The Total Survey Error Paradigm and Challenges to its Application in the Arab World

Kathrin Thomas[1]   Michael Robbins[1,2]

[1] Princeton University

[2] University of Michigan

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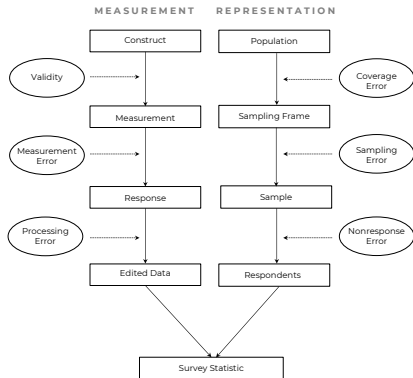
الباروميتر العربي
ARAB BAROMETER

Where to begin...

"Honest discussions about the extent, sources of, an solutions for quality issues [...] are needed. Regionally specific issues [...] raise concerns about social desirability and underscore the need for methodological research. Technological advances [...] offer possibilities for real-time monitoring and [...] research [...]. Yet apart from a handful of studies on interviewer effects, anchoring vignettes, and a few other topics, **almost no research systematically assesses the impact of the survey methods used on data quality in the Arab world**."

(Benstead, 2018)

Puzzle

- Is the Arab survey world just a few decades behind?
    - Surveys and polling fairly new: beginning in 1980s, but real interest since the Arab uprising 2011 (Benstead, 2018)
    - While core principles of Total Survey Error (TSE) are followed, holistic concept not (yet) recognised
    - Survey practice in the Arab world *may* also make application of TSE more difficult
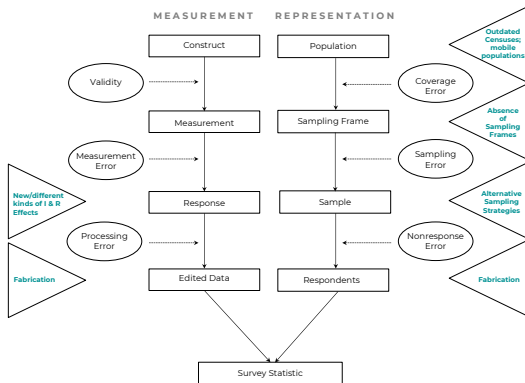
The TSE

(Groves & Lyberg, 2010)

Representation

- Potentially poor coverage due to past or ongoing security treats
- Absence of transparent sampling frames and/or outdated censuses
- Limited attention given to nonresponse and incomplete files
- Data fabrication, i.e, "*Intentional* departure from [...] sampling procedures by any member of the survey project" (Robbins, 2018)
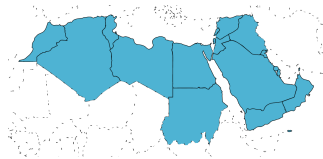
Measurement

- Translation: Arabic $\neq$ Arabic $\neq$ Arabic
- Interviewer effects on response or item nonresponse (e.g., Benstead and Maluche, 2014; Benstead, 2014a, 2014b; Blaydes and Gillum, 2013; Koker, 2009)
- Third party presence (Benstead, 2014)
- Data fabrication, i.e., *intentionally* deviating from instructions; *intentionally* misrecording the answer given by a respondent; or *intentionally* creating data (Robbins, 2018)

The TSE…again

MEASUREMENT

Construct → Measurement → Response → Edited Data

Validity, Measurement Error, Processing Error

New/different kinds of I & R Effects

Fabrication

REPRESENTATION

Population → Sampling Frame → Sample → Respondents

Coverage Error, Sampling Error, Nonresponse Error

Outdated Censuses; mobile populations

Absence of Sampling Frames

Alternative Sampling Strategies

Fabrication

Survey Statistic

(Groves & Lyberg, 2010)

Data and Methods

- Arab Barometer III and IV
- Representation: Contact attempts, data fabrication
- Measurement: INR and response bias due to interviewers and third party presence
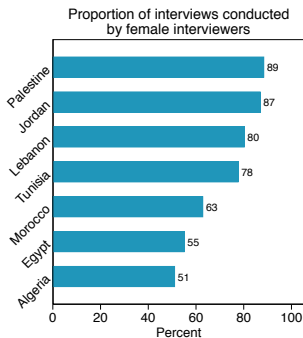
Interviewer Gender

Example Jordan

- Interviewer gender not included in the AB IV, but interviewer names available…in Arabic
- Three coders (2 Arabic speakers, 1 non-Arabic speaker) coded names into gender
  - κ varied from 0.37 to 0.70
  - Non-Arabic speaker seemed to be least reliable; but also the Arabic speakers had discrepancies
  - Major challenges unisex names and context

Interviewer Gender

AB IV

- Interviewers in the Arab region predominantly female (AB IV: 72 percent)

Proportion of interviews conducted
by female interviewers

Country	Percent
Palestine	89
Jordan	87
Lebanon	80
Tunisia	78
Morocco	63
Egypt	55
Algeria	51

Percent

Source: Arab Barometer Wave IV

Interviewer Religiosity
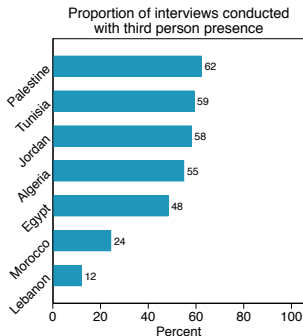
- Approx. three quarters of the female interviewers wore a hijab during the survey interview (77.0 percent)

Country	Percent
Algeria	N/A
Egypt	100
Jordan	96.3
Lebanon	28.5
Morocco	N/A
Palestine	94.2
Tunisia	29.1

Table: AB IV Proportion of Female Interviewers wearing a Hijab

Third party presence

- Almost every other interview was attended by a third person (44.6 percent)

Proportion of interviews conducted with third person presence

Country	Percent
Palestine	62
Tunisia	59
Jordan	58
Algeria	55
Egypt	48
Morocco	24
Lebanon	12

Source: Arab Barometer Wave IV

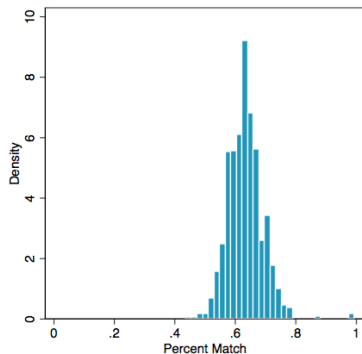# Representation: Coverage, Sampling Error, & Unit Nonresponse

- Little information about any of these aspects of the TSE
  - Coverage problematic, esp. in less stable countries
    - e.g., field report for Iraq AB III indicates that only "more than 66 percent of the population of Iraq" are represented
  - Sampling error problematic, esp. due to lack of transparent information
  - No collection/no provision of UNR files
  - Response rate largely AAPOR standard, but not for all countries
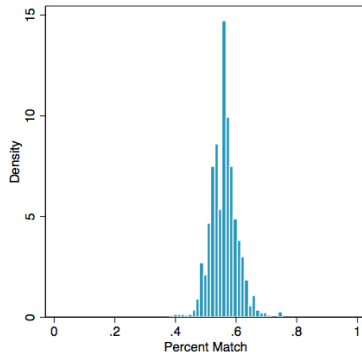   - e.g., field report for AB IV Palestine suggest 91 percent response rate (response/response+refusal)

Example Tunisia

- Up to 8 contact attempts before UNR is logged
- On average, female interviewers need approximately one fewer contact attempt to interview compared to male interviewers
- T-test reveals statistically significant difference in contact attempts across interviewer gender (t=2.7; p<0.01)

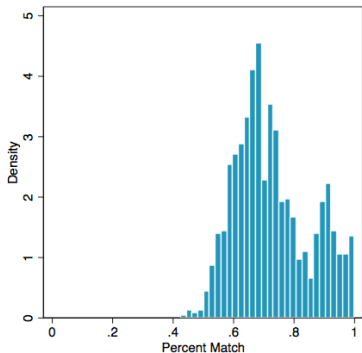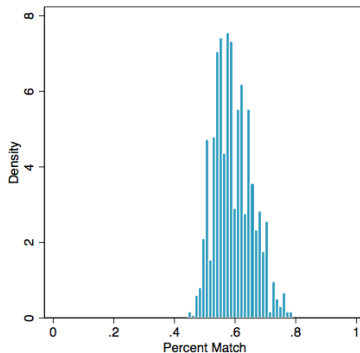Source: Arab Barometer Wave III

Source: Arab Barometer Wave IV

Source: Arab Barometer Wave III

Source: Arab Barometer Wave IV

Representation: Suspected Data Fabrication

	AB III	AB IV
100 percent match	4	0
95 percent match	161	0
90 percent match	336	4
85 percent match	565	18
Total no. of suspicious cases	1,066	22
Total no. of observations in survey	14,809	9,000

Table: Suspected Data Fabrication AB III and AB IV

Representation: Implications

- Keep more detailed records of sampling procedures and frames
- Request UNR files by contract
- Request calculation of AAPOR RR by contract
- Development of a live data checking tool that flags up suspicious cases to prevent fabrication
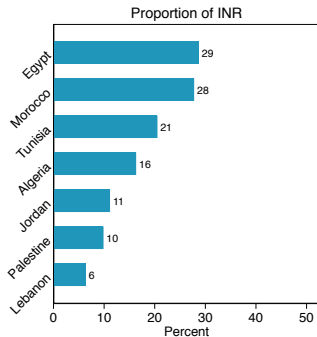
Measurement: Interview Length

Example Tunisia
- Shortest interview just over 30 minutes; longest interview almost 2 hours
- Interviews conducted by female interviewers tend to be longer
  - T-test reveals statistically significant difference in total interview length across interviewer gender (t=2.7; p<0.01)

Measurement: Item Nonresponse: Americans good people? (1)

- Overall, quite high INR (16.7 percent), substantive country variation

Proportion of INR

Country	Percent
Egypt	29
Morocco	28
Tunisia	21
Algeria	16
Jordan	11
Palestine	10
Lebanon	6

Source: Arab Barometer Wave IV

- Interviewer Gender
  - Male interviewers appear to have higher INR (χ^2=22.7; p<0.01) – all AB IV countries, but Algeria
- Third Person Presence
  - Third person presence appears to increase INR (χ^2=17.2; p<0.01) – esp. Algeria, Morocco, and Tunisia

Measurement: Interviewer Gender & Women's Rights (1)

- While female interviewers seem to evoke more agreement with the question whether women could become prime minister/president (χ^2=67.8, p<0.01) – esp. Jordan, Palestine, Tunisia...

- ....male interviewers seem to evoke more agreement when asking if men should have the final say in family decisions (χ^2=61.6, p<0.01) – all AB IV countries, except Tunisia

Measurement: Interviewer Religiosity & Women's Rights (1)

- It seems to be more likely that respondents disagree with the statement "women should be able to become prime minister/president" when the female interviewer wears a headscarf (χ^2 =23.4, p<0.01) – esp. Jordan, Palestine, Tunisia

- Respectively, wearing a hijab appears to evoke more agreement with the statement that men should have the final say in family decisions (χ^2=8.5, p<0.01) – all AB IV countries, except Tunisia

Measurement: Third Person Presence & Women's Rights (1)

- Respondents seem to be more inclined to disagree with the statement that women should be able to become prime minister/president when a third person is present (χ^2 =5.0, p<0.05) – esp. Algeria, Jordan, Morocco

- But, presence of a third person seems to lead to more agreement with the statement that men should have the final say in family decisions (χ^2=6.3, p<0.01) – esp. Algeria, Morocco, Tunisia

Measurement: Implications

- Design of a more extensive interviewer questionnaire by the end of the survey interview
- Request for provision of core information about interviewers (ID, name, gender, etc.) from the field agencies
- Interviewer questionnaire capturing similar information (sealed envelope approach) at interviewer training
- Switch to Computer Assisted Personal Interviews in (almost) all countries
- Request for more detailed field reports detailing fieldwork procedures plus relevant records

Is the Arab survey world just a few decades behind?

- Arab survey world is in transition
- Benstead (2018) proposes an extensive agenda for methodological research on the Arab world, but are we ready to walk the walk...yet
- The AB has started collecting relevant data to empirically and systematically investigate representation and measurement error
- The AB V will collect most of these data, so stay tuned...

Contact Information

Kathrin Thomas:
kathrint@princeton.edu

Michael Robbins:
mdr7@princeton.edu

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🏠 www.arabbarometer.org
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