There is No Place Like Home: Theory and Evidence on Decentralization and Politician Preferences

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Outline

Introduction

Introduction

- Decentralization has been a popular area of reform since 80s.
- Literature emphasizes the tradeoff between better local information & incentives and risk of corruption & capture by local elites.
- However: distortions in inter community allocations may outweigh intra community. (B&M 2006, B&M&M&N 2018)
- Here: Incorporate distortions in inter community allocations

Introduction

- Implications for optimal design of political constitutions: Centralization vs Decentralization vs Civil Servant model
- Key parameter in the model: Home favoritism
- Main conclusion: If favoritism is small (great) enough, decentralization will reduce (increase) welfare relative to centralization.
- Conduct an IC discrete choice experiment with 179 councilors in Kenya and assess the extent of favoritism empirically.

Background on Kenyan Politics

Kenyan Politics

- In the pre-colonial period, Kenya was a multiethnic society.
- British administered the country based in part on ethnicity.
- After the independence in 1963, debate over the constitution.
- KANU prevailed, KADU marginalized, one party state created.
- Very limited role for elected local government at the level of County Councils.
- Despite the single-party state, it was a multiethnic coalition.

Kenyan Politics

- Political competition within the party, on the ability to deliver local public goods. (Harambee system)
- Kenyatta died in 1978, Moi took over, deepened single party rule throughout the 80s.
- Multiparty elections held and term limits imposed in 1992.
- Severe post-election violence in 2007.
- Power sharing agreement made, agreed on a new constitution. (passed in 2010 by referendum)
- Decentralization reintroduced by devolving substantial authority and funds to 47 counties.

Model

Assumptions

- Consider a region with two areas: i and j
- 2 project sites in each area
- y_{nk} quality of nth site in area k, distributed with pdf f and support $(0, \bar{y})$; known by politician/servant pre-decision.
- Politicians given funds to complete 2 projects.

Assumptions

- 2 possible distortions: location of projects and corruption
- Home bias parameter $0 < \alpha \leq 1$: welfare weight of residents of other area.
- Diverting is costly: for every unit they convert, incur cost of $1 - \gamma$.
- γ is distributed with g, has support $(\underline{\gamma}, \bar{\gamma})$

Preferences

$$U = \gamma C + \sum_{n=0}^{m} y_{nD} Q_{nD} + \alpha \sum_{n=0}^{4-m} y_{nF} Q_{nF}$$

- y_{nD} and y_{nF} are the values of a project at site n in home and non-home areas respectively.
- Q_{nD} and Q_{nF} are binary variables indicate whether a location is chosen or not.
- $C \in \{0, 1, 2\}$ indicates whether the politician has chosen to divert no, one or two project's funds to himself.
- Total welfare is given by:

$$\omega = (y_{1i} Q_{1i} + y_{2i} Q_{2i}) + (y_{1j} Q_{1j} + y_{2j} Q_{2j})$$

- 2 potential distortions: no bias parameter or corruption benefits in total welfare

Constitutional Structures

Decentralization to Identity Areas

Each politician control enough funds to complete one project. They are responsible for only their home area. Hence, they maximize:

$$U = \gamma C + (Q_{1D} y_{1D} + Q_{2D} y_{2D})$$

s.t.

$$1 = C + Q_{1D} + Q_{2D}$$

- No scope for bias, but lack of flexibility

Constitutional Structures

Unconstrained Centralized Constitution

Single politician has enough funds for 2 projects.

$$U = \gamma C + (Q_{1D}y_{1D} + Q_{2D}y_{2D}) + \alpha(Q_{1F}y_{1F} + Q_{2F}y_{2F})$$

s.t.

$$2 = C + Q_{1D} + Q_{2D} + Q_{1F} + Q_{2F}$$

- Scope for bias, but more flexible

Constitutional Structure

Constrained Centralization

Equal Treatment Clause

With equal treatment clause, politician can complete at most one project in each area. Thus, he maximizes:

$$\gamma C_D + (Q_{1D} y_{1D} + Q_{2D} y_{2D})$$

s.t.

$$1 = C_D + Q_{1D} + Q_{2D}$$

and

$$\gamma C_F + \alpha(Q_{1F} y_{1F} + Q_{2F} y_{2F})$$

s.t.

$$1 = C_F + Q_{1F} + Q_{2F}$$

- Aim to reduce home bias, but less flexible than unconstrained centralization

Constitutional Structure

Constrained Centralization

Minimum Spending Clause

$$U = \gamma C + (Q_{1D}y_{1D} + Q_{2D}y_{2D}) + \alpha(Q_{1F}y_{1F} + Q_{2F}y_{2F})$$

s.t.

$$2 = C + Q_{1D} + Q_{2D} + Q_{1F} + Q_{2F}$$

and

$$1 \leq C + Q_{1F} + Q_{2F}$$

- Alternative to equal treatment clause

Constitutional Structure

Civil Servant Model

Civil servant maximizes:

$$U = \gamma C + \alpha(Q_{1i}y_{1i} + Q_{2i}y_{2i} + Q_{1j}y_{1j} + Q_{2j}y_{2j})$$

s.t

$$2 = C + Q_{1i} + Q_{2i} + Q_{1j} + Q_{2j}$$

- No home bias, but more prone to corruption than politician in his home area.

Results

- Trade-off between decentralization and centralization
- Centralizing broadens the choice set, thus increases expected welfare
- but may allocate the funds to socially suboptimal projects in presence of home bias.
- α determines which effect dominates.
- Similar for corruption; politician is more likely to find projects that he prefers to corruption (broader choice set)
- However, home bias effect increases expected total corruption.

Lemmas

Lemma 1.1

If $\alpha = 1$, then expected welfare is higher and expected total corruption is lower under a centralized structure than under a decentralized structure.

Lemma 1.2

If $\alpha = 0$, then expected welfare is higher and expected total corruption is lower under a decentralized structure than under a centralized structure.

Lemma 1.3

Exp. welfare under centralization is strictly increasing, and exp. total corruption is str. decreasing in α for $0 < \alpha < 1$.

Lemma 1.4

Expected welfare under centralization is continuous in α on the interval [0,1].

Proposition 1

There exists some $\alpha^* \in (0, 1)$ such that for $\alpha > \alpha^*$, exp. welfare is higher under centralization; for $\alpha < \alpha^*$, exp. welfare is higher under a decentralization, and for $\alpha = \alpha^*$, they are identical.

When $\bar{\gamma} > 0$, There exists some $\hat{\alpha} \in (0, 1)$ such that for $\alpha > \hat{\alpha}$, exp. corruption is lower under centralization, for $\alpha < \hat{\alpha}$, exp. corruption is lower under a decentralization, and for $\alpha = \hat{\alpha}$, they are identical. When $\bar{\gamma} \leq 0$, expected corruption is 0 under all constitutional structures and for any value of α.

Civil Servant Model

Proposition 4

In the absence of corruption, welfare and corruption outcomes under the civil servant model are equivalent to those under an unconstrained centralization model in which $\alpha = 1$. Thus the civil servant model maximizes expected social welfare relative to other constitutions when corruption is not present.

- In the presence of corruption, civil servant model may lead to more corruption. Tradeoff between politician and servant control.

Optimal Geographic Divisions

Proposition 12
If a politician does not have control over the location of projects, then exp. total corruption is weakly higher than it would be if he had. Exp. total corruption is strictly higher if the process determining these locations does not match his preferences and $\bar{\gamma}$ is sufficiently large.

Experiment Design and Context

Experiment Design and Procedure

- They conducted an incentive-compatible discrete choice experiment with 179 elected councilors in rural Kenya in 2012.

- Free dispenser program by IPA
  - Install and maintain approximately 40 chlorine dispensers in county council wards.
  - The dispenser is a device which releases a measured dose of diluted chlorine solution that can be easily added to a container of water immediately after it is collected.
  - Free dispensers are allocated through a public lottery.

- They built on this program by eliciting the preferences of county councilors through a discrete choice experiment consisting of two parts
  - Choose a Dispenser Package
  - Choose a Dispenser Location

Part 1: Choose a Dispenser Package

- Two attributes were varied across dispenser packages:
  - The party choosing where the dispenser would be installed
  - The party that would receive the money to manage the chlorine refills.

- Dispenser location could be determined in one of three ways:
  - Councilor himself
  - District public health officer
  - NGO officer

- Refilling the dispenser
  - Councilor himself(provided 7.77 dollars per month)
  - NGO officer

Part 1: Choose a Dispenser Package

Based on above two attributes, there are 6 different dispenser packages:

	Installed where?	Chlorine delivered how?
Package A	Councilor	Councilor
Package B	Councilor	NGO officer
Package C	District public health officer	Councilor
Package D	District public health officer	NGO officer
Package E	NGO officer	Councilor
Package F	NGO officer	NGO officer

Part 1: Choose a Dispenser Package

- Councilors made a series of 20 choices between two alternative water treatment dispenser packages.
- Councilors were asked to choose which of two dispenser packages they would prefer to receive for their ward.

Q1	Package A v.s. Package B
Q2	Package A v.s. Package C
⋮	⋮
Q15	Package E v.s. Package CF
Q16-Q20	Choose randomly from menu of 15 and presented with the order of two packages swapped

Part 2: Choose a Dispenser Location

- Councilors were asked to choose the water source in their ward where they would like to have a water treatment dispenser installed.
    - In the event that the councilor's ward was randomly chosen to receive a dispenser and the dispenser package that the councilor chose allowed the councilor to choose the dispenser location

How Will a Dispenser Package Implemented Finally?

- Each of their 20 dispenser package selections had a 5 percent (1 in 20) chance of being implemented if their ward was chosen to receive a dispenser through the public lottery.

- After the selection of the 40 wards that would receive a dispenser, an additional lottery was conducted to determine which of the 20 dispenser package questions would decide which dispenser the wards would receive.

- If the councilor chose not to select either of the two dispenser packages offered in that choice set, then no dispenser would be installed in his ward.

- If the councilor indicated that he was indifferent between the two packages offered in that choice problem, the package to be implemented would be selected through a third lottery with a 50 percent chance of each package being chosen

Complementary Data

- Two complementary data from discrete choice experiment.
  - Census of shared water sources in the county council wards
    - ★ 7,618 shared water sources in 3,164 villages
    - ★ name and local nicknames of each water source as well as other basic information the type of source.
    - ★ number of months that each source is dry, the approximate number of households using the source, whether the source is privately owned, whether users have to pay for water from the source, and the ethnicities and wealth levels of the households using the source
  - Political characteristics of the wards in our sample using the official results of the 2007.
    - ★ the total number of registered voters
    - ★ the total number of votes cast

Summary Statistics

Table 1: Summary Statistics — Councilors and Wards

VARIABLE:	MEAN	S.D.	MEDIAN	MIN.	MAX.	N
Female	0.07	0.25	0	0	1	179
Age	46.88	9.99	46	28	73	179
Married	0.91	0.29	1	0	1	179
Kikuyu	0.68	0.47	1	0	1	179
Christian	0.96	0.21	1	0	1	179
Completed secondary school	0.90	0.30	1	0	1	176
Some post-secondary education	0.25	0.43	0	0	1	176
Farmer	0.53	0.50	1	0	1	177
Business owner	0.34	0.48	0	0	1	177
More than half of HH income from being councilor	0.35	0.48	0	0	1	175
Years in politics	8.34	5.49	5	1	30	178
Member of major political party	0.73	0.45	1	0	1	179
Member of PNU party	0.58	0.49	1	0	1	179
Member of ODM party	0.03	0.17	0	0	1	179
Member of ODM-K party	0.12	0.32	0	0	1	179
Heard about chlorine dispensers	0.10	0.30	0	0	1	177
Number of registers voters in ward	8065.66	3138.85	7874	682	16359	179
Voter turnout	79.12	8.64	81.64	34.72	97.26	176

Summary Statistics

Table 2: Summary Statistics of Wards & Water Sources — Source Selection Sample

VARIABLE:	MEAN	S.D.	MEDIAN	MIN.	MAX.	N
Number of water sources in ward	48.52	34.28	40	3	209	157
Proportion streams and rivers	0.37	0.21	0.38	0	0.92	157
Proportion shallow wells	0.12	0.14	0.08	0	0.68	157
Proportion borehole wells	0.08	0.12	0.03	0	0.82	157
Proportion standpipes or taps	0.15	0.19	0.07	0	0.97	157
Proportion protected springs	0.07	0.12	0.02	0	0.88	157
Proportion unprotected springs	0.02	0.07	0	0	0.56	157
Proportion of water sources protected	0.33	0.21	0.31	0	1	156
Proportion of private water sources	0.13	0.14	0.09	0	0.63	157
Proportion of free (no charge) water sources	0.81	0.19	0.86	0.07	1	157
Has year-round source	0.99	0.08	1	0	1	157
Average number of dry months (among sources in ward)	0.63	0.55	0.50	0	2.83	157
Average number of users (HHs) per source in ward	138.27	120.28	102.7	25.52	739.13	157
Maximum number of users at any source in ward	564.85	398.91	470	40	1200	157
Minimum number of users at any source in ward	23.78	22.19	20	10	150	157

Analysis and Results

Framework for Analysis

- Assume that the level of utility councilor n derives from installing dispenser package j in location k is given by:

$$U_{n,j} = V_{n,j,k} + \epsilon_{n,j,k}$$

$V_{n,j,k}$ is the explicitly-modeled representative utility associated with the attributes of dispenser package j when installed at location k and $\epsilon_{n,j,k}$ is an unobserved stochastic component.

- The probability that dispenser package $j \in J$ is chosen by councilor n and installed at location $k \in K$ is then given by

$$P_{n,j} = \frac{e^{V_{n,j}}}{\sum_{l \in J} \sum_{m \in K} e^{V_{n,l,m}}}$$

Assess the Extent of Favoritism (Home Bias)

Table 3: Conditional Logit Model of Water Source Selection

Specification:	LOGIT (1)	LOGIT (2)	LOGIT (3)	LOGIT (4)	LOGIT (5)	LOGIT (6)
Users in councilor's village	0.045*** (0.011)	.	.	.	0.039*** (0.012)	.
Users outside councilor's village	0.019*** (0.004)	.	.	.	0.019*** (0.004)	.
Number of users (tens of HHs)	.	.	0.02*** (0.004)	.	.	.
Log users in councilor's village	.	1.087*** (0.161)	.	.	.	1.419*** (0.364)
Log users outside councilor's village	.	0.635*** (0.108)	.	.	.	0.619*** (0.11)
Log users of water source	.	.	.	0.663*** (0.107)	.	.
In councilor's village	.	.	0.877** (0.405)	0.925** (0.403)	0.415 (0.515)	-1.187 (1.123)
In councilor's sublocation	.	.	0.095 (0.316)	0.131 (0.318)	0.12 (0.318)	0.133 (0.321)

Quantifying Favoritism (Home Bias)

- We can use the results reported in Table 3 to estimate the parameter α from the model, representing the weight that politicians put on the welfare of residents of non-home areas relative to that of residents of their home area.

- Suppose that the utility gain provided by a dispenser to each user of a given water source can be represented by the utility function

$$U'_k = V'_k + \epsilon_k$$

$$V'_k = \beta_0 + \sum_{i=1}^{6} \beta_i I_i$$

- Users' utility can also be represented by $e^{U'_k}$

- Councilor's utility from providing at site k is $(\alpha + (1-\alpha)I_0)n_k e^{U'_k}$ where n is the number of users of source k and I_0 is an indicator variable equal to one if k is in the councilor's home area, and zero otherwise.

- Preferences represented by U can also by represented by

$$0.663(\ln U_k - \alpha - \beta_0) = 0.663(-\ln \alpha I_0 + \sum_{i=1}^{6} \beta_i I_i + \epsilon_k)$$

- The righthand side of this expression takes the form of the specification in column 4 of Table 3.
- So $0.663(-\ln \alpha) = 0.925$. $\alpha = 0.248$.

Decentralization and Corruption

- Councilor n's utility from a dispenser package which allows him to manage chlorine provision and choose the dispenser's location is:

$$U_{n,j} = \phi_n + \alpha_n^{councilor} + \beta_n^{councilor} + \gamma_n^{councilor \times councilor} + \epsilon_{n,j}$$

- ϕ_n is the utility derived from receiving the benchmark dispenser package (where the implementing organization chooses the dispenser location and handles the restocking of chlorine)
- $\alpha_n^{councilor}$ is the increase (or decrease) in utility that results if the councilor is responsible for choosing the dispenser location.
- $\beta_n^{councilor}$ is the change in utility result- ing from allowing the councilor to manage the funds allocated for restocking the chlorine.
- $\gamma_n^{councilor \times councilor}$ is the change in utility from the combination of targeting responsibility and management of restocking funds.

Decentralization and Corruption

Table 4: Mixed Logit Model of Water treatment dispenser Package Choices

	Coefficient	S.D.	Proportion Positive
Ward receives a dispenser	3.382***	3.854***	0.810
	(0.236)	(0.238)	
Councilor decides location	1.923***	1.916***	0.842
	(0.145)	(0.120)	
District Public Health Officer (DPHO) decides location	-0.039	2.282***	0.493
	(0.152)	(0.141)	
Councilor manages chlorine funds	0.019	2.773***	0.503
	(0.166)	(0.148)	
Councilor decides location × councilor manages funds	-1.016***	0.892***	0.127
	(0.165)	(0.308)	
DPHO decides location × councilor manages chlorine funds	-0.437***	0.364**	0.115
	(0.161)	(0.177)	

Conclusion

Conclusion

- This paper develops a theoretical model of politician behavior that demonstrates that when politicians favor their home areas, decentralization can increase social welfare relative to centralization.
- Limiting politicians discretion over where public goods are situated may lead to greater corruption.
- Using an experiment with 179 Kenyan county councilors, they demonstrate and quantify the favoritism.
- Councilors are more likely to value the opportunity to control part of the funds associated with the public good (corrupt) when they do not have control over the location of the public good.