

## RM: Practical Longitudinal Sustainability Studies

Research on sustainability aims at answering the age-old question of how to build a society that can sustain. This covers almost every aspect of our life including what energy source to use, what business model to adopt, how we plant crops, how we reduce pollution, etc. Many research projects try to link the practice in these fields that we see today to its outcome in the foreseeable future and therefore make changes for the better. However, often, what is happening at the moment alone is not a good reference. Things are developed over time and just like our society, the problems within it evolves over time. The outdated conclusion may not apply to today anymore and the current findings may not apply in the future. (To use technologies as an example, almost all new generation technologies due to their daunting upfront cost are often not well received at first but gain their dominance years later.) Longitudinal research provides an innovative perspective to solve problems that are rooted over a short or a long period of time. It repeatedly measures the same variables to study the intrinsic relationship among factors of the problem and how such relationship develops over time.

In this course, we will learn innovative tools of longitudinal data analysis to investigate sustainability issues. A list of research questions on sustainability related to psychology will be proposed at the beginning of the semester. Public datasets (e.g., CHILD cohort study) as well as data that have been collected on Grounds at UVA (e.g., the Juice Laundry data) will be available to the class to help us answer the research questions. The course is research-oriented and student-centered. We will use discussions to identify sustainability issues that we are interested in at different stages of the course, use lectures to learn new concepts, designs, and statistical models and methods, and using labs to practice and work on our projects with R. There will be a big final class project. Students will need to write brief reports during the semester regarding their progress on the project and present their project to the class and write a summary paper at the end of the semester. There is no final exam. The performance of students is evaluated based on the project.

This new course is funded by UVA Sustainability (<https://sustainability.virginia.edu/>). Here is a link to the [Career in Sustainability](https://sustainability.virginia.edu/about-us/careers): <https://sustainability.virginia.edu/about-us/careers>.