Alliance Manchester Business School

PGR Course unit outline 2022/23	
Unit code:	**BMAN85322**
Title:	Introduction to Longitudinal Data Analysis
Credit value:	2.5 ECTS
Semester:	**2**
Course Coordinator contact details:	Masakatsu (Bob) Ono Room 7.012 masakatsu.ono@manchester.ac.uk Office hours: By appointment only
Other staff involved contact details:	N/A
Pre-requisites **Co-requisites** **Dependent course units** **Restrictions**	BMAN82232 Advanced Quantitative Research Methods

Course unit overview

This course aims to help PhD students acquire hands on and practical experiences in specific programming/research design skills that will contribute to the doctoral research. The unit will cover the theory, design, and analysis of change. It will help students to develop, implement, and evaluate longitudinal research. The course will review: (a) the meaning of change in different theoretical approaches, (b) analytic strategies (repeated measures general linear model, random coefficient modelling, and latent growth modelling) used to assess change, (c) the circumstances in which the analytic strategies are appropriate, and tradeoffs among them; and (d) will provide the opportunity to practice these skills on new datasets.

Aims

The aims of this course are to: provide a framework for thinking about dynamics, change, transitions in organizations which includes understanding the significance of studying change; provide key practical skills in developing research design, collecting and analyzing longitudinal date; provide key critical thinking skills skills in critiquing and improving longitudinal research in their domain.

Objectives (Learning outcomes)

Category of outcome	*Students should/will be able to:*
Knowledge and understanding	Students will develop knowledge and understanding of the meaning of change, research designs appropriate for longitudinal research, appropriateness of analytical methods for different longitudinal research.

Intellectual skills	Students will develop intellectual skills related to critical and original thinking and understanding of strengths and weaknesses of research literature and various methodologies.
Practical skills	Students will develop practical skills to design longitudinal studies, analyse and evaluate longitudinal data.
Transferable skills and personal qualities	Students will develop transferable skills related to research design, data analysis, and programming.

Syllabus content

The course will cover an introduction to longitudinal research including the meaning of change, the necessity to study change, and current approaches to study change in management and other disciplines. After this broad introduction, we will cover several approaches for researching change, including the repeated measures GLM model, the random coefficient model, and the latent growth approach. Throghout we will refer to key cases and studies in the literature which will help us understand why the methods are needed, when to use these methods, key advantages and disadvantages of these methods, and common failures in their implementation in research.

Methods of delivery

Lectures	Three lectures across three weeks Lecture 1 – 3hrs Lecture 2 – 2hrs Lecture 3 – 2 hrs
Seminar/Tutorial/Workshop/Lab Hours	
Independent Study	50
Total Study Hours	58

Reading List

Pre Reading:

Fitzmaurice, G. (2001). A conundrum in the analysis of change. Nutrition, 17(4), 360-361.

Mitchell, T. R., & James, L. R. (2001). Building better theory: Time and the specification of when things happen. Academy of Management Review, 26(4), 530-547.

Core Text:

Singer, J. D., Willett, J. B., & Willett, J. B. (2003). Applied longitudinal data analysis: Modeling change and event occurrence. Oxford university press.

Newsom, J. T. (2015). Longitudinal structural equation modeling: A comprehensive introduction. Routledge.

Key readings:

- Bliese, P. D., & Ployhart, R. E. (2002). Growth modelling using random coefficient models: Model building, testing, and illustrations. Organizational Research Methods, 5(4), 362-387.
- Bliese, P. D., Chan, D., & Ployhart, R. E. (2007). Multilevel methods: Future directions in measurement, longitudinal analyses, and nonnormal outcomes. Organizational Research Methods, 10(4), 551-563.
- Cole, D. A., & Maxwell, S. E. (2003). Testing mediational models with longitudinal data: questions and tips in the use of structural equation odelling. Journal of abnormal psychology, 112(4), 558.
- Hopwood, C. J., Bleidorn, W., & Wright, A. G. (2021). Connecting theory to methods in longitudinal research. Perspectives on Psychological Science.
- Ployhart, R. E., Holtz, B. C., & Bliese, P. D. (2002). Longitudinal data analysis: Applications of random coefficient modeling to leadership research. The leadership quarterly, 13(4), 455-486.
- TEXTBOOK EXAMPLES APPLIED LONGITUDINAL DATA ANALYSIS: MODELING CHANGE AND EVENT OCCURRENCEBY JUDITH D. SINGER AND JOHN B. WILLETT Retrieved from https://stats.oarc.ucla.edu/other/examples/alda/#

Supplementary Text:

- Bliese, P. (latest version). Multilevel modeling in R (latest version).
- Bliese, P. D., Adler, A. B., & Flynn, P. J. (2017). Transition processes: A review and synthesis integrating methods and theory. Annual Review of Organizational Psychology and Organizational Behavior, 4, 263-286.
- Bliese, P. D., & Lang, J. W. (2016). Understanding relative and absolute change in discontinuous growth models: Coding alternatives and implications for hypothesis testing. Organizational Research Methods, 19(4), 562-592.

- Chan, D., & Schmitt, N. (2000). Interindividual differences in intraindividual changes in proactivity during organizational entry: A latent growth modeling approach to understanding newcomer adaptation. Journal of applied psychology, 85(2), 190.
- Chen, G., Ployhart, R. E., Thomas, H. C., Anderson, N., & Bliese, P. D. (2011). The power of momentum: A new model of dynamic relationships between job satisfaction change and turnover intentions. Academy of Management Journal, 54(1), 159-181.
- Chou, C. P., Bentler, P. M., & Pentz, M. A. (1998). Comparisons of two statistical approaches to study growth curves: The multilevel model and the latent curve analysis. Structural Equation Modeling: A Multidisciplinary Journal, 5(3), 247-266.
- Lance, C. E., Vandenberg, R. J., & Self, R. M. (2000). Latent growth models of individual change: The case of newcomer adjustment. Organizational behavior and human decision processes, 83(1), 107-140.

Assessment

Suggested mode of Assessment	Length required
Formative assessment. Practical applications of the methods through exercises with feedback.	Various
Summative. Development of a 1500-words research (design and analysis) plan for longitudinal research on the students' preferred topic.	1500 words
Resits: To be determined by supervisors and dependent on assessment task failure.	

Feedback methods

Formative assessment requires completion of exercises, applying the methods learned. Feedback is provided in the form of model answers.
Summative assessment. Data collection and analysis plan using methods learned during the course. Written feedback and grade provided at the end of the course.

Feedback from students
In addition to the course unit evaluation questionnaire, students are encouraged to give feedback through emails and conversations at any time, and using the online questionnaire near the end of the semester

Social Responsibility

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AMBS aims for our graduates to develop not only academic and professional skills, but also a sense of social, ethical and environmental responsibility towards the societies of which they are part. Please give details of how social responsibility is addressed in your course unit by highlighting any knowledge or skills that support students' social and ethical understanding and conduct.

This unit provides students key skills in statistical literacy, i.e., understanding and application of statistical concepts. Statistical literacy is a key skill for handling everyday and employment situations. The statistical skills acquired will help students in their professional (e.g., producing high quality research with return on investment for policy makers; helping companies make balanced decisions with regard to their workforce by applying key methods to analyze workforce attitudes, behaviors, and performance), social (e.g., helping fight the modern disinformation crisis by applying knowledge of statistical analysis to interpret facts and events and share that knowledge via different platforms, thereby helping to educate the wider public), and personal lives (e.g., helping them analyze their intrapersonal biases and increase their decision making rationality).

Please indicate by ticking the box(es) below, which specific aspect of SR your module is linked to:

[x] A UN SDGs*

[ ] Environmental Sustainability

[ ] Other (please specify)

4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all
8. Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all

** If a UN SDG, please note which one by reviewing the list here*

For additional support on how embed SR into your module, please review the resources here:

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https://documents.manchester.ac.uk/DocuInfo.aspx?DocID=51837
https://documents.manchester.ac.uk/DocuInfo.aspx?DocID=47017