The R-Package surveysd: Estimating standard errors for Complex Surveys with a Rotating Panel Design

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Abstract

Surveys with a rotating panel design are a prominent tool for producing more efficient estimates for indicators regarding trends or net changes over time. Variance estimation for net changes becomes however more complicated due to a possibly high correlation between the panel waves. Therefore, these estimates are quite burdensome to produce with traditional means. With the R-Package **surveysd**, we present a tool which supports a straightforward way for producing estimates and corresponding standard errors for complex surveys with a rotating panel design. The package uses bootstrap techniques which incorporate the panel design and thus makes it easy to estimate standard errors. In addition the package supports a method for producing more efficient estimates by cumulating multiple consecutive sample waves. This method can lead to a significant decrease in variance assuming that structural patterns for the indicator in question remain fairly robust over time. The usability of the package and variance improvement, using this bootstrap methodology, is demonstrated on EU-SILC UDB data of selected countries with various sampling designs.