Does Screen Size Affect Interviewer Data Quality for mCAPI Surveys?

A Comparison of Smartphones and Tablets from Kenya

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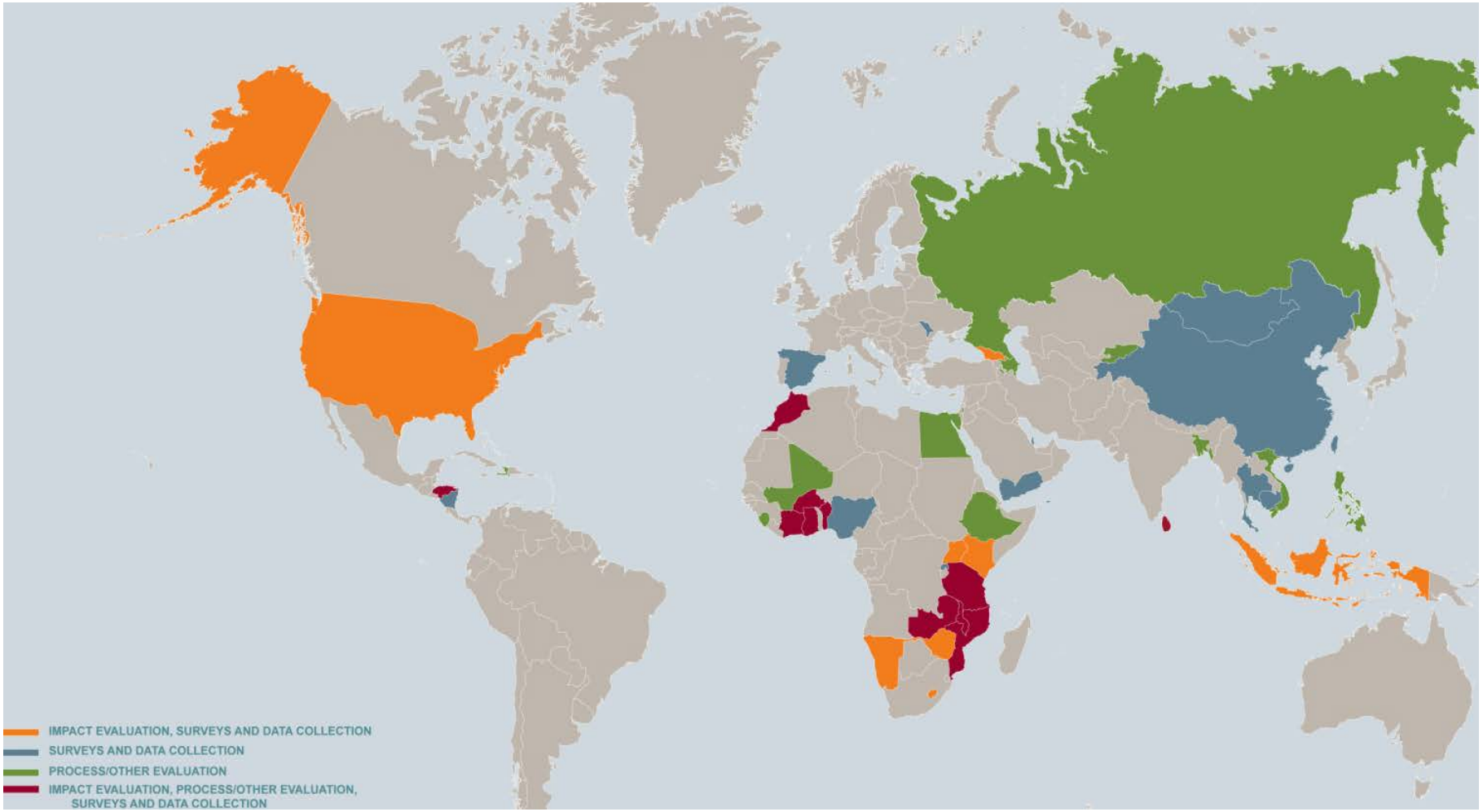
What is INPRO?



PAPI Data Collection

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1. **Hire local subcontractor**
   - For local expertise, field staff, field management
2. **Train enumerators in country**
   - Adhering to NORC's rigorous interviewing standards
3. **PAPI survey**
   - Due to rough environments, inexperienced interviewers
4. **Double data entry**
   - With reconciliation between both independent entries
5. **Result:**
   - Time-intensive, error-prone, subcontractor quality

mCAPI Data Collection

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1. **Hire local subcontractor**
   - For local expertise, field staff, field management
2. **Program and test tablets**
   - Using NORC staff or subcontractor
3. **Train enumerators in country**
   - Adhering to NORC's rigorous interviewing standards
4. **mCAPI (Mobile CAPI) survey on Android tablets**
   - With complex skips, consistency checks, and data sync
5. **Result:**
   - Faster/cleaner data, more control, better monitoring

mCAPI Pros/Cons Over PAPI

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PROS	CONS
• Faster process (often) – trades data entry for programming • Little lag between data collection and analysis • Fewer data entry errors, cleaner data • Cheaper (we think) • Less dependent on subcontractors	• No case management (yet) • Difficult to reconcile errors after the fact - no paper trail • Higher risk of stolen data and harm to enumerators • Difficult for supervisors to review enumerators' data • Changes the training required

- Pros outweigh cons for **some, but not all** projects
- When using mCAPI, does device impact data quality?

Our Experiment

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- World Bank's Kenya State of the Cities Survey
  - mCAPI survey in 15 cities using 7-inch Android tablets
  - Listed 194,000 households and administered 14,600 thirty-minute surveys (July 2012-March 2013)
- Selected two interviewers to administer 200 interviews using smartphones instead of tablets
  - 50 interviews each in two cities (Nairobi and Thika)
- Compared quality data collected using tablets to data collected using smartphones
  - Exact same UI on phones and tablets (designed for tablets)

Results

- Interview Duration
- Item Missingness (Response data)
- Item Missingness (GPS Data)
- Valid Phone Numbers
- Other Findings

We found that our two interviewers differed greatly, so we present their results separately.

Interview Duration

- Mean interview durations:

	John (Nairobi)	John (Thika)	John (Both)
Phones	25.8	40.2	33.6
Tablets	37.5	31.8	34.2
Difference	**-11.66*** **	**8.39***	**-0.59**

Item Missingness (Responses)

- Average number of missing responses (DK/R):

	John	Jane
Phones	1.5	2.8
Tablets	1.4	1.7
Difference	**0.12**	**1.17*** **

Item Missingness (GPS)

- Percent of interviews with GPS coordinates:

	John	Jane
Phones	99.0	97.7
Tablets	88.4	97.7
Difference	**10.33*** **	**-0.13**

Valid Phone Numbers

- Average number of valid phone numbers:

	John	Jane
Phones	0.9	0.5
Tablets	1.1	0.7
Difference	**-0.14****	**-0.18*****

Other Findings

- Text size was bigger on phones than tablets
  - Due to screen resolution
- Felt more professional with tablets
  - Respondents and others took them more seriously
- Felt safer with phones (but no device theft)
  - Tablets attracted unwanted attention
- Confidence and comfort in typing dependent on past experience
- Interviewers admitted to not scrolling completely through questions

Conclusions

- Phones are harder to type
  - Long open-ended questions, long numeric strings are difficult
- Otherwise, phones and tablets affect interviewers differently
- Some observed differences probably due to respondents' perceptions rather than hardware
- Phones probably are not worse, just different

Next Steps

- Bigger study exploring more dimensions with more interviewers
- Observing human-computer interaction (HCI) among different enumerators administering the same survey
- Further research questions:
  - Is there an “optimal” screen size? How is it determined – age, gender, technical capacity, prior experience?
  - What is the role of software?
- Finishing up a journal article

Thank You!

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