Is CAPI right for my survey?

Outline

- Why some still use PAPI

- Benefits of CAPI

- Can CAPI reduce costs?

- CAPI technical issues

- Survey Solutions and brief comparisons to other products

Why some still use PAPI

- Small, simple surveys
- Little or no Internet or cell phone accessibility
- Avoid the initial cost of tablets
- Scheduling issues
- Reliance on existing methods and skills

Benefits of CAPI

- Can provide immediate checks on routing, ranges, and consistency *during the interview*
- Can provide faster and more consistent field editing, and
- Can provide faster and more consistent home office (aggregated data) editing, so
- *Should provide higher data quality*
- Faster availability of final data
- No paper questionnaires to manage

Some Additional Benefits of CAPI
(Depending on software and hardware)

- Collect sensor data directly
  - Weight
  - GPS (including land area)
  - Date/time
  - Soil quality
  - Water quality
  - Temperature
  - Others…
- Use media (photos, videos, sound) as part of the interview

Can CAPI reduce costs?

- No double (verification) data entry and corrections
- Far lower paper, printing, and questionnaire storage costs
- Shorter interview durations can reduce fieldwork costs
- Lower logistics costs: no transporting and storing paper questionnaires
- Reduced waiting period for production of final data

Can CAPI reduce costs?

Cost comparisons of PAPI versus CAPI survey data collection (in 2011 purchasing power parity (PPP) US$)

Item	Paper-based Paper 1 (South Africa)	Paper-based Paper 2 (Tanzania)	Paper-based Paper average (a)	Tablet-based Tablet (Kenya) (b)	Tablet costs (b) as a percentage of paper costs (a)
Enumerator fees	6950	13,698	10,324	3679	36%
Supervisor fees	4245	4476	4361	3066	70%
Data entry costs	3321	2686	3003	0	0%
Data cleaning costs *	2088	11,200	6644	500	8%
Survey materials	1174	895	1034	2461	238%
Total	$17,778	$32,955	$25,366	$9706	38%
Cost per completed interview	$35	$68	$51	$13	26%

Note: * Estimated.

From "A Comparison of Tablet-Based and Paper-Based Survey Data Collection in Conservation Projects," Craig Leisher, Soc. Sci. 2014, 3, 264–271; doi:10.3390/socsci3020264; ISSN 2076-0760

Can CAPI reduce costs?

Cost comparisons of PAPI versus CAPI survey data collection (in 2011 purchasing power parity (PPP) US$)

Table 2: *Cost per interview in Uganda in 2005 PPP values*

Description	Wave 1	Wave 2	Wave 3	Wave 4
Year	2009-2010	2010-2011	2012-2013	2013-2014
Sample Size	3000	3000	3000	3000
Number of questions	1090	1097	1152	1148
Method of data collection	PAPI	CAPI	CAPI	CAPI
Costs				
Enumerators salaries	91.46	81.05	63.96	61.42
Supervisor salaries	45.27	40.12	31.66	30.40
Data Entry	28.38	-	-	-
Cleaning costs	NA	NA	NA	NA
Paper questionnaire cost	35.04	6.21	4.44	3.68
Electronic equipment cost	-	8.14	7.26	7.07
Cost per interview	200.16	135.52	107.33	102.56

Note: Values converted from Ugandan Shillings to 2005 PPP values using the World Development Indicators (2016).

Forthcoming, ICAS VII.

Costs specific to CAPI

- Initial investment in tablets, server, and service provider accounts
- Increased preparation time for connectivity, tablet setup, server setup, server maintenance
- New system for many organizations to learn
  - Different set of management skills
  - Depending on software, can require additional programming and other technical skills
- *Increased need for interviewer and field supervisor training*
- *Overall cost depends on learning curve, software cost, and preparation*

Costs specific to CAPI

- Direct Costs
  - Tablets (purchase, import, and setup)
  - Software
  - Training
  - Communications and connectivity
  - Server acquisition, setup, and maintenance
- Indirect Costs
  - Technical Support

CAPI Technical Issues

- Cell phone or Internet access
- Tablet availability
- Server availability and maintenance
- Availability of capable interviewers and office staff

Survey Solutions

- Very easy to learn to use, little programming or technical assistance required
- Programming uses C# syntax but is generally intuitive
- Enables complex skips (routing)
- Enables complex consistency checks

Survey Solutions

- Includes built-in case management system that is easy to configure and use
  - Sample definition
  - Case assignments and tracking
  - Case approvals and rejections

Survey Solutions

- Includes built-in case management system that is easy to configure and use
  - Report generation
    - Survey progress tracking
    - Durations of interviews
    - Locations of interviews displaying maps

Survey Solutions

- Server can provide extensive "paradata," or data about the data collection process
  - Can be exceptionally valuable for quality control, and includes:
    - Time stamps for each question
    - Interview durations
    - Question sequences
  - Enables creation of QC reports including:
    - Interview duration
    - Numbers of invalid responses (even if corrected)
    - By time of day, interviewer, team, or location using maps

Comparisons with Survey Solutions

- **Survey Solutions**
  - Produced and supported by the World Bank
- CSPro
  - Produced and supported by the US Bureau of Census
- ODK
  - Open source program developed at the University of Washington
- Blaise
  - Produced and supported by Statistics Netherlands

Comparisons with Survey Solutions

Criterion	Survey Solutions	CSPro	ODK	Blaise
Software license	**Free**	Free	Free	$$$
Server requirements	**HQ and Supervisor server can be anywhere**	FTP, Dropbox	ODK Aggregate server	IIS, ASP, relational database server
Learning curve	**Shallow, uses simplified C# syntax**	Steep, uses internal language	Moderate, uses MS Excel	Steep, uses internal language
Development time	**Shortest**	Long	Relatively short	Long
Android questionnaire testing	**Included**	Not included	Not included	Windows only
Questionnaire programming skills required	**Minimal training required, may use well-known C#**	Training required, uses unique language	Uses Excel, some training needed	Training required, uses unique language
Case management	**Built in**	Use CSPro program	External program	Use Blaise program
Export data formats	**SPSS, Stata, TXT**	SPSS, SAS, Stata, R, CSV, TXT	XML, CSV	Text, XML, ASCIIRelational, OLEDB

Questions?