Variance estimation for annual point estimates and net changes for LFS using R package *vardpoor*

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The presentation is devoted to the function *vardannual* from R package *vardpoor*. The Central Statistical Bureau of Latvia in 2017 has developed the function *vardannual* which is included in the R package *vardpoor*. The theoretical basis of *vardannual* was borrowed from the Guillaume Osier and Virginie Raymond (2015) article "Development of methodology for the estimate of variance of annual net changes for LFS-based indicators" and Guillaume Osier and Pauline Perray (2016) article "Variance estimators of annual levels and net changes for a defined set of LFS-based indicators". Both papers showed an estimator proposed by Berger and Priam (2013) and Berger and Oguz Alper (2013). The paper describes the variance estimation of quarterly estimates, correlation estimation of two quarter change estimates, and finally it explains how to extend the approach to deal with variance estimation for annual point estimates and net changes for the Labour Force Survey (LFS) indicators. Variance estimates for annual point estimates and net changes was estimated for the LFS indicators using the function "vardannual". This function was tested on simulated and real data. The function "vardannual" is important to assess quality of LFS estimates and statistical significance of the estimates. The annual net changes of all indicators are calculated with the confidence interval, and if the confidence interval for the difference does not cover 0, then we can conclude that the difference is statistically significant. When looking at the results with calibration, it can be identified that the confidence interval is narrower if compared with the results without calibration. The function "vardannual" in software R package "vardpoor" was implemented in practice for the LFS in Latvia.

References

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