

Lecture 8/30

Parameters Quantitative features of a population

Statistics Quantitative features calculated using a sample

Deduction A way of going from the population to the sample, e.g., if you get the class average (population) and then compare it to your personal score on an exam (sample), you can deduce that you did better than the average.

Inference A way of going from the sample to the population (opposite direction from deduction). For example, if you get a 100 on an exam (sample) and you infer that you did better than the class average (population).

Inference and deduction goes in a circle. When developing a model, you estimate some parameters, then you make deductions about the population, then you infer population parameters, then you draw deductions about the population again.

Experiment Repeatable task with well-defined outcomes

Sample space The sample space for an experiment is the set of all possible outcomes of that experiment, denoted by S

Event Any subset E of the sample space S attached to an experiment will be called an event associated with the experiment. To say that an event E has happened means that the outcome of the experiment was in the set E .

Simple event An event with only one event in it