

Equivalence Scales for Measuring In-Work Poverty in Europe

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Equivalence scales are a crucial tool to define the poor population and, accordingly, who is eligible for anti-poverty measures and who is not. Equivalence scales are based on the common principle that households make economies of scale. Two people living together need more income than one living alone but less than two living separately. Indeed, people living together can benefit from some savings, such as the sharing of the rent and heating costs. However, equivalence scales differ regarding the extent of the economies of scale they assume. In-work poverty (IWP), namely, workers' poverty risk, is generally measured with the OECD-modified (mod.) scale, which implies substantial economies of scale (Crettaz, 2013; Lohmann, Marx, 2018). So far, implementing this equivalence scale was not the subject of discussion. Our paper takes a first step in this direction and investigates whether this scale underestimates IWP. In particular, we examine the extent to which the OECD-mod. scale underestimates the poverty risk of working households compared to non-working households.

We expect that the OECD-mod. scale underestimates IWP for two main reasons. The first is related to the size of working households. Previous studies showed that equivalence scales implying high economies of scale tend to overvalue large households' resources and underestimate their risk of poverty (e.g., Buhmann et al., 1988; Coulter et al., 1992; Duclos et Mercader-Prats, 1999; Mysíková, Želinský, 2019). Working households tend to be large, mainly because of the presence of children, while those non-working are smaller as they mainly consist of the elderly and the young. Therein lies a primary risk of underestimation of IWP.

The second reason is related to employment's costs. Being employed may hinder households from doing economies of scale. For example, compared to not working people, workers are less likely to realize some savings by, for example, looking for the less expensive supermarket. Also, working households have extra expenses compared to non-working households, for which it is difficult to make economies of scale. We can think of transport and the range of activities (e.g., cleaning, cooking) that households need to buy on the market and cannot internalize since most people work. Working households will likely have more expenses and fewer opportunities to save than non-working households. This recalls the traits of the two-income trap phenomenon (Warren, Warren Tyagi, 2003). This argument may apply to all equivalence scales, but it becomes particularly relevant when large economies of scale are implied, as in the case of the OECD-mod. scale.

Analyses are based on 2020 cross-sectional data of the EU-SILC survey, which is the one commonly used to study IWP in Europe – especially for comparative analysis. We consider 22 European countries. We develop a three-step analysis. The first part of the analysis is descriptive and investigates how poverty statistics change when implementing the OECD-mod. scale ($1+0.5*\text{adult}+0.3*\text{child}$) rather than the old OECD scale ($1+0.7*\text{adult}+0.5*\text{child}$), which implies lower economies of scale. The analysis follows investigating households' capacity to do economies of scale. To this end, we implement both subjective and objective approaches. Through fixed-effect logistic regression models, we investigate the probability of perceiving one's disposable income as adequate to make ends meet. We then examine households' ability to do economies of scale with an objective approach. We implement fixed effect regression models to examine differences in monthly expenditures in food and transport between working and non-working households.

Results support our hypotheses. When implementing the OECD-modified scale rather than the old OECD scale, most of the households excluded by the poor population are working in all European countries. Also, for equal income levels, working households are more likely to judge their income as insufficient to make ends meet and to have higher food and transport expenses than non-working households. Empirical results show that the choice of equivalence scale is not neutral. Working households tend to be larger and struggle more than non-working households to make economies of scale because of employment-related costs. Therefore, the implementation of the OECD-mod. scale may relevantly underestimate their risk of IWP and the resulting economic distress.