

Equivalence scales for measuring in-work poverty in Europe

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Equivalence scales are at the heart of studies on socio-economic well-being, since they allow to compare incomes, wealth and consumption among households differing in size and age structure. They are particularly relevant in the analysis of poverty and inequalities, since they affect the composition of the poor and, therefore, the possibility to access services and supports. Indeed, equivalence scales assume that households, especially large households, benefit from economies of scale. A family of two adults spends more than a family of one adult but less than twice as much. A scale of equivalence that considers the weight of additional members as minimal (e.g. "OECD modified scale" compared to the "old OECD scale") gives great weight to economies of scale and can underestimate the poverty of large families. Conversely, if economies of scale are underestimated (e.g. within the "Square root scale"), the relative poverty experienced by larger families compared to smaller ones is overestimated.

In general, there is an extensive literature that compares the scales of equivalence (e.g. Buhmann et al., 1988; Dudel et al. 2020), also over time and between countries (Daley et al. 2020). By contrast, there are no studies that examine the effects of a certain equivalence scale on in-work poverty estimation (i.e. its volume and socio-demographic configuration). In-work poverty consists of workers who live in poor families, that is, people who have worked at least seven months in the previous year and live in a household with an equivalised income below 60% of the median income of the country (Eurostat).

The paper aims to investigate how in-work poverty estimations change according the adopted equivalence scale. In particular, we intend to examine i) the role of equivalence scales in affecting the estimations of relative poverty of the working population, taking into account the different household structures, defined both in terms of size and number of income earners; ii) the differences in the estimations of relative poverty between working and non-working households. Therefore, the objective is to understand whether and how employment protects against poverty according to different equivalence scales.

Our hypothesis is that equivalence scales shape the in-work poverty estimations, due to the different distribution of income earners within households. This would mean, for example, that the adoption of an equivalence scale giving maximum weight to children would increase the in-work poverty rate within one-earner households, for equal household size. Moreover, being employed is

often considered a necessary condition for having children. Therefore, we expect that the poverty of working households will be overestimated if the equivalence scale gives more weight to children, while the poverty of non-working household will be lower.

These hypotheses will be tested by considering all western European countries. According to the well-known typology of welfare regimes, we distinguish a Scandinavian, a Continental, and a Mediterranean regime. There are great differences among them, especially in terms of in-work poverty rates, labor market characteristics (e.g. employment, unemployment, female employment, part-time diffusion), and household size. Therefore, similar results between working and non-working households in such heterogeneous contexts would show the structural influence of the adoption of the equivalence scale in estimating the in-work poverty. Moreover, by comparing equivalence scales applied in different welfare regimes, our analysis contributes to the debate on the use of identical equivalence scales for several countries.

The present work is based on the 2018 cross-sectional data concerning the European Union Statistics on Income and Living Conditions survey (EU-SILC). Households are our unit of analysis and we will use variables related to households structure (that is, size, age, relations among members), households income (e.g. disposable household income, HY020) and individuals' working condition (e.g. the main activity status during the income reference period, PL211a-PL211I). In line with Eurostat, we consider as "workers" those who have worked for at least seven months in the previous year. To examine the role of equivalence scale in the estimation of in-work poverty rates, we will run a set of logit regressions.