

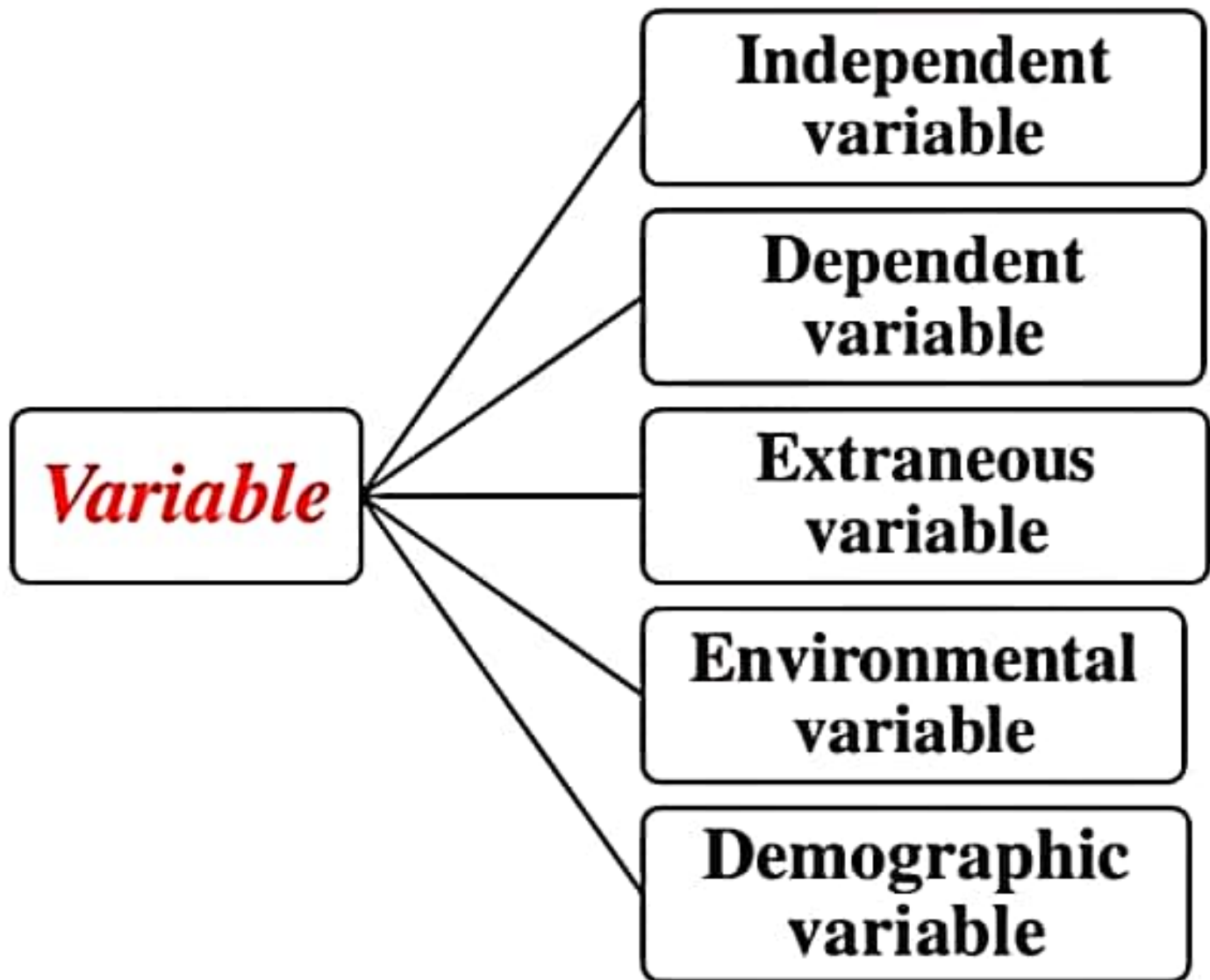
Research Variables

By- Vandana Mishra
Assistant Professor

- Research variables are defined as qualities, properties, characteristics, behaviors, attributes etc. of people- individuals or group, objects, situations, activities ect. That changes or vary. Variable are **manipulable** and measurable.

Any characteristic which is subject to change and can have more than one value such as age, intelligence, motivation, gender, etc.

Type of Research Variables



Independent variable

- Independent variable is the quality or property that can be **manipulated** by the researcher to **cause** an **effect** on the dependent variable. It is also called experimental variable or treatment variable.

Dependent variable

- Dependent variable is the quality or property or behavior or outcome that the researcher predicts and that occurs in response to the manipulation, experimentation or treatment of the independent variable. It is also called outcomes variable.

You are interested in **“How stress affects mental state of human beings?”**

Independent variable ----- Stress

Dependent variable ---- mental state of human beings

You can directly manipulate stress levels in your human subjects and measure how those stress levels change mental state.

Extraneous variable

- **Extraneous variables** exist in all type of research studies but the researcher does not include them for the research purpose. These are the variable which confuse or mix up the relationship between the variable and also interfere with the rational or causal relationship between the independent and the dependent variables.

Cont...

- The researcher makes an attempt to identify those extraneous variables before the research study is initiated and thereby control the influence of extraneous variables on the research study through a specific research design or through statistical manipulation.

Cont...

- **Example-** a clam and quite environment at bedtime at night will allow sound sleep to a patient in a general ward. – in the above example, the independent variable- clam and quite environment will have an effect on the dependent variable- sleep of patient at night.

Environmental variable

- **Environmental variable** are the variables which compose a research setting where the research study is conducted. These variables are climate, family background, social background, institution setup, community setup, education setup etc. these variable are also some type of extraneous variable.

Cont...

- In a **descriptive** or **correlation** research study where the study is conducted in a natural setting and where it is necessary to study the subjects' behavior in a **natural setting**, the researcher makes no attempt to control or alter the environmental variables.

Demographic variables

- **Demographic variable** are the qualities or property or characteristics of the subject under the research study and which are collected to describe sample. These variable are also called the sample characteristics.

Cont...

- **Example** – subject who are under research study- age, gender, height, weight, build, movement, vision, hearing, speech, religion, marital status etc. are the demographic variables.

Other Names for Dependent and Independent Variables

Dependent Variable

Explained

Predictand

Regressand

Response

Outcome

Controlled

Independent Variable

Explanatory

Predictor

Regressor

Stimulus

Covariate

Control

Thank you