Module C5—Longitudinal Data Analysis

24–28 November 2014, The University of Queensland, Brisbane

This five-day intensive course has been specifically designed to deepen the specialist knowledge of your research teams and enhance the quality and meaning of the data you use when making crucial business decisions. It incorporates several modules from across MFSAS streams, and delves more deeply into topics that are pivotal for organisations that use longitudinal data for research and decision-making.

Longitudinal Data Analysis: Analysing Complex Datasets

Longitudinal Data Analysis is a five-day intensive course that has been specifically designed for organisations that use longitudinal data for their research, and policy or decision making. Developed in response to a demand from practitioners working in government and corporate environments, this course will deepen the specialist knowledge of your research teams and enhance the quality and meaning of the data you use when making crucial business decisions.

The five-day course comprises a mix of foundation and advanced modules on longitudinal data analysis techniques. Topics cover the latest in statistical methods, as well as how and where to apply them to best effect. Through an engaging teaching mix of presentations, exercise-based and group activities, participants will hone their longitudinal research skills, learning to better manage the datasets and apply methods used in this type of research.

Delivered in ISSR’s training facility located on The University of Queensland’s picturesque St Lucia campus, the course also includes practical hands-on sessions using real world data.

Who should attend?

This course is designed for researchers working in government and universities, large organisations with research interests, and specialist research firms.

We recommend participants have a working knowledge of ordinary least squares (OLS) regression techniques; however, the first day of the course will include a brief refresher on regression modelling.

The five-day intensive course incorporates material from MFSAS Modules C2—Multilevel Models for Clustered and Longitudinal Data, and Module C3—Longitudinal Data Analysis: Introduction and Panel Regression Methods. For the computer-based practical sessions, some familiarity with Stata® software is desirable, but not necessary as all software syntax will be supplied.
Course program

Each day runs from 9am to 5pm, with breaks for lunch, and morning and afternoon tea. Each day will include some practical sessions with activities and applications using Stata® software. Laptops, data and software are all provided for the course.

<table>
<thead>
<tr>
<th>Day</th>
<th>Session</th>
<th>1 [9:00 to 10.30am]</th>
<th>2 [10:45 to 12:30pm]</th>
<th>3 [1:15 to 3:00pm]</th>
<th>4 [3:15 to 5:00pm]</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Monday</td>
<td>Longitudinal Data: What Is It and What Can It Tell Us?</td>
<td>Understanding the Data Structure and Managing Longitudinal Datasets, with an Introduction to Stata® software</td>
<td>Exploratory Longitudinal Data Analysis</td>
<td>Practical Session with Applications using Stata® software</td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td>Understanding the Multilevel Data Framework</td>
<td>Multilevel Models for Longitudinal Data</td>
<td>Random coefficient and growth curve models</td>
<td>Applications to Longitudinal Data using Stata®</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3. Wednesday</td>
<td>Multilevel Models for Binary Response Data</td>
<td>Multilevel Models for Ordinal and Count Data</td>
<td>Event History Analysis: Hazard and Survivor Functions</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4. Thursday</td>
<td>Practical Session on Multilevel Models for Discrete-Response Data</td>
<td></td>
<td>Re-visiting concepts and Question Time: Bring your own application for discussion</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5. Friday</td>
<td>Discrete-Time Event History Analysis</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The data used for this course comes from two longitudinal surveys funded and administered by the Department of Social Services: the Household, Income and Labour Dynamics in Australia (HILDA) longitudinal survey, and the Longitudinal Survey of Australian Children (LSAC).

There will also be opportunities during the course to review some participants’ specific research challenges. Please let us know your individual training needs when you register so we can discuss how they may be accommodated.
Course facilitators and guest lecturers

**Professor Michele Haynes, PhD (applied statistics)**

Michele is the Leader of ISSR’s Research Methods and Social Statistics program, which is specifically focused on training and methodological innovation in the social sciences.

She is a statistician with more than 20 years’ experience in providing advisory and training services to government and industry. Her interests include developing methodologies for life course research using longitudinal social data, social survey research, and statistical model estimation using Bayesian techniques.

Michele is also a skilled and generous educator. She coordinates ISSR’s statistical advisory service to academics and research higher degree candidates at The University of Queensland, coordinates the MFSAS suite of courses and delivered UQ’s social science course in Applied Quantitative Research Methods during 2003-2012.

**Dr Bernard Baffour, PhD (social statistics)**

Bernard is a statistical methodologist with an interest in using innovative social statistics to address practical issues of data collection and analysis. He joined ISSR as a Research Fellow in 2012 and has contributed to the development and teaching of MFSAS courses. After completing his PhD at the Southampton Statistical Sciences Research Institute, he continued as a Research Fellow in Statistics, primarily working on research to explore and quantify the relationship between weather patterns and their impact on health conditions through statistical models.

Bernard is an experienced and engaging trainer who willingly shares his knowledge and expertise with novice and veteran participants alike.

**Dr Francisco Perales (social and economic research)**

Francisco (Paco) joined ISSR from the Institute for Social and Economic Research at the University of Essex in the UK, where he completed a PhD on gender inequality at work in Britain. His research expertise includes the areas of gender-based socio-economic inequality, subjective wellbeing, quality of life, social disadvantage, longitudinal survey methodology, internal migration, and work careers.

Paco’s methodological expertise is in advanced quantitative research methods, and he is skilled in conducting econometric analysis of cross-sectional and longitudinal large-scale social surveys.
Testimonials

ISSR developed the five-day *Longitudinal Data Analysis* course in 2012 for the Australian Government Department of Social Services, who manage HILDA and other significant national social longitudinal surveys. Participants in recent courses we delivered had this to say:

“This course provided a great overview of a range of methods for the analysis of longitudinal data, providing a set of tools to address a variety of research questions. These complex methods were presented in non-technical language, appropriate for participants with no experience analysing longitudinal data. I walked away from the course with a better understanding of the theoretical differences between models, and with the confidence and skills to apply these methods to my research.” KT

“Presenters were excellent, and really knew how to communicate difficult concepts. The balance between theory and practical exercises was good. I am very appreciative that I had the opportunity to attend such an informative course.” AW

“The presenters have successfully catered for a range of backgrounds and skills and provided excellent supporting materials. I particularly like the way the course mixes presentation with practical hands-on work using Stata®. The presenters are skilled at explaining the material both mathematically and orally … I am enjoying the course as well as learning practical ways of setting up data for and conducting longitudinal analyses and interpreting results.” FS

Course registration

To attend ISSR’s *Longitudinal Data Analysis* five-day intensive course, please register and pay online at [http://www.issr.uq.edu.au/registration-and-payment](http://www.issr.uq.edu.au/registration-and-payment). Alternatively, you can register by calling ISSR’s Training Coordinator on (07) 3346 9680 to request an invoice. Please note: invoices must be paid in full by the commencement of the course.

### Fees

<table>
<thead>
<tr>
<th>Registration type</th>
<th>Closing date</th>
<th>Amount per person (excl. GST)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Early Bird</td>
<td>30 September 2014</td>
<td>$3,150</td>
</tr>
<tr>
<td>Students</td>
<td>14 November 2014</td>
<td>$2,850</td>
</tr>
<tr>
<td>Standard</td>
<td>14 November 2014</td>
<td>$3,800</td>
</tr>
<tr>
<td>Group rate (3 or more)</td>
<td>14 November 2014</td>
<td>$3,040</td>
</tr>
</tbody>
</table>

### Inclusions

- Comprehensive course materials including course handbook, slides manual, and a practical exercises manual.
- Lunch, and morning and afternoon tea.
- **Two hours** of post-course support from ISSR’s expert training team, for up to six months after completing the course.

The Course Handbook also provides a valuable reference document after the course is completed, with detailed summaries, scenarios, and further reading recommendations to support participants’ ongoing learning.

### Cancellation policy

A full refund will be provided if written notification is received by ISSR at least 7 days prior to the course start.
date. Substitutions may be made, but refunds are not provided for any cancellation received after this time or for non-attendance on the day.

**Methods for Social Analysis and Statistics**

University-level professional development training that bridges the gap between statistics and social policy.

The Longitudinal Data Analysis training course is part of ISSR’s Methods for Social Analysis and Statistics (MFSAS) training program so is distinctive in its real-world focus on the use of statistical information in the workplace. MFSAS program modules focus on quantitative analysis, statistical data interpretation, and translating research findings to help with public policy and program decision-making.

With modules ranging from introductory to advanced levels, the MFSAS program builds participants’ statistical literacy so they can critically review the use of quantitative data in journal articles or other publications, and make informed assessments about the various statistical analysis techniques used and their resulting conclusions.

**Training tailored to your needs**

In keeping with ISSR’s commitment to delivering research training that meets the needs of end-users, the Methods for Social Analysis and Statistics program is **fully customisable and mobile**.

As well as delivering public training events such as the upcoming five-day Longitudinal Data Analysis course, ISSR can help you design a curriculum from the program modules that will best suit your training needs and business goals. We can then deliver this training at our on-campus facilities at The University of Queensland, or at a venue of your choosing using our mobile computer lab, which features:

- 30 laptop computers, with specialist software, including Stata® (for quantitative data analysis) and Leximancer (for analysis of text-based datasets)
- mobile video conferencing facilities and wireless microphones (for instructors)
- portable digital projector and projector screen
- two high-performance desktop computers for data analysis.

To find out more about our upcoming training events, join our mailing list, or to discuss whether a custom program may be right for you, contact our Research Services Manager, Sue York on:

**Phone:** (07) 3346 9680  
**Email:** mfsas@uq.edu.au  