



**INSTITUTE FOR SOCIAL RESEARCH  
SURVEY RESEARCH CENTER**

UNIVERSITY OF MICHIGAN

**Total Survey Error and Survey Quality in  
Multinational, Multiregional, and Multicultural  
(3MC) Surveys**

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# Presentation Outline

- TSE model for 3MC surveys
- Fitness for intended use
- Survey process quality – example quality profiles
- Outstanding challenges

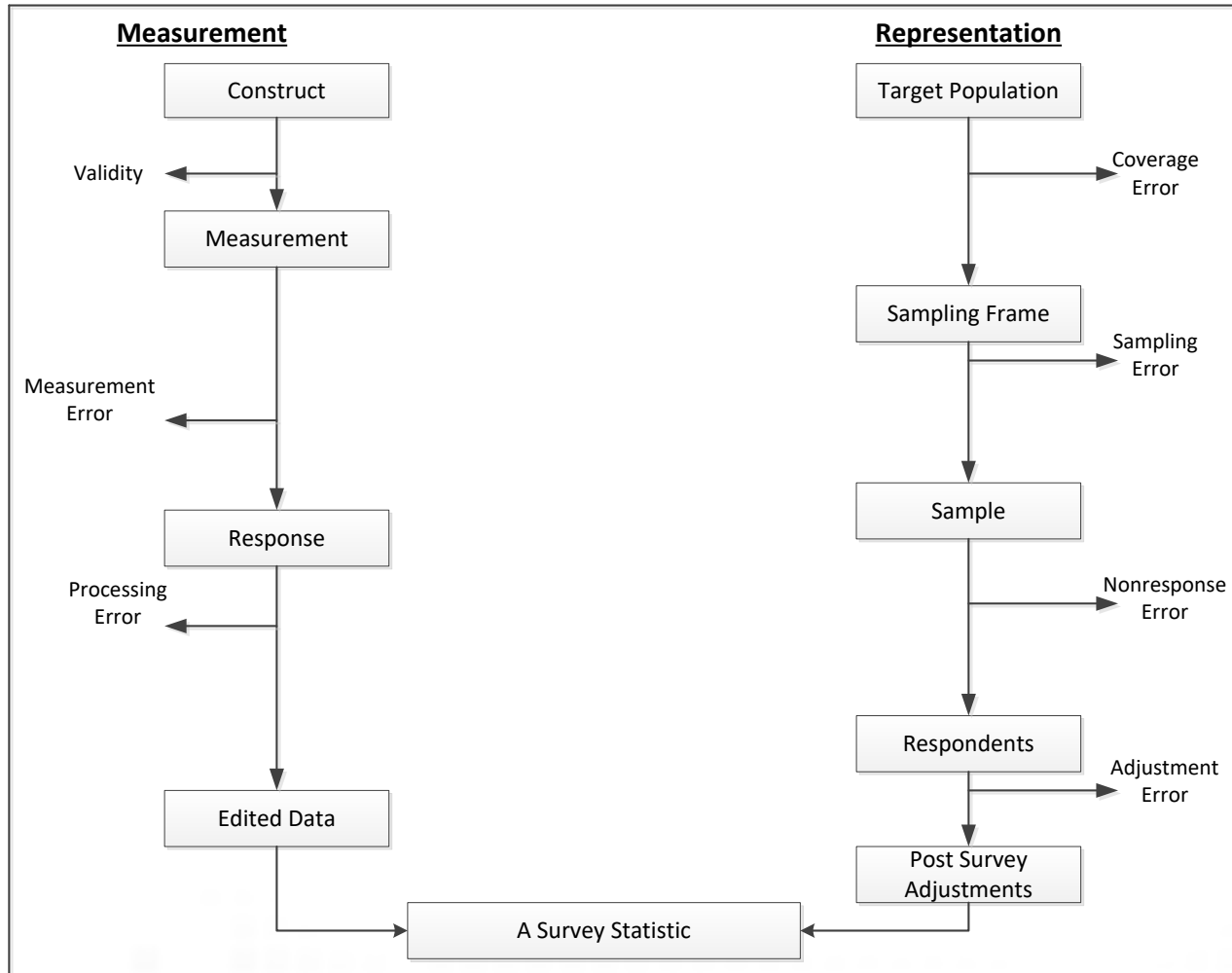
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# TSE in a Comparative Context

1. The scope, scale, and number of 3MC surveys continues to grow
2. Purpose is to collect data from two or more populations to enable comparison
3. TSE framework must be elaborated for these contexts – comparison error (Smith, 2011; forthcoming)
4. Usually involves balance between standardization and localization followed by ongoing monitoring, and documentation

# Traditional Total Survey Error (Groves et al., 2009)



# Elaborated TSE Model

- Identifies sources of error for each error component (e.g., coverage error, sampling error, measurement error, etc.)
- Adds detail on measurement (Tourangeau et al., 2000)
- Acknowledges procedures and operations more often encountered in 3MC – e.g., translation
- Integrates input/output harmonization
- Integrates survey lifecycle: design; implementation and evaluation
- Other factors: cost, burden, professionalism, ethical requirements, other constraints

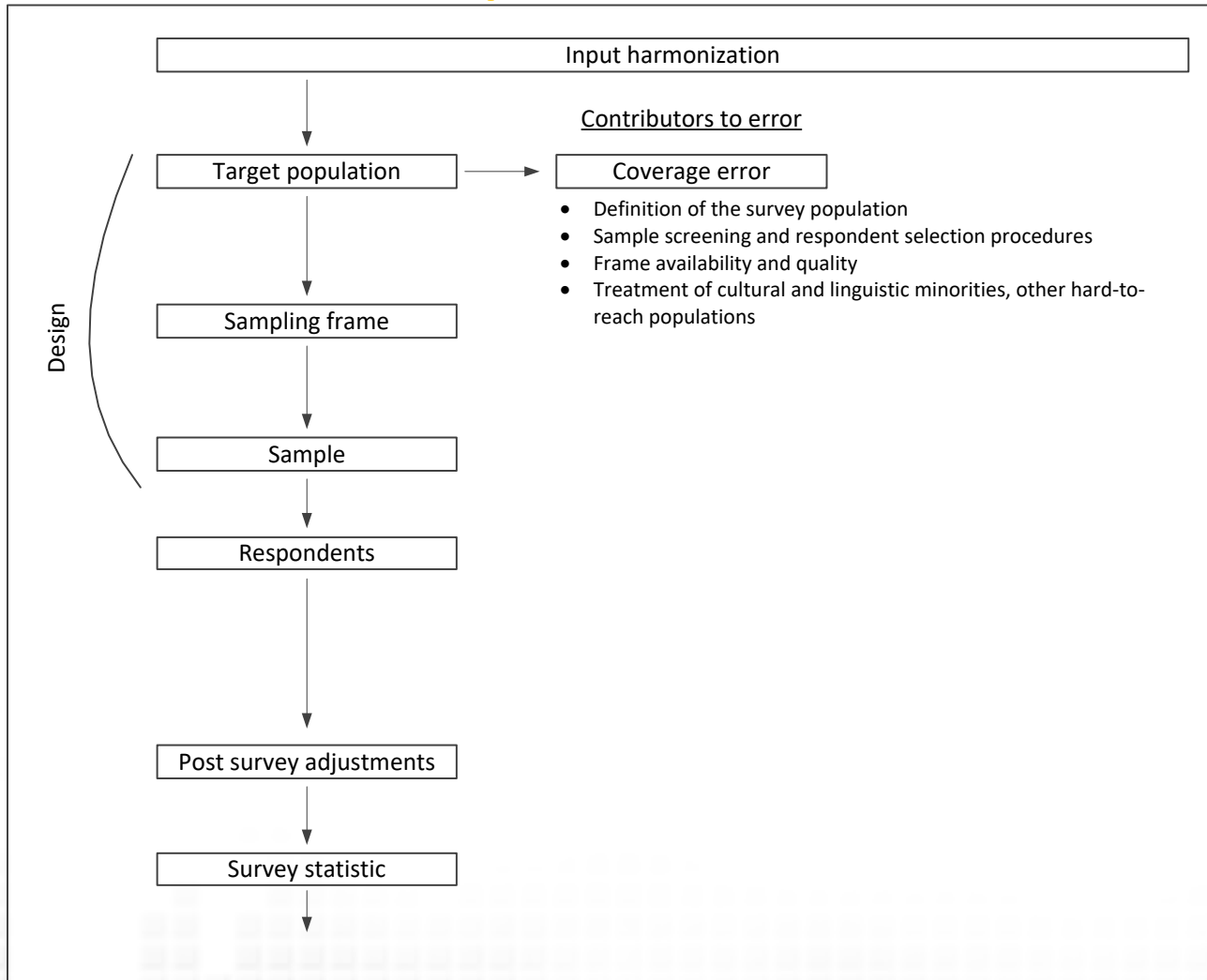
# Elaborated TSE Model, cont'd

Some general points:

- The framework is statistic specific
- Error sources may interact
- Bias/Variance
- Not all error sources can be quantified



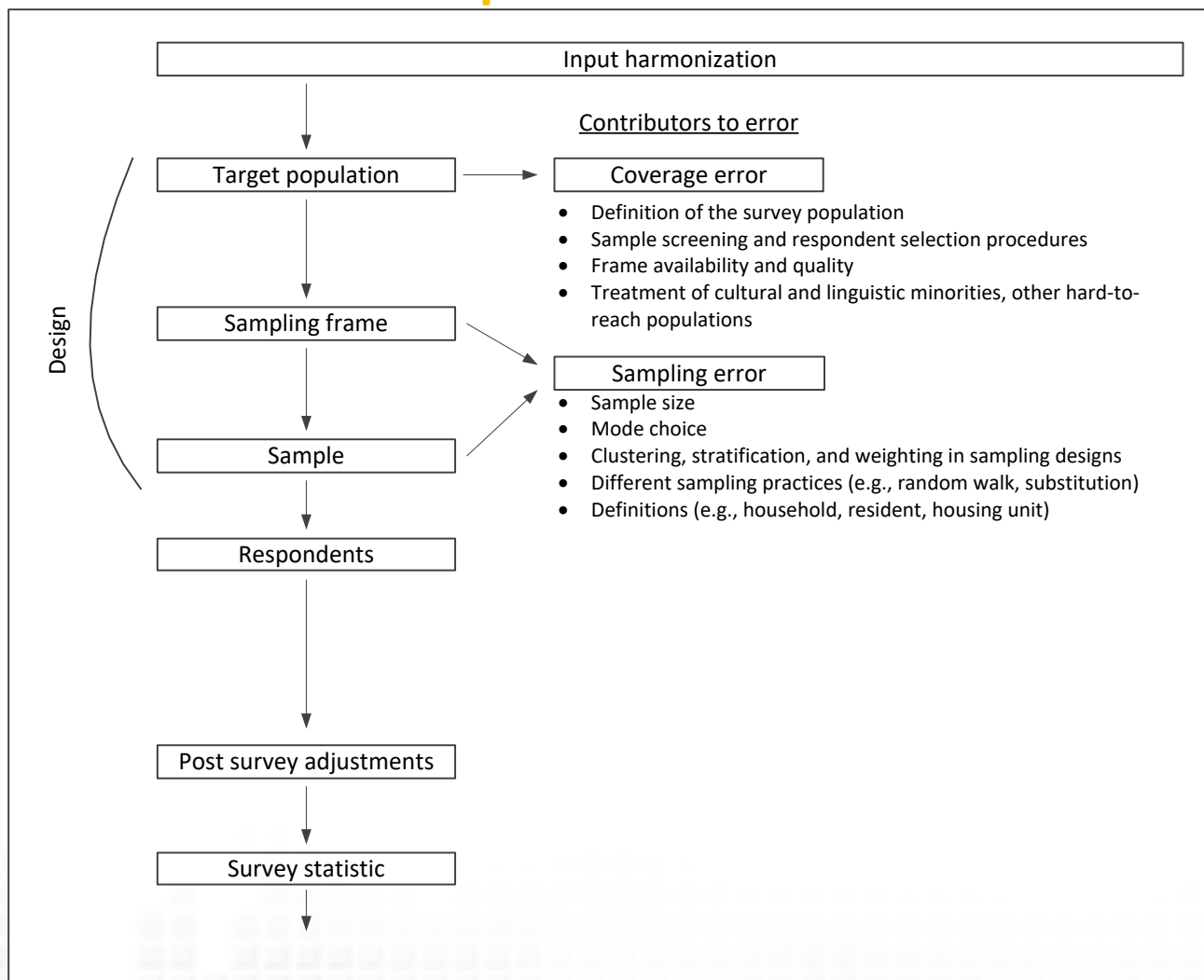
# TSE Representation in a Comparative Context



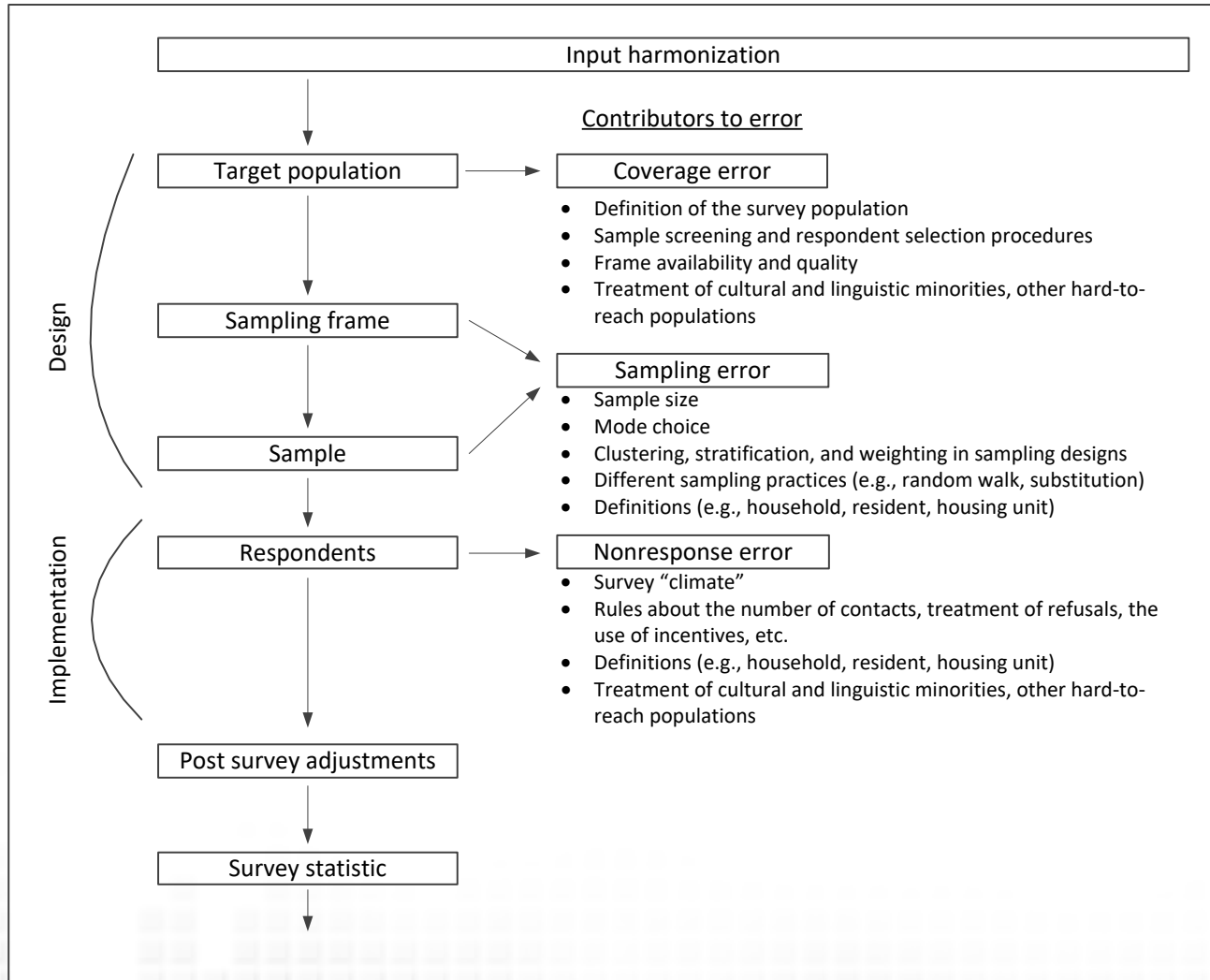




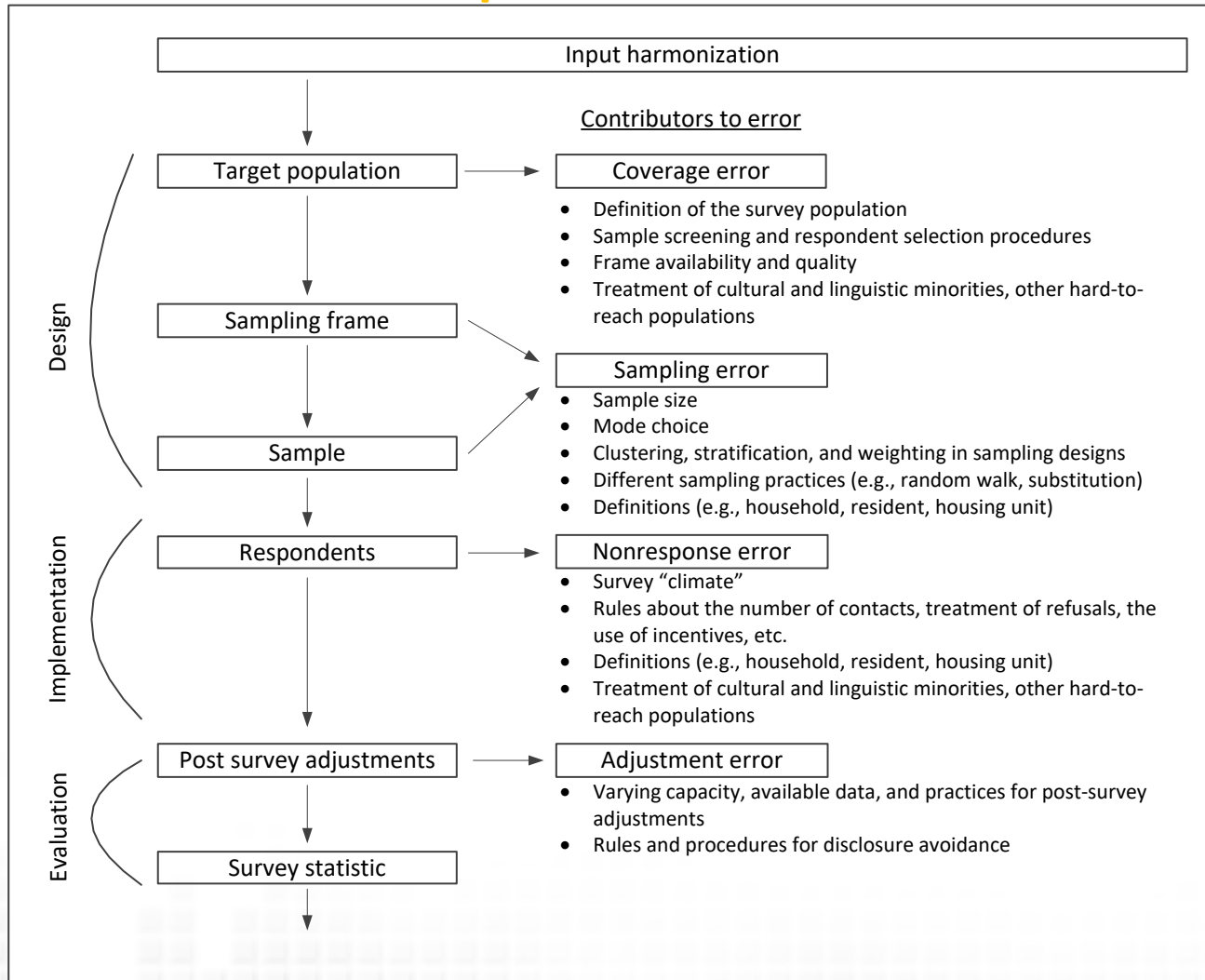
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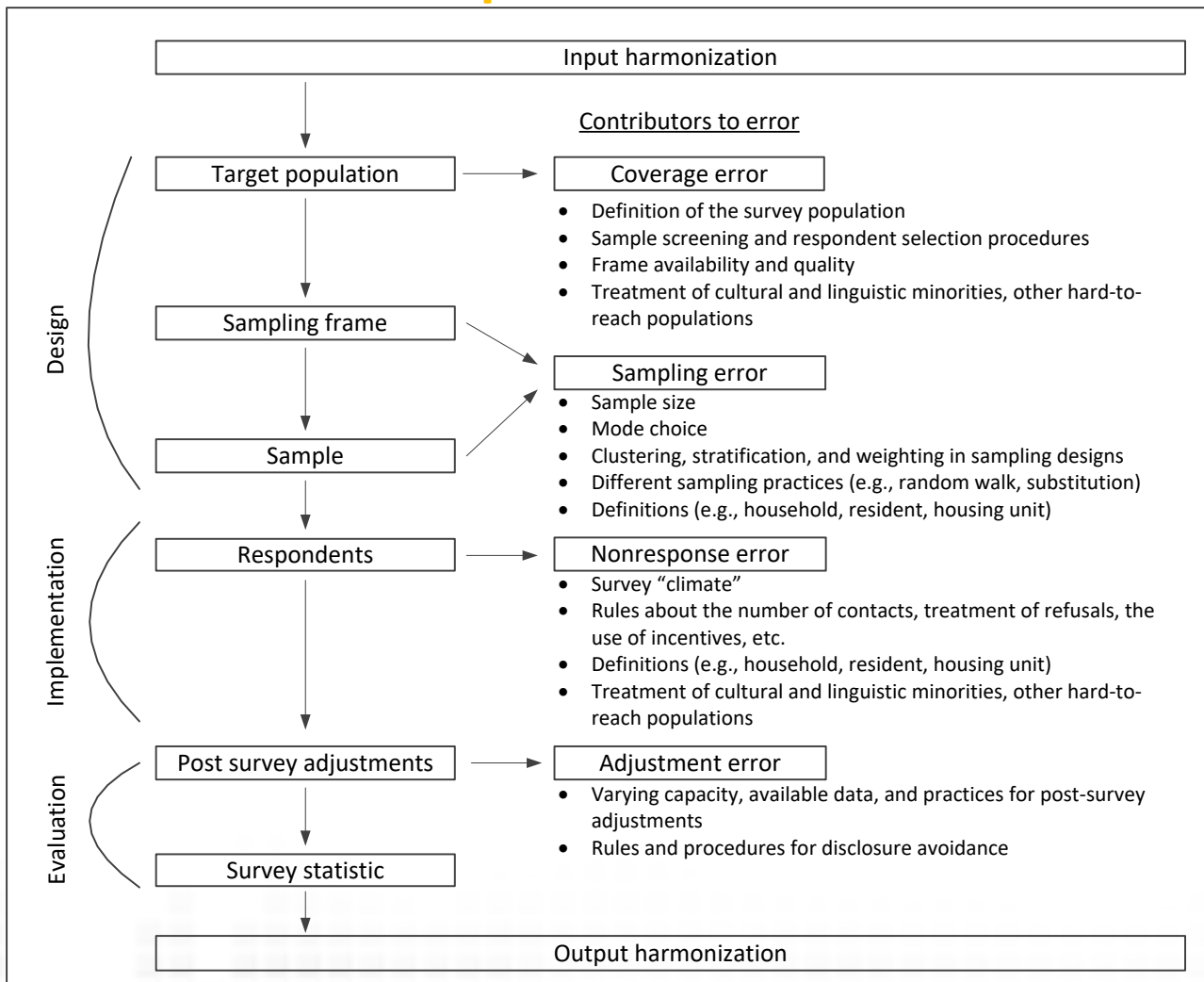
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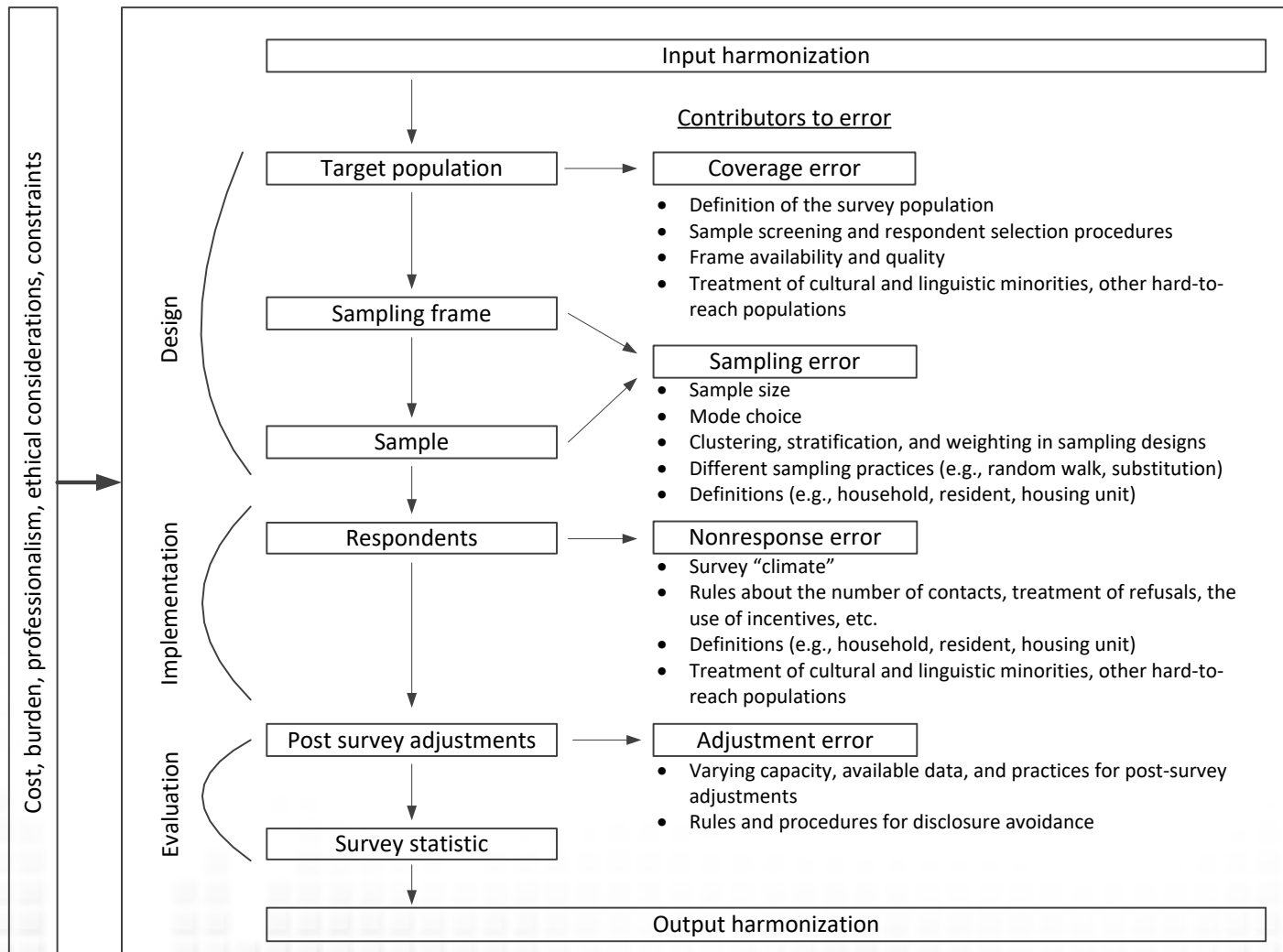


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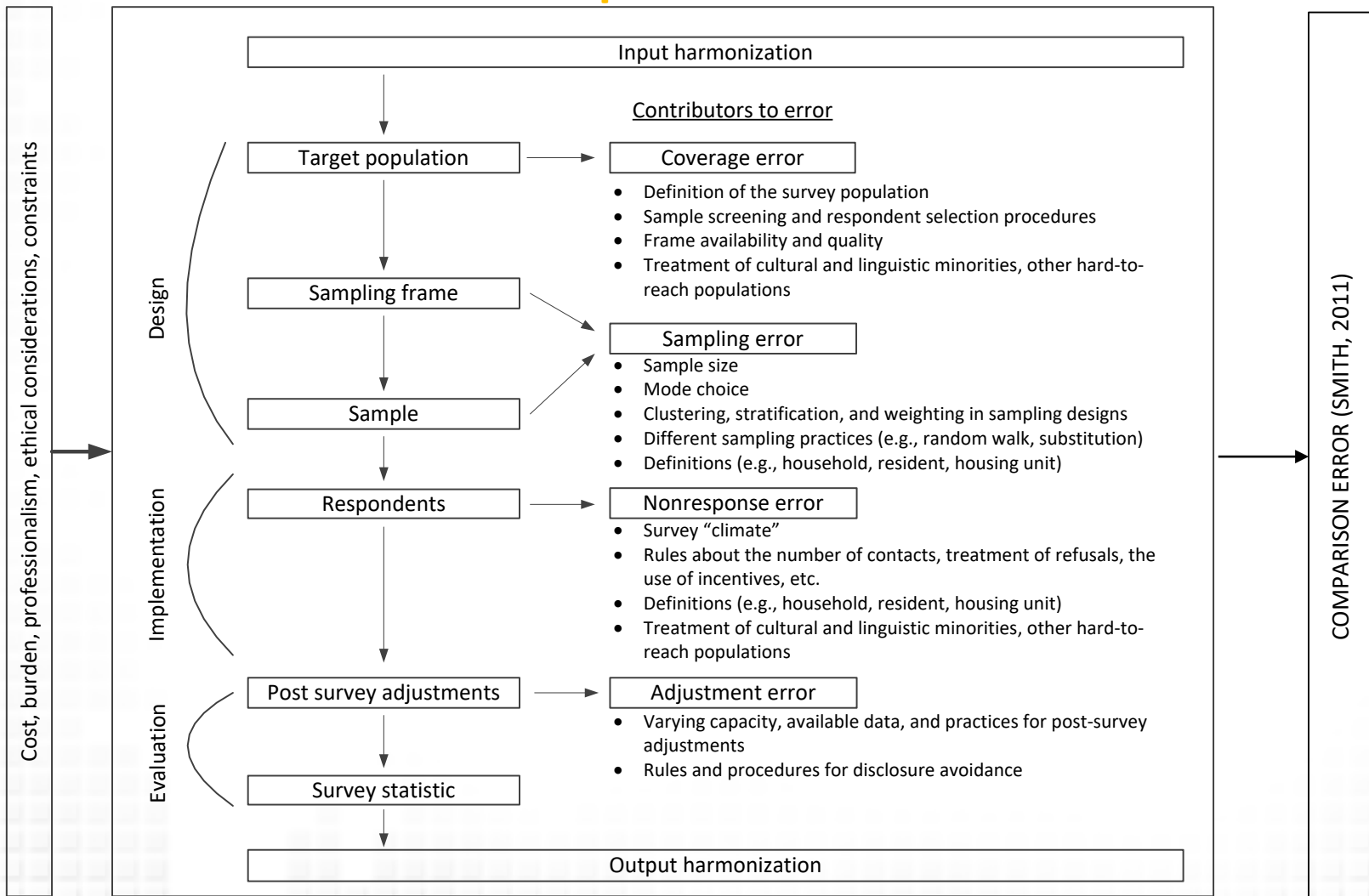




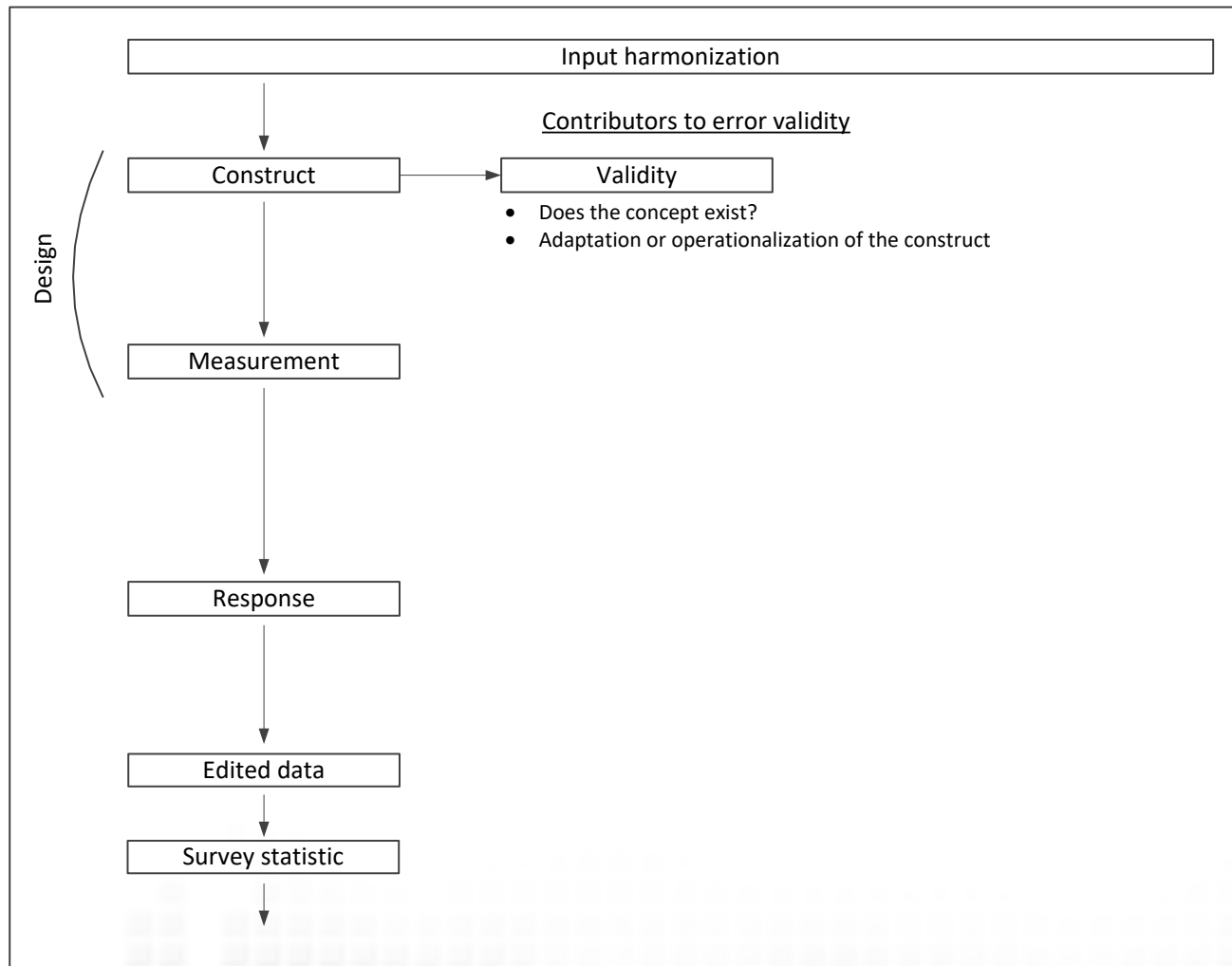
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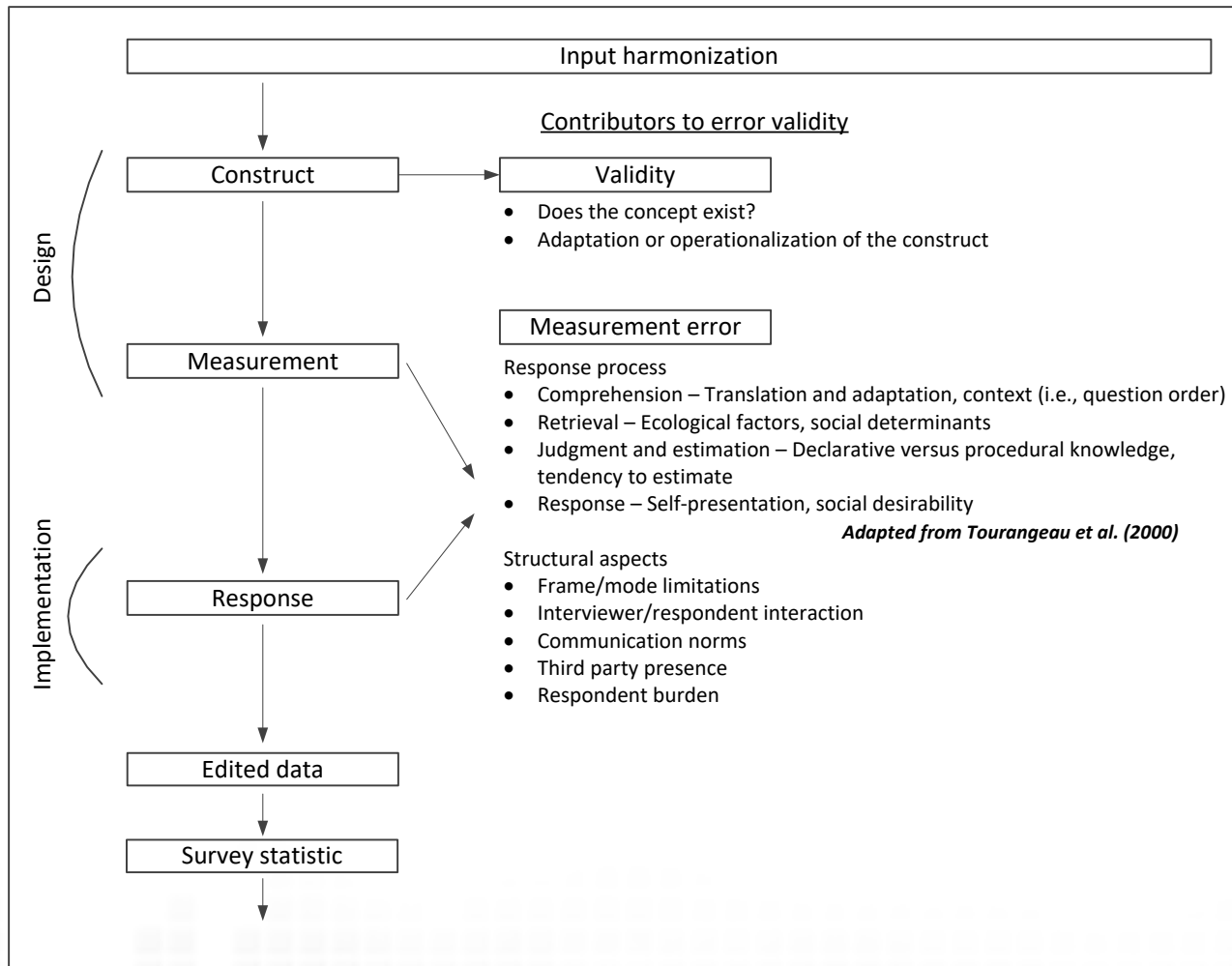
# TSE Representation in a Comparative Context



# TSE Measurement in a Comparative Context



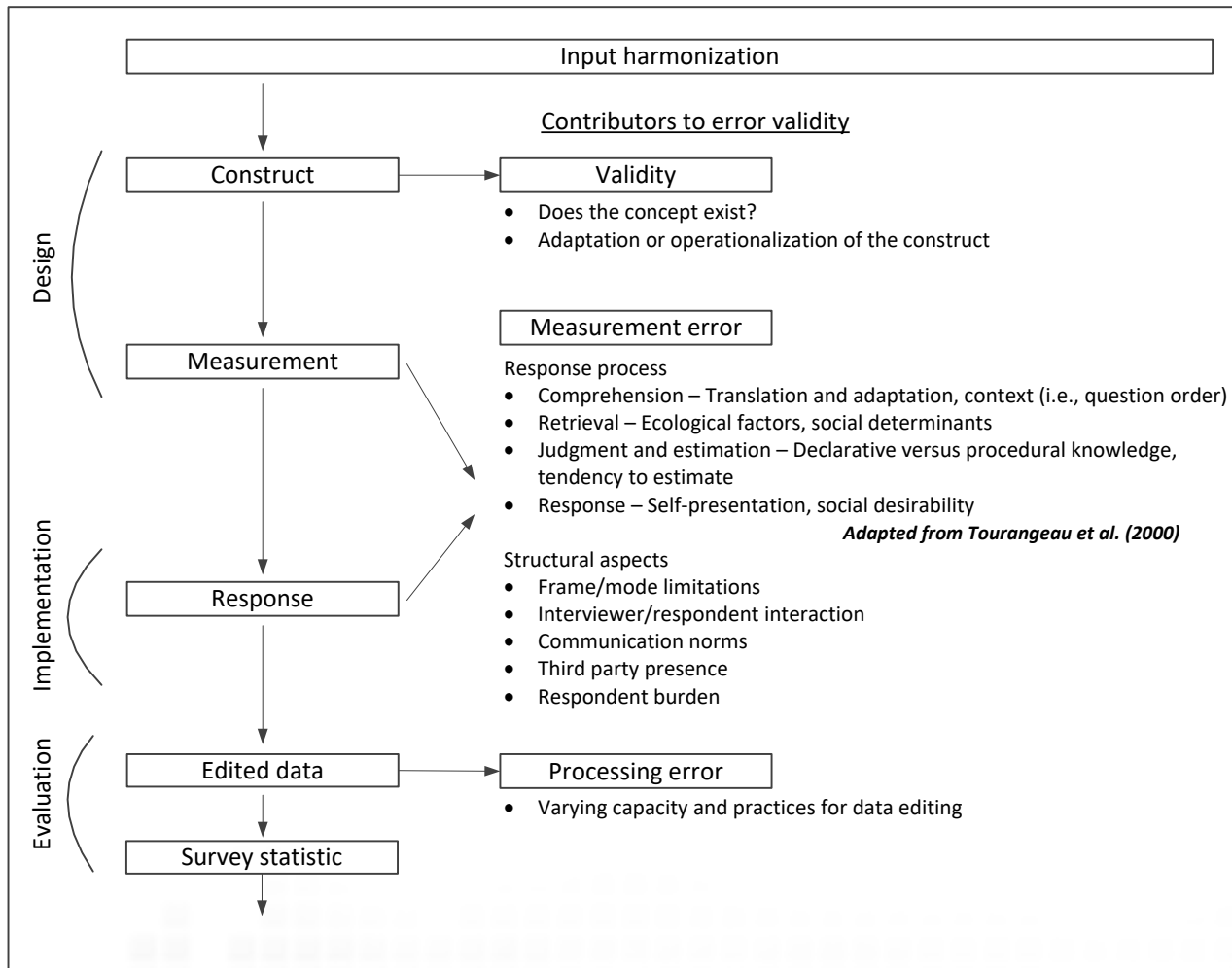
# TSE Measurement in a Comparative Context



*Adapted from Groves et al. (2009)*



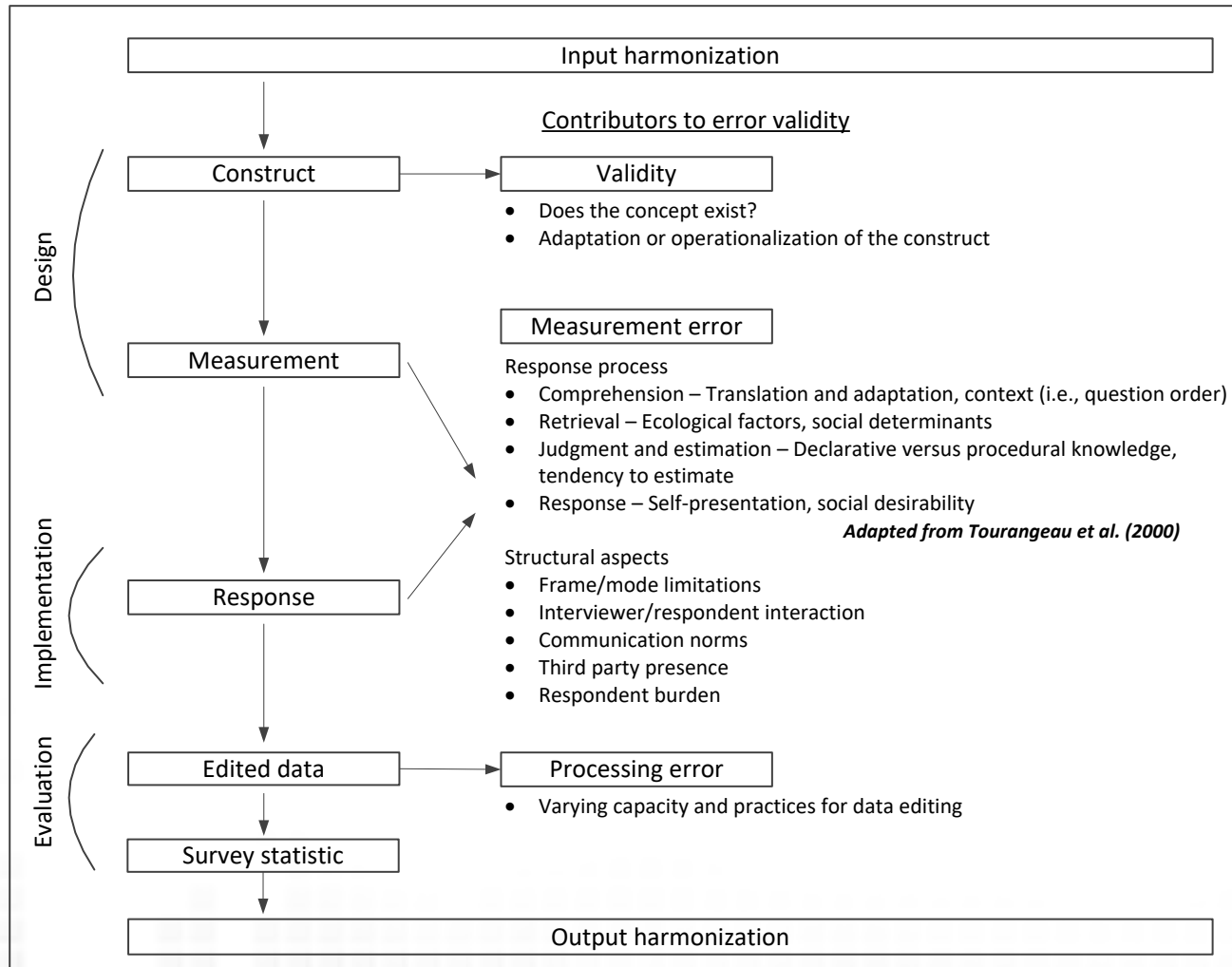
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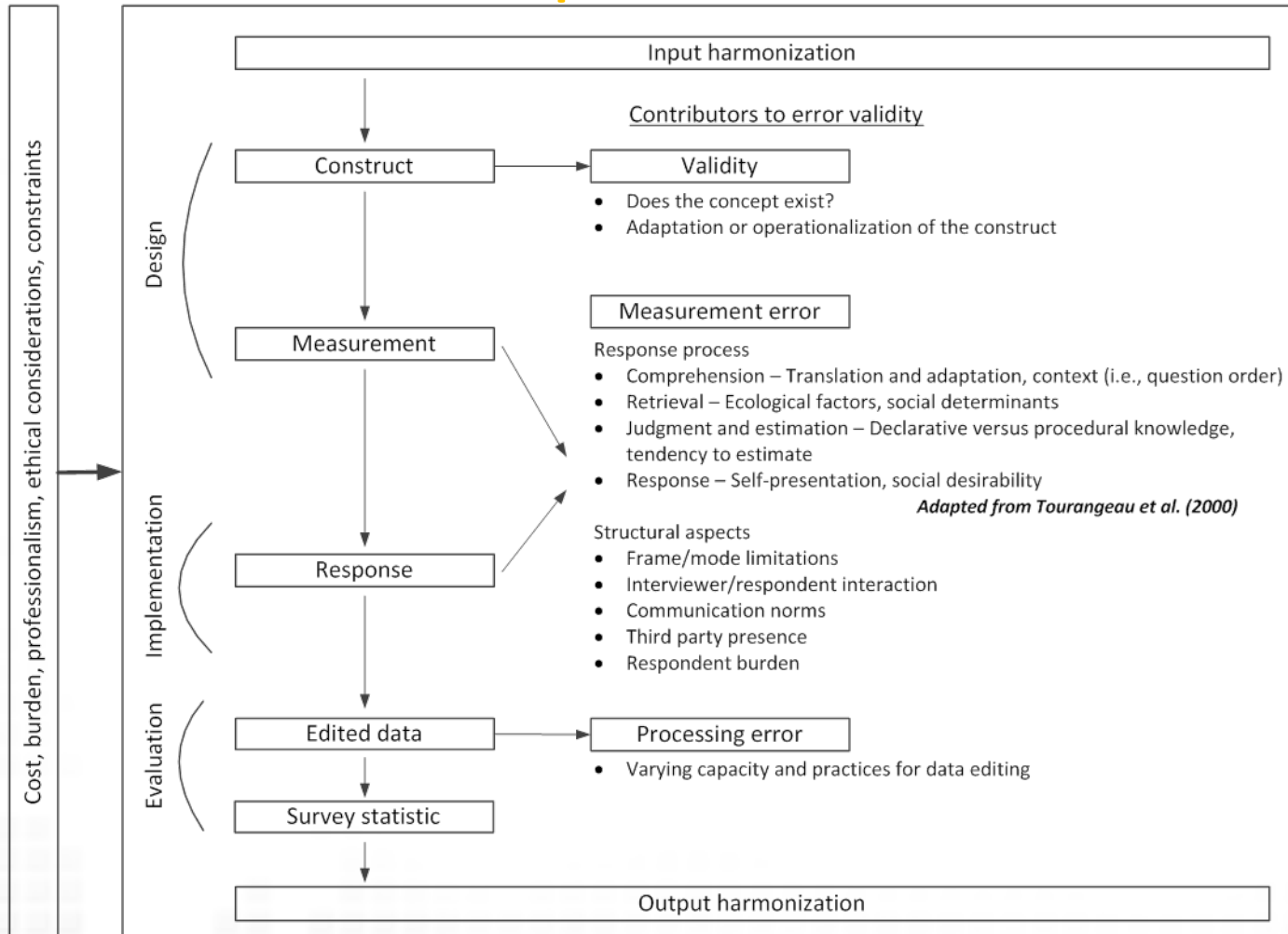


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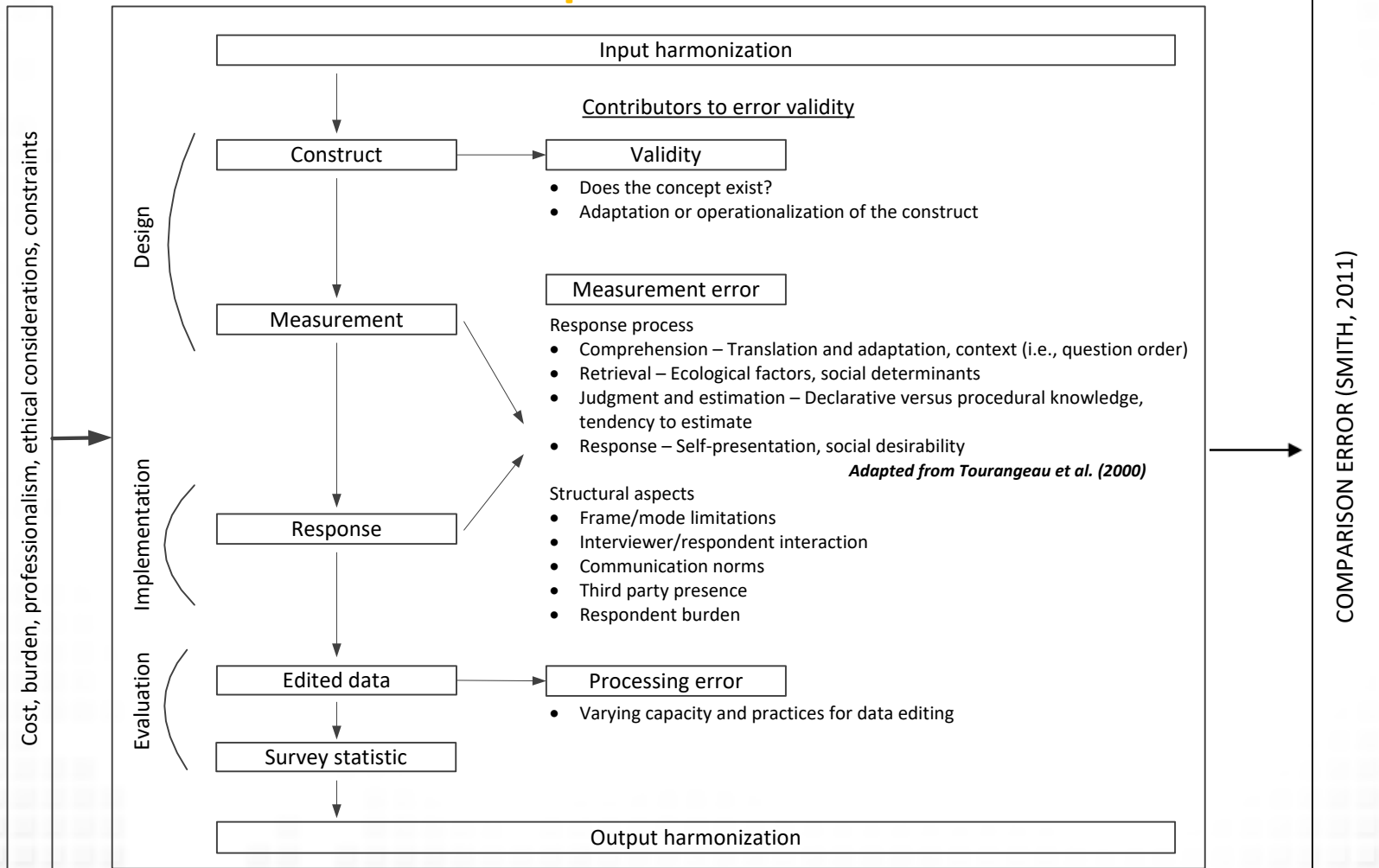
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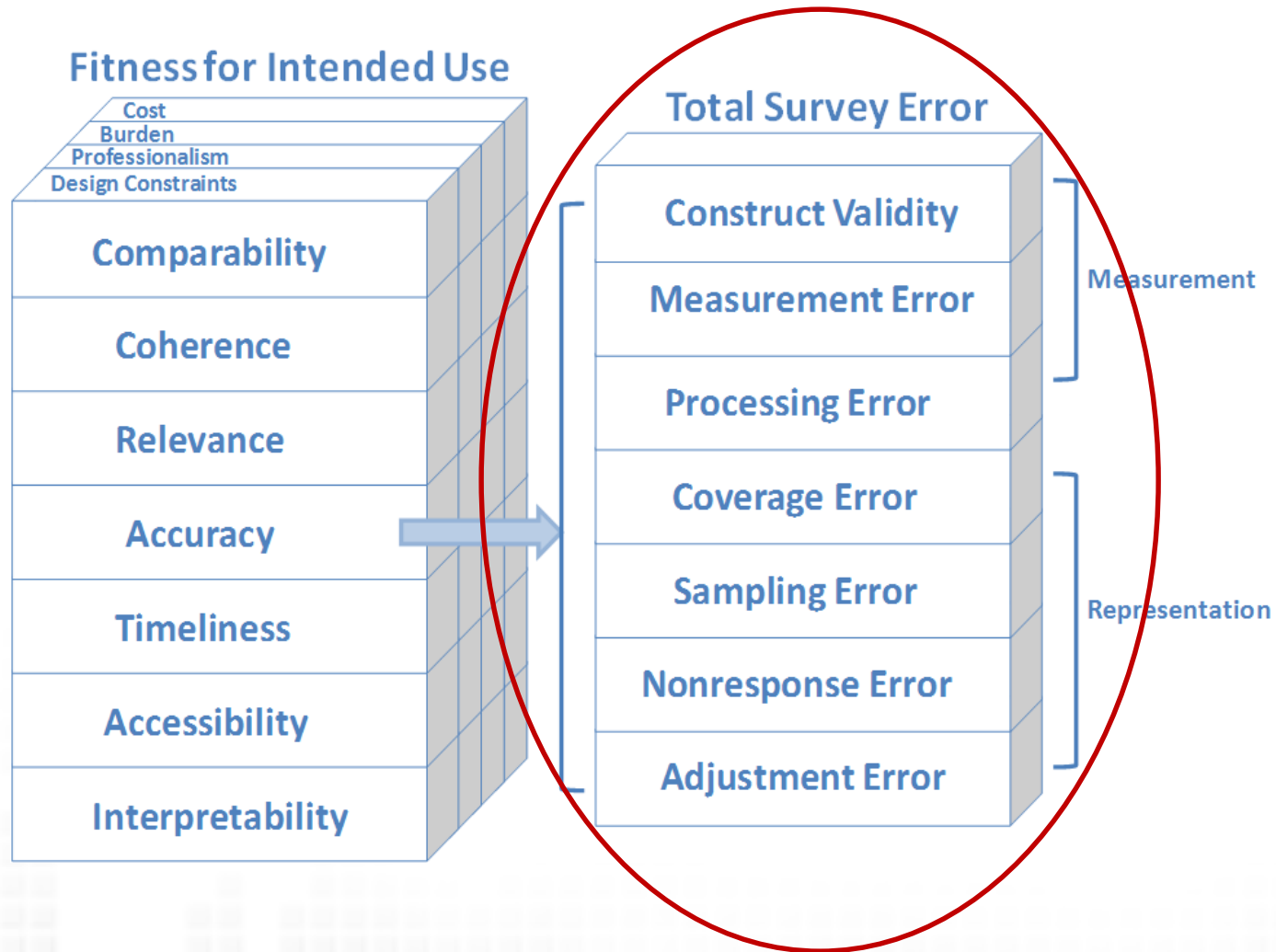
# TSE Measurement in a Comparative Context



*Adapted from Groves et al. (2009)*



# Fitness for Intended Use and TSE



# Fitness for Intended Use

Quality Dimension	Description
<b>Comparability</b>	Are the data from different countries or cultures comparable to each other?
<b>Coherence</b>	Do the data form a coherent body of information that can be rearranged or combined with other data?
<b>Relevance</b>	Do the data meet the requirements of the client and users?
<b>Accuracy</b>	Are the survey estimates close to the true values of the population parameters they are meant to measure? (i.e., TSE)

# Fitness for Intended Use

Quality Dimension	Description
<b>Timeliness and punctuality</b>	How much time has elapsed between the end of the data collection and when the data are available for analysis? Are the data available when expected, based on client specifications?
<b>Accessibility</b>	Can users easily obtain and analyze the data?
<b>Interpretability</b>	Do the data make sense in terms of users' hypotheses? Are supplementary data available to facilitate analysis: e.g., data that describe the major characteristics and structure of the data ( <u>metadata</u> ) as well as data about the survey processes ( <u>paradata and other auxiliary data</u> )?

# Survey Process Quality

- The **product** – expected quality of the deliverables
- The **process** – the quality of the process that generates the product
- The **organization** – the choice of survey organization and how it manages for quality



# Survey Process Quality

- Requires the definition of quality standards and a standardized set of:
  - Study metadata
  - Question metadata
  - Process paradata
- Quality assurance and quality control required to assess quality throughout the lifecycle
- Results in a quality profile or report that documents all that is known about the quality of a survey
- Can form the basis for improvement

# Quality Profile - example

## Cross-cultural Survey Guidelines

<http://ccsg.isr.umich.edu/>

## Survey Quality, Appendix B

- 1) Quality Planning and Assurance – Inputs and Activities
- 2) Quality Monitoring and Control – Measures and Reports
- 3) Elements of Quality Profile

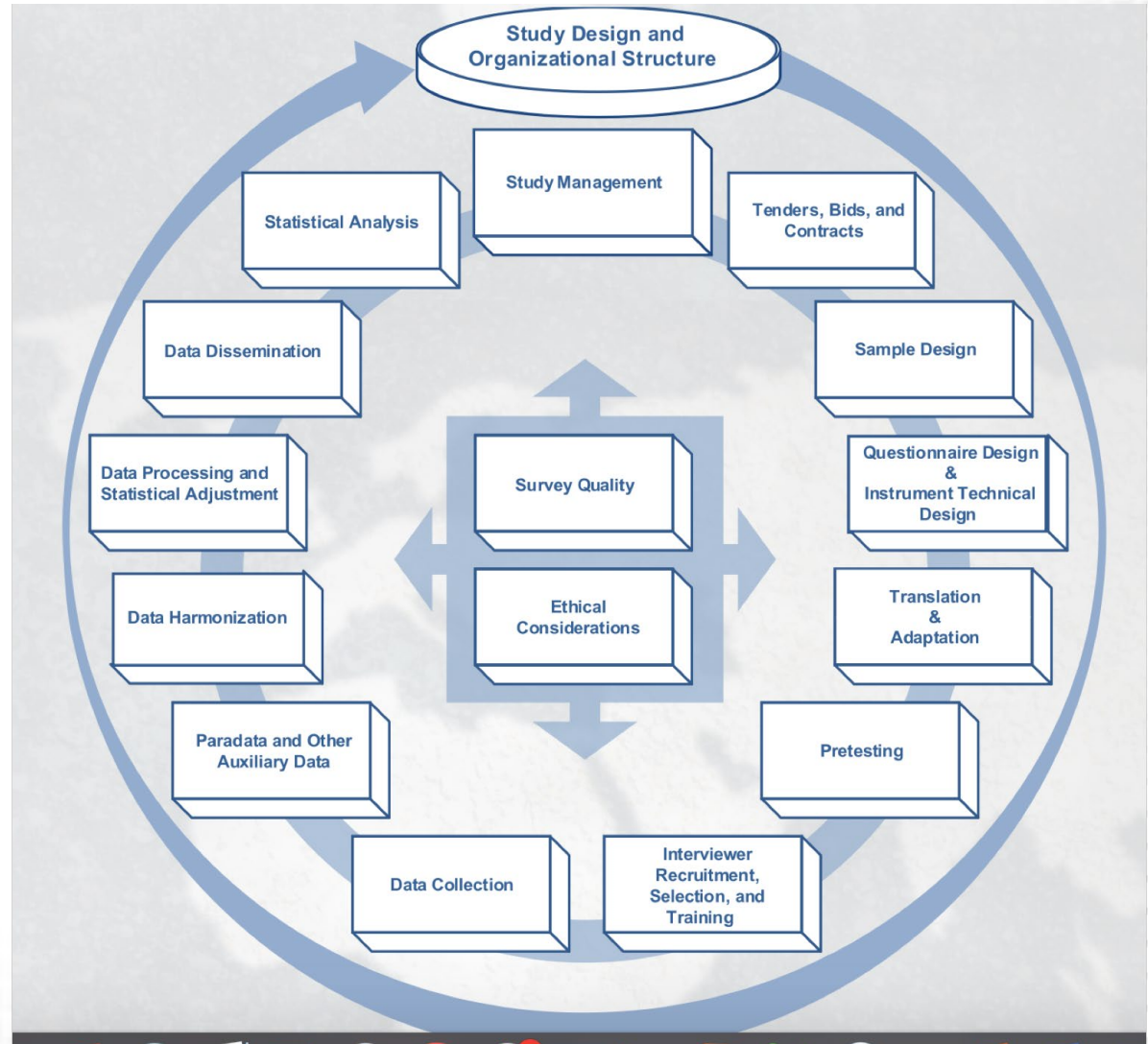


Table 2: Measures from the Total Quality Management conceptual framework on non-response errors

	Concepts	Measures
Process evaluation	Training and preparation	<ul style="list-style-type: none"> <li>Length &amp; contents of training</li> </ul>
	Evaluation of contact procedure	<ul style="list-style-type: none"> <li>Fieldwork period</li> <li>Number of contact attempts and completed sample units by fieldwork weeks and response status</li> <li>Sampling frame and proportion of ineligibles</li> <li>Respondent recruitment methods</li> <li>Interviewer workload</li> <li>Interviewer performances on response/non-response outcomes</li> </ul>
	Follow-up and feedback	<ul style="list-style-type: none"> <li>Quality control back-checks on response and non-response</li> </ul>
Output evaluation	Evaluation of non-response errors	<ul style="list-style-type: none"> <li>Response and non-response rates</li> <li>Studying different types of non-response through interviewer collected observable data</li> </ul>

European Social Survey, Round 5 - Matsuo and Looseveldt, 2013

**Table 3: Country characteristics concerning administration and survey design factors**

	Data collector	Type of sampling frame	Length of briefing	Use of instruction notes	Training on refusal conversion	Training on contact form	Training on observable data	Fieldwork duration (days)
BE	Significant GfK	Individual	Half to full day	Y	Y	Y	Y with photos	207
BG	ASA	Address	Half to full day	Y	Y	Y	Y but no materials	101
CH	MIS Trend	Individual	Half to full day	N	Y	Y	Y with photos	172
CY	European University Cyprus	Household	Half to full day	Y	Y	Y	Y with other materials	171
CZ	Factum Invenio, s.r.o.	Address	Less than half day	Y	Y	Y	Y with photos	47
DE	TNS Infratest Sozialforschung GmbH	Individual	No interview	Y	N	Y	Y with photos	141
DK	SFI-survey	Individual	Half to full day	Y	Y	Y	Y with photos	133

European Social Survey, Round 5 - Matsuo and Looseveldt, 2013

# Challenges

- Currently practiced by some surveys — e.g. ESS, SHARE — but not many others
- Burdensome to scale up for large multinational studies
- Requires:
  - Detailed design quality standards and specifications
  - Quality indicators are imperfect and evolving
  - Ongoing monitoring for adherence
  - Substantial human and financial resources and capacity

# Challenges

- Solid central infrastructure with expert consultation as needed to assist local teams
- Upfront investment and planning
- Possible tradeoff - Fewer countries?
- Will data users actually make use of the information?
- How can it be made easier for users to absorb and incorporate important methodological considerations/limitations?



# Thank you!