.
- It provides basis to conduct of research study.
- It expands the professional body of knowledge

CHARACTERISTICS

- They are universally accepted.
- They are theories applicable to a particular field of study.
- They refer to the finding of previous related researchers.

Types

- *Universal Assumptions*
- *Assumptions based on Theories*
- *Assumptions need to conduct Research*
- *Warranted Assumptions*
- *Unwarranted Assumptions*

UNIVERSAL ASSUMPTION :

- Assumed to be true by a large part of the society, but testing such assumptions is not always possible.
- Example : There is a supernatural power which governs this universe.

THEORY BASED ASSUMPTION

- Research project can be based on nursing theories.
- Example : A study based on Pender's health promotion model will use theory based assumption.
- Individual characteristics & experiences.
- Behavior specific cognition & effects.
- Behavior outcomes.

CONDUCT A RESEARCH

- Some assumptions may be developed to conduct a particular study.
- Example : “Childhood obesity is more private schools as compared to Government schools”.

WARRANTED ASSUMPTION

- Research findings or observations are stated along with assumption.
- Example : “Regular physical activity reduce BMI”.

UNWARRANTED ASSUMPTION

- These are presented without any support of research findings.
- Example : “Mental diseases are cured by holistic healing”.

LIMITATIONS

THEORITICAL LIMITATION

- They restrict the ability of research findings by generalize specific theoretical concepts in study.
- Also limits the study of variables through operational definitions.

METHODOLOGICAL LIMITATION

- Unrepresentative sample
- Weak design
- Single sitting
- Limited control over extraneous variables
- Poor implementation of treatment protocol
- Research tool with limited reliability & validity
- Poor data collection procedure
- Ineffective use of statistical analysis

DIFFERENCE

ASSUMPTIONS	*HYPOTHESIS*	*LIMITATIONS*
Assumptions are basically belief and ideas that hold to be true.	**Hypothesis is a predictions.**	**Limitations are restricted.**
Assumptions are not statistically tested in research.	**Hypothesis are statistically tested in research.**	**Limitations cannot be tested statistically in research.**
Beliefs about the variables	**Predictions about the relationship of two or more variables**	**Limitations points out strength and weakness of the research.**
Based on the belief , the researcher attempts to discover the correlation.	**Predicts relation between variables and statistically tested to conclude the study.**	**The limitation influence the interpretation of the finding and thus reduces the credibility of research findings**