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

Academic Year 2023-2024

Education, inequality & the life course (I)
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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, IRT models) to handle the complexity of the data structures in 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

<u>Monday</u>

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
-*Presentation and discussion of selected papers:*

<u>Tuesday</u>

Tuesday morning (Instructor: Sulis -Usala) (3 h) 10:00-13:00
-**Practicum Statistical Models for Tracking Inequalities in education:**
Life course analysis in MOBYSU.IT
Working group on educational data

<u>Wednesday</u>

Wednesday afternoon (Instructor: Michael D. Toland) (14:00-17:00)

-An introduction to IRT models (14:00-15:30)

Break

*P**ractical session on introduction to IRT (**16:00-17:00**)*

Thursday

Thursday morning (Instructor: Antonella D' Agostino) (3h) 10:00-13:00
-Educational Poverty:
> *- Introduction to educational poverty*
>
> *- Measuring educational poverty*
>
> *- Presentation and discussion of selected papers*
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> *-Practicum: Application Addressing Educational Poverty with R*

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.

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

Introduction Monitoring education systems using Large scale assessment surveys Measures of Quality & Equity based on Multilevel
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

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, 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.

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.

Books

AISP (2019). *Rapporto sulla popolazione. L'istruzione in Italia*. Bologna. Il Mulino.

IRT
De Ayala R. J. (2009). *The theory and practice of item response theory*. New York, NY: Guilford.