

Part 6

MODELLING THE BEHAVIOUR OF SAMPLE AVERAGES: INTERVAL ESTIMATING

- \bar{Y} as a random variable.
- The set of all possible samples.
- Modelling the behaviour of \bar{Y} :
 - Probability modelling;
 - Statistical modelling;
 - Design-based modelling.
- The mean of \bar{Y} .
- The standard deviation of \bar{Y} :
 - Infinite ‘populations’
- Confidence intervals:
 - t distributions;
 - K distributions.
- Modelling measurement error
 - Measuring inaccuracy;
 - Measuring imprecision.
- Sampling protocols beyond EPS.

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Figure 6.1. FROM PROBABILITY TO STATISTICS: Models For Sampling and Measuring.

†Figure 6.2. PROBABILITY MODELLING: The Sample Average and Control Charts (video summary).

Figure 6.3. QUANTIFYING UNCERTAINTY: Confidence Intervals.

Figure 6.4. PERCENTILES FOR THE t DISTRIBUTION [t_v].

†Figure 6.5. QUANTIFYING UNCERTAINTY: Confidence Intervals (video summary).

Figure 6.6. PERCENTILES FOR THE K DISTRIBUTION [K_v].

Figure 6.7. SAMPLING: Limitations Imposed by Sample Error – Two Illustrations.