The Total Survey Error Paradigm and Comparison Error: A Component-Level Evaluation

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Figure 1: TSE
Figure 2: TSE and Multiple Surveys
Uses of TSE in Comparative Perspective

The TSE paradigm is a valuable approach for comparative studies for several reasons.

First, it is a blueprint for designing studies. Each component of error can be considered with the object of minimizing comparison error.

Second, it is a guide for evaluating error after the surveys have been conducted. One can go through each component and assess the level and comparability of the error structures.

Third, it can set a methodological research agenda for study error and for the design of experiments and other studies to fulfill that agenda.

Fourth, it goes beyond examining the separate components of error and provides a framework for the combining of the individual error components into their overall sum.

Fifth, by considering error as an interaction across surveys, it establishes the basis for a statistical model for the handling of error across surveys.
Figure 3: TSE
Approaches to Minimizing Comparison Error

- Do it exactly the same way (SW)
- Do it in an equivalent way (EW)
- Do it a different way (DW)
- Combinations (C)
Sampling (EW)

As Kish (1994, p. 173) notes, “Sample designs may be chosen flexibly and there is no need for similarity of sample designs. Flexibility of choice is particularly advisable for multinational comparisons because the sampling resources differ greatly between countries. All this flexibility assumes probability selection methods: known probabilities of selection for all population elements.”

<table>
<thead>
<tr>
<th>Population Register</th>
<th>Design Effect</th>
<th>Aux. Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABS/Multi-stage area probability sample</td>
<td>Moderate+</td>
<td>Area-level</td>
</tr>
<tr>
<td>Random Route/Walk</td>
<td>Moderate+</td>
<td>Uncertain</td>
</tr>
<tr>
<td>Low</td>
<td>Person-level</td>
<td></td>
</tr>
</tbody>
</table>
Interview (Validation/Verification) (EW-SW-C)

1. Verification Reinterview
2. Allensbach Trick Question
3. Allensbach Handwriting Comparison
4. Field Supervision with Team of Interviewers
5. CAPI Time Stamps (Length/Proximity)
6. CARI
7. GPS Readings
8. Cross Checking Against Databases
9. Duplication Analysis
10. Other Data Analysis Techniques
Data Entry

**DW** CAPI vs. PAPI – different data entry => different error structures

  CAPI - Skip driven, but not data entry checks, comment capture field
  PAPI - Manual following of skips, need to data enter from hardcopy, manual entry of comments in margins

**SW** Both PAPI - double data entry and reconciliation/two pass verification
Non-Response

**SW** – AAPOR/WAPOR Standard Definitions; common case management system; callback rules

**EW** - But the survey climate is likely to be different, the effectiveness of different persuasion messages variable, optimal contact days and times will differ, etc. So procedures to contact and persuade sampled persons to become respondents will vary across countries to achieve the goals of increasing the response rate and reducing non-response bias.

Question Wording

**SW** – Could employ same translation procedures (e.g. committee translation, rules for written/full translations vs. ad hoc interviewer translations, minority languages to be covered, etc.

**EW** – Any translation by its very nature is not the same and can only hope to be equivalent.
Data Collector (DW)

House Effects – Data Collector and country usually totally overlap and are indistinguishable analytically