

Integrating complex panel data models into dynamic microsimulations: an application to the analysis of the migrant and gender pay gaps in Germany

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In this contribution, innovative panel data methods are used to model individual wage trajectories and, subsequently, emerging inequality measures (e.g., pay gaps). The aim is to develop techniques to integrate the principles of these complex panel models into the framework of dynamic microsimulations in order to project potential wage developments in different scenarios.

Individuals' wages develop from a complex interplay of self-acquired and parental resources. Discriminatory processes can influence this development. Moreover, the aggregate extent of discrimination against groups varies over time and can be triggered by sociopolitical changes or dynamics in the population composition. Such processes do not only lead to changing wage developments at the individual level. Indicators of discrimination on the macro-level, such as the adjusted gender and migrant pay gaps, might also develop dynamically.

Therefore, the first step of this contribution is to use panel data to analyze the interplay between endogenous dynamics within life courses, changing societal conditions, and changing population composition. In this way, we can explore under which conditions and to what extent group-specific average wages and consequently pay gaps develop. This can be done with dynamic panel models or growth curve modeling. Recently, approaches have been presented which combine these two types of models, enabling us to model life courses more precisely.

The wage dynamics identified in our empirical analyses are projected into the future using microsimulation modeling techniques based on different scenarios. This approach is necessary as we focus on the relatively young third generation of migrants in Germany, who are of particular theoretical interest, but for whom empirical research is scarce. In this context, we face the methodical challenge of integrating the results of complex panel data models into our microsimulation. We present strategies to meet this objective as well as empirical and simulated results.