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Measurement Error in Simulation Models. The Case of Social Assistance in Germany

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Microsimulation models are commonly used to estimate the extent and determinants of non take-up of means-tested social benefits. However, in simulating eligibility for social benefits various types of measurement error may arise. In our paper we address the impact of measurement error in income, needs and assets on the estimates of non take-up rates for social assistance in Germany, using data from the German Socio-Economic Panel Study (SOEP) for survey year 2002. In particular, we analyse selectivity effects resulting from item non-response, measurement errors in reported household incomes, needs (including housing costs) and assets, as well as misspecifications of the simulation model. The main focus is on measurement error of household incomes, which appears to impact most on the estimated non take-up rates. We provide sensitivity analysis of non take-up rates assuming classical (random) as well as non-classical measurement error (of a given pattern) using Monte-Carlo simulations. Given the specific discretionary character of the eligibility decision, preliminary results argue for increased awareness of a more systematic measurement error instead of simply assuming randomness of the distribution of this error.

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