

# **Motivating Agents to Spread Information: The Role of Explicit Incentives and Social Identity-Matching**

ISI Workshop, Kolkata  
(in collaboration with the IGC)  
13 January, 2012

Erlend Berg (Oxford)  
Maitreesh Ghatak (LSE)  
R Manjula (ISEC)  
D Rajasekhar (ISEC)  
Sanchari Roy (Warwick)

# Motivation

- Research on public service delivery in developing countries has focused on supply-side problems
  - Absenteeism, red tape, corruption, inefficient judiciary, etc.
- The demand-side is relatively under-studied in poor countries
- Lack of awareness/information among beneficiaries is an important cause for failure of public service delivery
  - In India, awareness about the National Rural Employment Guarantee Scheme (NREGS) is low in some of the poorer states
  - Information costs also responsible for low take-up of welfare schemes in developed countries as well (Aizer 2007; Daponte et al 1999)
- What can be done to increase awareness/information of welfare schemes?

# Summary

- In this paper, we study different channels of information delivery using a randomized field experiment in India
- Research questions:
  - Does recruiting and paying local women to spread information about a public health insurance programme increase knowledge and take-up?
  - Does the payment structure of agents (flat versus incentive pay) matter?
  - What role does social identity, as an alternative channel, play?
- Findings in brief:
  - Hiring agents has a positive impact on programme knowledge
  - This effect is driven entirely by agents on incentive-pay contracts
  - Higher knowledge is associated with higher programme enrolment
  - In addition to incentive pay, social identity matching between agent and beneficiary also improves knowledge

# The Programme

- Our experiment is implemented in the context of a new public health insurance scheme called “Rashtriya Swasthya Bima Yojana” – henceforth RSBY
- Our setting – 2 districts in south Indian state of Karnataka: Bangalore Rural and Shimoga
- Scheme launched in Karnataka in Feb-March 2010
- Key features of programme:
  - Eligible households: Below-Poverty-Line (BPL)
  - Covers hospitalization expenses for 700 medical conditions
  - Annual expenditure cap of Rs 30,000 (630 USD) per eligible HH of five
  - Policy underwritten by insurance co. selected in state-wide tender
  - Policy premium subsidized by government
  - Beneficiary HH pays Rs. 30 (37p) as annual registration fee

# The Programme

- Key features of programme (cont'd):
  - Cashless service at any participating (“empanelled”) hospital using RSBY smartcard
  - Smartcards contain biometric information of all members of eligible HH
  - Cost of treatment reimbursed to hospital by insurance company based on fixed rates

# Experimental design

- 151 randomly selected villages in Bangalore Rural and Shimoga
- First stage of randomization:
  - 112 villages assigned to **treatment** group – received an “agent”
  - 39 villages assigned to **control** group – did not receive an “agent”
  - Agent is local woman and member of a Self-Help Group (SHG)
  - Agent’s task: spread information about RSBY among eligible households over a one-year period
- Second stage of randomization: All agents were paid to do the job, but experimental variation in contract structure
  - **Flat-pay**: Agents paid fixed Rs 400 every three months (38 villages)
  - **Incentive-pay**: Agents paid a fixed Rs 200, plus a bonus depending on the level of knowledge about RSBY amongst the eligible households in village, tested on a random sample (74 villages)

# Experimental design

- Average pay designed to equal Rs 400 across both treatment groups
  - But some deviation in practice
  - The aim was to isolate the “incentive” effect of the contract structure from the “income effect” of the average payment size
- Payment structure revealed to agent *after* recruitment
  - Payment structure in a sealed envelope
  - The aim was to isolate the “incentive” effect of contract structure from potential “selection” effect
- No agent quit after being told about the payment structure
  - Four agents quit a few months later, due to pregnancy or migration
  - Those villages excluded from our analysis
  - Final number of villages in our sample is 147

# Data

- 3 waves of 'mini-surveys' conducted post-intervention
- A random sample of eligible HH in our sample villages were interviewed in each wave
- A few months' gap between each wave
- Aim of the mini-surveys:
  - Administer knowledge test to beneficiary HH to determine level of knowledge about RSBY (also used to pay agent)
  - Measure enrolment into RSBY
  - Collect limited background information on households
- Each knowledge test consisted of 8 questions relating to RSBY
  - Each answer was recorded and later coded as being correct or incorrect
  - The number of correct answers gives each interviewed household a score 0-8
- Main outcome variable is the knowledge test z-scores, also look at enrolment

# Empirical specification

- Basic specification:

$$Y_{hv} = \alpha_0 + \beta \cdot \text{Treat}_v + \varepsilon_{hv}$$

- $\beta$  captures overall effect of information-spreading agents
- All regressions are weighted least squares
  - Not all HHs are observed in every wave, but there is overlap
  - Weighted least squares assigns equal total weight to each HH
- Standard errors robust and clustered at village level
- Survey (wave) and taluk fixed effects included
  - Taluks are sub-district administrative divisions
  - 4 in Bangalore Rural, 7 in Shimoga

## Effect of information-spreading agents

	(1)	(2)	(3)
	Knowledge	Knowledge	Knowledge
Agent in village	0.173*** (0.0642)	0.185*** (0.0571)	
Flat-pay Agent in village			0.0740 (0.0918)
Incentive-pay Agent in village			0.242*** (0.0567)
Survey wave fixed effects	No	Yes	Yes
Taluk fixed effects	No	Yes	Yes
Observations	5650	5650	5650
t-test: flat=incentivised (p-value)			0.0677

# Effect of information-spreading agents, Shimoga

	(1)	(2)	(3)
	Knowledge	Knowledge	Knowledge
Agent in village	0.208** (0.0817)	0.190** (0.0739)	
Flat-pay agent in village			-0.0225 (0.122)
Incentive-pay agent in village			0.312*** (0.0670)
Survey wave fixed effects	No	Yes	Yes
Taluk fixed effects	No	Yes	Yes
Observations	2888	2888	2888
t-test: flat=incentivised (p-value)			0.00928

# Impact on Enrolment

- Does improved knowledge about programme translate into higher enrolment?
- OLS regression of enrolment on knowledge would lead to biased estimates
  - Unobserved heterogeneity at the HH level
  - Reverse causality
- Random assignment of our incentive-pay treatment used as an instrument variable for knowledge
- Villages with flat-pay agents and pure control villages clubbed together to form comparison group

## Knowledge and Enrolment: IV estimates

	(1)	(2)	(3)	(4)
	Enrolled (OLS)	Enrolled (Reduced form)	Knowledge (First stage)	Enrolled (IV)
Knowledge	0.207*** (0.00907)			0.395*** (0.131)
Incentive-pay Agent in village		0.0806** (0.0361)	0.204*** (0.0615)	
Survey wave fixed effects	Yes	Yes	Yes	Yes
Taluk fixed effects	Yes	Yes	Yes	Yes
Observations	5650	5650	5650	5650

# Incentives and Social Identity

- Recent literature suggests the importance of social identification effect on take-up of insurance products (Cole et al 2010)
- Thus, we compare the effect of providing incentive pay to that of matching the agent and beneficiary household on social identity
- Limited HH background information for a subset of our sample
- Hence we focus on caste identity defined in terms of SC/ST status
- Within-treatment group analysis in order to control for agent characteristics in levels

# Incentives and Social Identity

	(1)	(2)	(3)	(4)
	Knowledge	Knowledge	Knowledge	Knowledge
Incentive-pay Agent in village	0.176** (0.0888)	0.175** (0.0876)	0.193* (0.101)	0.165* (0.0903)
Agent is SC/ST	-0.108 (0.0912)	-0.133 (0.0903)	-0.132 (0.0902)	-0.180** (0.0845)
HH is SC/ST	-0.0436 (0.0500)	0.0591 (0.0548)	0.0585 (0.0550)	0.0667 (0.0476)
HH SC/ST status matches that of agent		0.212*** (0.0561)	0.230** (0.0920)	0.215** (0.0868)
Agent is incentivised *HH SC/ST status matches that of agent			-0.0272 (0.103)	0.00250 (0.0970)
Survey wave fixed effects	Yes	Yes	Yes	Yes
Taluk fixed effect	Yes	Yes	Yes	Yes
Agent controls	No	No	No	Yes
Observations	2756	2756	2756	2756

# Conclusion

- The demand side is under-studied in public service delivery
  - Lack of information in the target population often key reason for low take-up of welfare programmes
- Recruiting local agents to spread information can make a difference to beneficiaries' knowledge about a scheme
- Agents with monetary incentives do better at this
- ...but social identity also matters. Agents seem to communicate better with households who are similar to themselves in terms of caste and religion
- Improved knowledge also leads to higher take-up of welfare programmes