

Experimental Research Design

- A causal relationship exists **when one variable in a data set has a direct influence on another variable.**
- Also known as Cause and Effect relationship
- warmer weather caused more sales of AC or Cooler

Experimental Research Design

- a research method used to investigate the interaction between independent and dependent variables,
- used to determine a cause-and-effect relationship.
- research conducted with a scientific approach using two sets of variables
- Independent Variable and Dependent Variable

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- For Example
- A researcher wants to examine the effect of advertisement on customer demand
- Then two group will be selected
- One group will be exposed to Ad - Experimental Group
- Second Group will be Control Group

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Independent and Dependent Variables

- Those variables which affect the other variables are called **Independent Variables**
- Those variables which get affected by the other variables are called **dependent Variables**
- In a study to determine whether how long a student sleeps affects test scores, **the independent variable is the length of time spent sleeping while the dependent variable is the test score.**

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Moderating Variables

- a variable that can strengthen, diminish, negate, or otherwise alter the association between independent and dependent variables.

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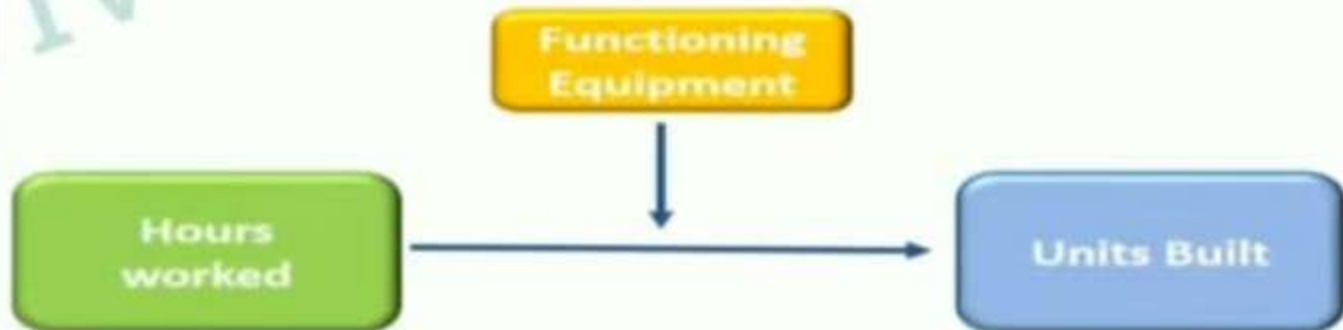
Concomitant Variables

- or covariate,
- is a variable which we observe during the course of our research or statistical analysis, but we cannot control it and it is not the focus of our analysis

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Moderating Variables

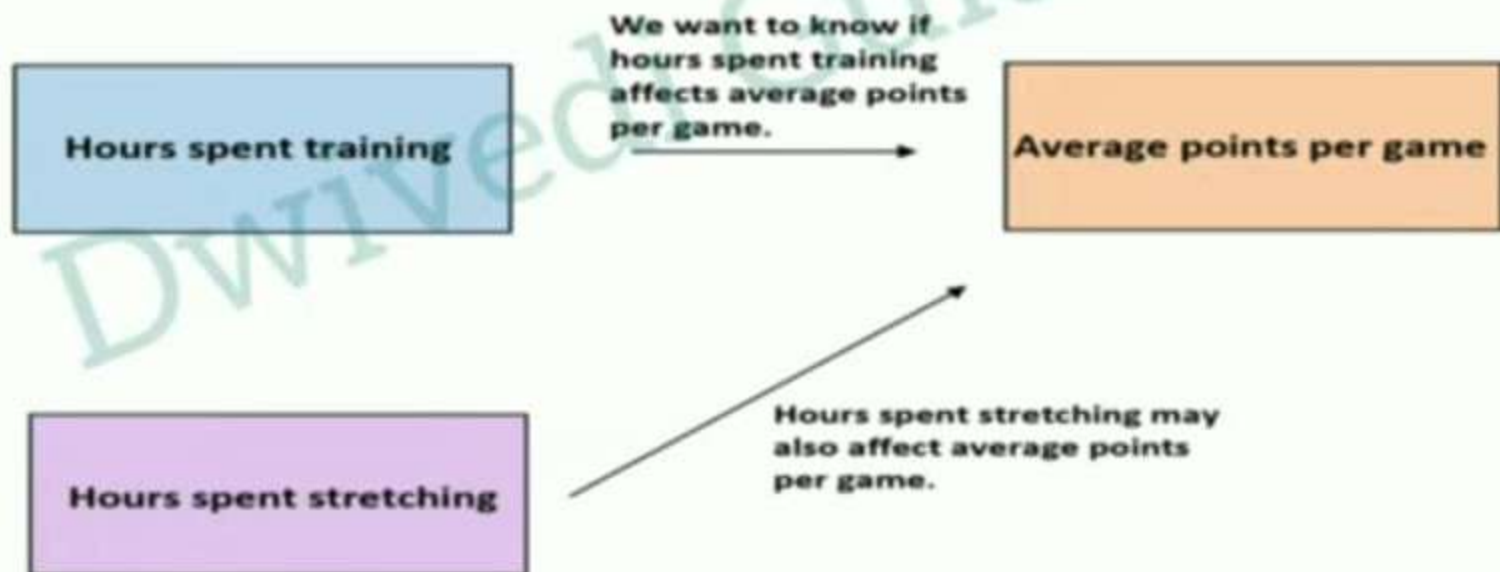
- a variable that can strengthen, diminish, negate, or otherwise alter the association between independent and dependent variables.
- Moderating variables can also change the direction of this relationship.



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Extraneous Variables

- an extraneous variable is any factor that can affect an experiment's dependent variables,



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- Treatment groups are the sets of participants in a research study that are exposed to some manipulation or intentional change in the independent variable of interest.
- The treatment group (also called the experimental group) receives the treatment whose effect the researcher is interested in.
- The control group receives either no treatment, a standard treatment whose effect is already known,