12.b - The Big Ideas of Sampling

1) Review of Reading (Vocabulary of Sampling)
2) Notes : Parameters vs. Statistics
3) Notes : Types of Sampling
4) Assignment Time

Parameters vs Statistics

A (population) parameter is a measurement of a population that we are estimating

A (sample) statistic is a precise measurement from a sample

We use (sample) statistics to help estimate (population) parameters

<table>
<thead>
<tr>
<th>Statistic</th>
<th>Parameter</th>
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</thead>
<tbody>
<tr>
<td>Mean</td>
<td>( \mu )</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>( \sigma )</td>
</tr>
<tr>
<td>Correlation</td>
<td>( r )</td>
</tr>
<tr>
<td>Regression coefficient</td>
<td>( b )</td>
</tr>
<tr>
<td>Proportion</td>
<td>( p )</td>
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</tbody>
</table>
Types of Sampling

Simple Random Sample (SRS)
- "put names in a hat and draw out #"
- each combination of outcomes is equally likely

Stratified Random
- separate into homogeneous groups first (strata)
- SRS is then used within each strata
- reduces sampling variability within each strata

Cluster Sampling
- split into representative clusters, select one or a few
- not always good idea for representative samples

Systematic Sampling
- surveying every "nth" person
- can still be random, if start point is random

Assignment (Due Monday, November 23)

1) Read Chapter 12, Pg. 272-279 Carefully!!
   - especially "representative sample"
   and "sampling variability"

2) Pg. 288a, #1-4, 7-14 e only

3) IT #11... (Due Tuesday!)