

Chapter 6

Coverage and Sampling

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SUGGESTIONS FOR FURTHER READING:

Total survey design

This is a unified approach to designing a survey that considers both sampling and nonsampling errors:

Biemer, P. P. and Lyberg, L. E. (2003). *Introduction to survey quality*. New York: Wiley.

Linacre, S.J. and Trewin, D.J. (1993). Total survey design—Application to a collection of the construction industry. *Journal of Official Statistics*, 9, 611–621.

Coverage

Accurate coverage of the population is essential for having high quality estimates from the survey. Undercoverage, which occurs when parts of the population are not included in the sampling frame, can lead to bias. The following references discuss how to select a mode of administration and construct a sampling frame with accurate coverage

Dillman, D. A. (2007). *Mail and internet surveys: The tailored design method*. New York: Wiley.

Groves, R., Fowler, F. J., Couper, M. P., Lepkowski, J. M., Singer, E., & Tourangeau, R. (2004). *Survey methodology*. New York: Wiley.

Probability sampling

Probability sampling is considered to be the gold standard for sampling designs. The two books listed below present the statistical methods used in probability sampling.

Levy P.S. and Lemeshow, S. (1999). *Sampling of populations: Methods and applications, 3rd ed.* New York: Wiley.

Lohr S.L. (1999). *Sampling: Design and analysis*. Pacific Grove, CA: Duxbury Press. For additional material see also

<http://math.la.asu.edu/~lohr/>

Rare Populations

Sampling rare populations presents special challenges, since the persons of interest are a small part of the whole population and are often dispersed within the population. Kalton and Anderson (1986) summarize methods that may be used to sample rare populations; Thompson (2002) gives an exposition of adaptive sampling methods that may be used to sample populations that are clustered.

Kalton, G. & Anderson, D. W. (1986). Sampling rare populations. *Journal of the Royal Statistical Society, Series A*, 149, 65-82.

Thompson, S.K. (2002). *Sampling, 2nd ed.* New York: Wiley.

INTERNET RESOURCES

A basic introduction to sampling can be found on the website of UNICEF MICS <http://www.childinfo.org/mics/micsmane.html>

An introduction to probability sampling can be found on the Statistics Canada website,
<http://www.statcan.ca/english/edu/power/ch13/first13.htm>

An introduction into model based survey sampling can be found on the website of EUSTAT –statistical offices in the series EUSTAT seminars at
<http://www.eustat.es/prodserv/datos/Sem42.pdf>