Evaluation of Coordination Methods for Simple and Stratified Samples

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- Control of co-ordination (positive/negative/rotation rate)

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- The control of the overlap and the control of the conditional sampling design are antonymic

Existing methods

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- Other techniques

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- At wave 2, begin by a pre-drawing of stratified samples independently of the sample of wave 1.
- Consider all the possible intersections of the strata of the first and the second wave.
- In the midst of each of these intersections, substitute as many units drawn at wave 2 that are not selected at wave 1 by units drawn at wave 1 as possible that were not selected at wave 2.

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- Within the two subsets of selected and unselected units, the permuted PRN's order must remain unchanged.

Dutch method

- The RBC-groups are basic strata that are defined once for all. The RBC-groups cannot change with time, and all the strata for all the waves must be constructed by joining RBC-groups.
- The use of a measure of burden. The burden of each survey is measured by a positive coefficient. This coefficient can be proportional to the time needed to complete the form, or can simply be equal to 1. For each unit, a measure of burden is computed that is equal to the total of the burden coefficient for all the samples in which this unit is included.

Rivière method

- the use of PRN that are allocated to each statistical unit,
- the use of a measure of burden, that can be the number of times that a unit has already been selected for all the waves with which one wants to co-ordinate,
- the use of microstrata that are constructed at each wave by intersecting all the strata of the waves with which one wants to co-ordinate,
- the permutation of the PRN's in function of the measure of burden within the microstrata in such a way that the units with the smallest measures of burden have the smallest random numbers.

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- proof

Properties

	K & S	Dutch	C & H	Rivière
Allow change of strata	X		X	X
Use measures of burden		X		X
More than two waves		X	X	X
Allow pos. or neg. co-ordination	X	X		X

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- It is maybe not possible to provide a good co-ordination with old surveys.
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- An arbitration must be done between the quality of coordination and the conditional sampling design.
- New methods are in development.