

Part 1

STATISTICS AND STATISTICAL METHODS

- **Data-based investigating:**
 - **Empirical problem solving.**
- **Knowledge and certainty:**
 - **Long-term considerations.**
- **The FDEAC cycle.**
- **Aspect(s) of an investigation.**
- **Terminology and notation:**
 - **Populations and processes;**
 - **Elements and units;**
 - **Variates and attributes;**
 - **Selecting and measuring.**
- **Accuracy and precision.**
- **Error and its six categories.**
- **Limitations on answers:**
 - **Successful investigating.**

Part 1 Table of Contents

- Figure 1.1. DATA-BASED INVESTIGATING: Introductory Overview.
- Figure 1.2. DATA-BASED INVESTIGATING: The FDEAC Cycle.
- Figure 1.3. DATA-BASED INVESTIGATING: Error Categories and Management.
- Figure 1.4. DATA-BASED INVESTIGATING: Why Does Statistics Emphasize ‘Random’ Selecting?
- Figure 1.5. DATA-BASED INVESTIGATING: Glossary – Distinctions and Notation.
- Figure 1.6. DATA-BASED INVESTIGATING: Effective Tables – How to Construct Them.
- †Figure 1.7. DATA-BASED INVESTIGATING: Simpson’s Paradox.
- †Figure 1.8. DATA-BASED INVESTIGATING: Terminology for Comparative Plans.
- †Figure 1.9. DATA-BASED INVESTIGATING: ‘Confounding’ – Its Usage in Statistics.
- †Figure 1.10. DATA-BASED INVESTIGATING: Measuring Processes.
- †Figure 1.11. DATA-BASED INVESTIGATING: Association and Causation – Reality and Illusion.
- †Figure 1.12. DATA-BASED INVESTIGATING: Question Aspect and Method of Sample Selecting.
- †Figure 1.13. RESPONSE MODELS: Modelling Sample Error and Measurement Error.
- †Figure 1.14. CONFIDENCE INTERVALS: Quantifying Sample Error and Measurement Error.