School of Education

EDST5101/ EDST5033
Advanced Quantitative Research
Research Method 2

Term 1 2021

Contents

IMPORTANT:
For student policies and procedures relating to assessment, attendance and student support, please see website, https://education.arts.unsw.edu.au/students/courses/course-outlines/

The School of Education acknowledges the Bedegal people as the traditional custodians of the lands upon which we learn and teach.

1. **LOCATION**

   Faculty of Arts, Design & Architecture
   School of Education
   EDST5101 Advanced Quantitative Research/EDST5033 Research Method 2 (6 units of credit)
   Term 1 2021

2. **STAFF CONTACT DETAILS**

Course Coordinator:	Professor Jihyun Lee
Office Location:	G44, Morven Brown Building
Email:	jihyun.lee@unsw.edu.au
Availability:	By email

3. **COURSE DETAILS**

Course Name	EDST5101 Advanced Quantitative Research/ EDST5033 Research Method 2
Credit Points	6 Units of Credit (UOC)
Workload	Involves 150 hours including class contact hours, readings, class preparation, assessment, follow up activities, etc. Include 24 hours of class contact time.
Schedule	http://classutil.unsw.edu.au/EDST_T1.html#EDST5101T1

   SUMMARY OF COURSE

   In this course you will learn about quantitative research methods and data analysis at an advanced level. The course will cover research design, population/sampling selection, construction of data collection tools, various types of data collection methods, and data analysis such as multiple regression and factor analysis. Emphasis will be given to the selection of statistical analyses that would be appropriate for different types of quantitative data.

   AIMS OF THE COURSE

   Develop an understanding of how to conduct an appropriate statistical analysis of the data, interpret research results, and accurately report the data analysis and interpretation.

   THE MAIN WAYS IN WHICH THE COURSE HAS CHANGED SINCE LAST TIME AS A RESULT OF STUDENT FEEDBACK:

   - The suggestion was to include both asynchronous and synchronous online lectures, and more time on hands-on computer time. As a result, more asynchronous lectures were included and students will have more hands-on computer time, in-between lectures.

STUDENT LEARNING OUTCOMES

Outcome		Assessment/s
1	Create a set of research questions that can be addressed by quantitative data	1,2
2	Select and apply appropriate statistical methods to analyse specific types of quantitative data	1,2
3	Use computer software programs to analyse quantitative data	2
4	Understand key concepts and terminology associated with various quantitative data analysis	2

PROGRAM LEARNING OUTCOMES

Standard		Assessment/s
1	**Advanced disciplinary knowledge and practices** Demonstrate an advanced understanding of the field of education as it relates to their specialist area of study, and the ability to synthesize and apply disciplinary principles and practices to new or complex environments.	1,2
2	**Research-based learning** Demonstrate an in-depth understanding of research-based learning and the ability to plan, analyse, present implement and evaluate complex activities that contribute to advanced professional practice and/or intellectual scholarship in education	1,2
3	**Cognitive skills and critical thinking** Demonstrate advanced critical thinking and problem-solving skills	1,2
4	**Communication, adaptive and interactional skills** Communicate effectively to a range of audiences, and be capable of independent and collaborative enquiry and team-based leadership	2
5	**Ethical and responsible professional practice** Demonstrate an advanced capacity to recognise and negotiate the complex and often contested values and ethical practices that underlie education	2

4. RATIONALE FOR THE INCLUSION OF CONTENT AND TEACHING APPROACH

Quantitative data analysis can be hard for many students. In this course, the attempts will be made to demonstrate how statistical concepts are formulated so that students have deeper appreciation of statistical methods beyond the numbers and outputs typically generated by computer package software. Calculation by hand is essential for students to gain a good sense of how quantitative data are analysed by a particular method.

5. TEACHING STRATEGIES

The teaching approach attempts to actively engage students as they discuss major issues related to quantitative research design, data collection methods and process, and data analyses. Students will learn statistics not just by mathematical formula but also by understanding how statistical concepts are formulated. Concepts will be presented with plenty of examples. Students will be given problems to solve by calculating statistics by hand for simple data while analysing complex data using computer software packages.

6. COURSE CONTENT AND STRUCTURE

Module	Lecture Topic	Field (2018) Textbook
Week 1	Introduction: Fundamentals of statistics Introduction to SPSS	Chapter 1: Why statistics? Chapter 4: The IBM SPSS Statistics environment
Week 3	Research design and statistical testing using: Correlation & Regression	Chapter 8: Correlation Chapter 9: The Linear Model (Regression)
Week 5	Research design and statistical testing using: t-tests	Chapter 10: Comparing two means
Week 7	Research design and statistical testing using: Analysis of Variance: Part 1	Chapter 12: GLM 1: Comparing several independent means
Week 9	Research design and statistical testing using: Analysis of Variance: Part 2	Chapter 12: GLM 1: Comparing several independent means

7. RESOURCES

Readings

Main Textbook

Field, A. (2018). *Discovering statistics using SPSS.* London; Sage.

Supplementary Textbook

Heiman, G. (2011). *Basic statistics for the behavioural sciences.* Belmont, CA: Wadsworth, Cengage Learning

Morgan, G., Leech, N., Gloeckner, G., & Barrett, K. (2011). *IBM SPSS for introductory statistics: Use and interpretation.* New York: Routledge.

Pallant, (2010). *SPSS Survival Manual: A Step by Step Guide to Data Analysis Using SPSS.* Allen & Unwin.

Further Readings

Copies of articles and book chapters will be provided during the lectures.

8. ASSESSMENT

Assessment Task	Length	Weight	Student Learning Outcomes Assessed	Program Learning Outcomes Assessed	Due Date
Assessment 1: Online quiz	25 items	40%	1-2	1-3	Friday Week 4 by 5pm
Assessment 2: Report	Three problems	60%	1-4	1-5	Friday Week 11 by 5pm

Submission of assessments

Students are required to follow their lecturer's instructions when submitting their work for assessment. All assessment will be submitted online via Moodle by 5pm. Students are also required to keep all drafts, original data and other evidence of the authenticity of the work for at least one year after examination. If an assessment is mislaid the student is responsible for providing a further copy. Please see the Student Policies and Procedures for information regarding submission, extensions, special consideration, late penalties and hurdle requirements etc. https://education.arts.unsw.edu.au/students/courses/course-outlines/

Assessment Details

Assessment 1: Online quiz (40%)

Students will take an online quiz. There will be 25 items (item format: multiple choices). Most of the questions will be based on the lecture content and the textbook (Field, 2018): Chapters 1 (Introduction) and 8 (Correlation), Carefully read these chapters to do well in the quiz.

Assessment 2: Report (60%)

- This assessment task will require students to produce output and writing based on SPSS exercises.
- Based on the content covered in class, three sets of data analysis problems will be presented to students to analyse.
- It is expected that students will present descriptive statistics (e.g., Means and Standard deviation) and inferential statistics (e.g., t-test, ANOVA).
- A format of this report is write-up in the results sections of a typical journal article.
- The results should be presented in a couple of tables (in the APA style: American Psychological Association) as well.
- The assessment should include SPSS output files as an appendix.
- Description and interpretation of the data should be accurate, appropriate, concise, and readable.

UNSW SCHOOL OF EDUCATION
FEEDBACK SHEET
EDST5101 QUANTITATIVE ANALYSIS/ EDST5033 RESEARCH METHOD 2

Student Name: Student No.:

Assessment Task 1: **Online quiz**

SPECIFIC CRITERIA	(-) ⟶ ⟵ (+)				
Understanding of the question or issue and the key concepts involved • Demonstrate a clear understanding of statistical testing • Demonstrate a clear understanding of the t-test • Demonstrate a clear understanding of the F-test • Use of appropriate statistical terminology					
Depth of analysis and/or critique in response to the task • Demonstrate the ability to apply to practical situations • Demonstrate the ability to distinguish the correct and incorrect use of analysis and research design • Alignment between research design and analysis					
Familiarity with and relevance of professional and/or research literature used to support response • Draws upon correct analysis techniques • Understand statistical terminology • Apply statistical terminology to practical scenarios					
Structure and organisation of response • N/A					
Presentation of response according to appropriate academic and linguistic conventions • N/A					
GENERAL COMMENTS/RECOMMENDATIONS FOR NEXT TIME					

Lecturer: **Date:**

Recommended: **/20**   **(FL PS CR DN HD)**   **Weighting: 40%**

NB: The ticks in the various boxes are designed to provide feedback to students; they are not given equal weight in determining the recommended grade. Depending on the nature of the assessment task, lecturers may also contextualize and/or amend these specific criteria. **The recommended grade is tentative only, subject to standardisation processes and approval by the School of Education Learning and Teaching Committee.**

Student Name: Student No.:

Assessment task 2: **Report**

SPECIFIC CRITERIA	(-) ⟶ ⬅ (+)				
Understanding of the question or issue and the key concepts involved • Demonstrate a clear understanding of statistical testing • Demonstrate a clear understanding of the t-test • Demonstrate a clear understanding of the F-test • Use of appropriate statistical terminology					
Depth of analysis and/or critique in response to the task • Demonstrate a well-thought-out analysis plan • Correct and appropriate analysis design • Alignment between the constructs, research design, and the analysis					
Familiarity with and relevance of professional and/or research literature used to support response • Draws upon correct analysis techniques • Produces correct and appropriate analysis results (in numbers) • Produces correct and appropriate interpretations of the results (in words)					
Structure and organisation of response • Present your ideas clearly • Present your ideas in logical and coherent order					
Presentation of response according to appropriate academic and linguistic conventions • Use of language with clarity and coherence • Use of academic writing conventions (e.g., punctuation, spelling, grammar, use of full sentences, capitalization) • Appropriate sentence structure • Appropriate paragraph structure • Appropriate use of headings and subheadings • Appropriate use of tables • APA style: American Psychological Association (tables, references, texts)					
GENERAL COMMENTS/RECOMMENDATIONS FOR NEXT TIME					

Lecturer: **Date:**

Recommended: /20   (FL PS CR DN HD)   **Weighting: 60%**

NB: The ticks in the various boxes are designed to provide feedback to students; they are not given equal weight in determining the recommended grade. Depending on the nature of the assessment task, lecturers may also contextualize and/or amend these specific criteria. **The recommended grade is tentative only, subject to standardisation processes and approval by the School of Education Learning and Teaching Committee.**