Adapting survey design based on respondent profiles and questionnaire profiles

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To date, many statistical institutes are considering survey designs that combine the web survey mode with the telephone, paper and face-to-face survey modes. Partly this is because of cost reasons and partly this is to accommodate preferences that persons may have in responding to surveys and/or in answering survey questionnaires. If the main motive is costs, then optimal means comparable to traditional designs. If the main motive is survey enjoyment and survey quality, then optimal means as close as possible to a true value or to an equivalent stimulus. The two motives meet each other in mode-specific coverage bias, mode-specific nonresponse bias and mode-specific measurement bias. Of the three types of effects, coverage, nonresponse and measurement, the latter is usually the hardest to estimate; measurement effects are conditional on the other two effects and in most cases external validation data is missing. An additional complexity is the multidimensionality of a survey questionnaire; questionnaires contain many survey items that are affected to different extents by the choice of survey mode. Since a (mixed-mode) survey design applies to all items in the questionnaire, it is often impossible to choose a design that is optimal for all items. It is this multidimensionality that the paper is about. While surveys may differ in topics, it is the interplay between the characteristics of the questionnaire, and the items contained in it, and the characteristics of the respondent that determine the occurrence and size of the measurement effects. We call these questionnaire profiles and respondent profiles. In the paper, we discuss two questions: Can we construct and measure questionnaire and respondent profiles using registry data and paradata, and can we employ such profiles in adaptive survey design. For this purpose a large scale experiment was designed that combines survey data from the LISS panel, survey data from Statistics Netherlands, validation data from Dutch government registries and a rich set of paradata observations