Master of Business Administration

Unit Outline

MGMT8504
Data Analysis and Decision Making

Jakarta
Quarter 1
2006

This unit introduces data analysis and decision-making tools that students are able to use to manage their own day-to-day work. Students are able to identify situations in which quantitative analysis can support problem solving and decision making. They also gain practical experience in applying statistical and decision analysis techniques and statistical packages (generally Excel) in management contexts. Topics covered include introduction to modelling of organisations and business problems; measurement; variability; uncertainty; statistical tests and quantitative approaches to decision making. The unit provides a foundation for quantitative techniques used in other Master of Business Administration units.
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<table>
<thead>
<tr>
<th>Unit Web Site URL</th>
<th>Iwan B. Santoso</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lecturer</td>
<td>Iwan B. Santoso</td>
</tr>
<tr>
<td>Email:</td>
<td><a href="mailto:iwsantoso@hotmail.com">iwsantoso@hotmail.com</a></td>
</tr>
<tr>
<td>Phone:</td>
<td>(021) 565-5802</td>
</tr>
<tr>
<td>Fax:</td>
<td>(021) 565-5805</td>
</tr>
<tr>
<td>Consultation Hours:</td>
<td>13.00-15.00 or by appointment</td>
</tr>
<tr>
<td>Lecture Times:</td>
<td>Saturday, 9.30-15.00</td>
</tr>
<tr>
<td>Lecture Venue:</td>
<td>MM-UNTAR</td>
</tr>
</tbody>
</table>

Your lecturer

_Iwan B. Santoso M.Eng, Ph.D._

He specialises in the field of quantitative analysis, systems management/system dynamics, modelling and transportation systems planning. He has been teaching at the MBA program -Tarumanagara University and University of Western Australia cooperation program – since January 2002. He teaches also at the Civil Engineering Graduate Program at Tarumanagara University.

UNIT DESCRIPTION

Introduction

Welcome to the world of data analysis and decision making. By exploring yourself to statistics and other quantitative analysis tools, you will be able to analyse the data and information in order to make a better decision. Computer packages will be applied to analyse the data.

The unit description

This unit introduces data analysis and decision-making tools that students are able to use to manage their own day-to-day work. Students are able to identify situations in which quantitative analysis can support problem solving and decision making. They also gain practical experience in applying statistical and decision analysis techniques and statistical packages (generally Excel) in management contexts. Topics covered include introduction to modelling of organisations and business problems; measurement; variability; uncertainty; statistical tests and quantitative approaches to decision making. The unit provides a foundation for quantitative techniques used in other Master of Business Administration units.
The goal of the unit

The goal of the unit is to develop in students:

- An understanding of appropriate uses of statistical methods in management decision making
- Confidence and ability to read, interpret, and evaluate the results of statistical data analysis
- Skills in data analysis and quantitative decision making
- Skills in using the method, tools, and computer packages to perform data analysis.

Learning outcomes

On completion of this unit, you should be able to:

- Identify situations in which data analysis can support problem solving and decision making
- Apply simple quantitative and statistical techniques appropriately
- Interpret and evaluate graphical presentations and numerical analysis
- Convey the interpretations clearly and accurately to the respective people
- Use computer packages for data analysis and decision making

Prerequisites

The prerequisites for this unit are:

None.

TEACHING AND LEARNING RESPONSIBILITIES

Teaching and learning strategies

To study this unit, active participation from each student is very important, during the class presentation, class examples and individual homework. Basic knowledge of mathematics is also required to analyse most of the quantitative analysis decision making problems. Every student has to be independently able to analyse the problems logically. A few computer programming will be utilised during class period.

Charter of student rights

This Charter of Student Rights upholds the fundamental rights of students who undertake their education at the University of Western Australia.

It recognises that excellence in teaching and learning requires students to be active participants in their educational experience. It upholds the ethos that in addition to the University’s role of awarding formal academic qualifications to students, the University must strive to instil in all students independent scholarly learning, critical judgement, academic integrity and ethical sensitivity. The charter outlines the rights and responsibilities for both students and staff of the university and you are encouraged to refer to the charter at:
Use of student feedback

The feedback from students are very important and will be taken into consideration in order to make the process of studying more meaningful and useful for the students.

ASSESSMENT MECHANISM

The purpose of assessment

There are a number of reasons for having assessable tasks as part of an academic program. The assessable tasks are designed to encourage you to explore and understand the subject more fully. The fact that we grade your work then gives you an indication of how much you have achieved. Providing feedback on your work also serves as part of the learning process.

Assessment details

<table>
<thead>
<tr>
<th>Component</th>
<th>Weight</th>
<th>Due date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homework</td>
<td>20%</td>
<td></td>
</tr>
<tr>
<td>Mid-term Exam</td>
<td>25%</td>
<td>18 February 2006</td>
</tr>
<tr>
<td>Assignment/Project</td>
<td>25%</td>
<td>11 March 2006</td>
</tr>
<tr>
<td>Final Exam</td>
<td>30%</td>
<td>25 March 2006</td>
</tr>
</tbody>
</table>
The standard of assessment

The Graduate School must ensure that the processes of assessment are fair and are designed to maintain the standards of the School and its students. The School follows the University of Western Australia’s grading system:

- HD (Higher Distinction) 80-100%
- D (Distinction) 70-79%
- CR (Credit Pass) 60-69%
- P (Pass) 50-59%
- N+ (Fail) 45-49%
- N (Fail) 0-44%

The School awards marks leading to these grades by using the following general criteria which are presented here as an indication of the School’s expectations. These general criteria may be supplemented by specific standards provided with regard to a particular assignment.

HD The student has a clear understanding of theory, concepts and issues relating to the subject and is able to adopt a critical perspective. The student is able to clearly identify the most critical aspects of the task and is able to offer a logically consistent and well articulated analysis within the analytic framework presented in the course. The student is able to draw widely from the academic literature and elsewhere but maintains relevance.

D The student has a clear understanding of theory, concepts and issues relating to the subject. The student is able to develop an analysis of an issue using the analytic framework presented in the course and is able to identify and evaluate the critical issues. The student is able to draw upon relevant academic and other material.

CR The student demonstrates an understanding of the analytic framework developed in the course and a partial understanding of concepts and issues. The student is able to identify some key issues and is able to present a logical discussion, but with some conceptual errors or gaps between analysis and conclusions shortcoming. The student is able to draw upon an adequate range of references and other materials.

P The student generally takes a descriptive rather than analytic approach to the subject. The student is able to demonstrate some understanding of the issues involved but does not demonstrate the ability to apply the analytical framework which had been developed in the course. Draws primarily upon course materials for referencing.

N+ The student is unable to demonstrate that he or she understands the core elements of the subject matter. The student is able to provide some insight into issues but misapplies analytic framework developed in course, omitting key factors and, for example, drawing conclusions which are not related to the preceding discussion.

N The student is unable to demonstrate any understanding of the subject matter. Material presented for assessment is unrelated to course framework and shows no effort to identify or address critical aspects of the topic.

The scaling of marks to ensure comparability between classes in an acceptable academic practice. The GSM and Board of Examiners has the right to scale marks where it is considered necessary to maintain consistency and fairness.
**Assessment components**

**Assessment 1**

**Description**

This individual Assignment/Project is designed to develop each student’s skills in utilizing the statistical techniques and in interpreting data for making decisions. The main task for each student is to analyse existing data and prepare a report for management based on the analysis. Chapter 13 of the additional textbook outlines the structure of the report.

**Assessment criteria**

The report should include the following sections with marks shown.

<table>
<thead>
<tr>
<th>Section</th>
<th>Task</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Title</td>
<td>Includes name and the title of the report</td>
<td></td>
</tr>
<tr>
<td>Executive Summary</td>
<td>A single paragraph should describe the most important facts and conclusions from the report. This section is often easier to write last</td>
<td>10</td>
</tr>
<tr>
<td>Contents</td>
<td>Gives an outline of the report together with page numbers</td>
<td></td>
</tr>
<tr>
<td>Introductions</td>
<td>Describe the background, the question(s) of interest, the relevant dataset(s). The key variables and the assumptions should be outlined.</td>
<td>25</td>
</tr>
<tr>
<td>Analysis and Method</td>
<td>Interpret the data with the aid of graphical displays and statistical summaries. Because the report has been prepared for senior management with little or no exposure to statistical tools and techniques, the interpretations should be explained in clear and concise terms.</td>
<td>40</td>
</tr>
<tr>
<td>Conclusions and Summary</td>
<td>Summaries the detail presented in the previous section and discussed possible recommendations</td>
<td>20</td>
</tr>
<tr>
<td>References</td>
<td></td>
<td>5</td>
</tr>
<tr>
<td>Appendices</td>
<td>Should include all tables and graphs not directly referred to in the report</td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td>100</td>
</tr>
</tbody>
</table>

**Final exam**

The Final exam will cover all parts of the unit
The final examination is open book and will take about 3 hours
Submission of assignments

Assignments should be submitted in class on the due date or if handed into the office; a standard cover sheet should be used and a receipt issued.

Late assignments will attract a penalty of 5% per day. This penalty will be waived by the lecturer only in exceptional circumstances. No marks will be awarded to assignments submitted after other students in the class have had their assignments returned.

Papers of excessive length will also attract a penalty. The penalty will be 5% for each 300 words, or part thereof, over the word limit.

It is the intention that the marked assignments will be returned within two weeks of submission.

ETHICAL SCHOLARSHIP, ACADEMIC LITERACY AND ACADEMIC MISCONDUCT

Ethical scholarship is the pursuit of scholarly enquiry marked by honesty and integrity.

Academic Literacy is the capacity to undertake study and research, and to communicate findings and knowledge, in a manner appropriate to the particular disciplinary conventions and scholarly standards expected at university level.

Academic misconduct is any activity or practice engaged in by a student that breaches explicit guidelines relating to the production of work for assessment, in a manner that compromises or defeats the purpose of that assessment. Students must not engage in academic misconduct. Any such activity undermines an ethos of ethical scholarship. Academic misconduct includes, but is not limited to cheating, or attempting to cheat, through:

• Collusion
• Inappropriate collaboration
• Plagiarism (see more details below)
• Misrepresenting or fabricating data or results or other assessable work
• Inappropriate electronic data sourcing/collection
• Breaching rules specified for the conduct of examinations in a way that may compromise or defeat the purposes of assessment.

Penalties for academic misconduct vary according to seriousness of the case, and may include the requirement to do further work or repeat work; deduction of marks; the award of zero marks for the assessment; failure of one or more units; suspension from a course of study; exclusion from the University, non-conferral of a degree, diploma or other award to which the student would otherwise have been entitled. Refer to the Ethical Scholarship, Academic Literacy and Academic Misconduct and individual Faculty policies. For further information on the rules and procedures in respect of appropriate academic conduct you should visit: http://www.teachingandlearning.uwa.edu.au/tl/academic_conduct
Acknowledgements and plagiarism

In the course of your individual and group work assignments, you will encounter ideas from many sources. These will include journal and newspaper articles, commentaries, books, web sites and other electronic sources, original case sources, lecture materials. All MBA assignments that you submit must acknowledge all the different sources you have used. Not to acknowledge your sources is plagiarism, a form of dishonesty. Plagiarism is the misappropriation of the work or ideas of others and presenting them as your own. This is reprehensible from both an ethical and legal viewpoint. Neither the School nor the University accepts ignorance or the fact that a student’s previous acts of plagiarism had been undetected as a defence.

In order to avoid engaging in plagiarism it is your responsibility to acknowledge all of your sources in any work submitted for assessment and it is essential that you reference the work of others correctly. Where you quote directly from a source, you must ensure that any direct quotations are placed in quotation marks and are fully referenced. Even when you do not quote directly and are just referring to or expanding on the work of others, you must still acknowledge the sources of your information and ideas. Close paraphrasing in which you change a few phrases around, leave a clause out of a long sentence or put the original sentences in a different order is still plagiarism. To mark words as a quotation the entire text that has been copied should be enclosed within quotation marks. If the copied text is four or more lines in length, it may be more appropriate to set it as a separate and indented paragraph. Each time that text is copied, the source must be acknowledged with a reference citation, including the page number.

Advice on proper referencing is given below. If you have any doubts concerning appropriate referencing formats or how to acknowledge the work of others correctly, you should seek the advice of your lecturer.

Referencing

It is important that the referencing of any sources used in your written work is done properly, if only to substantiate the points you are making in your assignment or project. The Harvard style is the preferred and there are some notes for guidance which have been prepared by the library staff: ‘Citing your sources Harvard Style’ http://www.library.uwa.edu.au/guides/citingsources/harvard.html

Endnote is a really good system for building up a database of references. Not everyone will want to invest the time in using this system but you should consider it if you intend to build up resource materials or plan to undertake extensive research in a particular area. The library staff have also developed a tutoring package: ‘A quick Guide to Using EndNote’ which provides the basics for using EndNote with an essay http://www.library.uwa.edu.au/guides/endnote/quick_endnote.pdf

This is linked to from the how to Use End Note page www.library.uwa.edu.au/guides/endnote/ which provides more comprehensive information.

Appeals against academic assessment

In the first instance, students are strongly advised to talk informally to the lecturer about the grade awarded. The University provides the opportunity for students to lodge an appeal against any mark which he or she feels is unfair. Any student making an appeal is under an obligation to establish a prima facie case by providing particular and substantial reasons for the appeal.

There is a 12 day time limit for making any such appeal. An appeal against academic assessment may result, as appropriate, in an increase or decrease in the mark originally awarded. The University regulations relating to appeals and the form on which the appeal should be lodged can be found in the GSM website or at http://www.publishing.uwa.edu.au/handbooks/interfaculty/PFAAAA.html
TEXTBOOKS AND RESOURCES

Textbook(s)

Recommended/required text(s)


Additional/Suggested/Alternate text(s)


Software requirements

Software (student CD-rom) is available in the textbook

UNIT STRUCTURE

Seminar topics

<table>
<thead>
<tr>
<th>Week</th>
<th>Week Commencing</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>14 January</td>
<td>Data – Collection, Presentation, Summary Measures Chapter 1, 2, 3</td>
</tr>
<tr>
<td>2</td>
<td>21 January</td>
<td>Probability and Random Variables, Probability Distribution Chapter 4, 5</td>
</tr>
<tr>
<td>3</td>
<td>28 January</td>
<td>Normal Distribution, Estimation Chapter 6, 7</td>
</tr>
<tr>
<td>4</td>
<td>4 February</td>
<td>Hypothesis Testing Chapter 8, 9</td>
</tr>
<tr>
<td>5</td>
<td>18 February</td>
<td>ANOVA, Chi-square test Chapter 10, 11 Mid Term Examination (in class)</td>
</tr>
<tr>
<td>6</td>
<td>25 February</td>
<td>Simple Linear Regression, Multiple Regression Chapter 12, 13</td>
</tr>
<tr>
<td>7</td>
<td>4 March</td>
<td>Regression, Time Series, Quality Control Chapter 13, 15, 17</td>
</tr>
<tr>
<td>8</td>
<td>11 March</td>
<td>Decision Making, REVIEW Chapter 16</td>
</tr>
<tr>
<td>Exam Week</td>
<td>25 March</td>
<td>Final Examination</td>
</tr>
</tbody>
</table>
Attendance

Participation in class, whether it be listening to a lecture or getting involved in other activities, is an important part of the learning process. For this reason the GSM has decided not to move to on-line teaching. It is, therefore, important that you attend classes (and be on time).

More formally, the University regulations state that ‘to complete a course or unit students shall attend prescribed classes, lectures, seminar and tutorials’. Students should not expect to obtain approval to miss more than two classes per unit, unless there are exceptional circumstances.

Taping of Lectures

The Graduate School does not provide tape recordings of lectures, however if you do wish to tape record a lecture then as a matter of courtesy, you should obtain the permission of the lecturer first.