Ph.D. in "Life Course Research" – Socio-demographic curriculum

Academic Year 2024-2025

Education, inequality & the life course
Module coordinator: Mariano Porcu, mariano.porcu@unica.it

Objectives
This course addresses issues related to the measurement and monitoring of inequalities in the educational field, with an emphasis on key aspects such as (i) defining and measurement of complex phenomena such as disparities in learning outcomes and educational poverty, (ii) monitoring educational choices and disentangling the multiple factors influencing the observed outcomes. The course introduces statistical methods and modelling approaches (such as multilevel models and IRT models) to handle the complexity of the data structures in the educational framework. Methods will be introduced starting from research inquiries, aiming to assist students in defining variables of interest and selecting appropriate tools and modelling approaches tailored to their specific questions. Case studies using educational datasets will be provided. Moreover, students will gain hands-on experience utilizing the Stata software for implementing empirical analyses based on the methods discussed in the lectures.

Program

Monday

Monday (Instructor: *Porcu -Sulis- Usala*) (3h) 10:00-13:00
– **Monitoring inequalities in education**:
Introduction to Educational Inequalities
Monitoring education systems using Large Scale Assessment Surveys (LSAs): insight from PISA surveys and indicators.
-**Statistical Models for Tracking Inequalities***:* Indicators of Quality & Equity in education based on Multilevel Models & IRT models.

Tuesday

Tuesday (Instructor: *Sulis -Usala*) (3h) 10:00-13:00

-***Presentation and discussion of specific research topics, methodologies & selected papers***

In this section, case studies will be presented to show how to model disparities in educational choices and performances (e.g., gender bias in educational choices, resilience in access and completion of secondary and tertiary education, achievement and performance of students with disadvantaged backgrounds) with emphasis on the selection of suitable modelling approaches***.***

Wednesday

Wednesday (3h) 10:00-13:00

-**Practicum Statistical Models for Tracking Inequalities in education:**

Life course analysis in MOBYSU.IT & INVALSI
Working group on educational data

Thursday

Thursday morning (Instructor: Antonella D' Agostino) (3h) 10:00-13:00
-Educational Poverty:
    - Introduction to educational poverty

    - Statistical methods for measuring educational poverty

    - Practicum: Application Addressing Educational Poverty. Suggested lectures. Materials provided by the teacher

Requirements
Multiple regression models; multilevel models; logistic regression models.

Suggested lectures

Materials provided by the instructors

Selected papers: TBA

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Further reading

Inequalities in education
Goldstein; H.; & Spiegelhalter; D. J. (1996). League tables and their limitations: Statistical issues in comparisons of institutional performance. Journal of Royal Statistical Society A; 159; 385-443.

Contini; D.; Cugnata; F.; Scagni; A. (2018). Social selection in higher education. Enrolment; dropout and timely degree attainment in Italy. High Educ 75; 785-808

Sulis & Porcu (2015). Assessing Divergences in Mathematics and Reading Achievement in Italian Primary Schools: A Proposal of Adjusted Indicators of School Effectiveness. Social Indicators Research; 122; 607-634

Porcu; M.; Sulis; I.; Usala; C. & Giambona; F. (2023). Will the gap ever be bridged?
A cross-national comparison of non-native students' educational achievements. Genus
79; 19. doi: 10.1186/s41118-023-00199-5

Sulis; I.; Giambona; F.; & Porcu; M. (2020). Adjusted indicators of quality and equity for monitoring the education systems over time. Insights on EU15 countries from PISA surveys. Socio-Economic Planning Sciences; 69; 100714.

Usala, C., Sulis, I., Salaris, L., Tedesco, N., Porcu, M., & Barbieri, B. (2024). Disentangling the secondary school effects in the assessment of university inefficiencies. *Studies in Higher Education*, *50*(3), 537–557. https://doi.org/10.1080/03075079.2024.2345188

Sulis, I., Barbieri, B., Salaris, L., Melis, G., & Porcu, M. (2024). Gender bias in university student mobility: a cohort analysis in Italy. *International Journal of Manpower*, *45*(5), 1076-1092.

IRT

Edelen M. O.; Reeve B. B. (2007). Applying item theory (IRT) modeling to questionnaire development; evaluation; and refinement. *Quality of Life Research*; 16; 5-18

Edwards M. C. (2009). An introduction to item response theory using the need for cognition scale. *Social and Personality Compass*; 3; 507-529.