## APPLIED STATISTICS IN SOCIAL SCIENCES

### INTRODUCTION

Statistics is an indispensable tool for social workers, due to both the frequent need to work with reports containing statistical data and the requirement to organize and systematize data relating to the problems in which they intervene, as well as organizing, analysing and evaluating the interventions themselves. Similarly, statistics plays a fundamental role in social research, and especially in quantitative practice, where it becomes an essential tool in both measuring social phenomena and selecting samples or analysing data.

This subject will focus on the acquisition of basic competencies, taking into account that it is not necessary for its own sake but rather as a hugely useful tool for social workers. As such, practical study is prioritized, without at any point ignoring the theoretical foundations of statistics (which are essential for good practice).

### COMPETENCIES

- Know and properly apply the main descriptive statistical techniques of data analysis, univariate and bivariate analysis, being aware of the conditions for the application, utility, relevance and interpretation of results for each one.
- Know and understand the foundations, importance and utility of statistical inference.
- Know the different types of randomized sampling and be able to calculate sizes and sample errors in a simple randomized sample.
- Understand the important of using IT programmes for statistical analysis.
- Know and be able to use the main sources of statistical data relating to social matters at national and international levels.
- Know how to apply statistical knowledge to the analysis of various situations, creatively and adapting knowledge acquired to different social contexts.
- Understand and value the contribution of statistics and statistical analysis to the professional practice of the social worker.

### CONTENT

1. Statistics in social work and social research. Measurement in social sciences. Basic concepts: population, sample, units, variables, measurement level, data matrix.
2. Univariate descriptive analysis: distributions of frequency, central and dispersion pattern measurements, categorization.
3. Bivariate descriptive analysis: total percentages, vertical and horizontal analysis, marginal and conditioned distributions, association analysis.
4. Statistical inference: foundations. Concept of probability. Random variables. Binomial model. Normal model.
5. Statistical inference: predictions. Statistics and parameters. Point estimation. Sample distribution. Interval estimation.
6. Statistical inference: introduction to contrastive analysis hypotheses.
7. Statistical inference: random sampling. Types of sampling. Calculation of error and sample sizes.
8. Main sources and databases for social statistics in Spain and Europe.