BMA417
Data Analysis and Management

Semester 2, 2008

This unit will be offered in:

Hobart

The lecturing team responsible will be:

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http://www.utas.edu.au/mgmt/student.htm

Introduction to the Unit

This unit enables students to acquire the skills and techniques required to analyse and manage data, interpret results, and report data analysis methods and findings in a business environment. Qualitative and quantitative research approaches are examined to consider their respective contributions, discretely and in combination, to knowledge development through empirical research.

The qualitative component examines principles and techniques for organising, analysing and reporting qualitative data. The central principle of this component is the execution of rigorous qualitative data analysis through 'good housekeeping' – undertaking, recording and demonstrating careful, rational decision-making in qualitative data analysis (Marshall, 1999). Consequently, strategies for undertaking and reporting analysis of qualitative data are equally emphasised. Strategies for data analysis will include techniques for organising, searching, retrieving and interpreting qualitative data to develop and test theoretical conclusions. Strategies for reporting analytical processes will incorporate techniques for recording and describing data analysis, including the articulation of theoretical conclusions and the use of qualitative data to illustrate and support conclusions drawn. Data analysis processes will be undertaken using N Vivo 7, a computer software program for qualitative data analysis, although manual techniques will also be explored.

The quantitative component covers basic statistical thinking and data analysis techniques. A strong emphasis will be placed on the logic underlying statistical concepts such probability and probability distributions, normal distribution, sampling distributions, parameter estimation, and hypothesis testing. A range of data analysis techniques will also be covered, including t-test, Analysis of Variance, cross tabulation, regression, correlation, and factor analysis. There is a strong emphasis on the application of statistical techniques to practical research problems in a business context. The statistical computer package SPSS will be used for the statistical analysis of data.

Learning Outcomes

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

- Appreciate the synergies between research design, methodology, and data analysis
- Understand how data analysis and management contribute to the rigor of academic research
- Understand and appreciate the synergies between qualitative and quantitative components of mixed-method research
- Understand and demonstrate competence in the use of SPSS and N Vivo 7 software in data analysis
- Report data analysis methods and results of analyses in a transparent and comprehensive manner

Generic Graduate Attributes

The University has defined a set of generic graduate attributes (GGAs) that can be expected of all graduates (see http://www.utas.edu.au/tl/policies/index.htm). By undertaking this unit you should make progress in attaining the following attributes:

Knowledge
- An understanding of the key concepts and logic underlying qualitative and quantitative data analysis
- An understanding of the different qualitative and quantitative data analysis techniques, as well as the assumptions, strengths, and limitations associated with each
- An awareness of the appropriate application and interpretation of various data analysis techniques in isolation and in combination

Communication Skills
- The ability to communicate data analysis methods and the results of analyses in an effective manner
- The ability to describe data using numerical and graphic communication skills

Problem Solving Skills

- The ability to apply an understanding of the range of data analysis techniques to solving problems and addressing research questions in a business context

Prerequisites

Completion of BCom (BBus from 2006), BTourism, or equivalent, and approved entry into the Management Honours program.

Recommended Reading

Critical readings on qualitative and quantitative data analysis and management will be supplied. In addition, the publications listed below are highly recommended for further reading on the topics covered in the unit.

Qualitative Data Analysis and Management

Catterall, M. & MacLaren, P. 1998. Using computer software for the analysis of qualitative market research data. ***Journal of the Market Research Society***¸ 40 (3): 207-222.

Cresswell, J.W. 1998. ***Qualitative inquiry and research design: Choosing among five traditions***. Thousand Oaks: Sage.

Fossey, E., Harvey, C., McDermott, F. & Davidson, L. 2002. Understanding and evaluating qualitative research. ***Australian and New Zealand Journal of Psychiatry***, 36: 717-732.

Hewitt-Taylor, J. 2001. Use of constant comparative analysis in qualitative research. ***Nursing Standard***, 15 (42): 39-42.

Richards, L. 2005. ***Handling qualitative data.*** London: Sage.

Weber, R.P. 1990. Basic content analysis: Sage University Papers Series: ***Quantitative applications in the social sciences*** (No. 07-049). Newbury Park, California, Sage Publications.

Wickham, M. & Woods, M. 2005. Reflecting on the strategic use of CAQDAS to manage and report on the qualitative research process. ***The Qualitative Report***, 10 (4): 687-702.

Quantitative Data Analysis and Management

Allison, D.B. et al. 1997. Power and money: Designing statistically powerful studies while minimizing financial costs. ***Psychological Methods***, 2(1): 20-33.

Cooper, D.R. & Emory, C.W. 1995. ***Business research methods*** (5th ed.). Chicago: Irwin. Chapter 14—Data preparation and preliminary analysis.

Hair, Jr. J.F. 1995. ***Multivariate data analysis with readings*** (4th ed.). Englewood Cliffs: Prentice Hall.

Newbold, P., Carlson, W. L., & Thorne, B. M. 2007. ***Statistics for business and economics***. Upper Saddle River, NJ: Pearson.

Schafer, D., & Ramsey, F. 2002. ***The statistical sleuth: A course in methods of data analysis*** (2nd ed.). Belmont, CA: Duxbury Press.

Selvanathan, A., Selvanathan, S., Keller, G., & Warrack, B. 2006. ***Australian business statistics*** (4th ed.). South Melbourne: Thomson.

Stevens, J. P. 2002. ***Applied multivariate statistics for the social sciences*** (4th ed.). Mahwah, NJ: Lawrence Erlbaum Associates.

Tabachnick, B. & Fiddell, L. 1996. ***Using multivariate statistics*** (3rd ed.). New York: Harper Collins.

Tilly, A. 1994. ***An introduction to psychological research and statistics.*** Brisbane: Pineapple Press.

Varki, S., Cooil, B. & Rust, R.T. 2000. Modelling fuzzy data in qualitative marketing research. ***Journal of Marketing Research***, 37(4): 480-489.

Writing Up Research

Belgrave, L. L., Zablotsky, D. & Guadagno, M. A. 2002. How do we talk to each other? Writing qualitative research for quantitative readers. ***Qualitative Health Research***, 12 (10): 1427-1439.

Gay, L.R. & Diehl, P.L. 1992. ***Research methods for business and management***. New York: Macmillan. Chapter 14—Preparation of a research report.

Kazdin. A.E. 1995. Preparing and evaluating research reports. ***Psychological Assessment***, 7(3): 228-237.

Wright, D.B. 2003. Making friends with your data: Improving how statistics are conducted and reported. ***British Journal of Educational Psychology***, 73: 123-136.

School Publications

Students must obtain the following electronic publications which are available from the School of Management website:
http://www.utas.edu.au/mgmt/student/

Writing Assignments: A Guide

School of Management Referencing Style

Library Resources

The library offers a variety of electronic and physical resources that may be helpful for completing assignments. The library's subject guide for management can be found at the following address:
http://www.utas.edu.au/library/info/subj/management.html

Flexible Learning: MyLO

MyLo software has not been incorporated into the delivery of this unit.

Assessment

In order to pass this unit you must achieve an overall mark of at least 50 per cent of the total available marks. Details of each item of Coursework are provided in the Assignment Topics section.

Method of Assessment	**Value**	**Due Date**	**Length***
Coursework Assignment 1	100	Friday 8th August	6000
Total Marks	100		

*** Word Limit**: The word count includes such items as headings, in-text references, quotes and executive summaries. It **does not** include the reference list at the end of the assignment.

Study Week

The Honours program does not recognise the School of Management study week.

Examination

Format

There is no examination in this unit.

Submission of Coursework

Lodging Coursework

All Coursework must have the School of Management Assignment Cover Sheet and Title Page attached. Both of which are available as a blank template from the School of Management website:
http://www.utas.edu.au/mgmt/student.htm

Please remember that you are responsible for lodging your Coursework on or before the due date. We suggest you keep a copy. Even in the most 'perfect' of systems, items sometimes go astray.

Note that you may also be required to submit an electronic copy of your Coursework. More details of this will be given in Lectures.

Hobart students: Lodge in assignment box at room 316, Commerce & Economics Building.
Launceston students: Lodge in assignment box beside room A170.

All coursework must be handed in by 2.00 p.m. on the due date.

Late Coursework

Written Work

Extensions will only be granted on medical or compassionate grounds and will not be granted because of work or other commitments. Requests for extensions should be **made in writing** to the lecturer-in-charge prior to the due date. Medical certificates or other evidence must be attached and must contain information which justifies the extension sought.

Late assignments which have **not** been granted an extension will, at the lecturer's discretion, be penalised by deducting ten per cent of total marks for each full day overdue.

Assignments submitted more than six days late will normally not be accepted by the lecturer-in-charge.

Tests

Students who are unable to sit a test on medical or compassionate grounds (work or other commitments are not considered 'compassionate grounds') may request that they be permitted to submit alternative Coursework.

Please do not expect a special test to be held for you if you choose to go on holidays or undertake other activities on the scheduled date. If you do need to request alternative Coursework, you should do so in writing to the lecturer-in-charge prior to the due date. Medical certificates or other evidence must be attached and must contain information which justifies the request. The telephone number of the doctor should also be included.

Return of Coursework

Coursework will be returned during classes or it can be collected from the lecturer's or tutor's room at nominated times; it will not be available from the School's offices.

Plagiarism

Plagiarism is a form of cheating. It is taking and using someone else's thoughts, writings or inventions and representing them as your own, for example:

- using an author's words without putting them in quotation marks and citing the source;
- using an author's ideas without proper acknowledgment and citation; or
- copying another student's work.

If you have any doubts about how to refer to the work of others in your assignments, please consult your lecturer or tutor for relevant referencing guidelines, and the academic integrity resources on the web at http://www.utas.edu.au/tl/supporting/academicintegrity/index.html.

The intentional copying of someone else's work as one's own is a serious office punishable by penalties that may range from a fine or deduction/cancellation of marks and, in the most serious of cases, to exclusion from a unit, a course or the University. Details of penalties that can be imposed are available in the Ordinance of Student Discipline—Part 3 Academic Misconduct, see http://www.utas.edu.au/universitycouncil/legislation/ord9.pdf

The University reserves the right to submit (or to require you to submit) assignments to online plagiarism detection software, and might then retain a copy of the assignment on its database for the purpose of future plagiarism checking.

Occupational Health and Safety (OH&S)

The University is committed to providing a safe and secure teaching and learning environment. In addition to specific requirements of this unit you should refer to the University's policy at: http://www.admin.utas.edu.au/hr/ohs/pol_proc/ohs.pdf

Assignment Topics

Assignment 1

Due date: Friday 8th August 2008

Length: 6000 words (excluding appendices)

Value: 100 marks

During this unit you have developed knowledge about the principles of rigorous data management and analysis using quantitative and qualitative data. You have also developed practical skills in undertaking rigorous analysis using the N Vivo 7 and SPSS computer software programs. The purpose of this assessment task is to develop and demonstrate your ability to apply this knowledge in a practical context by undertaking and reporting computer-assisted analysis of qualitative and quantitative data.

This assignment is designed to assess your knowledge and skills related to conducting mixed-method research (combining qualitative and quantitative data analyses) and reporting your research findings. During the teaching week you will be provided with a data set of qualitative and quantitative survey responses. Your task is to analyse this data to answer a research question you develop during the teaching week.

Qualitative component

Analysis of qualitative data must be undertaken using QSR's N Vivo 7 program. Your analytical processes and development of an analytical conclusion must be detailed in a submitted research report. The qualitative component of your report must detail:

- How you prepared the data for analysis in the software program.
- How you developed the data category system which you used to organise the data, including explanations of
    - whether categories were developed *a priori* or inductively
    - meanings of category titles
    - coding rules used to identify data relevant to each category
    - categorisation rules for determining relationships between categories
- Data attributes used to characterise the data sources and data types
- The data analysis techniques you used to descriptively and/or conceptually code the data
    - coding processes applied
    - checks for coder reliability

Your report must also include the following outputs of N Vivo 7 as appendices to your report. These may be exported from N Vivo 7 or appended as Word documents.

- Your complete node system, including all major and subsidiary categories and node addresses
- A print-out of all codes allocated to **ONE** node (of your choice)
- A complete list of coding rules for each node

Quantitative Component

Based on the data from this project, you are required to develop a set of valid research hypotheses that you will examine using ***both*** *descriptive* and *inferential* data analysis techniques. You are required to develop at least ***TWO hypotheses***, one requiring a statistical *test of association* and the other requiring a statistical *test of difference*. You should analyse and display the descriptive statistics that are sufficient to accurately represent the key variables in your hypotheses. This information can be displayed in text and/or in graphical format. You should analyse the data using inferential statistical techniques that are appropriate to your research questions. Write a report of your findings, including the following sections:

- A statement of your hypotheses. Provide a clear statement of each hypothesis and describe the type of research question (i.e., testing for difference or testing for association).
- Description of Variables. Describe the key independent and dependent variable/s, and the level of measurement for each variable (i.e., nominal, ordinal, interval, or ratio).
- Overview of data analysis techniques. Include a brief description of the data analysis techniques that will be used to test the hypotheses. You should include a justification of the data analysis techniques you selected, an overview of the theoretical assumptions and limitations associated with each technique.
- Descriptive statistics. Provide sufficient detail to accurately represent the variables in your hypotheses. Use textual and/or visual representations (e.g., graphs, tables) of the descriptive information where appropriate. Use the information from the representations and summary measures to describe the data set.
- Inferential statistics. Report the results of statistical analyses using in-text discussions and graphical representations where appropriate. Provide sufficient detail to demonstrate your understanding of statistical hypothesis testing, type 1 and type 2 errors, and the use and interpretation of p-values.

Your report must also include the following outputs of SPSS as appendices to your report. These may be exported from SPSS or appended as Word documents.

- The output from your descriptive analyses
- The output from your inferential analyses

Research answer

Your report must also include discussion of your conclusions about the answer to the research question. This must include discussion of:

- The data you are using as evidence for your conclusion
- Your interpretation of this data (e.g., how the results of the descriptive and inferential analyses relate to your hypotheses; how your interpretation of qualitative data informs your conclusions).
- Any alternative or competing interpretations of the data you have used
- Your justification against these alternative explanations.
- Development of theoretical explanations
- Testing of alternative explanations

Study Schedule

Semester 2, 2008

BMA 417 will be delivered as five day-long sessions (10 am-4 pm) for all Honours students in the week beginning Monday 14th July 2008. Classes will be held in room 103 in the Faculty of Business building. This course will be delivered on the Hobart campus only.

Week beginning 14th July	Monday	Tuesday	Wednesday	Thursday	Friday
	Qualitative data analysis		**Qualitative data analysis**		
Practical session (morning)	Course overview Introduction to planning data analysis and management	Using N Vivo to explore qualitative data	Reporting methods and results of qualitative analyses	Developing quantitative research questions Descriptive statistics for quantitative data Inferential statistics for quantitative data	Using SPSS to explore associations and relationships in quantitative data
Practical session (afternoon)	Creating a data analysis project in N Vivo	Free work session – class activities and assignment	Free work session – class activities and assignment	Creating a data analysis project in SPSS Using SPSS to undertake statistical analyses	Reporting methods and results for statistical tests