

### Types of Research

#### Quantitative Research:

1. **Numerical, statistical** instead of giving reasonings, information that is objective. Answers factual questions.
2. Best for representativeness and **generalizability**. Broader study. Greater number of subjects.
3. **Harder to analyze** and give reasonings. Can't explore why.

#### Qualitative Research:

1. Focused around **opinion**, feelings and **WHY** something is happening. Complex data and harder to analyze. Subjective Data.
2. **Detailed information** that explores reasonings. Based on human experience which gives **better validity**.
3. Longer process to analyze the data as it all varies due to subjective nature. **If not careful, researcher can have a negative impact on the results behavior.**

#### Mixed Methods Research:

1. Combines elements of quantitative research and qualitative research.
2. Help to gain a more **complete picture**.
3. Used often in Social Work Research.

### Types of Research

<b>Descriptive Research-</b>	research that describes or define a particular phenomenon.
<b>Explanatory Research-</b>	explains why particular phenomena work in the way that they do, answers "why" questions.
<b>Exploratory Research-</b>	conducted during the early stages of a project, usually when a researcher wants to test the feasibility of conducting a more extensive study.

### Terms

<b>Attributes-</b>	characteristics that make up a variable.
<b>Exhaustiveness-</b>	all possible attributes are listed.
<b>Index-</b>	measure that contains several indicators and is used to summarize a more general concept.
<b>Indicators-</b>	represent the concepts that we are interested in studying.
<b>Interval-</b>	the distance between attributes is known to be equal.



### Terms (cont)

<b>Operationalization-</b>	process by which researchers conducting quantitative research spell out precisely how a concept will be measured.
<b>Ratio-</b>	attributes can be rank ordered, the distance between attributes is equal, and attributes have a true zero point.
<b>Scale-</b>	composite measure designed in a way that accounts for the possibility that different items on an index may vary in intensity.
<b>Typology-</b>	measure that categorizes concepts according to particular themes.

### Measurements

<b>Nominal Scale-</b>	Places people, events, perceptions, etc. into categories based on a common characteristic.	Lowest form of measurement because it doesn't capture information about the focal object other than whether the object belongs or doesn't belong to a category.
<b>Ordinal Scale-</b>	Contains all of the information captured in the nominal scale but it also ranks data from lowest to highest.	Rank orders the subjects. Richer than nominal scaling, ordinal scaling still suffers from information loss in the data.
<b>Interval Scale-</b>	Indicates the distance one object is from another.	
<b>Ratio Scale-</b>	Contains all of the information of the previous three levels plus it contains an absolute zero point.	

## Variables

**Definition-** any characteristics of an individual that can change from individual to individual.

**Independent Variable-** (Explanatory/Predictor) manipulated by the researcher. Purposely change or control in order to see what effect it has.

**Dependent Variable-** (Response/Outcome) responds to the change in the independent variable.

**Confounding Variable-** affects the relationship between the independent variable and the dependent variable.

**Mediating Variable-** explains the relationship between the independent variable and the dependent variable. Comes in between the independent and dependent variables and is affected by the independent variable, which then affects the dependent variable.

**Moderator Variable-** affects the strength or direction of the relationship between the independent variable and the dependent variable.

## Variables (cont)

**Control Variable-** held constant or controlled by the researcher to ensure that it does not affect the relationship between the independent variable and the dependent variable.

**Continuous Variable-** can take on any value within a certain range.

**Categorical Variable-** can take on a limited number of values or categories.

**Discrete Variable-** can only take on specific values. Discrete variables are often used in counting or frequency analyses.

**Dummy Variable-** takes on only two values, typically 0 and 1, and is used to represent categorical variables in statistical analyses. Dummy variables are often used when a categorical variable cannot be used directly in an analysis.

## Variables (cont)

**Extraneous Variable-** has no relationship with the independent or dependent variable but can affect the outcome of the study. Extraneous variables can lead to erroneous conclusions and can be controlled through random assignment or statistical techniques.

**Latent Variable-** cannot be directly observed or measured, but is inferred from other variables. Latent variables are often used in psychological or social research to represent constructs such as personality traits, attitudes, or beliefs.

**Moderator-mediator Variable-** acts both as a moderator and a mediator. It can moderate the relationship between the independent and dependent variables and also mediate the relationship between the independent and dependent variables. Moderator-mediator variables are often used in complex statistical analyses.



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### Sampling

**Sample-** Specific group of individuals that you will collect data from.

**Sample Frame-** The actual list of individuals that the sample will be drawn from.

**Probability Sampling-** Used in **Quantitative** research. **Random** selection, allowing you to make strong statistical inferences about the whole group. Every member of the population has a chance of being selected.

#### Types of Probability Sampling:

**Simple Random Sampling-** Every member of the population has an equal chance of being selected. Should include the whole population.

### Sampling (cont)

**Systematic Sampling-** Instead of randomly generating numbers, individuals are chosen at regular intervals. Easier to conduct than Simple Sampling.

**Stratified Sampling-** Dividing the population into subpopulations that may differ in important ways. Allows you draw more precise conclusions by ensuring that every subgroup is properly represented in the sample.

### Sampling (cont)

**Cluster Sampling-** Divide the population into subgroups, but each subgroup should have similar characteristics to the whole sample. Instead of sampling individuals from each subgroup, you randomly select entire subgroups.

**Non-Probability Sampling-** Used in **Qualitative** and **Exploratory** research. **Non-random** selection based on convenience or other criteria, allowing you to easily collect data. Individuals are selected based on non-random criteria, and not every individual has a chance of being included.

#### Types of Non-Probability Sampling:



### Sampling (cont)

**Convenience Sampling-** Includes the individuals who happen to be most accessible to the researcher. Easy, inexpensive. At risk for sampling bias and selection bias.

**Voluntary Response Sampling-** People volunteer themselves. At risk for self-selection bias.


**Purposive Sampling-** Also known as **Judgement Sampling**. Researcher uses their expertise to select a sample that is most useful to the purposes of the research. At risk for observer bias.

**Snowball Sampling-** Recruit participants via other participants. At risk for sampling bias.

### Sampling (cont)

**Quota Sampling-** Non-random selection of a predetermined number or proportion of units.

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