



JEMBA 2010

Managerial Statistics

Course Outline

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Overview

Important decisions are rarely made by intuition alone. We need to use data to develop our insights and to support our analyses. Furthermore, we often need to develop simple models to structure our reasoning and communicate our analyses in a defensible way to others. Ultimately we have to trust our intuition, but in refining our insight we generally seek to use data and models in the most coherent way.

The basic objective of this course is to help you become more comfortable with simple statistical analysis. We shall discuss concepts that will enable you to understand topics such as corporate risk, market research and forecasting, which are encountered later in the EMBA programme. The aim of this course is to teach when a technique is appropriate and what it can achieve, leaving the computational aspects to the computer. The emphasis throughout the course is on concepts and reasoning, rather than technical details. You should acquire, or reacquire, some basic skills in data analysis, but more importantly, become a more informed and critical user of business statistical analyses, as for example, might be undertaken by market researchers, consulting and financial analysts.

The topics to be covered, with a specific business focus, include:

- Descriptive statistics and the normal probability distribution
- Analysis of sample data, including estimation, confidence intervals and hypothesis testing
- Correlation and regression models

G. B. Shaw once said that "*all professions are conspiracies against the layman*", and it is certainly true that statisticians often appear to find the most difficult way to conclude the obvious. But do not despair, your Managerial Statistics course will not be attempting to improve your ability to create confusion, although you may, from time to time, find inspiration in achieving that goal!

Practical points

The course consists of classroom sessions, exercises in small tutorial groups and PC workshops, as well as readings and exercises to be undertaken individually. Classroom sessions introduce ideas and approaches for

tackling real-world problems. Practical PC workshops are conducted in the PC labs with the lecturer and tutors to help you. The main software used will be Microsoft Excel.

The course folder includes guidelines for PC workshops, cases and some additional readings. Class overheads and exercise sets will be handed out at the start of each class. You will need a simple hand calculator for the exercise sessions.

The course web page is available on Portal. Many of the documents in your binder, as well as announcements, lecture slides, data files for workshops and cases, solutions files will be posted there. Please check the course webpage regularly for more information.

Assessment

The course grade will be based on one individual assignment and one group assignment, each 50% of the final grade. There will be no final written exam.

Textbook

The course book is "Statistics for Management & Economics" by G. Keller (Duxbury, 7th edition, 2005). This book has very good examples and often shows you how to work out a solution by hand and in Excel. The CD that comes with the book has several applets that illustrate nicely some statistical concepts.

Topics and Preparatory Readings:

Session 1: Descriptive Statistics and the Normal Probability Distribution

- Read Keller Ch 4: p 90-110, Ch 7: p 193-198, and Ch 8: p 234-251

Sessions 2 – 3: Sampling, Confidence Intervals and Hypothesis Testing

- Read Keller Ch 9: p 278-288, p 294-295, Ch 10: p 306-314, Ch 11: p 326-344

Sessions 4 – 5: Regression Modelling and Applications

- Read Keller Ch 17: p 578-606, p 614-619, Ch 18: p 627-649 and Ch 19: p 663-675

Sessions 6 – 7: Forecasting. Case preparation and presentation

- Read Keller Ch 18: p 627-649 and Ch 19: p 663-675

In addition to the course book, you might find useful to browse through M. Wisniewski, "Quantitative Methods for Decision Makers", Prentice Hall, 2002. This book has clear explanations and contains fewer formulas than the course book above. However, it gives very few Excel examples.

And finally, remember that you are always welcome to be in touch if you have questions or concerns!!