

From household level weights to personal level weights: rethinking weighting adjustment in the context of EU-SILC

Oona Pentala-Nikulainen
Statistics Finland, Finland, oona.pentala-nikulainen@stat.fi

In May 2019 Statistics Finland will release a new official statistics called “Statistics on living conditions”. The results are based on the yearly Survey on Income and living conditions where the data for Income distribution statistics and European Survey on Income and Living Conditions EU-SILC are also derived from. The survey has been conducted since 1977 and now will be utilised even more with this new statistics release. The statistics on living conditions describe the living conditions of the household population from different perspectives, such as risk of poverty or social exclusion, subjective well-being and livelihood, health and housing by population group in Finland. (Official Statistics of Finland (OSF): Statistics on living conditions).

The statistics on living conditions are a sample survey where the final sample size is around 10,000 households. They households are interviewed by telephone and in addition data are derived from administrative registers. The survey consists of four yearly panels but here we only consider cross-sectional data. In 2017 the overall response rate in all the panels was 76 %. Usually the data has been weighted on household level using calibrated weighting adjustment to reproduce characteristics from the sample population, namely totals and category frequencies. This household level cross sectional weight has then been integratively calibrated using both household and individual level external information to create the individual level weight for EU-SILC.

Since the statistics on living conditions contains a lot of personal level variables such as perception of health and livelihood, we wanted to explore the possibility of adjusting the weights only on individual level. This was easily done by using the same calibration adjustment based on individual level population distributions (Deville and Särndal 1992). We also wanted to examine whether adding some well-being and health related auxiliary variables would affect the results. However, we also wanted to use these individual level weights as an additional personal weights for EU-SILC ad-hoc module “Material deprivation, well-being and housing difficulties” (European Commission 2017 1, 2). This created the need to maintain the population totals in coherence with results based on household level weights created some restrictions on using different auxiliary information. This paper examines the possibilities of personal level calibration adjustment and the use of different auxiliary information in calibration adjustment while maintaining the coherence with household and personal level EU-SILC weights.

References

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