



Module C3 – Longitudinal Data Analysis: Introduction and Panel Regression Methods

Overview

Purpose

To provide participants with a thorough understanding of the structure, properties and uses of quantitative longitudinal survey datasets as well the skills to confidently manage and analyse these. This module will combine comprehensive explanations with hands-on practical sessions using Stata software and data from the Household, Income and Labour Dynamics in Australia (HILDA) Survey.

Learning objectives

On completing this module, participants will be able to:

1. Understand the advantages of using longitudinal data in socio-economic research
2. Manage longitudinal datasets and prepare these for statistical analysis
3. Perform exploratory and descriptive panel data analyses
4. Understand the different approaches that can be used to model multivariate relationships with panel data (e.g. fixed and random effects regression models)
5. Determine which modelling approach is better to answer a particular research question
6. Effectively present the results of longitudinal data analyses to different audiences

Who should attend, and module pre-requisites

This module is designed for people who want to begin analysing quantitative longitudinal datasets such as cohort studies (e.g. the Longitudinal Study of Australian Children or the Australian Longitudinal Study of Women's Health) or household panel surveys (e.g. the HILDA Survey). It will also be helpful for those who are partially familiar with these methods and want to gain a more comprehensive understanding of these or how to apply them using Stata software. To get the most from this course, a working knowledge of ordinary least squares (OLS) regression is recommended. However, the first day of the course will not delve far into modelling issues and will provide a refresher on regression modelling. For the computer-based practical sessions, some familiarity with Stata software is desirable, though all necessary software syntax will be provided.