

# **Public Goods, Taxation, and Political Participation: A Field Experiment in Freetown, Sierra Leone**

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presented by Michael Rozelle

December 7, 2022

- ▶ **Freetown property tax reform** in 2020
    - Registration of about 110,000 properties
    - Introduction of a transparent (points-based) property assessment scheme
    - Increase of tax liabilities for most valuable and decrease for least valuable properties
- Despite these efforts, tax compliance stays low at about 20%

► **Freetown property tax reform** in 2020

- Registration of about 110,000 properties
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→ Despite these efforts, tax compliance stays low at about 20%

**Q:** Can we increase tax income through **quasi-voluntary tax compliance**?

# MOTIVATION

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- ▶ **Quasi-voluntary compliance**

- ⇒ Messages related to tax morale, e.g., reminders, peer influence,  
**reciprocal motivation** (fiscal exchange)  
(Luttmer and Singhal, 2014)

- ▶ Little evidence on the effects of public service messaging on tax compliance in developing countries

- (Mascagni and Nell, 2022; Cohen, 2020; Grady et al., 2020)

- ▶ Little confidence in reciprocity of the government

- (Prichard, 2017; Dom et al., 2022)

- ⇒ **Need to visibly demonstrate that increased tax revenue translates into increased service provision**

- (Ali et al., 2014; Fjeldstad, 2004)

# MOTIVATION & RESEARCH QUESTIONS

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**Randomized Controlled Trial with > 5,000 participants**

Specific information about services delivered by the local government

⇒ Importantly, not the *provision* of services but rather the *salience* of local level service provision

# MOTIVATION & RESEARCH QUESTIONS

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## Randomized Controlled Trial with > 5,000 participants

Specific information about services delivered by the local government

⇒ Importantly, not the *provision* of services but rather the *salience* of local level service provision

## Research questions

1. Does the provision of specific information on public service delivery improve tax attitudes and increase tax compliance?

# MOTIVATION & RESEARCH QUESTIONS

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## Randomized Controlled Trial with > 5,000 participants

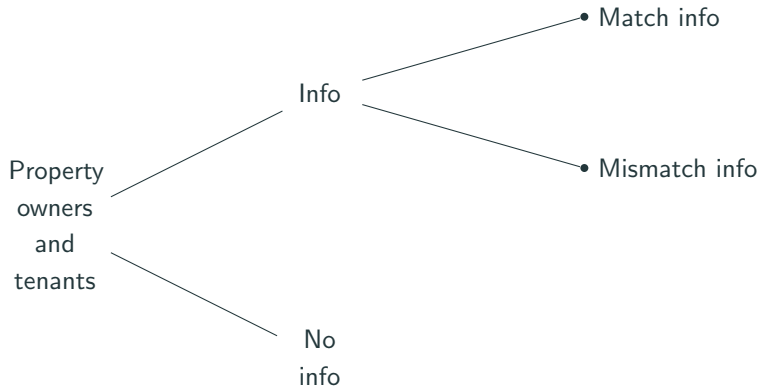
Specific information about services delivered by the local government

⇒ Importantly, not the *provision* of services but rather the *salience* of local level service provision

## Research questions

1. Does the provision of specific information on public service delivery improve tax attitudes and increase tax compliance?
2. Do individual public service preferences play a role in shaping these effects?

# EXPERIMENTAL DESIGN



- ▶ Match info: information on most preferred type of service
- ▶ Mismatch info: information on least preferred type of service



- ▶ **Geo-mapping** of services provided by the Freetown City Council

Map

- ▶ **Baseline** (phone) survey to elicit public service preferences

Survey questions

Service preferences

- ▶ **Intervention** assigned using stratified randomization

- Match and mismatch treatment

Intervention script

Treatment services

- Via the phone

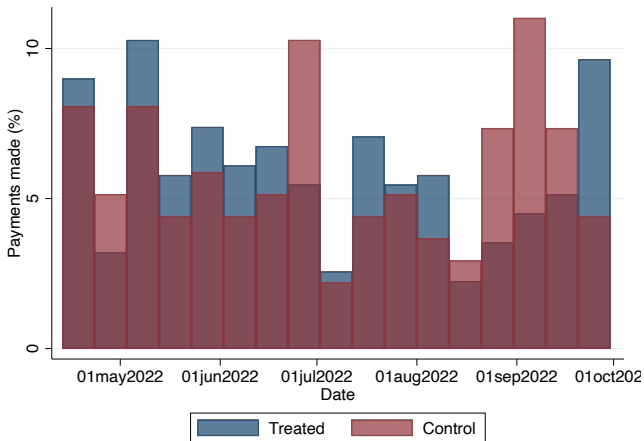
- Reminder SMS immediately after call

- ▶ **Endline** (phone) survey and **administrative data**

1. Tax attitudes (self-reported)
2. Tax compliance (admin)

# PRELIMINARY RESULTS

## Property tax payments made after treatment



# PRELIMINARY RESULTS: Effects by ownership status

	(1) Tax paid (y/n)	(2) Tax amount	(3) Tax share
<i>Panel A. Overall treatment effect</i>			
Treated	0.039** (0.019)	7,764.894 (22,766.303)	0.046** (0.019)
Owner	0.046*** (0.017)	6,753.700 (19,809.622)	0.058*** (0.018)
Treated $\times$ Owner	-0.030 (0.022)	2,868.956 (24,602.623)	-0.045** (0.022)
p-val. Treated + Treated $\times$ Owner = 0	0.416	0.266	0.924
<i>Panel B. Treatment effect by arm</i>			
Match treatment	0.033 (0.022)	-2,873.364 (24,144.729)	0.038 (0.023)
Owner	0.046*** (0.017)	6,718.926 (19,808.950)	0.058*** (0.018)
Match treatment $\times$ Owner	-0.022 (0.025)	13,893.164 (26,662.792)	-0.038 (0.027)
Mismatch treatment	0.046** (0.023)	18,601.619 (27,320.865)	0.054** (0.023)
Mismatch treatment $\times$ Owner	-0.039 (0.026)	-8,343.284 (29,854.234)	-0.052** (0.026)
p-val. Match = Mismatch	0.578	0.374	0.510
p-val. Match + Match $\times$ Owner = 0	0.394	0.361	0.998
p-val. Mismatch + Mismatch $\times$ Owner = 0	0.585	0.396	0.865
Obs.	5,384	5,384	5,384
Control mean	0.204	109469.184	0.186
SD	0.403	367182.152	0.381

Notes: Robust standard errors in parentheses. Significance levels are indicated by \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ .

## Among tenants...

- ▶ Positive effects of the treatment, in particular the mismatch treatment, on whether some property tax was paid (19-23%)
- ▶ Positive effect of the treatment, in particular the mismatch treatment, on share of tax liability paid by the deadline (25-29%)

## For below mean tax liability properties...

- ▶ Positive effects of the treatment on whether some property tax was paid (11-14%)
- ▶ Positive effect on share of tax paid, in particular in the mismatch group (11-12%)

# CONCLUSION

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- ▶ Information on public services has the potential to increase tax compliance
  - ▶ It does so, in particular, for lower value properties and when information is provided to tenants
- Shows importance of involving tenants in property tax collection
- **Open question:** how to nudge high value property owners – whose contributions play a major role for tax revenue – to pay taxes?

Thank you! Questions?

Please get in touch with Laura:

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# REFERENCES

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	February	March	April
Baseline	11/02 – 04/03		
Geomapping		07/03 – 16/03	
Intervention			29/03 – 12/04
Endline			06/04 – 16/04

**Figure A1:** Project timeline



# SURVEY QUESTIONS - PUBLIC SERVICES

[Results](#)[Design](#)

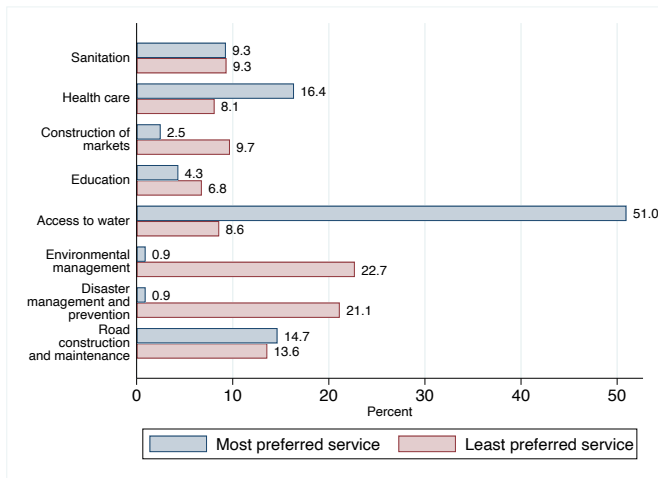
Topic	Question
Most preferred service	<p>In the following, I will read a list of areas of public service provision to you. Imagine the FCC was to provide services in <b>only one</b> of these areas. Which one would you personally prefer?</p> <p>A: Sanitation, Health care, Construction of markets, Education, Access to water, Environmental management, Disaster management and prevention, Road construction and maintenance</p>
Least preferred service	<p>Now think about the same list of public service areas and imagine again that the FCC was to provide services in <b>only one</b> of these areas. Which one would you personally be least interested in?</p>
Service availability	<p>Let's talk about what services the FCC currently provides to the citizens of Freetown. In your opinion, what level of the following public services does the FCC currently provide? Is it a lot, a little, or nothing?</p>
Service satisfaction	<p>Now let's talk about the services the FCC currently provides to the citizens of Freetown. For each of these services, how satisfied are you with the provision of this service?</p> <p>A: 1 (completely unsatisfied) to 5 (completely satisfied)</p>

# SURVEY QUESTIONS - GOVERNMENT CAPACITY

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Topic	Question
Confidence	<p>I am going to name a number of organizations/individuals. For each one, could you tell me how much confidence you have in them: is it a great deal of confidence, some confidence, not very much confidence or none at all?</p> <p>- How much confidence do you have in your ward councillor? your mayor? the FCC?</p>
Approval	<p>Do you approve or disapprove of the way your ward councillor / your mayor has performed on the job over the past twelve months?</p> <p>A: 1 (strongly disapprove) to 5 (strongly approve)</p>
Integrity of government spending	<p>Now I would like to ask you what you think the Freetown City Council (FCC) will do with the money it receives from this year's property tax collection. Imagine that the FCC receives Le 10 million in property tax. How much of this money will be put to good use, for example providing public goods? How much of this money will go to diversion of funds and waste?</p> <p>A: 1 (0 – 2,000,000) to 5 (800,001 – 1,000,000)</p>
Government responsiveness	<p>Some people say that the Freetown City Council is “responsive” to their needs. By “responsive” I mean that the Freetown City Council takes action to address things that people want. Other people say that the Freetown City Council is not responsive and does not address the things that they need. Please tell me if you think the Freetown City Council is:</p> <p>A: 1 (completely unresponsive) to 5 (completely responsive)</p>

# PUBLIC SERVICE PREFERENCES

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**Figure A2:** Public service preferences at baseline

# INTERVENTION SCRIPT

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Today, we are calling you to provide some information about the progress of the Transform Freetown Agenda. In line with this agenda, the Freetown City Council works on improving access to public services across Freetown. The FCC has been raising the necessary funds through different sources, ranging from donor funds to property tax, local tax, and business license tax.

When we last called you, you said that **ACCESS TO WATER** was/were your top priority.



Today, we are calling you to provide some information about the progress of the Transform Freetown Agenda. In line with this agenda, the Freetown City Council works on improving access to public services across Freetown. The FCC has been raising the necessary funds through different sources, ranging from donor funds to property tax, local tax, and business license tax.

Part of these funds have been used to improve **ACCESS TO WATER** in several areas in Freetown.



**ACCESS TO WATER** has/have been improved, for example, at **Bottom Oku, around a 5-10 minutes walk** from your house. Improvements in/of **ACCESS TO WATER** typically include the installation of boreholes, water pumps, or milla tanks.

Do you know about the FCC's improvements in terms of **ACCESS TO WATER** done in this area?

- ☐ Yes
- ☐ No



Thank you very much for your time. Following this call, I will send you a short message on your phone to remind you of where **ACCESS TO WATER** has/have been improved by the FCC in your area. As I said, these improvements have been done at **Bottom Oku, around a 5-10 minutes walk** from your house.

Should you be interested into receiving more details, do not hesitate to get in touch with the FCC representative in your ward.

Thanks again for listening to me and for answering my questions.

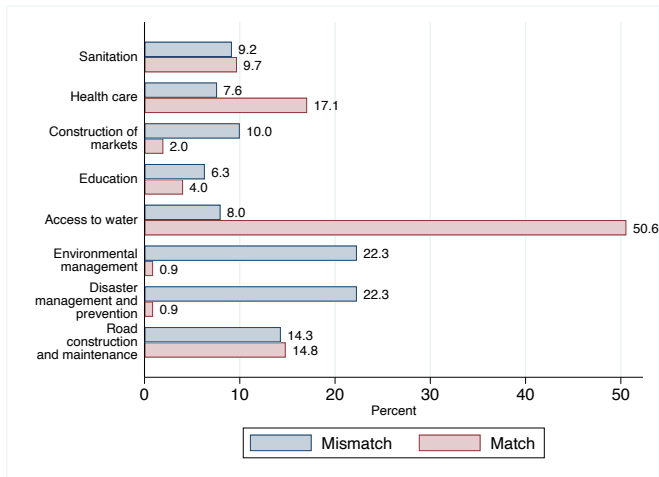
(a) Part I - Match

(b) Part I - Mismatch

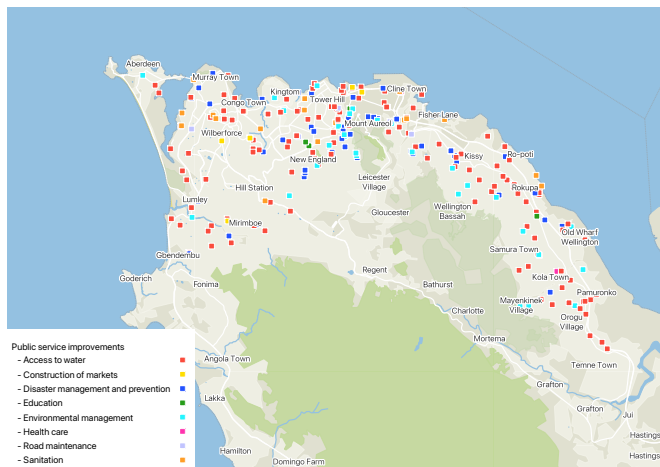
(c) Part II

(d) Part III

# TREATMENT SERVICES BY ARM

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**Figure A3:** Intervention service



**Figure A4:** FCC service improvements across Freetown

## Effects on tax compliance

	(1) Tax paid (y/n)	(2) Tax amount	(3) Tax share
<i>Panel A. Overall treatment effect</i>			
Treated	0.016 (0.010)	8,793.884 (9,119.382)	0.012 (0.010)
<i>Panel B. Treatment effect by arm</i>			
Match treatment	0.017 (0.011)	8,424.280 (11,365.173)	0.009 (0.011)
Mismatch treatment	0.015 (0.011)	10,059.157 (11,095.213)	0.014 (0.011)
p-val. Match = Mismatch	0.876	0.899	0.645
Obs.	5,370	5,370	5,370
Control mean	0.204	109675.978	0.186
SD	0.403	368077.543	0.381

Notes: Robust standard errors in parentheses. Significance levels are indicated by \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ .

# PRELIMINARY RESULTS: Effects by tax liability

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	(1) Tax paid (y/n)	(2) Tax amount	(3) Tax share
<i>Panel A. Overall treatment effect</i>			
Treated	0.027** (0.011)	5,441.026 (3,388.269)	0.023** (0.011)
Above mean tax liability	0.048** (0.019)	155,617.334*** (23,009.982)	0.045** (0.019)
Treated $\times$ Above mean tax liability	-0.040* (0.023)	19,268.725 (32,389.546)	-0.041* (0.023)
p-val. Treated = Treated $\times$ Above mean tax liability	0.083	0.552	0.072
<i>Panel B. Treatment effect by arm</i>			
Match treatment	0.030** (0.013)	6,745.698 (4,260.635)	0.019 (0.013)
Above mean tax liability	0.047** (0.019)	155,591.711*** (23,378.287)	0.046** (0.019)
Match treatment $\times$ Above mean tax liability	-0.049* (0.027)	9,153.839 (39,651.695)	-0.038 (0.026)
Mismatch treatment	0.022* (0.013)	4,506.441 (3,877.115)	0.025* (0.013)
Mismatch treatment $\times$ Above mean tax liability	-0.027 (0.027)	32,041.372 (41,287.460)	-0.039 (0.026)
p-val. Match = Mismatch	0.573	0.604	0.681
p-val. Match = Match $\times$ Above mean tax liability	0.062	0.817	0.147
p-val. Mismatch = Mismatch $\times$ Above mean tax liability	0.329	0.438	0.135
Obs.	5,370	5,370	5,370
Control mean	0.204	109675.978	0.186
SD	0.403	368077.543	0.381

Notes: Robust standard errors in parentheses. Significance levels are indicated by \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ .



# PRELIMINARY RESULTS

## Tax attitudes - index (1) and standardized variables

	(1) Tax compliant attitudes index	(2) The FCC always has the right to make people pay taxes	(3) It is justified that some people do not pay the taxes that they owe	(4) Appropriateness of FCC property tax amount
<i>Panel A. Overall treatment effect</i>				
Treated	-0.021 (0.034)	-0.030 (0.034)	0.018 (0.022)	-0.026 (0.039)
<i>Panel B. Treatment effect by arm</i>				
Match treatment	-0.030 (0.039)	-0.018 (0.039)	0.025 (0.025)	-0.064 (0.045)
Mismatch treatment	-0.012 (0.039)	-0.043 (0.041)	0.011 (0.025)	0.012 (0.044)
p-val. match=mismatch	0.638	0.529	0.567	0.073
Obs.	2,682	2,682	2,682	2,682
Control mean	0.000	0.000	-0.000	-0.000
SD	1.000	1.000	1.000	1.000

Notes: Robust standard errors in parentheses. Significance levels are indicated by \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ .