Using R-indicators for adaptive follow-up in longitudinal studies

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Representativity or R-indicators measure the degree to which respondents and non-respondents differ from each other (the contrast) and go beyond response rates alone. R-indicators are based on the variation of response probabilities estimated through a response propensity model conditional on auxiliary information and paradata available to both respondents and non-respondents. R-indicators can be further decomposed into partial R-indicators which determine relevant population sub-groups that are contributing the most to the lack of representativity and can be targeted in data collection. For the case of longitudinal studies, there is a wealth of information and paradata from previous waves for developing response propensity models and R-indicators to implement targeted follow-up strategies in subsequent waves. The longitudinal survey design is generally more complex and hence response propensity models and confidence intervals of R-indicators need to be adapted to deal with clustered and weighted survey data. An application for adaptive follow-up in the longitudinal UK Millennium Cohort Study is presented.