

# The Local Enumerator Approach

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# Motivation

- Bring down costs of relatively simple rural data collection such as annual technology adoption monitoring
  - Initially thought about SMS or IVR but sample bias, literacy and coverage issues in rural areas
  - Approach conceived to bridge gap between these approaches and conventional surveys



## Local enumerator concept

- Train enumerators living in or near agricultural communities
- Use phone or tablet to collect data
- Data collection managed by national firm/s
- With success, a network of local enumerators expands and further brings down data costs
- Some precedent – e.g. Grameen’s Community Knowledge workers (Uganda), Indian census, Chris Udry’s dissertation



## Testing the concept

- Tested local enumerator approach hypothesis:
  - Cost reducing (reduced per diem and travel costs)
  - Similar quality data as conventional survey
- Compared three local enumerator survey implementers in India with conventional survey
- Not experimental
  - Implementers had autonomy to adapt concept
  - Questionnaires were developed by implementers with some oversight – not exactly the same



## Research design overview

- Comparison 1 – wheat and rice system technology adoption
  - Ludhiana and Karnal (600 hh/district vs 800 hh/district)
- Comparison 2 – wheat and rice system technology adoption
  - Karnal and Vaishali (800 hh/district vs 800 hh/district)
- Comparison 3 – groundnut technology adoption
  - Anantapur and Kurnool (800 hh/district vs 800 hh/district)



# Results: Rice-wheat system technology adoption rates (% hh)

	Laser land levelling	Zero till	Direct seeded rice
<b>Ludhiana, Punjab</b>			
Local enumerator	51.7	5.6**	0.8
Conventional	48.8	0.3	0.3
<b>Karnal, Haryana</b>			
Local enumerator – 1	67.3**	18.5**	0.8**
Local enumerator - 2	72.4**	22.4**	0.2**
Conventional	61.0	3.1	4.2
<b>Vaishali, Bihar</b>			
Local enumerator	1.5**	1.4	0
Conventional	0	1.1	0

\*\* p <.05



# Results: Groundnut technology adoption rates (% hh)

	Soil bunds	Field bunds	Broad bed and furrow	Contour bunds	Land levelling	Polythene mulching
<b>Anantapur, Andhra Pradesh</b>						
Local enumerator	32.6	38.3**	2.0**	15.6**	38.5**	0**
Conventional	37.4	1.2	59.6	0	7.3	8.9
<b>Kurnool, Andhra Pradesh</b>						
Local enumerator	4.3	1.6	2.5**	0	5.7	0.2
Conventional	14.0	0.1	30.4	0	6.3	0

\*\* p <.05



# Results: Groundnut technology adoption rates continued (% hh)

	Nala plugs/ RFDs	Sunken pits	Farm ponds	Masonry dams	Well recharge pits	Penning
<b>Anantapur, Andhra Pradesh</b>						
Local enumerator	0.4	0.1	12.5**	0.2	0	20.1**
Conventional	0.6	0	1.3	1.2	4.5	44.9
<b>Kurnool, Andhra Pradesh</b>						
Local enumerator	0.1	0	3.6	2.1	0.4	69.3**
Conventional	0.2	0	2.6	0.5	0	35.8

\*\* p <.05





# Enumerator characteristics

- Hypothesized that differences in enumerators might affect data quality
  - Local enumerators maybe less educated, less experience, less tech savvy?
- However as shown below this was not the case for our research
- Further analysis will try to tease out the effect of enumerator differences on data quality

	n	Age	Education	Agriculture experience (years)	Enumerator experience (times)	CAPI* Experience (times)	Own smart-phone
<b>Local enumerator</b>	58	28	Diploma/undergrad	6.8	4	1.4	63%
<b>Conventional enumerator</b>	27	26	Undergrad/Grad	2.8	0.9	0.5	54%



# Cost

- Local enumerator approach: mean – 27 USD/HH (12 min, 43 max)
- Conventional survey: 22 USD/HH
- However fixed cost of developing the app was about 20% of the cost implying diminishing incremental per hh costs – if this goes to zero, avg. cost the same
  - The conventional survey utilized a program which requires annual subscription
- Additionally, management efficiencies associated with larger scale of conventional survey (4,000 vs 1,600)



## Lessons learned

- Theoretically local enumerator approach would be most valuable for relatively simple, longitudinal data – not tested
- At least in India, enumerator quality at the local level does not appear to be a problem
- Difficult to identify causes of measurement differences – many confounding factors (enumerator quality, technology, app, management, wording, etc)
  - Ideally more time would have been available for implementers to test and refine their apps to reduce potential effect on data quality



Thank you!

