Deserranno (2019) - Financial Incentives as Signals: Experimental Evidence from the Recruitment of Village Promoters in Uganda

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Motivation and Main Questions

- There is an extensive literature on the effect of financial inventives on agents' behavior:
  - Increasing incentives affects effort and motivation
  - Higher incentives may also encourage a more talented applicant pool
- Recently there has been renewed interest on the fact that financial inventives may be used as a signal to convey information about job characteristics, especially in the presence of a significant amount of incomplete information:
  - Incentives may convey information about the nature of the task and organization
  - They may also convey information about the priorities of the job (i.e. whether pro-social or pro-business).
- **Main Question:** How does varying payment expectations affect perceptions of and recruitment into a relatively unknown position among villagers in Uganda? In particular, do higher financial incentives crowd out potential applicants with pro-social motivations?

Main Contributions/Results

- **#1**: The experimental design and environmental context allow a unique ability to test the signaling channel of financial incentives:
  - The job is new in Uganda, with limited information about job characteristics
  - The job has both pro-social and private benefits
  - The authors examine *both* eligible and actual applicants, cleanly measuring the composition of the pool of applicants versus potential applicants
  - There are separate treatments for perception of the job and for recruitment
  - They measure many characteristics of applicants with both survey and previous volunteer experience
- **#2**: The results point to the fact that higher expected financial incentives increase total applications, but reduce the number of applicants with pro-social motivations (which reduces job performance):
  - They alter expectations without lying about the *actual* pay distribution, and without altering expectations about the variance of the pay, meaning performance is mainly affected by signals and not varying actual incentives
  - Jobs with high incentives percieved as less pro-social, but not more difficult
  - Agents who have volunteered less likely to apply with high financial incentives
  - Low-pay treatment has best performance outcome (robust across measures)
  - They can rule out alternate mechanisms (like reservation wage).

The Environment and Experimental Design

- NGOs often utilize community-based postions to increase access to basic public services, combining a set of public and private services aimed at being both financially sustainable and addressing development issues.
- Community Health Promoter (CHP) implemented by BRAC in Uganda on top of microfinance program.Three stages: selection, training, and deployment. Financial incentives are from selling products, and thus profits can vary substantially.
- **Information Experiment:** Show a leaflet about the job to respondents, varying whether they advertise the job by divulging the max, average, or min of the pay distribution. Collect basline info, then ask questions about perceptions of the job.
  - Experiment carried out in 231 rural villages across western Uganda. Stratify by village, 6845 women randomly assigned to a treatment arm. Half asked about expected earnings distribtion; half about other monetary/non-monetary aspects.
- **Recruitment Experiment:** Same treatment. But, now, authors only examine whether there is a decision to apply or not.
  - Among BRAC's microfinance group, stratified across 315 groups. After initial survey and leaflet, each villager asked one-by-one if they had interest in applying.
- Both experiments are well-balanced.

Treatment Affects Percieved Earnings and Pro-Socialness without Increasing Percieved Variance or Difficulty

TABLE 2—TREATMENT EFFECTS ON PERCEIVED EARNINGS (*information experiment*)

	Survey questions		Calculated from elicited expected distribution of earnings			
Variables	Expected earnings in a "typical month" (1)	Expected earnings per hour of work in a "typical month" (2)	Expected average earnings (3)	Expected median earnings (4)	Expected SD in earnings (5)	Expected average earnings/ expected SD in earnings (6)
Medium-pay treatment	5.5364	0.2016	2.5943	2.2693	−0.7232	0.2345
	(2.39)	(0.13)	(1.68)	(1.95)	(0.77)	(0.11)
High-pay treatment	33.2167	0.7658	8.3172	9.8436	0.4867	0.3127
	(3.11)	(0.15)	(1.70)	(1.88)	(0.65)	(0.12)
Mean dep. var. in low-pay treat.	87.886	2.575	116.852	114.404	47.648	2.789
Observations (number of respondents)	3,031	2,717	2,715	2,715	2,715	2,715
R^2	0.354	0.387	0.406	0.407	0.365	0.238
p-value Med = High	0.000	0.000	0.001	0.000	0.088	0.528
p-value Low = Med = High	0.000	0.000	0.000	0.000	0.230	0.014

TABLE 3—TREATMENT EFFECTS ON OTHER PERCEIVED JOB ATTRIBUTES (*information experiment*)

Variables	Job is perceived as a "private goal" (CHPs do the job for the money) more than a "social goal" (CHPs do the job to improve health conditions) (1)	Perceived proportion of time allocated to sales (versus delivery of health services) (2)	Expected number of work hours in a "typical week" (3)	Perceived difficulty in selling products to community (4)	Perceived difficulty in improving people's health behavior (5)	Own perceived ability (6)
Medium-pay treatment	−0.0033	0.0027	−0.0638	−0.0285	−0.0315	0.0286
	(0.02)	(0.01)	(0.34)	(0.04)	(0.05)	(0.13)
High-pay treatment	0.0692	0.0450	0.1665	0.0008	−0.0236	0.1144
	(0.02)	(0.01)	(0.35)	(0.04)	(0.05)	(0.14)
Mean dep. var. in low-pay treat.	0.403	0.461	14.081	1.827	2.536	6.004
Observations (number of respondents)	3,067	3,014	2,769	3,055	3,056	2,901
R^2	0.282	0.293	0.384	0.266	0.217	0.259
p-value Med = High	0.002	0.000	0.544	0.444	0.867	0.483
p-value Low = Med = High	0.004	0.000	0.822	0.698	0.789	0.673

Recruitment: High Pay Discourages Pro-Social Applicants

TABLE 4—TREATMENT EFFECTS ON APPLICANTS' TRAITS
(*recruitment experiment, sample = potential applicants*)

	Dependent variable = 1 if the potential candidate applies for the CHP position, = 0 if the potential candidate does not apply							
	Pro-social preferences		Interest in sales		Pro-social preferences		Interest in sales	
TRAIT	Has ever volunteered in the health sector (1)	Community driven (2)	Owns a shop (3)	Has ever sold health-related products (4)	Has ever volunteered in the health sector (5)	Community driven (6)	Owns a shop (7)	Has ever sold health-related products (8)
TRAIT	0.2812 (0.05)	0.0865 (0.02)	0.0271 (0.03)	0.0503 (0.04)	0.2749 (0.04)	0.0703 (0.02)	0.0302 (0.03)	0.0834 (0.04)
TRAIT × Medium-pay treatment	−0.0017 (0.06)	−0.0441 (0.03)	0.0233 (0.04)	0.1156 (0.06)	−0.0121 (0.06)	−0.0073 (0.02)	0.0188 (0.04)	0.0710 (0.06)
TRAIT × High-pay treatment	−0.1621 (0.06)	−0.0882 (0.03)	0.0566 (0.05)	0.1587 (0.06)	−0.1078 (0.06)	−0.0139 (0.02)	0.0738 (0.04)	0.1318 (0.06)
NOT_TRAIT × Medium-pay treatment					0.0197 (0.01)	0.0326 (0.02)	0.0167 (0.02)	0.0114 (0.01)
NOT_TRAIT × High-pay treatment					0.0550 (0.02)	0.0768 (0.02)	0.0320 (0.02)	0.0303 (0.02)
Fixed effects	Group	Group	Group	Group	Branch	Branch	Branch	Branch
Mean dependent variable in low-pay treatment	0.144	0.144	0.144	0.144	0.144	0.144	0.144	0.144
Mean TRAIT in low-pay treatment	0.079	0.427	0.166	0.081	0.079	0.427	0.166	0.081
Observations (number of potential candidates)	4,330	4,252	4,150	4,330	4,330	4,252	4,150	4,330
R^2	0.229	0.210	0.203	0.215	0.135	0.115	0.109	0.121
p-value Trait × Low = Trait × Med = Trait × High	0.017	0.025	0.483	0.027	-	-	-	-
p-value Trait × Med = Trait × High	0.013	0.204	0.488	0.519	0.106	0.158	0.955	0.319
p-value Trait × Med = NoTrait × Med	-	-	-	-	0.586	0.776	0.191	0.305
p-value Trait × High = NoTrait × High	-	-	-	-	0.007	0.002	0.369	0.090
p-value NoTrait × Med = NoTrait × High	-	-	-	-	0.032	0.033	0.331	0.268

High Pay Treatment Increases Number of Applicants, but Is Associated with Poorer Performance

TABLE 7—TREATMENT EFFECTS ON DROPOUT AND PERFORMANCE OF CHPS
(*recruitment experiment, sample = CHPs*)

	Dropout			Performance					
	CHP has dropped out within two years of recruitment			Monthly sales profits			Number of households visited per month		
Dependent variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Medium-pay treatment	0.0818	0.0391	0.0827	−3.2843	−1.2695	−1.4013	−2.4506	0.6103	−1.1416
	−0.06	(0.06)	(0.07)	(2.53)	(2.49)	(2.85)	(3.51)	(3.56)	(3.65)
High-pay treatment	0.1359	0.0901	0.0953	−4.8243	−2.6637	−2.9253	−8.0721	−4.7896	−4.0527
	(0.06)	(0.06)	(0.07)	(2.97)	(2.97)	(3.04)	(3.55)	(3.53)	(3.65)
Amount donated		−0.1782	−0.1353		8.3973	8.4848		12.7578	10.9888
		(0.05)	(0.06)		(2.79)	(2.91)		(3.69)	(4.02)
Ever volunteered in the health sector			−0.1299			4.0673			4.0498
			(0.06)			(2.63)			(3.47)
Community driven			0.0460			−3.0813			−1.0483
			(0.06)			(2.68)			(3.44)
Owns a shop			0.0610			4.0161			6.3491
			(0.07)			(4.10)			(4.19)
Ever sold health-related products			−0.2300			0.8803			5.1064
			(0.07)			(4.32)			(3.89)
Controls	No	No	Yes	No	No	Yes	No	No	Yes
Mean of dependent variable in low-pay treat.	0.189	0.189	0.189	38.396	38.396	38.396	52.807	52.807	52.807
Observations (number of CHPs)	301	301	271	301	301	271	301	301	271
R^2	0.131	0.157	0.258	0.427	0.444	0.496	0.484	0.504	0.575
p-value Med = High	0.381	0.405	0.850	0.597	0.630	0.619	0.160	0.169	0.466
p-value Low = Med = High	0.071	0.332	0.288	0.220	0.665	0.630	0.076	0.300	0.535