Unit 31: Statistics for Management

Unit code R/508/0570
Unit level 5
Credit value 15

Introduction
The aim of this unit is to provide students with an understanding of how management information and decision-making are enhanced by the application of statistical methods. Students will learn about a range of statistical techniques and how they can inform management thinking. While studying the unit they will develop their numerical abilities and increase their confidence in handling data in order to create information and knowledge.

Learning Outcomes
By the end of this unit a student will be able to:
1. Evaluate business and economic data/information obtained from published sources.
2. Analyse and evaluate raw business data using a number of statistical methods.
3. Apply statistical methods in business planning.
4. Communicate findings using appropriate charts/tables.
**Essential Content**

**LO1** Evaluate business and economic data/information obtained from published sources

*Interpretation of business and economic data:*
- The nature of data and information, and how data can be turned into information and information into knowledge.
- Interpreting data from a variety of sources using different methods of analysis: descriptive, exploratory and confirmatory.

**LO2** Analyse and evaluate raw business data using a number of statistical methods

*Statistical methods that are used to analyse and evaluate data:*
- Differences between qualitative and quantitative raw data analysis.

*Descriptive statistics:*
- Measures of central tendency (e.g. mean, median).
- Measures of variability (e.g. range, standard deviation).
- Application to business data (e.g. finding average earnings, measuring variability in business processes such as queuing times and customer arrival rates).

*Inferential statistics:*
- The difference between sample and population.
- Different sampling techniques and methods.

*Measuring association:*
- Use of scatter plots, correlation and regression analysis, simple forecasting.
- Business applications such as the association between output and cost, advertising and sales.
- Evaluating use of software such as Excel and SPSS to perform raw data analysis.
- Applying the appropriate methods and tools for evaluation of raw data.
LO3 **Apply statistical methods in business planning**

*Statistical methods for business planning:*
Applying statistical methods to a number of areas of business planning and operations management, including inventory management and capacity management.

*Measures of variability:*
The issue of variability in business processes (e.g. arrival rates of customers and time taken to deal with customers), and how this leads to a trade-off between waiting time and process utilisation.
Statistical process control in quality management.

*Measures of probability:*
Probability distributions and application to business operations and processes.
Normal distribution (e.g. weights and measures regulations and statistical process control),
Poisson distribution (e.g. customer arrival rates) and binomial distribution (e.g. inspection sampling).
Inference (e.g. margins of error and confidence limits).

LO4 **Communicate findings using appropriate charts/tables**

*Different variables:*
Choosing the most effective way of communicating the results of your analysis and variables.
Nominal, ordinal and interval/ratio levels.

*Different types of charts/tables and diagrams:*
The use of frequency tables, simple tables, pie charts, histograms, frequency curves and normal curve.
Advantages and disadvantages of different types of methods.
Presentation of information using tables and charts.
Software for producing charts/tables (e.g. Excel).
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<th>Learning Outcomes and Assessment Criteria</th>
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<td><strong>Pass</strong></td>
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<tr>
<td><strong>LO1</strong> Evaluate business and economic data/information obtained from published sources</td>
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Recommended Resources


Links

This unit links to the following related units:

- Unit 5: Management Accounting
- Unit 6: Managing a Successful Business Project
- Unit 25: Principles of Operations Management
- Unit 11: Research Project
- Unit 13: Financial Reporting