

Video 2 of 21: Coverage error

Coverage bias

Sampling



THE WORLD BANK

MANNHEIM
BUSINESS SCHOOL

Coverage bias

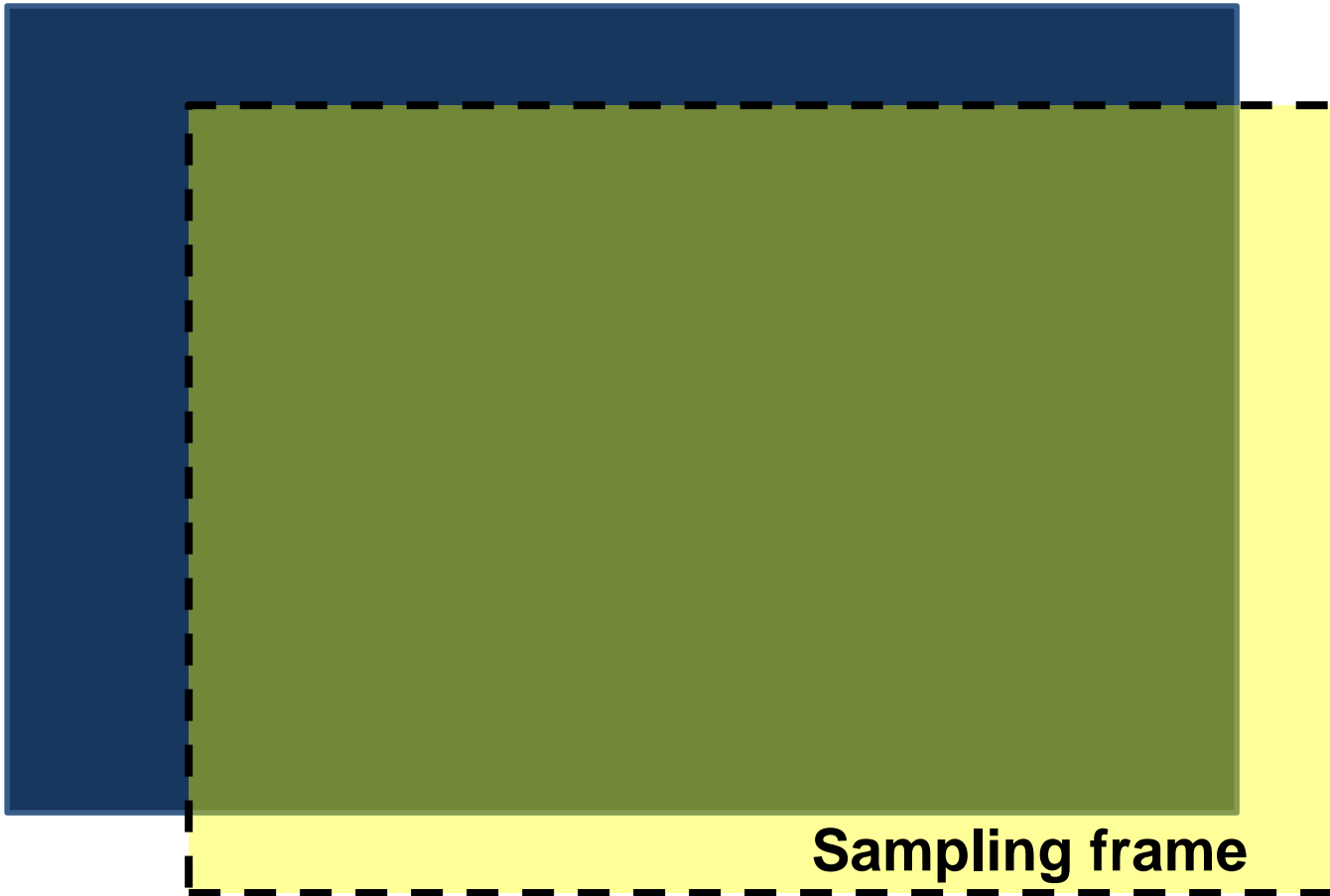
Target population

N = Population size

\bar{Y} = Population mean for survey variable Y

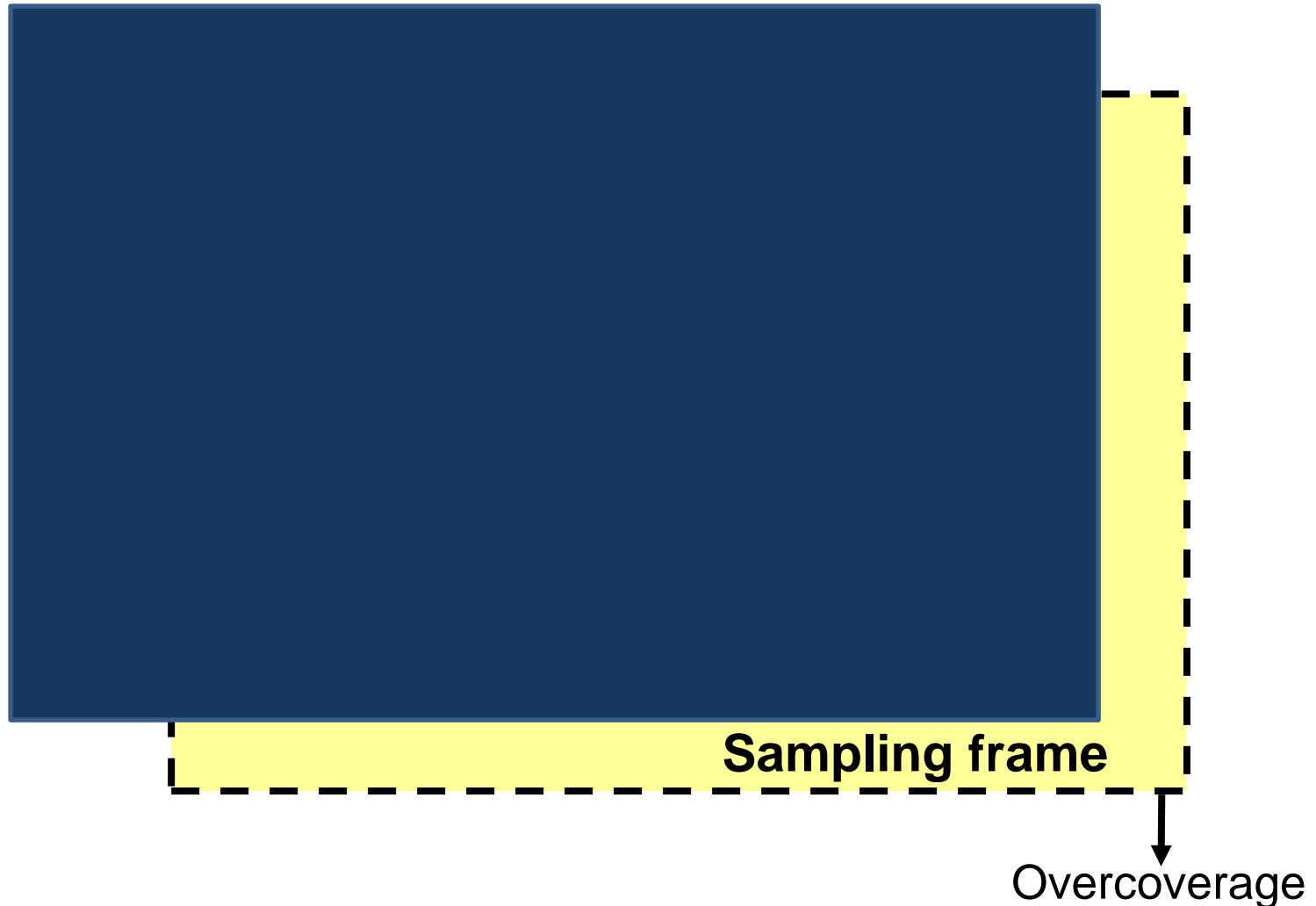
Coverage bias

Target population



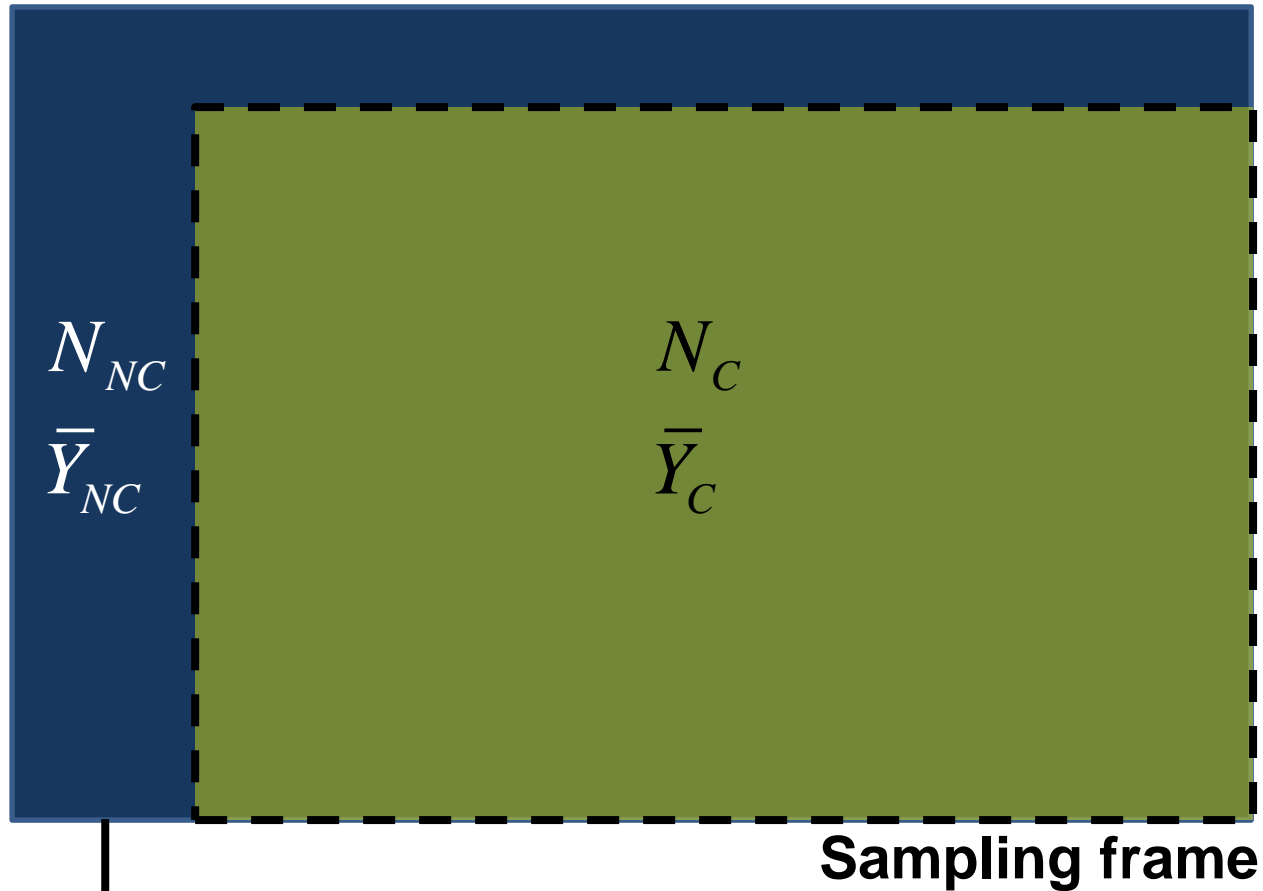
Coverage bias

Target population



Coverage bias

Target population



(Under)Coverage bias:

$$Bias(\bar{y}) = \underbrace{\frac{N_{NC}}{N}} \left(\bar{Y}_C - \bar{Y}_{NC} \right)$$

$$\text{Undercoverage rate} = \left(1 - \frac{N_C}{N} \right)$$

N = Overall population size

N_{NC} = Non-covered population size

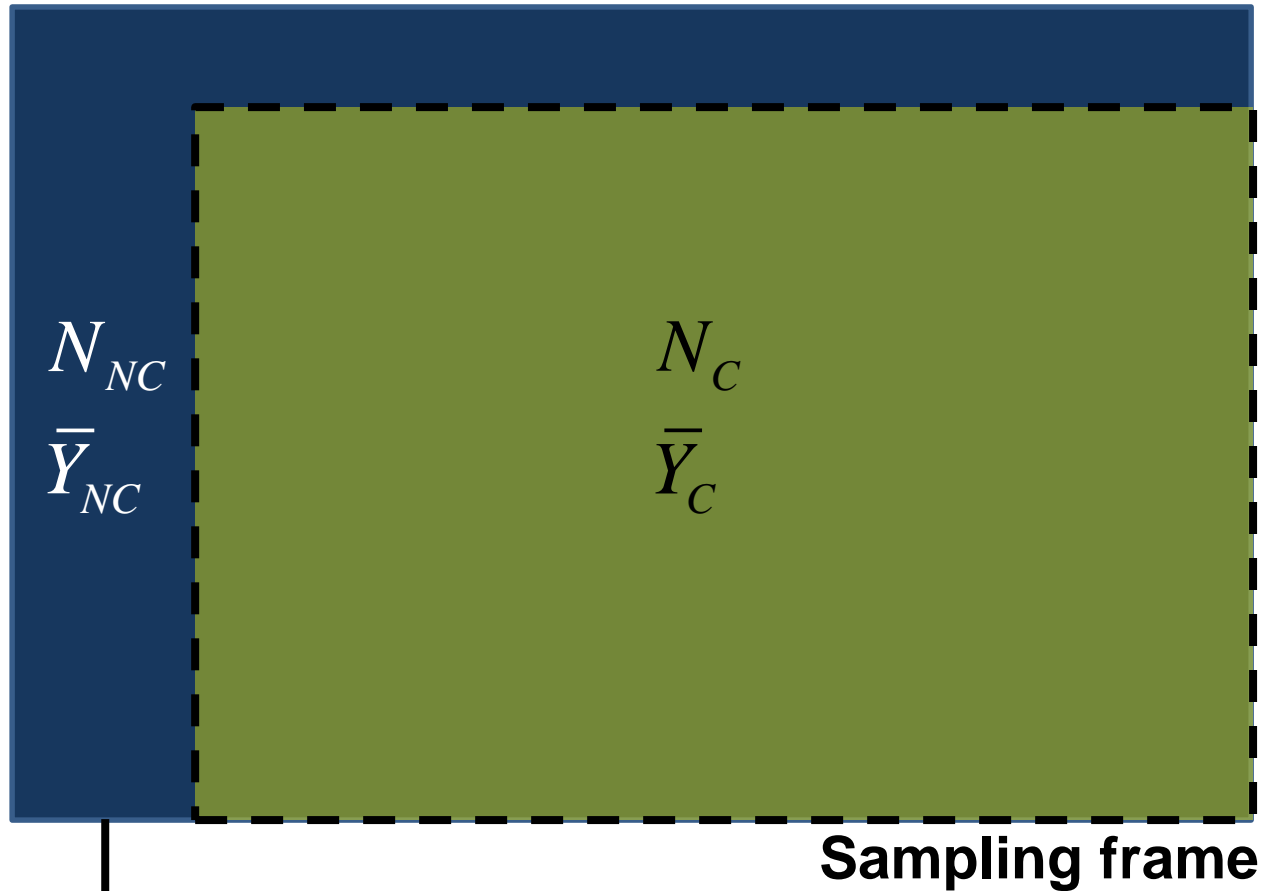
\bar{Y}_{NC} = Non-covered population mean for survey variable Y

N_C = Covered population size

\bar{Y}_C = Covered population mean for survey variable Y

Coverage bias

Target population



(Under)Coverage bias:

$$Bias(\bar{y}) = \frac{N_{NC}}{N} \underbrace{(\bar{Y}_C - \bar{Y}_{NC})}$$

Difference between the covered and non-covered populations

N = Overall population size

N_{NC} = Non-covered population size

\bar{Y}_{NC} = Non-covered population mean for survey variable Y

N_C = Covered population size

\bar{Y}_C = Covered population mean for survey variable Y

Coverage bias: Example

Undercoverage rate	\bar{Y}_C	\bar{Y}_{NC}	$(\bar{Y}_C - \bar{Y}_{NC})$	<i>Bias</i> (\bar{y})
10%	2,750	2,250	500	50
10%	4,500	500	4,000	400
60%	2,750	2,250	500	250
60%	4,500	500	4,000	2,400

END OF VIDEO 2