

VARIABLES

- In **quantitative** research, the investigator identifies multiple variables and seeks to measure them. In **qualitative** research, the term **variable** is not used, and instead the inquirer seeks to gather information on a single concept – a central phenomenon.

Variable

- Element that is identified in the hypothesis or research question
- Property or characteristic of people or things that ***varies*** in quality or magnitude
- Must have two or more levels
- Must be identified as independent or dependent

Independent Variables

- Manipulation or variation of this variable is the cause of change in other variables
- Technically, independent variable is the term reserved for experimental studies
(Also called antecedent variable, experimental variable, treatment variable, causal variable, predictor variable)

Dependent Variables

- The variable of primary interest
- Research question/hypothesis describes, explains, or predicts changes in it
- The variable that is influenced or changed by the independent variable
(In non-experimental research, also called criterion variable, outcome variable)

Relationship Between Independent and Dependent Variables

- Cannot specify independent variables without specifying dependent variables
- Number of independent and dependent variables depends on the nature and complexity of the study
- The number and type of variables dictates which statistical test will be used

Control Variables

- Factors controlled by the researcher to cancel out or neutralized any effect on DV.
- The effects of control variable are neutralized; those of moderator variables are studied.
- What is the relationship between physical size and social maturity among boys and girls in the same age group?

Moderator Variables

- A special type of independent variable, a secondary variable selected to determine if it affects the relationship between IV and DV.
- A factor measured or selected to discover whether it modifies the relationship.
- What is the difference in achievement between good readers and poor readers after receiving written and oral instructions?

Intervening Variable

➤ Intervening variable

- Presumed to explain or provide a link between independent and dependent variables
- Relationship between the IV and DV can only be explained when the intervening variable is present
- As task interest increases, measured task performance increases. (learning)

Confounding Variable

➤ Confounding variable

- Confuses or obscures the effect of independent on dependent
- Makes it difficult to isolate the effects of the independent variable