Appendix 1. Formulas used for RRT data. See Horvitz et al. (1976) for more detail.

The proportion of the population (n) with the non-sensitive attribute \( (\pi_y) \) is given by (1).

\[
\pi_y = \frac{P_2}{P_2 + P_3} = \frac{P_2}{1 - P_1} \quad \text{(1)}
\]

The proportion of the population with the sensitive attribute \( (\hat{\pi}_A) \) when \( (\pi_y) \) is known, is estimated by (2); with \( P \) being the probability of selecting the sensitive attribute \( (P=P_1) \) and \( \hat{\lambda} \) being the observed \( P \) of “yes” in the RRT section.

\[
\left( \hat{\pi}_A | \pi_y \right) = \frac{\hat{\lambda} - (1-P)\pi_y}{P} \quad \text{(2)}
\]

The variance is given by (3), with \( \lambda \) being the probability of a “yes” response \( (\lambda = P\pi_A + (1 - P)\pi_y) \)

\[
\text{var} \left( \hat{\pi}_A | \pi_y \right) = \frac{\lambda(1-\lambda)}{nP^2} \quad \text{(3)}
\]