Age-Period-Cohort (APC) Analysis
Old Controversies and New Solutions

8 - 9 May 2025
10.00 – 17.00
Meeting Room “G. Poggi” 1st floor
Department of Sociology and Social Research

Speakers:
Prof. Juho Härkönen and Dr. Jos Van Leeuwen
European University Institute

Thursday, 8 May 2025	
10.00-12.00	Age, period and cohort in the analysis of individual and social change
12.00-13.30	Lunch break
13.30-16.30	The Hierarchical Age-Period-Cohort Model (HAPC)

Friday, 9 May 2025	
10.00-12.00	The Age-Period-Cohort Interaction Model (APC-I)
12.00-13.30	Lunch break
13.30-16.30	The Life Cycle-Social Change Model (LC-SC)

Course description

Social change can be understood in terms of three basic temporal variables: age, period, and cohort. Age is simply the amount of time that has elapsed since birth, period is the moment in historical time when the observation takes place, and cohort is the time when an individual was born. These variables entail quite different explanations and mechanisms, as is clear from the following (fictitious) conversation:

> **A:** I can't seem to shake off this tired feeling. Guess I'm just getting old. *[Age effect]*
>
> **B:** Do you think it's stress? Business is down this year, and you've let your fatigue build up. *[Period effect]*
>
> **A:** Maybe. What about you?
>
> **B:** Actually, I'm exhausted too! My body feels really heavy.
>
> **A:** You're kidding. You're still young. I could work all day long when I was your age.
>
> **B:** Oh, really?
>
> **A:** Yeah, young people these days are quick to whine. We were not like that. *[Cohort effect]*
>
> (Adapted from Suzuki 2012)

But although the conceptual distinction between age, period, and cohort effects seems clear enough, they are difficult to distinguish in empirical research. The reason is that age, period, and cohort are defined in terms of each other: period (survey year) minus age is cohort (birth year), period minus cohort is age, and age plus cohort is period.

Distinguishing between age, period and cohort processes is important for understanding social and political change. For instance, are more recent generations really more progressive and left-leaning than earlier generations? Or is it rather that "if you are under 30 and not a liberal, you have no heart, but if you are over 30 and not a conservative, you have no brain"? Did support for Brexit decline because people changed their minds or because older "Brexiteer-cohorts" passed away? And does the recent crisis in mental health affect all people in society, or is it limited to young people from more recent generations?

Several solutions to the APC problem have been proposed, each with its own strengths and weaknesses. The objective of this workshop is to give an overview of the most important approaches to APC analysis in contemporary research. Participants will get acquainted with the rationale, caveats, and critiques associated with each approach. Furthermore, they will learn how they can be implemented in a hands-on way by applying them to either their own data or an example dataset using statistical software (*Rstudio*, *STATA*). The workshop structure allows for a comprehensive understanding of both traditional and modern APC methods, ensuring participants are equipped with a diverse toolkit for analyzing age, period, and cohort effects. **Participants should be prepared by reading Alwin and McCammon, at least one of the overview papers and go through the methods papers. Bring your laptop with software installed.**

Literature

Background

Alwin, D. F. & McCammon, R. J. (2003). Generations, cohorts and social change. In *Handbook of the Life Course* (pp. 23-49). Springer.

Overviews

Bell, A. (2020). Age period cohort analysis: A review of what we should and shouldn't do. *Annals of Human Biology, 47*, 208-217.

Fosse, E., & Winship, C. (2019). Analyzing age-period-cohort data: A review and critique. *Annual Review of Sociology, 45*, 467-492.

Methods

Fosse, E., & Winship, C. (2023). The anatomy of cohort analysis: Decomposing comparative cohort careers. *Sociological Methodology,* 00811750231151949.

Luo, L., & Hodges, J. (2022). The age-period-cohort-interaction model for describing and investigating inter-cohort deviations and intra-cohort life-course dynamics. *Sociological Methods & Research, 51*, 1164-1210.

Yang, Y., & Land, K. C. (2006). A mixed models approach to the age-period-cohort analysis of repeated cross-section surveys, with an application to data on trends in verbal test scores. *Sociological Methodology, 36*(1), 75-97.