

“Sampling Methods”

- 1 **Introduction to sampling concepts.**
 1. Sample survey and complete enumeration.
 2. Random (probability) sampling.
 3. Concept of sample representativeness, the importance of correct sampling.
 4. Representativeness error as a component of the general error theory.
 5. Basic concepts of sampling surveys. Analyzed population, sampling frame, sample population.
 6. Sampling estimates. Dispersion and estimation of the mean, shares of a characteristic. Confidence interval.
 7. Determining sample size. Factors affecting sample size. Sample size calculation.

- 2 **Sampling techniques.**
 1. Simple random sampling.
 2. Systematic sampling.
 3. Stratified sampling. Impact on sample estimates. Design effect. Sample allocation by strata: proportional, equal, Neyman, optimal.
 4. Cluster sampling and multi-stage sampling. Calculating probability selection of elements. Impact on sample estimates. Intra-cluster correlation coefficient. Optimal subsample size in a cluster. Technique for constructing a cluster sample. Clusters selection with probability proportional to size.
 5. Determining sample size for various sampling techniques.

- 3 **Data weighting. Calculation of weights. Impact of weights on sample estimates.**

- 4 **Coverage error and nonresponse error. Systematic biases in sampling estimates.**

- 5 **Construction of a sample for various types of research. Planning and design of sampling strategies, selection of sampling units. Regional specifics.**
 1. Personal interviews (face-to-face).
 2. Telephone interviews.
 3. Online surveys.
 4. Combined methods.
 5. Data collection techniques, control and quality assurance in sampling.

- 6 **Statistical analysis of sample data.**
 1. Descriptive statistics, confidence intervals.
 2. Hypothesis testing, level of statistical significance. One-sided and two-sided hypotheses. Hypothesis of equality of means of two general populations. Hypothesis of equality of means for paired samples.
 3. Regression analysis.

- 7 **Reporting: Preparation of reports on sampling procedures. Ethical aspects of sampling.**

October 25, 27, 30 November 1, 3
10:00 – 13:00 Moscow time
Russian language
Via video conference

