

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

Instructors:

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Duration: 2 days (10 hours), 10 credits

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Life course research involves three fundamental temporal variables: age, period, and cohort. Age is simply defined as the amount of time that has elapsed since birth for an individual who is observed, period as the specific moment in time at which observation takes place, and cohort as the moment in time when the individual who is observed was born. Each of these variables entails 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 though the distinction between age, period, and cohort effects itself is clear enough, it has proven to involve huge difficulties to distinguish them in practice. 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.

Because of the crucial importance of distinguishing age, period, and cohort effects, many have tried to come up with solutions for this problem. But until recently, every proposed model has been met with huge difficulties. This has led some researchers to the conclusion that it may be better to just abandon this “futile quest” altogether (Glenn 1976). Yet there is light at the end of the tunnel: specifically, in recent years, two methods have been developed that make it possible to isolate trends to an extent hitherto thought to be impossible—specifically, Fosse and Winship’s bounding approach and Luo and Hodges’ age-period-cohort interaction (APC-I) model.

This workshop is directed to give participants an overview of the the most common approaches to APC analysis and their issues, caveats, and critiques. Furthermore, they will learn how to perform statistical analyses using the most state-of-the-art APC methods in a hands-on way by applying them to an example dataset using statistical software (R, 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.

Literature

Introduction

Elder Jr, G. H., & George, L. K. (2016). Age, cohorts, and the life course. In *Handbook of the life course: Volume II* (pp. 59-85). Cham: Springer International Publishing.

Suzuki, E. (2012). Time changes, so do people. *Social Science & Medicine*, 75, 452-456.

Classics

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Ryder, N. (1965). The cohort as a concept in the study of social change. *American Sociological Review*, 30, 843-861.

Reviews

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.