# Improving Government Accountability for Delivering Public Services

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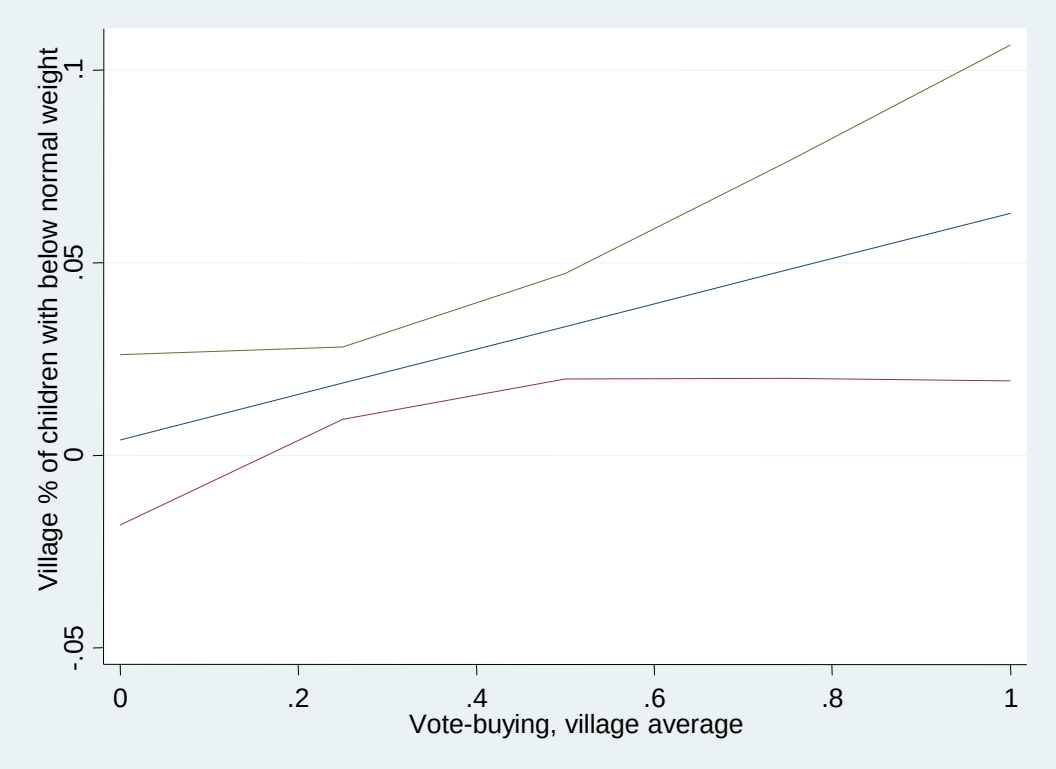
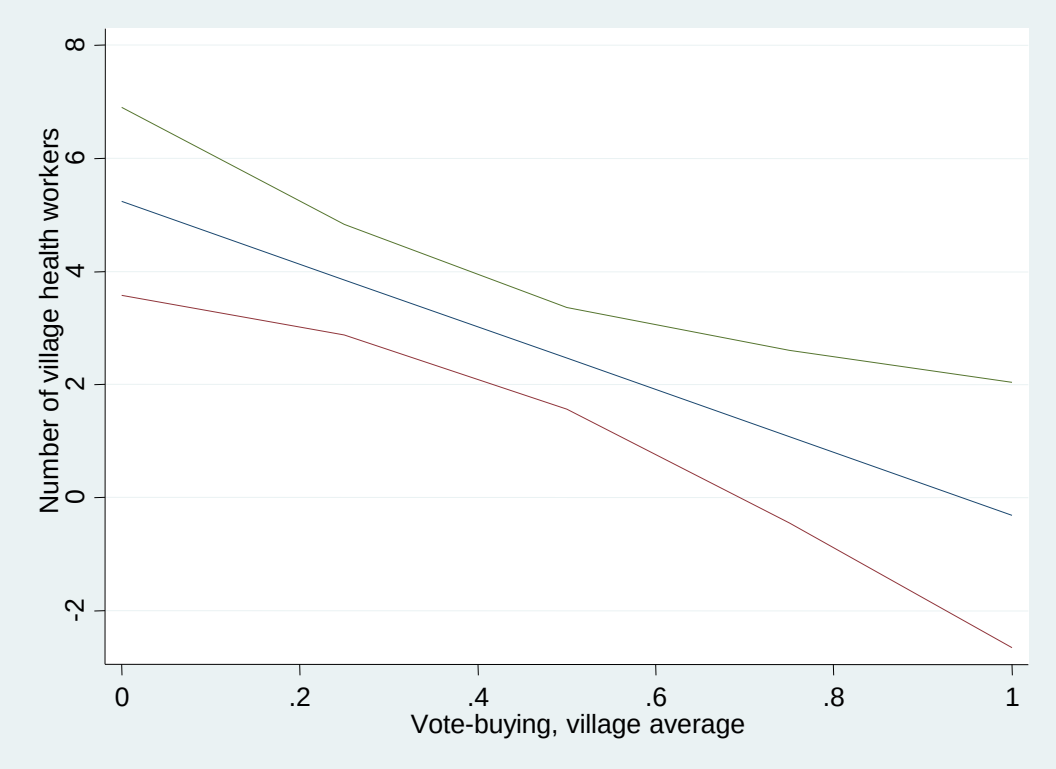
# Background and Motivation

- Governments have powerful policy instruments to improve health and education outcomes, especially among the poor
- Problem: governance/political constraints to using these instruments
- Example: politics of vote buying has significant implications for the delivery of basic health services by local governments

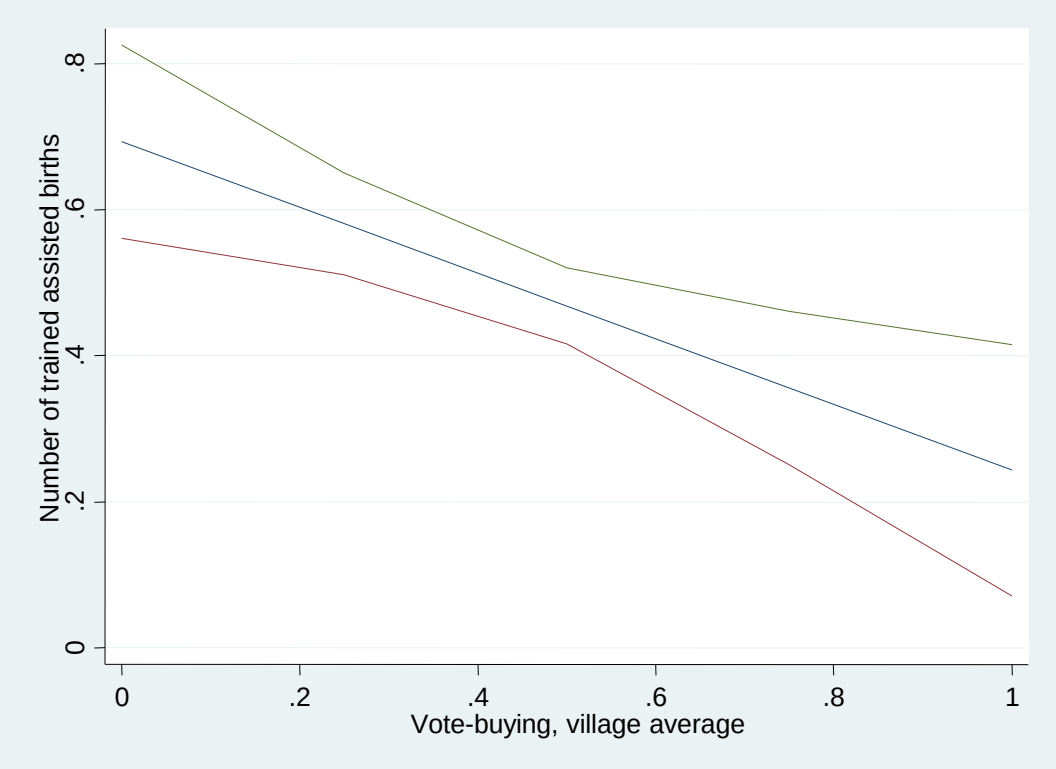
# Evidence from The Philippines:
# Vote buying associated with higher percentage of village children with below-normal weight (Khemani, 2013)



# Vote buying associated with fewer number of village health workers



# Vote buying associated with fewer number of births assisted by trained public health personnel



# Background and Motivation

- Governments have powerful policy instruments to improve health and education outcomes, especially among the poor
- Problem: governance/political constraints to using these instruments
- Solution: evaluating institutional interventions to improve governance. Eg. Transparency, mass media

# Can Transparency Institutions Help?

- Transparency initiatives pursued by reform leaders and their international development partners
- However, little rigorous evidence of impact on government accountability
- New results on the impact of mass media—community radio–from Benin (Keefer and Khemani, 2012a,b; 2013)

# The Role of Mass Media

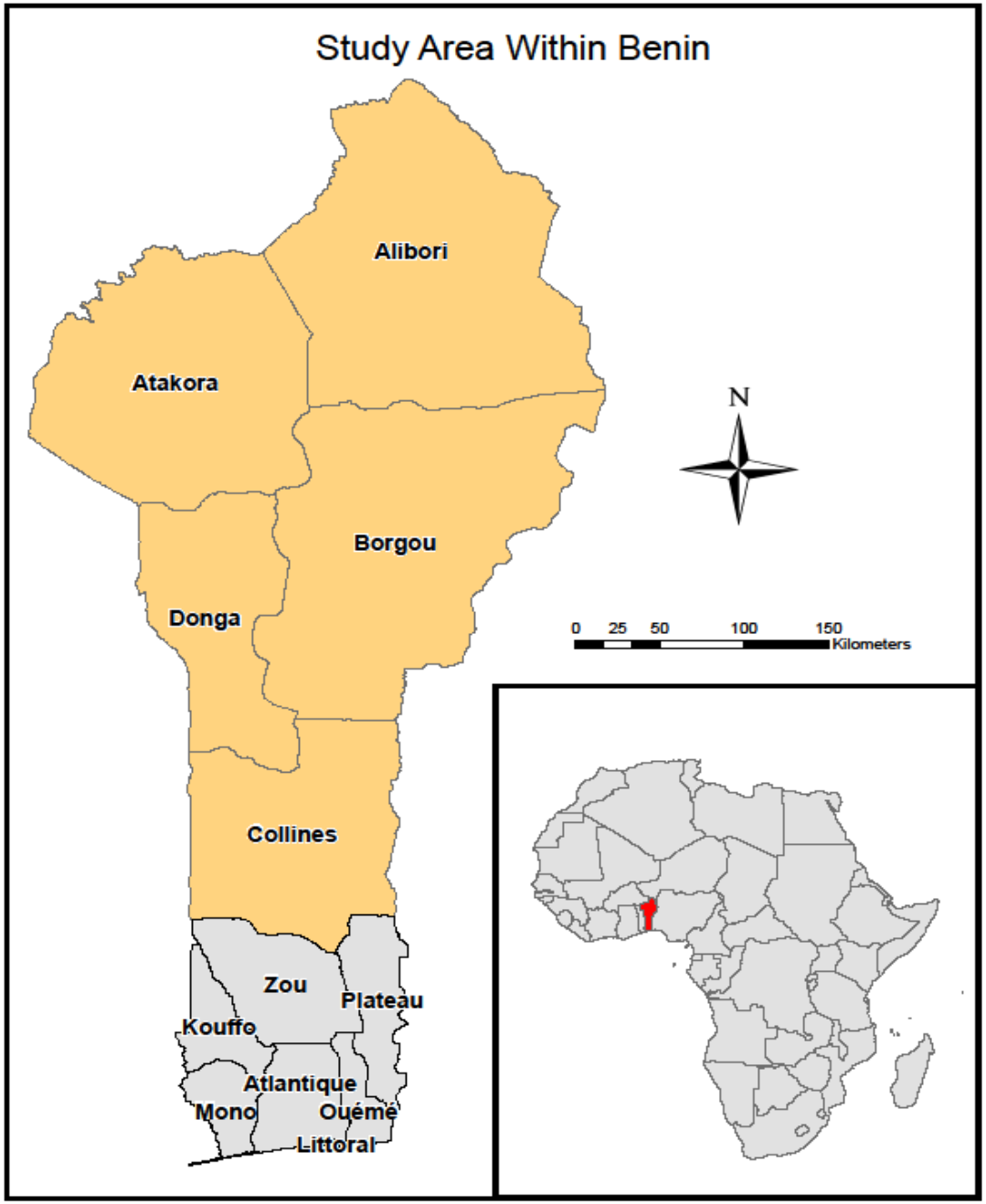
- Research on the influential role of mass media dominated by accountability concerns, and conducted in that context (Besley and Burgess, 2002; Strömberg, 2004; Ferraz and Finan, 2008)
- Media can also provide information that influences private household behaviors that matter for development outcomes (Chong, LaFerrara et al, 2009; Yanagizawa, 2009; Paluck, 2009)
- **Results from Benin: contrasting media's impact on private household behavior versus government responsiveness**

# Previewing Results

- In villages with greater access to community radio,
  - households more likely to report paying for government bed nets they could have received for free
  - More likely to invest private resources in their children's education (including tuition, even though it has been formally repealed)
  - Children more likely to be functionally literate
  - No evidence of greater government provision of benefits

# Benin

- Small country in Francophone West Africa
- Population: 8 million+; Relatively long history of competitive elections and peaceful turnover of political power (20 years);
- Vibrant network of local community radio
- 77 communes—our study focuses on 32 which exhibit conditions of a natural experiment in access to community radio
- Natural experiment in radio markets: intra-commune variation in radio access that is exogenous to village characteristics


Study Area Within Benin
Alibori
Atakora
Borgou
Donga
Collines
Zou
Plateau
Kouffo
Atlantique
Mono
Ouémé
Littoral
N
0 25 50 100 150
Kilometers


Benin Communes in Study Area
Karimama
Malanville
Banikoara
Kandi
Tanguiéta
Kérou
Segbana
Matéri
Gogounou
Cobly
Toffo
Kouandé
Sinendé
Bembéréké
Kalalé
Boukoumbé
Natitingou
Péhunco
Nikki
Copargo
N'Dali
Djougou
Pèrèrè
Ouaké
Parakou
Tchaourou
Bassila
Ouèssè
Bantè
Glazoué
Savè
Savalou
Dassa-Zoumè
N
0 25 50 100 150
Kilometers

# Type of Media

- Mass Media that broadcast information to the poor: Community Radio in Africa
  - Owned and managed by local community organizations
  - To support public-interest programming (eg. importance of health and education), and local collective action
  - a type of media specifically tasked with reaching and influencing the poor

# Identifying media effects

- Previous research has relied on exogenous geological features that interrupt the broadcast of one or two national radio/TV stations

- Our contribution: new source of identification—multiple, small, dispersed broadcasters, whose (possibly) endogenous location can be controlled for through commune fixed effects

- **A "Natural Experiment"**

# Identifying media effects

- Rely on history of establishment of community radio in Benin
- Yields substantial intra-commune variation that is exogenous to village characteristics:
  - Location can be endogenous to commune characteristics
  - Villages within a commune, located close to each other, can differ substantially, and accidentally, in the number of community radio they can access
  - Because of fragmented radio market: village-level variation depends on where signals from multiple, low-powered, and widespread stations, happen to end their reach
- Tailored sampling strategy to take advantage of this variation :
  - Matched villages on observable geographic characteristics; namely, distance from major roads and from radio towers

# Impact on: Health Service Delivery

- Malaria is endemic throughout the country
- Key element of anti-malaria policies in Benin, that is typical across Africa: distribute free/subsidized bed nets to households
  - In-kind benefit from government (supported by international development partners)
  - 58% of the recent decline in infant mortality (in Kenya) attributed to HH bed nets ownership (Demombynes and Trommlerova, 2012)

# Health Service Delivery: Bed Nets Distribution

- Free distribution by government dominates the market in Benin (particularly by the time of our survey, March 2009)--Roll Back Malaria Program
- Government-nets meant to be free (sponsored by donors); generally classified as “essential” health goods
- Bed net distribution organized at the commune level– the lowest political and administrative jurisdiction
- Nets provided to public health workers, staffing village-level public health facilities, to distribute free to households
- Distribution to target HHs (pregnant women, young children) typically happens as part of routine health services—on immunization days, pre-natal visits, for example

# Bed Nets Distribution Program in Benin

- Inter-village variation in **quantity** supplied depends upon decisions at the commune-level or above
- However, inter-village variation in **price** also depends upon the *de facto* decisions of village health workers
  - Health workers are supposed to be able to charge some fees (policy regulated), and retain at the health center
  - Policy regulation in the case of bed nets: zero price
  - However, health workers can exercise *de facto* discretion over price: Weak administrative controls, or, incentives, or, willingness to enforce policies

# Outcomes

- March 2009 Survey: 4200 households across 210 villages
  - Focus: Detailed survey module on bed net acquisition
  - For each bed net household reports currently owning:
    - Source (Government, private supplier, charitable organization/NGO, friends/family, other)
    - Whether received free, whether paid a price

# Outcomes

- Summary statistics from our sample:
  - 86 percent report having at least one bed net of any kind (Mean: 1.9; std. dev: 1.5)
  - 69 percent report having at least one free bed net from government (Mean: 1.2; std. dev: 1.2)
  - 16 percent report purchasing at least one bed net from government (Mean: 0.3; std. dev: 0.8)

# Empirical Test of Competing Hypotheses

- Institutional context generates competing hypotheses:
  - Politics in Benin is clientelist (Wantchekon, 2003)—targeted, private benefits are politically salient
  - Community radio broadcasts information about the value of a specific government benefit: free bed nets
    - Can influence both citizen capacity to demand greater benefits, and, increase willingness to pay for/acquire a valuable health good

# Empirical Test of Competing Hypotheses

- Media's impact if informed citizens **are able** to extract greater benefits:
  - More free bed nets, fewer paid nets
  - Citizens more informed about public policies that matter for accountability

# Empirical Test of Competing Hypotheses

- Media's impact if informed citizens are **not able** to extract greater benefits (for eg. if clientelist networks drive benefits distribution, and are independent of information/media access),

  but ***do*** have higher valuation/willingness to pay:

  - "local capture" increases: health workers more likely to charge a price for nets they could have distributed free
  - Share of paid nets increases, while share of free nets falls
  - HHs more informed about health outcomes and practices, but not about public policies

# Main Specification

$$FreeGovt.Nets_{ijk} = \beta_o + \beta_1 MediaAccess_{jk} + X_{ijk}\beta + \mu_k^{\beta} + \varepsilon_{ij}^{\beta}$$

$$PaidGovt.Nets_{ijk} = \pi_o + \pi_1 MediaAccess_{jk} + X_{ijk}\pi + \mu_k^{\pi} + \varepsilon_{ij}^{\pi}$$

$$AllBedNets_{ijk} = \gamma_o + \gamma_1 MediaAccess_{jk} + X_{ijk}\gamma + \mu_k^{\gamma} + \varepsilon_{ij}^{\gamma}$$

(*For household i, in village j, in commune k;* $\mu_k$ are commune fixed effects)

- Greater accountability to informed citizens:

  $\beta_1 > 0$ , $\pi_1 <= 0$, $\gamma_1 >= 0$
- Greater capture of fees from informed citizens:

  $\beta_1 <= 0$ , $\pi_1 > 0$, $\gamma_1$?

# Measuring Media Access and Identifying Impact

- Survey of all 68 radio stations operating in Benin as of March 2009
- Number of community radio signals accessible at the village level
  - Enumerators interviewed village-level key informants, and checked signals directly through their own transistors
  - Post-coded whether radio were community, public, private commercial, religious
- Number of community radio associated with greater exposure to programming about health issues

# Radio coverage in northern Benin

| | No. of stations in study area | No of sample villages covered (total = 210) | Average signal strength | No. of health programs broadcast over past 3 months |
|---|---|---|---|---|
| Government-owned public radio | 2 | 190 | 2400 | 33 |
| Private non-commercial/com-munity radio | 21 | 195 | 207 | 138 |
| Private commercial radio | 10 | 49 | 476 | 40 |
| Religious radio | 2 | 71 | | 36 |

# Village radio access and exposure to health/education programs
(*p-values, clustered SEs*)

| | # Education Programs | # Health Programs | # Education Programs | # Health Programs |
|---|---|---|---|---|
| Community radio received by village (# stations) | 20.52<br>(0.04) | 126.3<br>(0.01) | 38.61<br>(0.00) | 129.4<br>(0.01) |
| Estimation | FE, control for total # of radios | | FE, control for # of commercial, public, religious radios | |

# Measuring Media Access and Identifying Impact

- Checking for (lack of) observable correlation between radio access and village characteristics, after controlling for commune fixed effects….

## Correlates of village access to community radio

***(OLS with Commune fixed effects; robust, commune-clustered std. errors)***

| | Multivariate | | Bivariate | |
|---|---|---|---|---|
| | *Coefficient* | *P-value* | *Coefficient* | *P-value* |
| Private commercial stations received by village | 0.098269 | 0.70 | .1563494 | 0.518 |
| Religious stations received by village | 0.169079 | 0.523 | .1819484 | 0.446 |
| Public stations received by village | -0.24818 | 0.419 | -.1230383 | 0.689 |
| Village population (1,000s) | -0.00002 | 0.786 | .0000496 | 0.292 |
| Does village have a paved road? | -0.06141 | 0.771 | .3269489 | 0.264 |
| # of potables water sources built in 2007 or 2008 | -0.00729 | 0.785 | -.0098969 | 0.741 |
| Secondary School Dummy | 0.221437 | 0.263 | .257805 | 0.068 |
| Number of functional private schools | -0.42531 | 0.077 | -.1589554 | 0.324 |
| Literacy Center Dummy | -0.02439 | 0.907 | .0464861 | 0.790 |
| Health Center or Maternity Dummy | 0.02136 | 0.91 | .1160546 | 0.292 |
| Village chief has primary schooling | 0.048877 | 0.80 | .0483001 | 0.785 |
| Village chief has secondary education | 0.268501 | 0.234 | .2868384 | 0.205 |
| Distance of village to nearest urban center | -0.00653 | 0.101 | -.0080242 | 0.089 |
| Dropping 7 "outliers" (in remoteness) | -.0061505 | 0.274 | -.0083652 | 0.192 |
| Distance of village to nearest bus or train stop | -0.00324 | 0.326 | -.0055033 | 0.253 |
| Share of surveyed households that report income in the lowest bracket | -0.29826 | 0.335 | -.5687794 | 0.099 |
| Share of surveyed households with a mobile phone | 0.220405 | 0.683 | .8780018 | 0.064 |
| Share of surveyed households with a TV | 1.037958 | 0.433 | 2.035389 | 0.064 |
| Most common language in village and commune is the same | 0.304337 | 0.256 | .2535236 | 0.314 |
| Probability that main language in any two households in the village is the same | -0.64553 | 0.227 | -.3076279 | 0.572 |
| Observations, R-squared | 199, 0.78 | | 208+, varies | |

| Impact of Community Radio on the Distribution of Bed Nets | | | | | | |
|---|---|---|---|---|---|---|
| *(OLS, commune fixed effects, village-clustered std. errors; Control variables not reported: respondent age, ethnicity, religion, dwelling characteristics, hhld head age and gender, village characteristics)* | **Total Number of Bed Nets** | | **Free Govt. Bed Nets** | | **Purchased Govt. Bed Nets** | |
| | *Coefficient* | *t-stat* | *Coefficient* | *t-stat* | *Coefficient* | *t-stat* |
| **Number of Community Radio** | **0.036814** | **0.94** | **-0.03621** | **-1.33** | **0.066108** | **2.91** |
| Respondent age | -0.00975 | -1.92 | -0.00677 | -1.32 | -0.00099 | -0.41 |
| Respondent is female | -0.15321 | -2.05 | -0.10392 | -1.62 | -0.00683 | -0.17 |
| Elementary education | 0.074212 | 1.29 | 0.096315 | 1.91 | 0.02019 | 0.55 |
| Secondary education | 0.264 | 3.82 | 0.109364 | 1.74 | 0.126594 | 2.39 |
| Higher education | 0.486031 | 2.07 | -0.00731 | -0.03 | 0.071538 | 0.51 |
| Number of adults in household | 0.247625 | 9.88 | 0.15643 | 7.83 | 0.03152 | 1.83 |
| Number over age 60 | -0.04159 | -0.44 | -0.0276 | -0.35 | -0.04197 | -0.98 |
| Number of children | 0.161001 | 8.97 | 0.108665 | 7.34 | 0.012705 | 1.35 |
| Number of young children (0-5) | -0.02417 | -0.78 | 0.022629 | 0.94 | -0.00084 | -0.05 |
| Income in second highest bracket | 0.057257 | 1.1 | -0.00872 | -0.2 | 0.090413 | 3.29 |
| Income in highest bracket | 0.23529 | 3.8 | 0.046874 | 0.81 | 0.125613 | 4.04 |
| Owns a TV | 0.487612 | 4.1 | 0.142262 | 1.5 | 0.063675 | 0.96 |
| Owns a mobile phone | 0.200791 | 3.61 | 0.067652 | 1.37 | 0.029915 | 0.82 |
| Observations, R-squared | 3663, 0.29 | | 3663, 0.19 | | 3663, 0.133 | |

| Impact of Community Radio on the Distribution of Bed Nets | | | | | | |
|---|---|---|---|---|---|---|
| *(OLS, commune fixed effects, village-clustered std. errors. Control variables not reported: respondent age, ethnicity, religion, dwelling characteristics, hhld head age and gender, village characteristics)* | **Share of Free-Govt Bed Nets** | | **Share of Paid-Govt Bed Nets** | | **Share of Treated Paid-Govt Bed Nets** | |
| | *Coefficient* | *t-stat* | *Coefficient* | *t-stat* | *Coefficient* | *t-stat* |
| **Number of community radio** | **-0.01956** | **-1.9** | **0.019266** | **2.48** | **0.019523** | **2.45** |
| Respondent age | -0.00178 | -1.35 | 0.001891 | 1.78 | 0.001456 | 1.42 |
| Respondent is female | 0.01021 | 0.49 | 0.003978 | 0.24 | 0.0073 | 0.45 |
| Elementary education | 0.003832 | 0.2 | 0.006044 | 0.41 | 0.015039 | 1.05 |
| Secondary education | -0.02776 | -1.31 | 0.041442 | 2.03 | 0.041997 | 2.06 |
| Higher education | -0.13783 | -2.48 | 0.024111 | 0.51 | 0.024019 | 0.52 |
| Number of adults in household | 0.00463 | 0.81 | -0.00585 | -1.45 | -0.00356 | -0.91 |
| Number over age 60 | -0.01227 | -0.53 | -0.00647 | -0.43 | -0.01327 | -0.91 |
| Number of children | 0.005615 | 1.4 | -0.00151 | -0.5 | -0.00304 | -1.09 |
| Number of young children (0-5) | 0.028124 | 3.35 | -0.00793 | -1.34 | -0.00429 | -0.74 |
| Income in second highest bracket | -0.0398 | -2.29 | 0.039658 | 2.94 | 0.02515 | 2.12 |
| Income in highest bracket | -0.0528 | -2.52 | 0.04254 | 2.91 | 0.025273 | 1.83 |
| Owns a TV | -0.06047 | -2.16 | -0.00189 | -0.09 | -0.01237 | -0.6 |
| Owns a mobile phone | -0.01759 | -0.9 | 0.001761 | 0.12 | 0.000119 | 0.01 |
| Observations, R-squared | 3131, 0.100 | | 3131, 0.124 | | 3131, 0.122 | |

# Robust to:

- Adding other radio variables; dropping all controls except commune F.E.
- Dropping one commune at a time; bootstrapping for small number of commune clusters
- Controlling for health worker visits
- Using only 1,187 HHs with no free bed nets.
- Joint estimation of standard errors using Seemingly Unrelated Regressions.
- Using only HHs in villages with paved roads
- Excluding 25 percent of sample closest to bus stop/urban center
- Excluding 25 percent of sample furthest from bus stop/urban center
- Separately estimating effects of community radios inside and outside of commune.

# Mechanisms: Knowledge of health outcomes, practices

- Two survey questions that measure respondent knowledge of health outcomes and practices, that can matter for private behavior:
  - Child Mortality: “According to you, among 100 children born in Benin, approximately how many cannot survive beyond the age of five?” (Different range options provided)
  - ORS treatment: “Can you tell me what type of treatment is most recommended for small children in case of diarrhoea, vomiting or serious dehydration”? (open ended)

# Mechanisms: Knowledge of health outcomes, practices

- 15% of all respondents could correctly identify the range of child mortality

- 48% of all respondents could correctly describe Oral Rehydration Salts as the most recommended treatment

- **Significant radio impact on knowledge of child mortality, and, conditional on respondent being female, on knowledge of ORS treatment**

| Impact of Community Radio on Health Knowledge | | | | |
|---|---|---|---|---|
| *(OLS, commune fixed effects, village-clustered std. errors. Control variables not reported: respondent age, ethnicity, religion, dwelling characteristics, hhld head age and gender, village characteristics)* | **Knowledge of Benin's Child Mortality Rate (=1 for correct response)** | | **Knowledge of ORS (=1 for correct response)** | |
| | *Coefficient* | *t-stat* | *Coefficient* | *t-stat* |
| **Number of Community Radio** | **0.020318** | **2.59** | **0.000591** | **0.04** |
| **Community radio*Female Respondent** | | | **0.03194** | **1.97** |
| Respondent age | -0.01124 | -0.48 | -0.00757 | -0.14 |
| Respondent is female | -0.00258 | -0.17 | 0.129201 | 5.49 |
| Elementary education | 0.026376 | 1.01 | 0.236212 | 8.1 |
| Secondary education | 0.027678 | 0.43 | 0.329902 | 4.95 |
| Higher education | 0.002928 | 0.58 | 0.010427 | 1.68 |
| Number of adults in household | -0.01478 | -0.81 | -0.09337 | -4.18 |
| Number over age 60 | 0.00419 | 1.02 | 0.022511 | 4.2 |
| Number of children | 0.002634 | 0.32 | 0.023949 | 2.3 |
| Number of young children (0-5) | -0.00902 | -0.62 | 0.054395 | 2.5 |
| Income in second highest bracket | -0.02794 | -1.47 | 0.077378 | 3.26 |
| Income in highest bracket | 0.011379 | 0.36 | 0.075411 | 2.25 |
| Owns a TV | 0.0598 | 2.96 | 0.074653 | 3.71 |
| Observations, R-squared | 3621, 0.073 | | 3663, 0.193 | |

# Mechanisms: Knowledge of health policies

- Several survey questions that measure respondent knowledge of public health policies, that can matter for extracting greater benefits
  - "What is the government doing to fight malaria?" (unprompted, open-ended, post-coded)
  - "Do you know that all public health centers are managed by COGECS?"
  - "Who appoints the members of COGECS?"
- 93% of respondents mentioned the distribution of free bed nets
- 25% of respondents claim to know about COGECS
  - Of these, 75% know that COGEC members are directly elected
- **No impact of radio on policy knowledge**

# Discussion

- Welfare implications really difficult, and shared with rest of literature
- We don't know the extent to which health workers that charge prices for nets use the fees to improve local health services? Or, capture them as private rents?
- Other work on local deviations from centrally set rules has interpreted this as "local capture"=corruption (Uganda: Reinikka and Svensson, 2003)
- Normative implications of bed net pricing by local officials? (Really difficult):
  - How are the fees retained in health centers used?—no evidence; no data in our survey
  - How does pricing impact HH usage?—Cohen and Dupas find no impact in Kenya; Hoffman finds shift away from children in Uganda; no data in our survey to address this

# Discussion

- Scope to increase coverage and protection against malaria by increasing the quantity supplied of bed nets
  - As much as 14% of the sample reports zero bed nets
  - Median household reports 1 bed net for every 3 members, including old nets that were either never treated with insecticide or have lost their effectiveness

# Discussion

- Why no greater catering by government to more informed citizens?
  - "issue framing" the likely explanation (Prat and Strömberg, 2011)
  - In Uganda example, issue framed as corruption, and media programming carried anti-corruption messages
  - Community radio may be framing health issues precisely to influence private household health practices and valuation of health goods, rather than emphasizing government accountability
  - However, could not assume this *a priori*: community radio meant to strengthen local democracy and collective action; empirical test needed to distinguish competing hypotheses

# First Conclusions, & Implications

- Information/transparency interventions can impact outcomes by changing private household behaviors, and increasing private contributions…
- …rather than improving the accountability of public agents

- Mechanisms of impact are particularly important to examine, if policy objective is to improve government accountability, or, to reduce citizen disaffection with government

# First Conclusions, & Implications

- Information/transparency interventions can impact outcomes by changing private household behaviors, and increasing private contributions…
- …rather than improving the accountability of public agents
- Mechanisms of impact are particularly important to examine, if policy objective is to improve government accountability, or, to reduce citizen disaffection with government
- Open question: Media's impact on clientelist/vote buying policy preferences?

# Radio's impact on: Citizen Preference for Clientelism

Vignette to measure preference for JOBS platform versus Education or Health

"In Benin, a political leader considers running for president and is consulting with his advisors to choose his priorities if elected president. You commune is very important to him and he considers different options for offering advantages to the commune. He cannot do both options due to the country's tight budget.

- Option 1: Give public **employment to some** of the commune's residents.
- Option 2: Increase funding for **health** so that **all** the children in the commune are vaccinated and have a mosquito net/Give more books and training to the teachers of all the commune's schools so that children can learn better.
- After carefully thinking, he decides to promise more jobs (Option 1) instead of health/education (Option 2).
- Q.1: If that candidate were running today, would you vote for him?
- Q.2: Do you think the leader made the right choice to increase his chances of winning these elections?
- Q.3: Do you think the choice he made was the right policy for the commune?"

# Radio's Impact on: Citizen Preference for Clientelism

## Vignette to measure preference for GIFTS from candidates at election times

We discussed with two groups of voters from your commune which candidate they would vote for during the next municipal elections. The two candidates (Candidate 1 and Candidate 2) promised to improve education and health for the commune's populations. Moreover, Candidate 1 gave them gifts but Candidate 2 did not.

- The voters in Group 1 said they would vote for the candidate who made gifts.
- The voters in Group 2 said they would vote for the candidate who did not make gifts.
- Q.1: Which group of voters do you agree with?
- Q.2: According to you, which group will win more votes in your commune?
- Q.3: According to you, which candidate is the most corrupt?
- Q.4: According to you, which candidate will keep his promises regarding the improvement of education and health care?

# Radio's Impact on Clientelist Policy Preferences

- Summary statistics from our sample:
  - 59 percent report voting for JOBS (for a few) rather than EDUCATION (for all)
    - Of these, 96% think the JOBS strategy is more likely to win elections; 89% think this is also the right policy for the commune.
  - 49 percent report voting for JOBS (for a few) rather than HEALTH (for all)
    - Of these, 93% think the JOBS strategy is more likely to win elections; 89% think this is also the right policy for the commune
- Radio's estimated effect: ***reduces*** the likelihood of choosing JOBS over HEALTH/EDUCATION

# Radio's Impact on Preference for GIFTS

- Summary statistics from our sample:
  - 44 percent report voting for the GIFTS-giving candidate
    - Of these, 65% respond that the GIFTS-giving candidate is more likely to be corrupt
    - 43% respond candidate is more likely to deliver on service promises
    - 35% of them respond the candidate is more likely to be corrupt, and NO more likely to deliver on service promises (About 15% of full sample)
- Radio's estimated effect: no significant or robust effect on choosing the gifts candidate; some evidence of ***reduction*** in the likelihood of choosing the believed-corrupt-gifts-candidate

# Open Questions

- What programming content (information/persuasion delivered through mass media) might shift clientelist policy equilibria….

…..away from vote-buying type policies/actions, to the effective delivery of broad public services?