Investigating the role of the interviewer in a face-to-face (FTF) survey in Zambia
MPSM / JPSM Brown Bag Seminar, Michigan

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Motivation for studying interviewer effects in FTF surveys in developing countries

Practical perspective

- lack of established, nationally representative data sources for policy decisions spurs ad-hoc survey data collections
- two-third of the people in developing countries were offline (ITU, 2015)
- 85% percent of surveys in developing countries are face-to-face (Lupu and Michelitch, 2018)

1 The following journals were reviewed for the period of January 2010 to October 2015: American Journal Political Science, American Political Science Review, Comparative Political Studies, Journal of Politics, Public Opinion Quarterly, and World Politics.
Motivation for studying interviewer effects in FTF surveys in Sub Saharan African countries

Scientific perspective

- lack of capacities in survey methodology (esp. questionnaire testing)
- due to lack of infrastructure and universal education
- question whether prior results on interviewer effects from other countries applicable
- Sub-Saharan countries with multi-ethnic, multi-lingual setting for surveys

Conclusion: interviewer will remain principal tool for data collection
Definition of interviewer effect

Interviewer effect is defined as a portion of the total response variance which can be attributed to differences among interviewers (Dijkstra, 1983)

1. Interviewer variance, only known intracluster correlation in Sub Saharan African study for Lesotho for 5 items which lies between 0.05 and 0.19

2. Multi-lingual setting for surveys represent challenges for questionnaire evaluation and implementation
Language and translation

http://sozambia.ni/sites/default/files/upload/languesprn.gif
Survey background

- Data collection for randomised control trial as impact evaluation implemented by University of Mannheim
- Project to be evaluated: Rural Finance Expansion Programme (RUFEP)
- Topic: Linking rural savings groups to financial sector and strengthening their capacity regarding savings, credit and insurance
- Project sites: 8 districts in 3 provinces in Zambia: Eastern, Northern and Western Province
- Three survey waves (2016, 2018, 2019) with mainly CAPI
Data collection and training

- Wave 1/baseline done in 2016 and wave 2/midline in 2018
- 6-8 days training, individual extra-training if necessary
- 1 day of dress-rehearsal
- in midline: 1 day of pilot and test at the end of training
Interpenetration of interviewers

Objective for interpenetration:
equal assignment probabilities to study between-interviewer variance in form of intra-cluster correlations (ICCs)

Table: Summary of quasi-interpenetrated design

| **Eligibility** | Mature & active savings groups as beneficiaries |
| **Eligible units** | ca. 500 savings groups in 3 provinces |
| **Random Sample** | Random sample of 4 members / group |
| **No. of interviewers** | 40 in baseline, 25 in midline |
| **Team size** | 5 interviewers mixed in gender |
| **Interpenetration** | respondents randomly assigned to interviewers |
| **Sample size** | ca. 2000 respondents |
### Table: Respondent and interviewer mean characteristics in baseline 2016

<table>
<thead>
<tr>
<th>Variable</th>
<th>Baseline - Northern</th>
<th></th>
<th>Baseline - Eastern and Western</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Respondents (n = 848)</td>
<td></td>
<td>Respondents (n = 1203)</td>
</tr>
<tr>
<td></td>
<td>mean (sd)</td>
<td></td>
<td>mean (sd)</td>
</tr>
<tr>
<td>Female</td>
<td>.72 (.45)</td>
<td></td>
<td>.83 (.38)</td>
</tr>
<tr>
<td>Urban</td>
<td>.15 (.36)</td>
<td></td>
<td>.19 (.39)</td>
</tr>
<tr>
<td>No school</td>
<td>.07 (.26)</td>
<td></td>
<td>.20 (.40)</td>
</tr>
<tr>
<td></td>
<td>Interviewers (n = 30)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>.43 (.50)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Urban</td>
<td>1.00 (.00)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No school</td>
<td>0.00 (.00)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Test of independence between gender

**Table:** Test of independence between GOI and GOR

<table>
<thead>
<tr>
<th></th>
<th>Baseline 2016</th>
<th></th>
<th>Midline 2018</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male int.</td>
<td>Female int.</td>
<td>Male int.</td>
<td>Female</td>
</tr>
<tr>
<td>Male res.</td>
<td>28.69</td>
<td>26.11</td>
<td>17.75</td>
<td>16.70</td>
</tr>
<tr>
<td>Female res</td>
<td>71.31</td>
<td>73.89</td>
<td>82.25</td>
<td>83.30</td>
</tr>
</tbody>
</table>

Chi-squared test: \(0.6888\) \(\text{and}\) \(0.2297\)
Data sources in Zambia study

Survey data
- Quasi-interpenetration
- Mode experiment (PAPI vs. CAPI)
- Multi-trait multi-methods experiments

Validation data
- Photos for savings and credit data for ca. 10% savings group in baseline (Eastern / Western Province)

Behavioural coding
- Analysis for interviewer compliances
- Recordings of 4-5 questions of ca. 800 interviews during midline

Interviewer survey
- Socio-demographics
- Technical and language skills
- Survey experience
- Answers to questions of main survey
Focus of this talk

1 Preliminary findings
   - Gender of Interviewer (GOI) effect
   - Interviewer variance
   - Interviewer compliance
Hypotheses on GOI effect

Social deference

- Krysan and Couper (2003): "fear of physical harm or economic intimidation" generated by gender of interviewer (GOI) like race/ethnicity

Social distance

- Tu and Liao (2007): gender as essential dimension of social distance next to others like age, education and ethnicity
Findings on GOI effect in Western context

West and Blom (2017)

- no GOI effect in 10 out of 23 studies
- female interviewers obtain higher-quality responses (9 studies) vs. opposite with males (4 studies)
- GOI effects moderated by respondent gender (3 studies)
Summary on GOI effect in non-Western contexts

Main GOI effect and interaction between GOI and GOR in attitudinal, gender-sensitive questions, as well as factual ones

- China: interaction and main effects in some items but not all regarding marriage related questions (Liu and Stainback 2013)
- Mexico: interaction effects with geography as potential moderator for questions on abortion and women’s right (Flores-Macias and Lawson 2008)
- Timor-Leste: main and interaction effects for both factual and attitudinal questions (among others women’s right) (Himelein 2016)
Dichotomous factual questions - yes/no

- Have you requested any loan in the last 12 months?
- Have you given out any loan in the last 12 months?
- Have you ever heard of mobile money (MM) services, like Airtel Money, MTN Money and Zoona?
- Have you attended a village meeting in the last 12 months?
GOI effect in factual questions

![Bar chart showing GOI effect in Zambia]

- **Village meeting**: Male (0.8) > Female (0.7)
- **Request loan**: Male (0.8) > Female (0.7)
- **Gave out loan**: Male (0.7) > Female (0.6)
- **Knows MM**: Male (0.8) > Female (0.7)
Interaction between respondents and interviewer gender in factual questions

Village meeting

Requested loan

GOI

male
female

Attitudinal questions

Attitudinal questions on a four-point scale (completely, much, a bit, not at all)

In what degree do you trust...?

- Government banks
- Private banks
- Microfinance institutions (MFIs)
- Non-government organisations (NGOs)
- Your neighbours

Transformation in dichotomous variable (1 - no trust, 0 - different level of trust)
GOI effect in attitudinal questions

[Bar chart showing comparisons between different categories and genders.]

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Interviewer Effects in Zambia

09 January 2019 20 / 27
Interviewer variance in Zambian study

Intra-cluster correlation for interviewer variance

\[ \rho_{\text{int}} = \frac{\sigma^2_{\text{int}}}{\sigma^2_{\text{int}} + \sigma^2} \]  

(1)

Multi-level model for continuous variables with random intercepts

\[ y_{ij} = \alpha + \beta x_{ij} + u_i + \epsilon_{ij}; \text{ with} \]

(2)

\[ u_i \sim N(0, \sigma^2_0) \]  

(3)

\[ \epsilon_{ij} \sim N(0, \sigma^2) \]  

(4)
### Table: ICCs for trust questions

<table>
<thead>
<tr>
<th>Trust in ...</th>
<th>ICCs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Government banks</td>
<td>0.240</td>
</tr>
<tr>
<td>Private banks</td>
<td>0.302</td>
</tr>
<tr>
<td>MFIs</td>
<td>0.335</td>
</tr>
<tr>
<td>NGOs</td>
<td>0.240</td>
</tr>
<tr>
<td>Neighbours</td>
<td>0.310</td>
</tr>
</tbody>
</table>
## Behavioural coding instructions

<table>
<thead>
<tr>
<th>Minor Deviations</th>
<th>Instructions/Question as it Appears in Questionnaire</th>
<th>Examples of Deviations*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Words in interview instructions omitted, subbed/paraphrased or added that did not give meaning or context to question or to express politeness to the respondent or are related to tenses</td>
<td>Now I will read out some statements and after each one I would like to ask how far do you agree or disagree with each statement.</td>
<td>Now I will read out some statements and after each one I would like to ask how far do you agree or disagree with each statement.</td>
</tr>
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<thead>
<tr>
<th>Major Deviations</th>
<th>Question as Appeared in Questionnaire</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Key nouns, verbs or adjectives/qualifiers were omitted</td>
<td>Now I will read out some statements and after each one I would like to ask how far do you agree or disagree with each statement.</td>
<td>Now I will read out some statements and after each one I would like to ask how far do you agree or disagree with each statement.</td>
</tr>
</tbody>
</table>
Interviewer compliance - Instructions

Interviewer compliance with reading instructions in %

- verbatim
- minor changes
- major changes
- other
- omitted
Interviewer compliance with reading question/statement in %

- verbatim
- minor changes
- major changes
- other
- omitted

Interviewer Effects in Zambia
Conclusion

GOI effects
- GOI effects for both some factual and attitudinal questions but not in all
- Interactions between GOI and GOR in some items but not in all

Interviewer compliance
- All effects above could be mediated by interviewer behaviour
Limitations and future outlook

- Lack of evidence and understanding of multi-ethnic and multi-lingual context
- Expectations of services by respondents