

Video 15 of 21: Weighting Multiplicity adjustment

Sampling



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Multiplicity adjustment (I)

- Multiplicity happens when a household has a greater probability of selection because it could have been selected through different sample elements:
 - Phone surveys: if more than one landline or cellphone number is used for residential purposes
- The household weight should be adjusted to reflect the increased probability of selection
- To adjust for the multiplicity, information about the multiplicity (number of landline/cellphone numbers and their use in the household, e.g.) should be collected
- The multiplicity problem can be fixed before the data collection by screening out the duplicates

Multiplicity adjustment (II)

- The multiplicity adjusted household weight, d_{2i} , is computed as:

$$d_{2i} = d_{1i} \times a_{2i}$$

- where a_{2i} is the multiplicity adjustment factor computed as:

$$a_{2i} = \frac{1}{\#phone\ lines}$$

- Usually, the number of phones is capped at some value to decrease variability added to the weights

Multiplicity adjustment (III)

Example

- For the West region, $d_{1i} = 174,930.2$. The multiplicity adjustment is then (capping number of phone lines at 4):

#Phone lines	a_{2i}	d_{2i}
1	1	174,930.2
2	0.5	87,465.1
3	0.333	58,310.1
4+	0.25	43,732.6

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