

“Testing the Effects of a Novel Offer and Marketing Messages on Uptake & Usage of Improved Stoves in rural Uganda”

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Agenda

1. Review of Timeline & Study Design
2. Summary of Progress to Date
3. Overview of RCT 1,2,3 and Initial Findings

Note: Results presented are preliminary and subject to change.



University of California, Berkeley



High-Level Timeline

Sept '11 – Jan '12

Phase 1: Baseline

- Baseline Assessment
- Feasibility Assessment

Jan '12 – Dec '12

Phase 2: Project Implementation

- RCT 1
- RCT 2 & 3
- RCT 4

*Outcomes:
ICS Effects Waves 1 & 2*

Dec '12-Sept'13

Phase 3: Reporting

- Analysis
- Write-up
- Dissemination

*Outcomes:
Oct 2013 – Publications &
Reports*

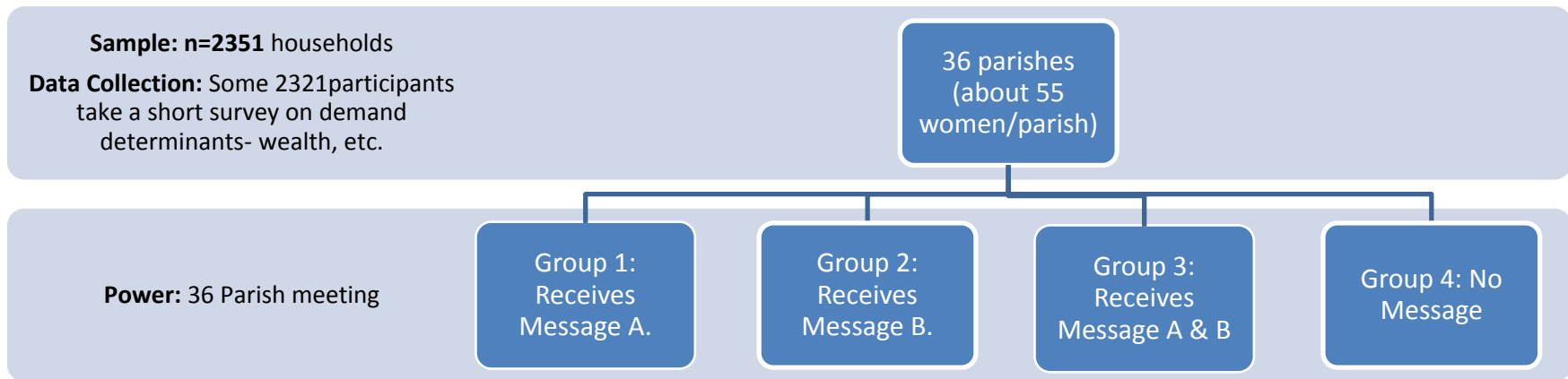
Summary of Progress to Date

We have overall had a perfect record to date of delivering stated objectives on time and within budget. To date we have completed:

1. Feasibility Stage Objectives (including: regional selection, stove selection, design and test of marketing messages and all survey methods, etc.)
2. RCT 1
3. RCT 2,3, & 4
4. Designed and led a Multi-stakeholder workshop held in Kampala, Uganda during Feasibility Stage (jointly with PATH) to solicit feedback from relevant stakeholders and outline synergies between the two teams
5. Published a Feasibility Report outlining key objectives in the feasibility stage and circulated to project partners and other stakeholders
6. Leveraged additional funding with Colleagues at Cornell to add a 4th RCT measuring social spillovers and network effects.

Review of Research Stated Objectives- RCT 1

Objective of RCT 1: To assess households' WTP for the Envirofit stove and any effects marketing messages might have on WTP.



RCT 2: The Impact of the Novel Offer

Data Collection: All participants who attend take a short survey on demand determinants-wealth, etc.

26 parishes
(about 55 women/parish)

Power: 10 Traditional Parish meeting

Novel Offer (14 parishes, n=863)

Traditional Offer (12 parishes, n=544)

Outcome: 57% uptake Novel vs. 13% uptake Traditional Offer

Actual Acceptors (493)

Actual Acceptors (69)

RCT 3: The Impact of Improved Cookstoves

Sample: 396 households if 40% accept novel offer of a free trial

14 Novel offer Parishes
(with 12 women/parish)

Randomization: Women level- $\frac{1}{2}$ early & $\frac{1}{2}$ late

$\frac{1}{2}$ buyers start free trial within 1 week of sales;

$\frac{1}{2}$ buyers start free trial 3 months later;

Data Collection (n=168): Baseline, Follow-up, and small Endline

Daily Wood Use (Kg per day)

Monitor Stove Usage for both traditional & improved stoves.

PM sub-sample Kitchen level Exposure

RCT 3b: Effects of Marketing Messages on Usage

Table 4: More Basic Household Characteristics

	Marketing Message Received				Total
	No Message	Saves Time and Money	Improves Health	Time, Money and Health	
Primary HH Fuel Source					
Wood	98%	93%	93%	96%	95%
Charcoal	2%	4%	1%	3%	3%
Wood—Charcoal	0%	3%	6%	0%	2%
Other	0%	0%	1%	1%	0%
Bought Cooking Wood Last Week					
No	77%	77%	81%	74%	77%
Yes	23%	23%	19%	26%	23%
Bought Cooking Wood Last Month					
No	73%	71%	77%	71%	73%
Yes	27%	29%	23%	29%	27%
Gathered Cooking Wood Last Week					
Yes	81%	86%	86%	86%	85%
No	19%	14%	14%	14%	15%
Gathered Cooking Wood Last Month					
Yes	86%	88%	86%	88%	87%
No	14%	12%	14%	12%	13%
Type of Stove Already Owned					
None	70%	76%	78%	69%	73%
Charcoal Stove	10%	14%	6%	20%	12%
Built-in Mud Stove	15%	7%	14%	8%	11%
Other	6%	3%	3%	4%	4%
Who is HH Primary Cook					
Wife	86%	87%	92%	84%	87%
Husband	4%	6%	3%	8%	5%
Other	6%	3%	4%	5%	5%
Children	4%	4%	2%	3%	3%
Who is HH Decision Maker					
Wife & Husband Jointly	43%	45%	34%	55%	44%
Husband	23%	21%	36%	21%	25%
Wife	28%	28%	26%	18%	25%
Father or Mother	5%	3%	4%	4%	4%
Other	1%	2%	1%	1%	1%

Source: RCT1, all completed demand surveys

Table 2: Marketing Message and Bids for Auctions (in USD) ADD SIGNIFICANCE DOUBLECHECK

Pay Within a Week Auction Offer							
Marketing Message Received	N	Mean Bid (S.D.)	Median Bid	Mean Deposit (S.D.)	Median Deposit	Count and Percentage of Winners by Auction	Count and Percent of Bids Above 10USD
No Message	555	4.57 (4.79)	3.98	6.26 (3.69)	5.96	10 21%	26 5%
Saves Time & Money	513	4.47 (4.14)	3.98	5.14 (5.43)	5.96	7 15%	34 7%
Improves Health	529	5.54** (5.25)	3.98	6.45 (4.67)	3.98	19 40%	70 13%
Time, Money & Health	542	4.88 (4.28)	3.98	3.87 (3.64)	1.99	11 23%	49 9%
Time Payment Auction Offer							
Marketing Message Received	N	Mean Bid (S.D.)	Median Bid	Mean Deposit (S.D.)	Median Deposit	Count and Percentage of Winners by Auction	Count and Percent of Bids Above 10USD
No Message	553	6.71 (6.83)	4.77	5.28 (3.57)	4.97	9 20%	73 13%
Saves Time & Money	535	7.17 (6.38)	5.96	4.76 (2.61)	3.98	20 44%	86 16%
Improves Health	518	6.83 (6.34)	4.77	5.14 (3.61)	3.98	8 18%	86 17%
Time, Money & Health	543	6.61 (5.90)	4.77	5.47 (1.30)	5.47	8 18%	92 17%

Source: RCT1 (Exchange Rate Used: 2515 Uganda Shillings to 1 USD) found at <http://www.fms.treas.gov/intn.html> (March 31, 2012 Official Exchange Rate US Treasury)

Note: Data is presented after removing twenty eight observations of initial auction winners that refused to pay as this is evidence they were not expressing their true willingness to pay. Failing to removing these outliers would upwardly bias the means of each auction offer.

Note: All amounts for Mean, S.D., and Median are in US Dollars

Significance tests: the effect of individual marketing message on bid amount, deposit amount, count of winners, and count of individuals bidding more than \$10 : ** p<0.01, * p<0.05

Joint Significance F-tests: messages jointly different than zero for Count and Percent of Bids Above \$10 : ** p<0.01, * p<0.05

Setting the Price for the Envirofit for RCT 2 Novel Offer

Table 1: Summary Statistics: Overall and by Auction Type (bids in USD)

General Summary Statistics		Count	%		
Number of Households on Master Roster		2351	100.0		
HH's that Took Demand Determinant Survey		2321	98.7		
Female Participants		1631	70.3		
HH's that Bid on Pay Within a Week Auction		2139	92.2		
HH's that Bid on Time Payment Auction		2149	92.6		
Pay Within a Week Auction Offer		Count	Mean	S.D.	Median
All Bids		2139	4.86	4.65	3.98
Winning Bids		47	15.78	8.56	15.90
Second Price Paid		47	12.87	5.07	11.93
Deposit Paid for Stove		47	5.61	4.37	3.98
Stoves Returned: Number and Percentage		4	8.5%		
Defaults: Number and Percentage		2	4.3%		
Average Amount (%) Paid Prior to Default			35.4%		
Time Payment Auction Offer		Count	Mean	S.D.	Median
All Bids		2149	6.83**	6.37	4.77
Winning Bids		45	23.03**	14.95	19.88
Second Price Paid		45	16.78**	6.38	15.90
Deposit Paid for Stove		45	5.06	2.77	4.77
Stoves Returned: Number and Percentage		7	15.6%		
Defaults: Number and Percentage		4	8.9%		
Average Amount (%) Paid Prior to Default			24.8%		

Source: RCT1 (Exchange Rate Used: 2515 Uganda Shillings to 1 USD) found at <http://www.fms.treas.gov/intn.html> (March 31, 2012 Official Exchange Rate US Treasury)

Note: Data is presented after removing twenty eight observations of initial auction winners that refused to pay as this is evidence they were not expressing their true willingness to pay. Failing to removing these outliers would upwardly bias the means of each auction offer.

Note: Number of winners per auction type can vary slightly. In cases where the highest bid is a tie, both bidders are given the opportunity to purchase the stove.

Note: All amounts for Mean, S.D., and Median are in US Dollars

t tests: difference of means between auction offer types: ** $p < 0.01$, * $p < 0.05$

The Novel Offer Greatly Increases Uptake

- Of 863 attending novel offer meetings, we had 493 buyers (57%; that is, both ordered and picked up a stove and did not return it).
- Of these, we had 7 partial defaults (1.4% of buyers).
- We had 534 pick up a stove, but 41 returned it (7.7% of picked up stoves).
- Of 544 attending Traditional offer meetings, we had 69 buyers (12%).

Implications of Initial Findings

1. RCT 2's test of the Novel vs. Traditional Offer provides evidence that optimal contracts increases sales rates by over 4-fold (from 12% to 57%) in poor rural communities.
2. The Novel Offer's time payments and free trial will significantly increase adoption of improved cookstoves.

Thank You

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