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Analysing the Influence of Non-Observable and Observable Interviewer Characteristics on Measurement Error: Evidence from Zambia

P. Linh Nguyen

, *University of Essex/University of Mannheim*, nphuongl@umich.edu

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Interviewer Effects on Measuring Attitudes

Evidence From a Face-To-Face Survey in Zambia

P. Linh Nguyen <p1nguy@essex.ac.uk>

University of Essex / University of Mannheim

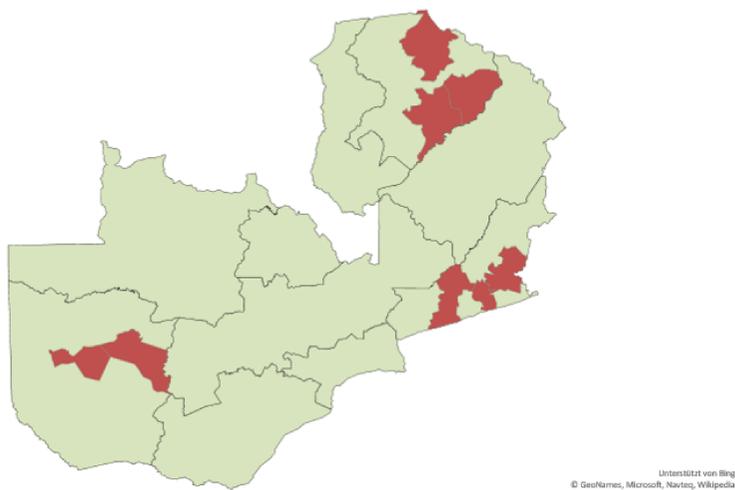
Background

Survey

- Survey on financial behaviour & attitudes, as well as standard of living in 2016
- Target: savings group members participating in Rural Finance Expansion Programm
- 2,051 respondents of 529 savings groups (ca. 4 respondents randomly drawn/group)
- 40 interviewers in 11 teams of 5 (15 interviewers worked across teams/provinces)
- Interviewer survey on socio-demographics, survey experience and attitudes

Map¹ of Zambia

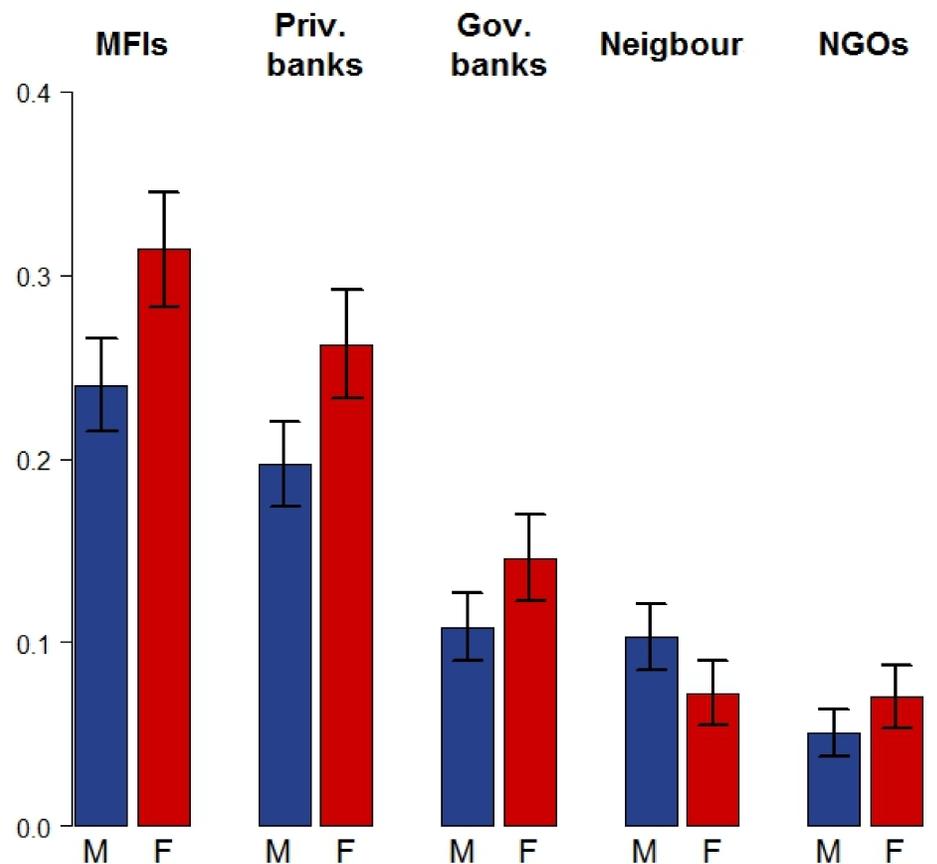
■ Operating districts



- 8 districts in Northern, Eastern and Western Province
- Quasi-interpenetrated design (interviewers are randomly assigned to respondents)

Gender-of-Interviewer Effects on Trust Questions

Percentages of respondents who do not trust in institutions separated by male (M) and female (F) interviewers.



Hypotheses

1. Different interviewers collect systematically different answers.
2. Even after controlling for respondent-level characteristics (such as age or gender of the respondent), systematic interviewer effects persists.
3. Interviewers' characteristics (such as age, gender and own attitudes) influence the respondents' answers systematically.

Model Specification Using Step-Up Approach

Model 1

The response y_{ij} of the i -th respondent being interviewed by a certain interviewer j can be specified in a general model as follows:

$$y_{ij} = \beta_0 + \beta_1 * district_{ij} + v_j + \epsilon_{ij}$$

where β_0 is the overall mean for the respondents' answers;

β_1 represents the fixed effect of $district_{ij}$ (id);

$v_j \sim N(0, \sigma_j^2)$ denotes the random intercept associated with interviewer j ;

and $\epsilon_{ij} \sim N(0, \sigma^2)$ represents the residual error at the respondent level.

And it is assumed that $\epsilon_{ij} \perp v_j$.

Model 2

$$y_{ij} = \beta_0 + \beta_1 * district_{ij} + \beta_2 * \mathbf{X}_{res} + v_j + \epsilon_{ij}$$

where \mathbf{X}_{res} represents the vector of the covariates at the respondent level (such as gender and age of the respondent) and β_2 is the fixed effect of all respondent-level covariates.

Model 3

$$y_{ij} = \beta_0 + \beta_1 * district_{ij} + \beta_2 * \mathbf{X}_{res} + \beta_3 * \mathbf{X}_{int} + v_j + \epsilon_{ij}$$

where \mathbf{X}_{int} denotes the vector of all covariates at the interviewer level, such as attitudes, gender and age of the interviewer and β_3 is the fixed effect of all interviewer-level covariates.

Intra-Interviewer Correlations (IICs)

$$IIC = \sigma_j^2 / (\sigma_j^2 + \sigma^2)$$

	Model 1		Model 2		Model 3	
	Variance (SE)	IICs	Variance (SE)	IICs	Variance (SE)	IICs
Government banks	0.256 (0.064)	0.226	0.256 (0.065)	0.229	0.223 (0.062)	0.209
Private banks	0.383 (0.094)	0.310	0.385 (0.094)	0.311	0.375 (0.097)	0.306
Microfinance inst. (MFI)	0.389 (0.094)	0.343	0.391 (0.094)	0.345	0.388 (0.099)	0.340
Non-gov. org (NGO)	0.191 (0.048)	0.234	0.193 (0.048)	0.236	0.181 (0.049)	0.229
Neighbours	0.317 (0.077)	0.315	0.318 (0.078)	0.317	0.275 (0.073)	0.289

Future Extensions

1. Expanding interviewer and respondent characteristics (e.g. survey experience, education)
2. Including interviewer-respondent interaction
3. Considering cultural context (e.g. language of interview)
4. Behavioural coding to further explain interviewer variance

Main References & Footnotes

- Himelein, K. (2016). Interviewer effects in subjective survey questions: Evidence from Timor-Leste. *International Journal of Public Opinion Research*, 28(4), 511-533.
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- West, B. T., & Blom, A. G. (2017). Explaining interviewer effects: A research synthesis. *Journal of Survey Statistics and Methodology*, 5(2), 175-211.
- [1] Created with Excel, supported by Bing © GeoNames, Microsoft, Navteq, Wikipedia