

“To Sample, or Not to Sample, That is the Question” The Foundations of a Sampling Plan

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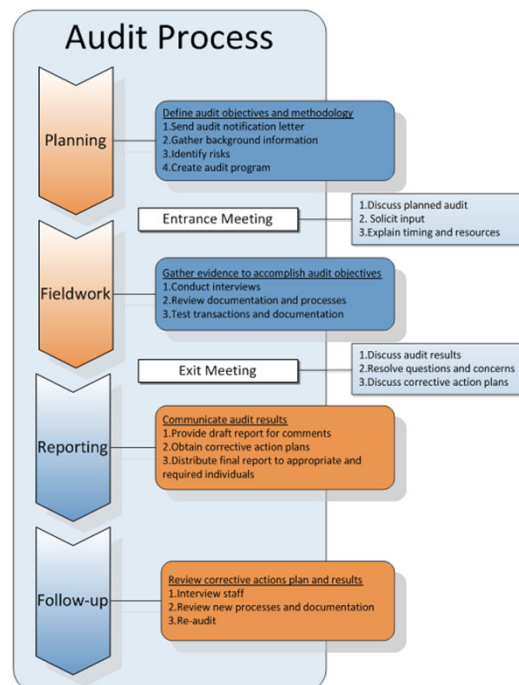
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Audit Process

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Why Sample?

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Possible limiting factors:

- Volume of data
- Resources
- Timeline
- Budget

Advantages of Sampling:

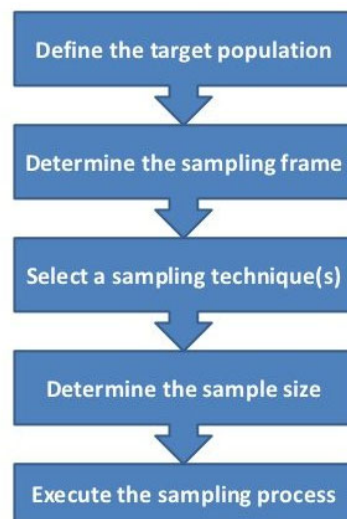
- Economical
- Efficient
- Replicable



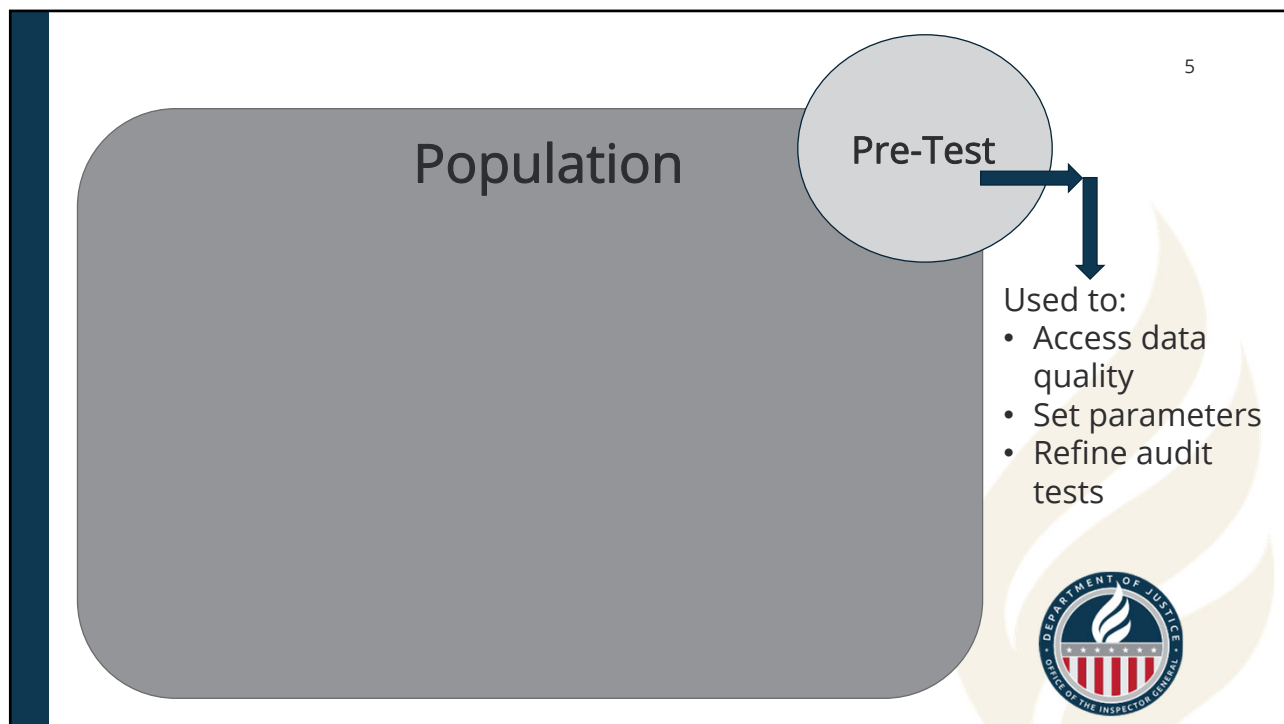
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Sampling Process

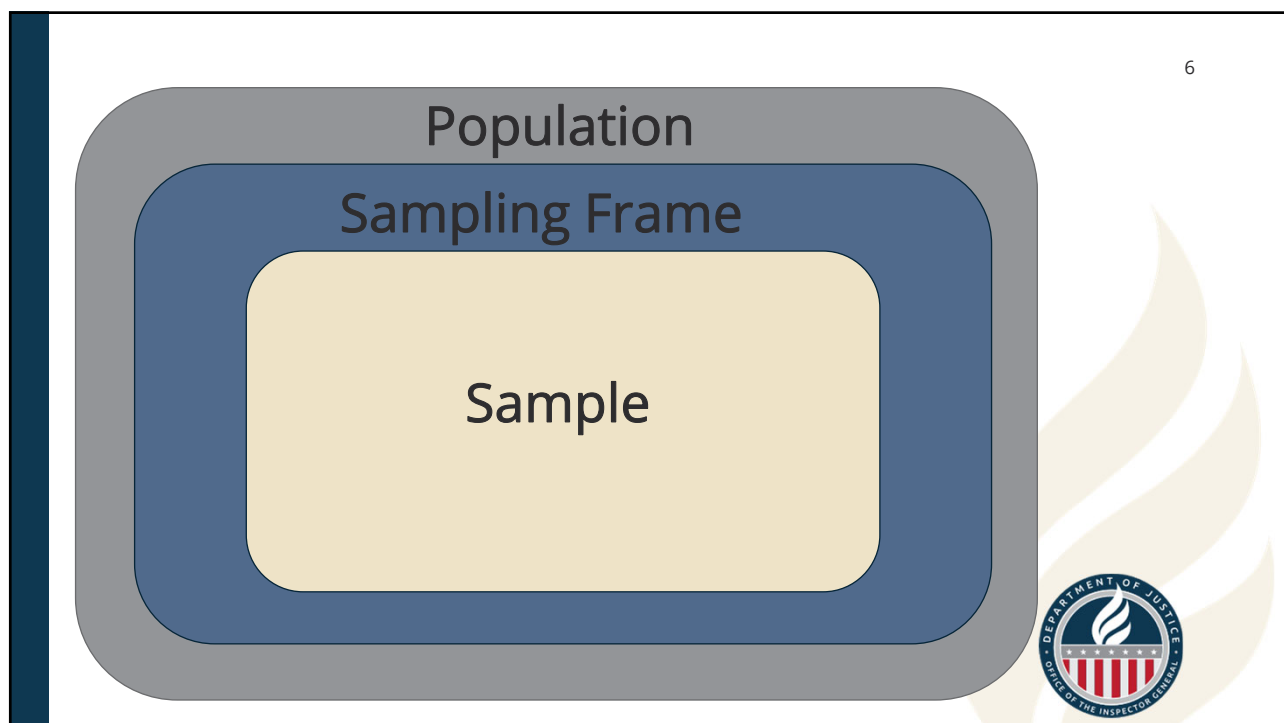
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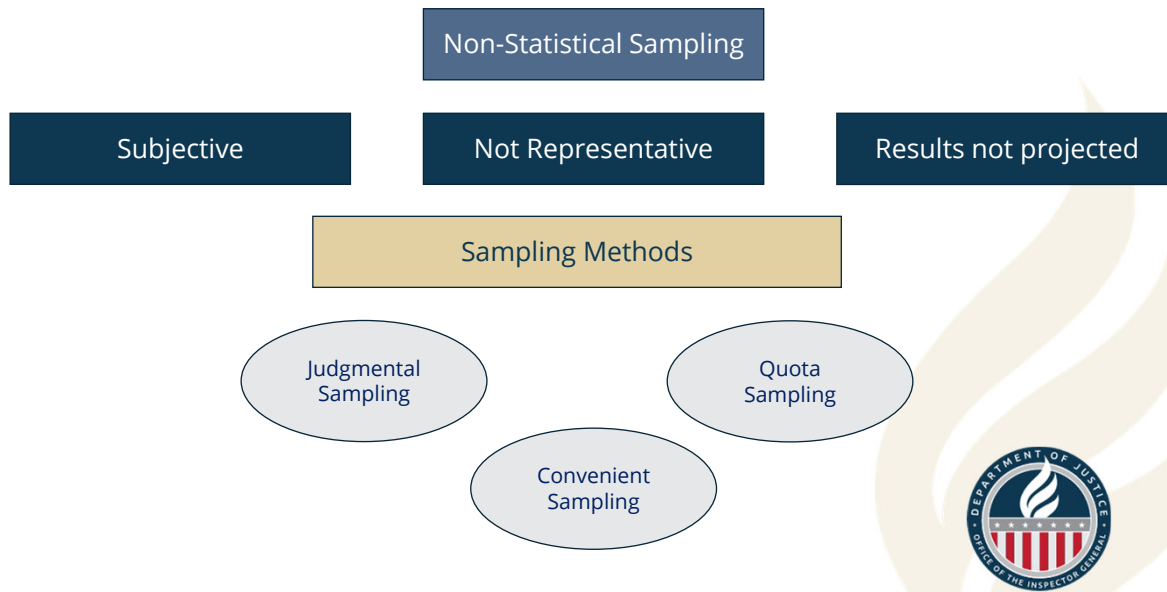
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Sampling Techniques

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Judgmental Sampling

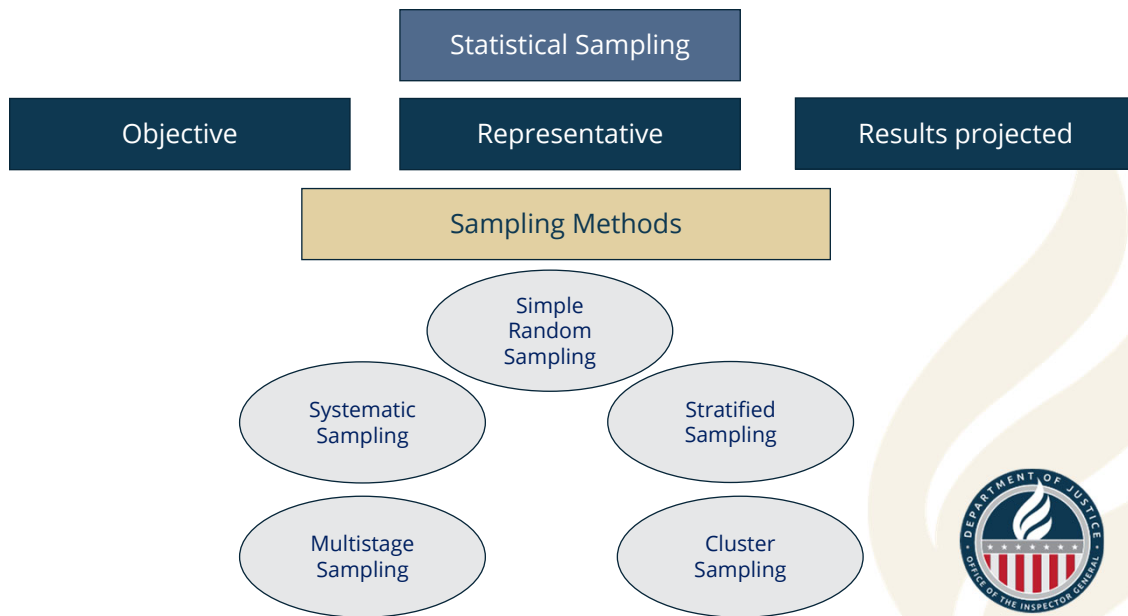
- Common non-probability method
- Utilizes experience and judgment
- There is no method to evaluate the reliability of the sample results

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Sampling Techniques

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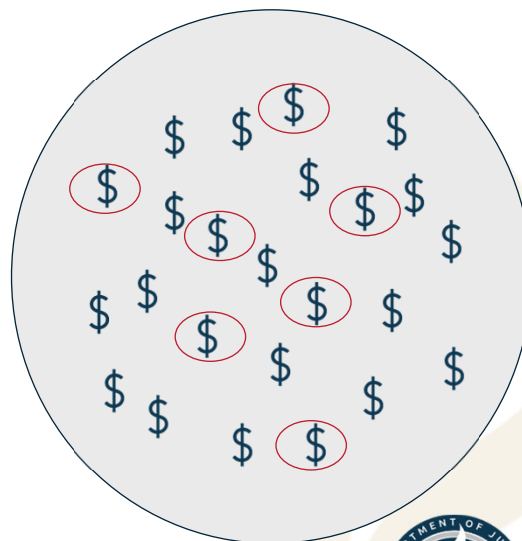


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Simple Random Sampling

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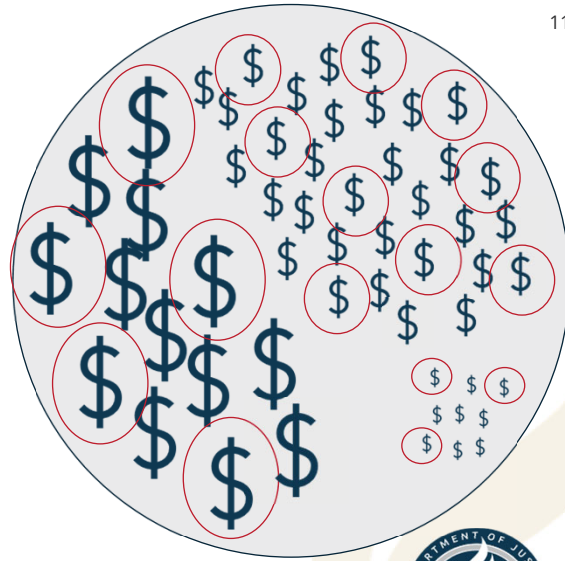
- Most applicable when population is homogeneous
- Each unit in the frame has an equal probability of selection
- Lottery system is used to determine which units are selected



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Stratified Sampling

- Commonly used probability method
- A stratum is a subset of the population that share at least one common characteristic
- Units are randomly selected from each stratum
- Often used when one or more of the strata have a low frequency relative to the other strata



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Sample Too Large



Sample Too Small



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Determining the Size of the Sample

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Factors That Impact the Sample Size

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- Margin of Error (Precision)
 - Decreasing the margin of error, increases the sample size
- Confidence Level
 - Degree of assurance that the population estimate will be within certain limits
 - 95% commonly used
- Measure of variability
 - Could be determined from a preliminary test or based on a prior audit



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Things to Consider...

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- Include statistician/data analyst early in the process
- Gather information about the audit and data
- Data format and software



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