

Video 13 of 21: Weighting Design/Base weights

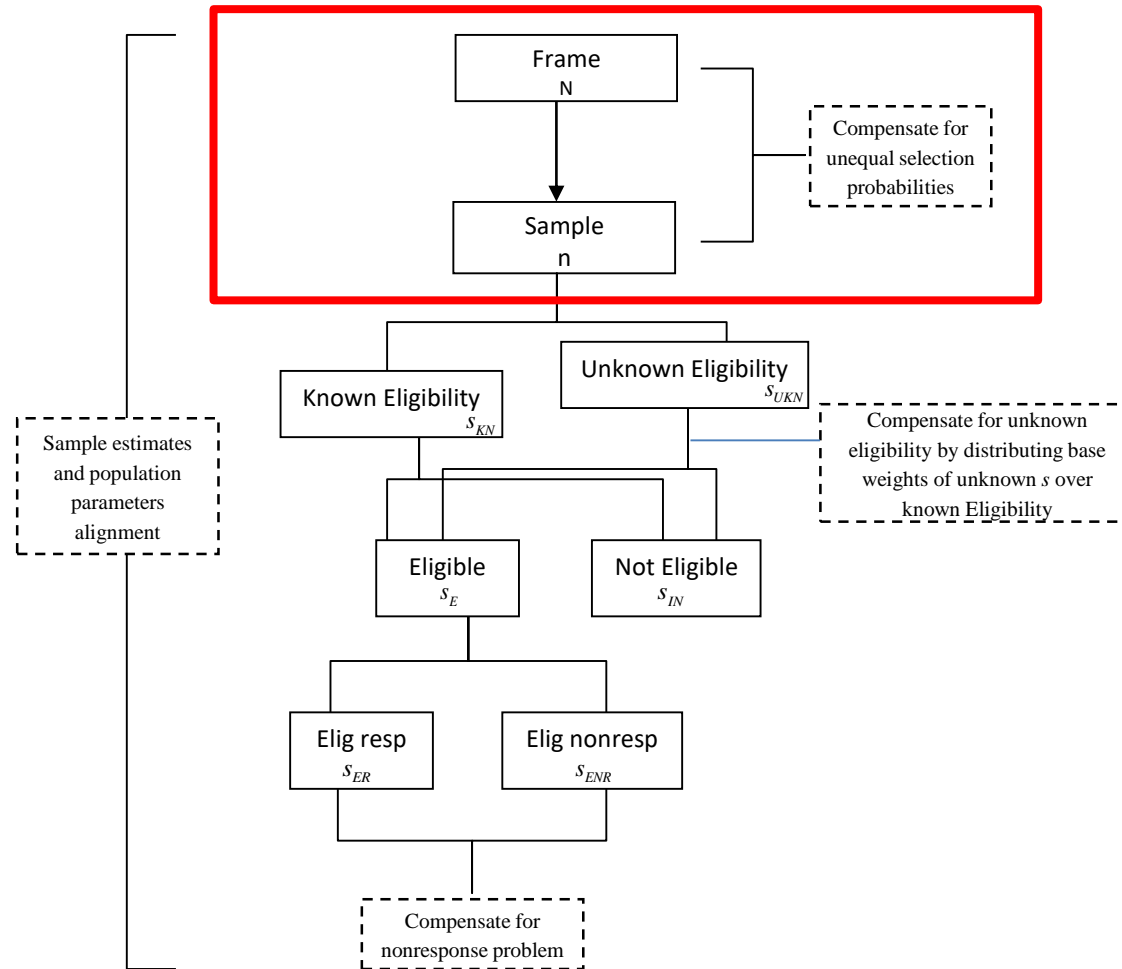
Sampling



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General steps used in weighting: Design/Base weights



Design weights

- First step in the weighting adjustment process
- Adjusts unequal selection probabilities across sampled cases due to various reasons:
 - Disproportionate sample allocation
 - Over- or under-sampling of sub-populations
 - Multiplicity
 - Dual frame integration
 - Within-household selection

Design/Base weights: Unequal selection probabilities

- In probability samples, all population elements have a known non-zero selection probability
- If the sample design assigns unequal selection probabilities across the population elements, this should be addressed through design weights
 - Sometimes the task of computing these selection probabilities for every sampled element is non-trivial
- Assuming that the selection probability of the i^{th} sampled element is π_i , the design (or base) weight is calculated as

$$d_{0i} = \frac{1}{\pi_i}$$

Design/Base weights: Example

- Assuming an RDD stratified random sample by region (i.e., phone numbers are selected with simple random sample within each region)

Region	N_h	n_h	$\pi_h = n_h/N_h$	$d_{0h} = 1/\pi_h$
West	25,014,398	220	0.000008795	113,701.81
Midwest	28,082,527	214	0.000007620	131,226.76
Northeast	25,014,398	228	0.000015351	65,141.66
South	41,882,543	1,046	0.000005444	183,695.36

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