Exam 1 Notes

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C1S1:

Population: the entire set of all potential measurement

Sample: any subset of a population

Simple Random Sample: A sample of size n taken in such a way that any group of size n has the same chance of being selected

Sampling Variability: different samples from the same population can lead to differences

Stratified Random Sampling: the population is broken into groups based off a characteristic. Then a SRS is taken from each group

Cluster Sampling: target population has many groups, groups are selected by SRS of the groups. All elements of each group are selected

Systematic Sample: A listing is generated over time, every k^{th} member is included in the sample.

Tangible Population: A population composed of members/individuals that exist.

Conceptual Population: A population composed of all values that can potentially be observed. They do not necessarily exist at any point in time.

Observations: The measurement, or set of measurements recorded from any individual in a sample.

Variables: The characteristics being observed from individuals.

Quanitative Variables: Possible values that represent *quantiles of something.* Numbers of things.

Ratio Variables: Inherent zero value and ratios between values make sense. **Interval Variables:** No meaningful ratios and arbitrary zero

Qualitative: A variable that takes a category of possible values.

Nominal: Ordering of categories makes sense.

Ordinal: No inherent ranking in categories.

Observational Study: Observe a sample from a population with minimal interaction.

Experimental Study: A study performed where the environment of subjects is strictly controlled.

Response Variable(s): The variable(s) of interest in a study.

Explanatory Variable: Variables to explain changes in the response variable.

Confounding Variable(s): Variables unaccounted for i a study that may explain changes in the response variable.