

Notes:

1. Types of research designs:
	1. A seeks to describe the current status of a variable or phenomenon. The researcher does not begin with a hypothesis, but typically develops one after the data is collected. Data collection is mostly observational in nature.
	2. A explores the relationship between variables using statistical analyses. However, it does not look for cause and effect and therefore, is also mostly observational in terms of data collection.
	3. A seeks to establish a cause-effect relationship between two or more variables. The researcher does not assign groups and does not manipulate the independent variable. Control groups are identified and exposed to the variable. Results are compared with results from groups not exposed to the variable.
	4. An is used to establish cause-effect relationship among a group of variables in a research study. Researchers make an effort to control for all variables except the one being manipulated (the independent variable). The effects of the independent variable on the dependent variable are collected and analyzed for a relationship.
2. Time dimension:
	1. A collects data at one point in time (thereby producing a snapshot) or during a single short interval to make comparisons across different types of participants or variables
	2. A collects data from respondents (or multiple groups) at several different points in time starting in the present and going into the future.
		1. A study samples respondents at various in time points but typically asks the same questions.
		2. A study is one in which a population (or subpopulation) who have a common characteristic (or experienced a similar event during a fixed period) are asked to respond to a questionnaire at various time points.
		3. *A*  study samples and tracks the same respondents by collecting repeated measures on the same set of variables at two or more time points.
			1. An iteration of data collection is referred to as a *wave* or *round.*
	3. A study has a historical emphasis, looking back to more than one time period – ideally, to make comparisons or establish a trend.
3. Types of data:
4. , which can also be called data
	1. Typically take on values that are names or labels (examples include hair color, gender, location, political party affiliation)

* 1. Another name for this data type
	2. This means that and and mean the same thing!
		+ This data type has

1. , which can also be called data
	1. Two types:
		* = data that can take on only certain values. Examples include: # of students in a class, # of workers in a department.
		* = data that can take on any value. Examples include: GPA, weight.
	2. Numerical data can be measured using three types of scales
		* = a measure where higher numbers represents more of a characteristic than a lower level number but the distance between adjacent response choices may not be equal and there’s no fixed zero.
		* = like an ordinal scale, higher numbers represent more or a greater amount of the phenomena being measured, and where the distance between adjacent response choices are equal but there’s still no fixed and non-arbitrary zero.
		* = has the same properties as an interval scale, except that there is a true zero and calculating ratios makes sense.
2. Objective vs. subjective measures
	1. Objective 🡪

* 1. Subjective 🡪

1. Self-report vs. other-report
	1. Self-report 🡪

Example:

* 1. Other-report 🡪
		+ Example:

Population

$μ$ = 35

Sample 3

$\overbar{x}$ = 28

Sample 2

$\overbar{x}$ = 42

Sample 1

$\overbar{x}$ = 37

1. Statistical artifacts and errors
	1. Sampling Error:
	2. Sampling Variation:
	3. is the difference between a measured quantity and its true value
		1. Two types
			*
			*