

A TWO-PHASE SAMPLING SCHEME AND π PS DESIGNS

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Neyman (1938) suggested to use a two-phase (2P) sampling scheme in order to obtain information in the first phase to use in a stratification in the second phase. Laitila and Olofsson (2011) proposed a 2P sampling scheme in order to, in an easy way, obtain a fixed-size sample with inclusion probabilities asymptotically equal to the target inclusion probabilities.

Olofsson (2011) extends the work of Laitila and Olofsson (2011). Starting from the probability mass function (pmf) of a sum of independent Bernoulli (λ_k) distributed variables, an expression for the sampling design corresponding to the sampling scheme suggested by Laitila and Olofsson (2011) as well as expressions for the exact inclusion probabilities up to the fourth order are derived. These expressions facilitate standard design-based inference and are necessary tools in order to further evaluate the $2P\pi$ ps sampling design.

This paper summarizes the main results from Laitila and Olofsson (2011) and Olofsson (2011) and focuses on an evaluation of the $2P\pi$ ps sampling design.

References

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