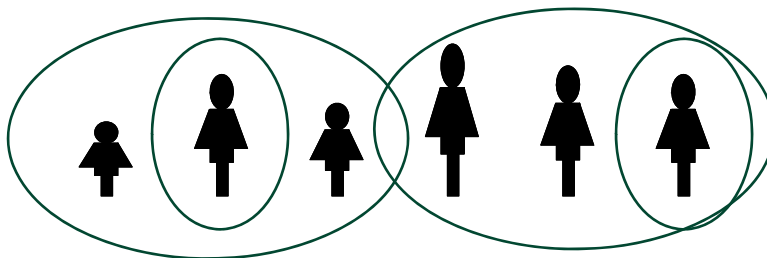


# Sampling Technique and Sampling Error

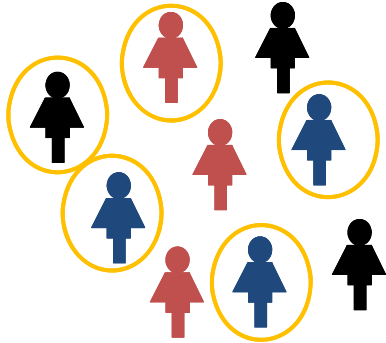
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## Understand Your Population



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Sampling Strategy

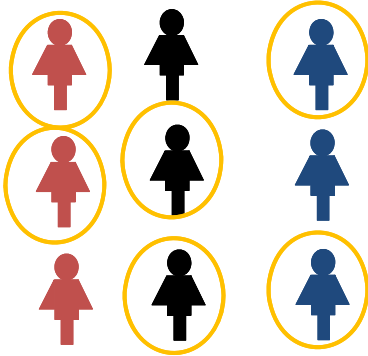


Random Sample

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The diagram illustrates a random sample. It features a collection of 10 stylized human figures in three colors: red, black, and blue. Five of these figures are enclosed within yellow circles, representing the selected sample. The selection is random, as the circled figures are scattered throughout the group and include all three colors.

Sampling Strategy



Stratified sample

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The diagram illustrates a stratified sample. It features a collection of 10 stylized human figures in three colors: red, black, and blue. The figures are arranged in three vertical columns: three red figures on the left, three black figures in the middle, and four blue figures on the right. In each column, the top two figures are enclosed within yellow circles, representing the selected sample. This method ensures that the sample is proportional to the distribution of the population.

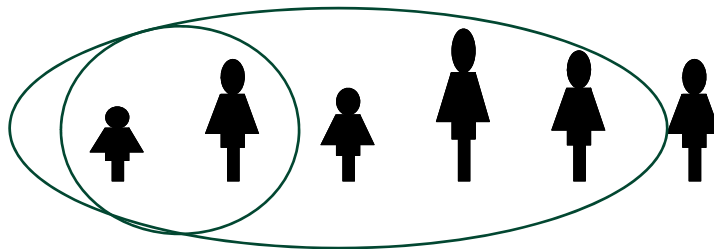
## Resources



- Explanation of random sample:  
<http://www.youtube.com/watch?v=Q5gB3qX0z-E>
- Excel tutorial on random sampling  
<http://www.youtube.com/watch?v=Q5gB3qX0z-E>
- Explanation of stratified sampling  
<http://www.youtube.com/watch?v=sYRUJYOpG0>
- explanation of cluster random sampling  
<http://www.youtube.com/watch?v=QOxXy-l6ogs>

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## Sampling Error



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- Sample error calculator:

<https://www.dssresearch.com/KnowledgeCenter/toolkitcalculators/sampleerrorcalculators.aspx>

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### Researcher's Toolkit

Sample Size:  Enter the size of the sample drawn from the population being studied.

Sample Proportion (%):  Enter the proportion of people in the population being surveyed who are expected to answer a certain way on the key measure in the survey. If you are unsure what the proportion might be, use 50% because this produces the maximum possible variation.

Total Population:  Enter the total size of the population you are studying. If the total population you are studying is small or your sample makes up at least 5% of the entire population, entering the population here will reduce the sampling error calculated. If you are unsure what amount to put here, leave it blank.

Confidence Interval:  Select the desired confidence interval to base the sampling error on. A 95% confidence interval is typical.

**Sample Error: 4.8%**

Calculate Sample Error

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## Practical sampling concerns

- Gather reliable student information (e.g., the list of all seniors)
- Avoid selection bias (e.g., those didn't come to class on the test day, those didn't respond to the survey)
- Sample as many as possible but make it manageable
- Small sample → can cumulate results across time before reaching conclusion

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