

Online Appendix for *Historical Exposure to Statehood, Ethnic Exclusion, and Compliance With the State*

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1 Summary Statistics (Appendix A)

Table A1: Summary Statistics (Continent-Wide Sample)

Statistic	N	Mean	St. Dev.	Min	Pctl(25)	Pctl(75)	Max
Abide by the Law	25,704	0.769	0.422	0	1	1	1
Absolute Latitude	25,709	11.989	8.404	0.250	5.750	17.750	35.250
Age	25,573	37.105	14.260	18	26	45	100
Age ²	25,573	1,580.126	1,268.812	324.000	676.000	2,025.000	10,000.000
Border Distance	23,573	110.687	93.970	0.000	44.000	150.000	674.000
Capital City Distance	25,709	0.268	0.274	0.005	0.076	0.361	1.911
Conflict	25,709	0.017	0.039	0	0	0	0
Education	25,700	3.475	2.168	0	2	5	9
Employed	25,691	0.411	0.492	0	0	1	1
Exclusion	23,675	1.664	0.621	1	1	2	4
Female	25,709	0.503	0.500	0	0	1	1
LHCE	25,709	0.047	0.055	0.0002	0.008	0.064	0.368
LHCE (10%)	25,709	0.040	0.048	0.0001	0.008	0.054	0.313
LHCE (50%)	25,709	0.019	0.028	0.00002	0.004	0.022	0.202
ln(Nightlights)	25,709	0.701	0.871	0.000	0.035	1.218	3.754
ln(Population)	25,709	12.474	1.529	5.468	11.598	13.505	15.692
Malaria Index	25,709	11.939	10.717	0	1.1	22.1	37
Obey Courts	25,707	0.716	0.451	0	0	1	1
Oil	25,709	0.014	0.118	0	0	0	1
Pay Taxes	25,699	0.739	0.439	0	0	1	1
Pct Mountainous	25,709	0.169	0.259	0.000	0.000	0.278	1.000
Precipitation	23,548	1.042	0.510	0.091	0.678	1.289	3.258
Precipitation ²	23,548	1.345	1.401	0.008	0.460	1.662	10.613
Share of Years Excluded	25,709	0.192	0.276	0	0	0.4	1
Soil Quality	25,709	5.616	0.624	2.135	5.488	5.778	7.000
Temperature	23,548	23.221	3.893	4.590	20.598	26.487	29.983
Urban	25,709	0.423	0.494	0	0	1	1
Water Access	25,709	0.809	0.393	0	1	1	1

Table A2: Summary Statistics (DHS Uganda)

Statistic	N	Mean	St. Dev.	Min	Pctl(25)	Pctl(75)	Max
Age of Mother	44,638	28.236	6.772	15	23	33	49
BCG	35,338	0.881	0.324	0	1	1	1
Buganda	44,638	0.245	0.430	0	0	0	1
DPT1	35,306	0.745	0.436	0	0	1	1
DPT2	35,292	0.659	0.474	0	0	1	1
DPT3	35,292	0.536	0.499	0	0	1	1
Education	44,637	1.028	0.699	0	1	1	3
Measles	35,240	0.613	0.487	0	0	1	1
Period	44,638	1.524	0.499	1	1	2	2
Polio0	35,365	0.542	0.498	0	0	1	1
Polio1	35,346	0.846	0.361	0	1	1	1
Polio2	35,333	0.746	0.435	0	0	1	1
Polio3	35,333	0.548	0.498	0	0	1	1
Radio	38,856	1.613	1.158	0	0	3	3
Urban	44,638	0.196	0.397	0	0	0	1
Vaccination	35,352	0.208	0.406	0	0	0	1
Wealth Index	38,882	1.449	1.530	-1.077	0.000	3.000	4.200

2 Constructing Local Historical Exposure to Capital Cities - LHCE (Appendix B)

The goal of the LHCE measure is to capture the local exposure to centralized political authority over time. We start by taking PRIO-GRID structure as our basis for defining local geographic units. That means for every country in our sample, we have a nested set of 55x55km grid cells for which we construct a measure of local exposure to historical statehood. To measure the history of exposure to centralized political authority, we use information on the physical distance between grid cells and historical capital cities for 50-year periods between 0 and 1900 AD.

Especially before the advent of modern transportation and communication technology, physical distance was a major constraint on the projection of state power over claimed territory. Regions physically proximate to administrative centers of power were much more likely to be affected by the effects of state institutions than regions in the periphery. The idea that state power diminishes with physical distance to administrative centers is in line with related research on state power (Tilly, 1990; Boone, 2003; Herbst, 2014).

To construct our measure, it was necessary to identify historical capital cities or administrative centers. Naturally, this was no easy task. We relied on the state antiquity index (Bockstette *et al.*, 2002) as our starting point. Bockstette *et al.* (2002) construct an index of state antiquity at the country level, working backwards from modern country shapes. For each modern country, they code whether a government above the tribal level existed in parts (or all) of the modern territory, whether such government was local or foreign, and how much of the territory of the modern country the government covered for 39 half centuries from year 1 up to 1950 CE. To achieve this, they rely on historical accounts from *Encyclopedia Britannica*. For each of the 39 half-centuries per country in which Bockstette *et al.* (2002) determine the existence of state-like entities, we use their supplementary coding information and additional sources (Macropedia entries for the country, region, dynasty, ruler, or city) to determine the location of corresponding historical capital cities. In the case of colonial governments, we do not assign the location of the imperial capital, but the location of the local vice-royal city through which colonial powers governed. When Bockstette *et al.* (2002) indicate divided control between foreign and domestic powers, we default to the location of the domestic power. When control is divided between rival domestic powers, we use the capital with the largest reach within the country. Where the comparative reach is unknown, we use the subsequent capital, assuming that the capital that emerged with consolidated rule was likely to have been more powerful during the time of divided rule. Where the governance structure had no official capital, we code the residence of the relevant ruler as the capital. For nomadic societies, we code the capital city as unknown.

This approach is far from perfect because, for instance, certain locations in the periphery of a current nation-state might have been part of a different political entity in the past, with a closer capital. Conversely, some locations close to a current (and past) capital city might have been part of the periphery of a neighboring political entity for long stretches of time. Despite this problem, we believe this approach is a reasonable approximation of local exposure to state institutions within our sample. We expect that our measure does not systematically over- or underestimate local state exposure and thus is subject to non-systematic measurement error and consequent attenuation bias.

Given the location of administrative centers in each half-century, we calculate the inverse distance from each grid cell to the capital city. We aggregate each half-century score into a total,

using a discount rate δ to weigh more recent experiences more heavily in the index. We vary the discount rate from 0 to 50% (mirroring [Bockstette *et al.* \(2002\)](#)).

Importantly, we validate this measure for the European continent, where we are able to construct the same measure not only based on the [Bockstette *et al.* \(2002\)](#) data, but also more detailed maps of the extent of European states and their capital cities from Euratlas ([Nüssli, 2011](#)). For Europe, the more accurate measure correlates at 0.6 with the version based on [Bockstette *et al.* \(2002\)](#). While measurement bias is likely to be more severe in Africa, we expect that our LHCE measure is a reasonable proxy.

3 Variation in Ethnic Exclusion (Appendix C)

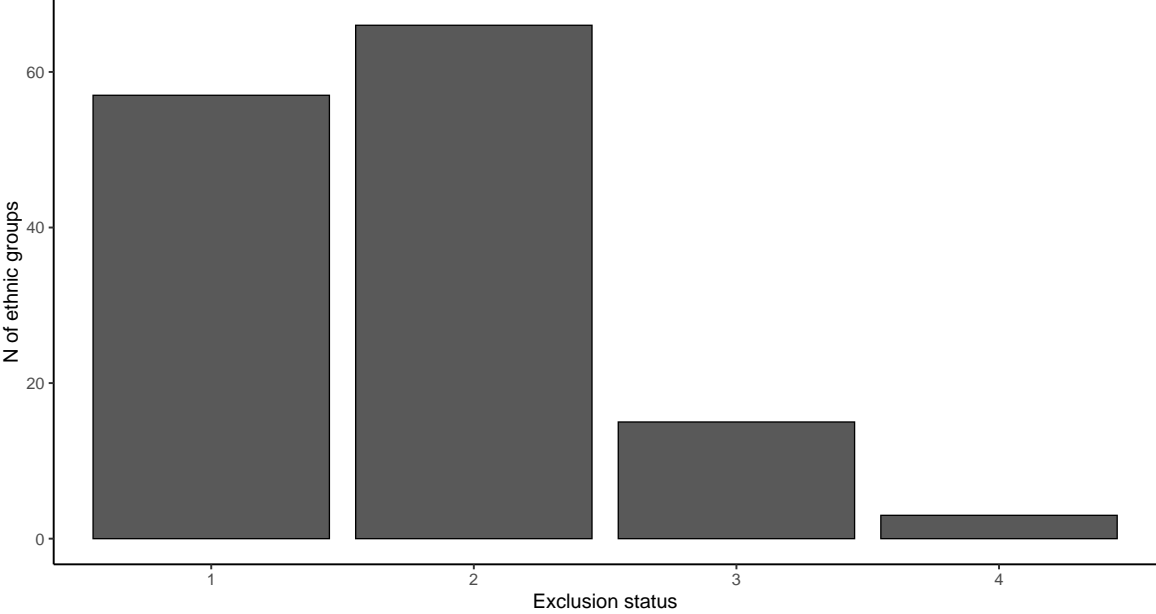


Figure 1: **Variation in Ethnic Exclusion: Ethnic Groups.** Exclusion status at the time of Afrobarometer survey data collection is coded based on the EPR (Ethnic Power Relations) dataset as follows: 1 = senior partner, 2 = junior partner, 3 = powerless, 4 = discrimination.

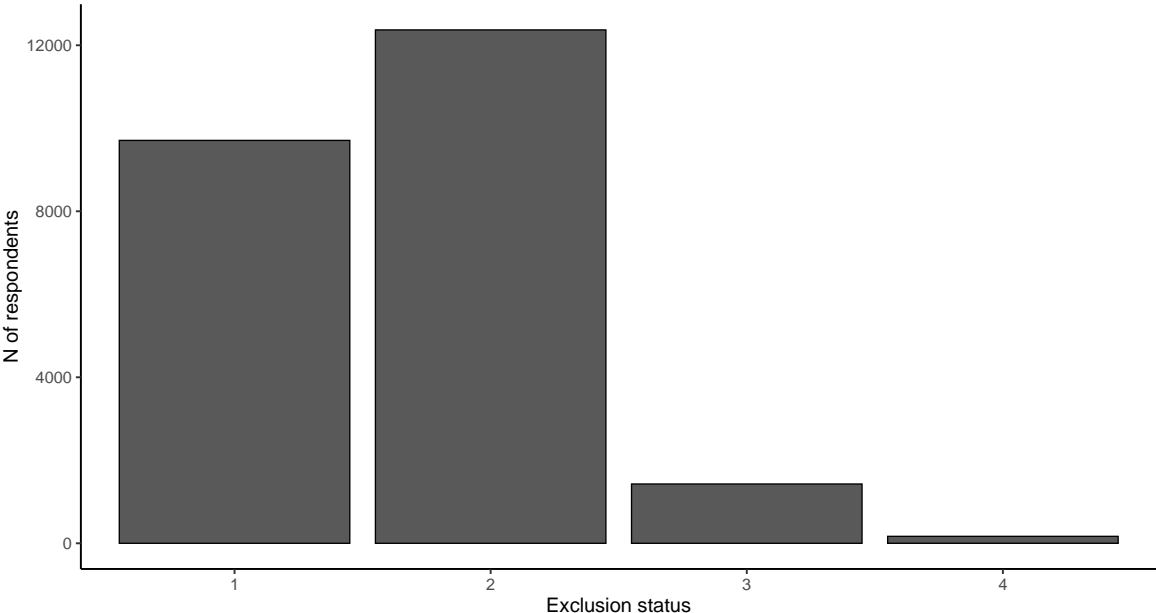


Figure 2: **Variation in Ethnic Exclusion: Afrobarometer Respondents.** Exclusion status at the time of Afrobarometer survey data collection is coded based on the EPR (Ethnic Power Relations) dataset as follows: 1 = senior partner, 2 = junior partner, 3 = powerless, 4 = discrimination.

4 Full Results (Appendix D)

Table D1: Conditional Quasi-Voluntary Compliance (OLS Estimates, Panel A)

	Pay Taxes				Obey Courts				Abide by the Law			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
LHCE	3.06*** (0.78)	3.57*** (0.72)	3.86*** (0.92)	3.77*** (0.79)	2.05*** (0.66)	3.02*** (0.63)	2.35*** (0.66)	2.86*** (0.62)	1.93*** (0.60)	2.85*** (0.56)	2.28*** (0.57)	2.59*** (0.56)
Water Access	0.05 (0.04)	0.07* (0.04)	0.03 (0.03)	0.04 (0.03)	0.03 (0.03)	0.05* (0.03)	0.03 (0.03)	0.05 (0.03)	-0.01 (0.03)	0.01 (0.03)	-0.005 (0.03)	0.01 (0.03)
Soil Quality	-0.02 (0.03)	-0.01 (0.03)	0.002 (0.02)	0.01 (0.02)	0.03 (0.03)	0.04 (0.03)	0.05** (0.02)	0.05** (0.02)	0.003 (0.03)	0.01 (0.03)	0.03 (0.02)	0.03 (0.02)
Absolute Latitude	-0.02** (0.01)	-0.02*** (0.01)	-0.01 (0.01)	-0.01 (0.01)	-0.02*** (0.01)	-0.03*** (0.01)	-0.01 (0.01)	-0.02** (0.01)	-0.02*** (0.01)	-0.03*** (0.01)	-0.02* (0.01)	-0.02** (0.01)
Pct Mountainous	0.15** (0.07)	0.14** (0.07)	0.10 (0.06)	0.10 (0.06)	0.17*** (0.06)	0.14** (0.05)	0.04 (0.06)	0.03 (0.05)	0.16*** (0.06)	0.14** (0.06)	0.10* (0.05)	0.09* (0.05)
Precipitation	0.15 (0.17)	0.17 (0.18)	0.51*** (0.16)	0.52*** (0.16)	-0.01 (0.15)	0.12 (0.16)	0.26* (0.16)	0.26 (0.17)	-0.12 (0.15)	-0.03 (0.15)	0.17 (0.15)	0.21 (0.16)
Precipitation ²	-0.09* (0.05)	-0.09* (0.05)	-0.17*** (0.05)	-0.17*** (0.05)	-0.01 (0.05)	-0.05 (0.05)	-0.09 (0.05)	-0.09 (0.06)	-0.003 (0.04)	-0.03 (0.05)	-0.07 (0.05)	-0.07 (0.05)
Temperature	0.01 (0.01)	0.01 (0.01)	0.001 (0.01)	0.003 (0.01)	0.01 (0.01)	0.01 (0.01)	0.01 (0.01)	0.01 (0.01)	0.02** (0.01)	0.02* (0.01)	0.01 (0.01)	0.01 (0.01)
Malaria Index	-0.004 (0.004)	-0.005 (0.004)	0.001 (0.005)	0.0000 (0.005)	-0.002 (0.003)	-0.001 (0.003)	-0.001 (0.004)	-0.001 (0.003)	0.001 (0.004)	0.001 (0.004)	0.003 (0.004)	0.003 (0.004)
Share of Years Excluded	-0.01 (0.06)	0.01 (0.06)			0.09 (0.05)	0.10* (0.05)			0.10* (0.06)	0.12** (0.06)		
Exclusion	0.003 (0.03)	-0.001 (0.03)			-0.01 (0.03)	-0.01 (0.03)			-0.04 (0.03)	-0.04 (0.03)		
Capital City Distance		-0.05 (0.07)		-0.15* (0.08)		0.15** (0.06)		0.07 (0.07)		0.06 (0.07)		-0.01 (0.07)
Border Distance		0.0002 (0.0002)		0.0001 (0.0002)		0.0004** (0.0002)		0.0004** (0.0002)		0.0002 (0.0002)		0.0002 (0.0002)
Conflict		-1.12* (0.66)		-0.06 (0.47)		-1.10* (0.57)		-0.54 (0.54)		-0.60 (0.57)		-0.17 (0.54)
ln(Population)		-0.01 (0.02)		-0.01 (0.02)		-0.02 (0.02)		0.002 (0.02)		-0.02 (0.02)		-0.01 (0.02)
ln(Nightlights)		-0.07* (0.04)		-0.06* (0.04)		-0.02 (0.03)		-0.05 (0.03)		-0.03 (0.03)		-0.04 (0.03)
Oil		-0.19* (0.10)		-0.17* (0.09)		0.09 (0.13)		0.06 (0.13)		0.12 (0.12)		0.10 (0.10)
Female	-0.06*** (0.02)	-0.04** (0.02)	-0.06*** (0.02)	-0.04** (0.02)	0.01 (0.02)	0.01 (0.02)	0.01 (0.02)	0.01 (0.02)	-0.03** (0.02)	-0.03** (0.02)	-0.03** (0.02)	-0.03** (0.02)
Age	-0.0004 (0.003)	-0.002 (0.003)	0.001 (0.003)	-0.001 (0.003)	0.003 (0.003)	0.0002 (0.003)	0.003 (0.003)	0.001 (0.003)	-0.002 (0.003)	-0.003 (0.003)	-0.0003 (0.003)	-0.001 (0.003)
Age ²	0.0000 (0.0000)	0.0000 (0.0000)	-0.0000 (0.0000)	0.0000 (0.0000)	-0.0000 (0.0000)	0.0000 (0.0000)	-0.0000 (0.0000)	0.0000 (0.0000)	0.0000 (0.0000)	0.0000 (0.0000)	0.0000 (0.0000)	0.0000 (0.0000)

Table D2: Conditional Quasi-Voluntary Compliance (OLS Estimates, Panel A) - Continued

Education	0.04*** (0.01)	0.04*** (0.01)	0.04*** (0.01)	-0.02*** (0.01)	-0.02*** (0.01)	-0.002 (0.01)	-0.002 (0.01)					
Employed	0.05** (0.02)	0.05** (0.02)	0.05** (0.02)	0.05** (0.02)	0.05** (0.02)	0.02 (0.02)	0.02 (0.02)					
Urban	0.01 (0.03)	0.03 (0.02)	0.03 (0.02)	-0.03 (0.03)	-0.03 (0.03)	-0.03 (0.03)	-0.01 (0.02)					
LHCE × Exclusion	-1.56*** (0.48)	-1.63*** (0.51)	-2.24*** (0.59)	-2.00*** (0.56)	-0.93** (0.41)	-1.13*** (0.42)	-1.11*** (0.42)	-1.06** (0.41)	-0.65 (0.40)	-0.87** (0.38)	-0.87** (0.35)	-0.84** (0.34)
Country FE	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Ethnic group FE			✓	✓			✓	✓			✓	✓
N	20,896	20,401	20,896	20,401	21,059	20,553	21,059	20,553	21,270	20,757	21,270	20,757
Adjusted R ²	0.06	0.07	0.08	0.09	0.06	0.06	0.07	0.07	0.07	0.07	0.08	0.08

Notes: Standard errors are clustered at the grid cell level. Pre-treatment controls: water access, soil quality, absolute latitude, mountainous terrain percentage, precipitation, precipitation squared, temperature, malaria index, sex, age, age². Post-treatment controls: capital city distance, border distance, conflict, log of population, log of nightlights, oil, education, formal employment, urban location. OLS = ordinary least squares; FE = fixed effects. Statistical significance: ***p < .01; **p < .05; *p < .1.

Table D3: Conditional Quasi-Voluntary Compliance (OLS Estimates, Panel B)

	Pay Taxes				Obey Courts				Abide by the Law			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
LHCE	1.46*** (0.44)	1.83*** (0.43)	1.79*** (0.47)	1.86*** (0.43)	1.10*** (0.37)	1.89*** (0.35)	1.23*** (0.34)	1.79*** (0.34)	1.16*** (0.33)	1.84*** (0.34)	1.38*** (0.32)	1.72*** (0.34)
Water Access	0.06 (0.04)	0.07* (0.04)	0.03 (0.03)	0.04 (0.03)	0.03 (0.03)	0.05* (0.03)	0.03 (0.03)	0.05 (0.03)	-0.004 (0.03)	0.02 (0.03)	-0.005 (0.03)	0.01 (0.03)
Soil Quality	-0.02 (0.03)	-0.01 (0.03)	0.003 (0.02)	0.01 (0.02)	0.03 (0.03)	0.04 (0.03)	0.05** (0.02)	0.05** (0.02)	0.004 (0.03)	0.01 (0.03)	0.03 (0.02)	0.03 (0.02)
Absolute Latitude	-0.02** (0.01)	-0.02*** (0.01)	-0.01 (0.01)	-0.01 (0.01)	-0.02*** (0.01)	-0.03*** (0.01)	-0.01 (0.01)	-0.02** (0.01)	-0.02*** (0.01)	-0.02*** (0.01)	-0.01* (0.01)	-0.02** (0.01)
Pct Mountainous	0.15** (0.07)	0.14** (0.07)	0.11* (0.07)	0.11* (0.06)	0.17*** (0.06)	0.14*** (0.05)	0.04 (0.06)	0.03 (0.05)	0.16*** (0.06)	0.14** (0.05)	0.10* (0.05)	0.09* (0.05)
Precipitation	0.21 (0.18)	0.22 (0.18)	0.49*** (0.16)	0.51*** (0.16)	0.01 (0.15)	0.12 (0.16)	0.27* (0.16)	0.27 (0.17)	-0.03 (0.15)	0.04 (0.15)	0.18 (0.15)	0.22 (0.16)
Precipitation ²	-0.11* (0.05)	-0.11* (0.06)	-0.17*** (0.05)	-0.17*** (0.05)	-0.02 (0.05)	-0.05 (0.05)	-0.09* (0.05)	-0.09 (0.06)	-0.03 (0.05)	-0.04 (0.05)	-0.07 (0.05)	-0.08 (0.05)
Temperature	0.004 (0.01)	0.01 (0.01)	0.001 (0.01)	0.003 (0.01)	0.01 (0.01)	0.01 (0.01)	0.01 (0.01)	0.01 (0.01)	0.02* (0.01)	0.01 (0.01)	0.01 (0.01)	0.01 (0.01)
Malaria Index	-0.01 (0.004)	-0.01 (0.004)	0.002 (0.005)	0.0003 (0.005)	-0.002 (0.003)	-0.001 (0.003)	-0.001 (0.004)	-0.001 (0.003)	-0.001 (0.004)	-0.0005 (0.004)	0.003 (0.004)	0.003 (0.004)
Share of Years Excluded	0.02 (0.06)	0.04 (0.06)			0.12* (0.06)	0.13** (0.06)			0.10 (0.06)	0.12* (0.06)		
Junior Partner	0.01 (0.04)	-0.01 (0.04)			0.001 (0.04)	-0.002 (0.04)			-0.06 (0.04)	-0.06* (0.04)		
Powerless	-0.15 (0.09)	-0.11 (0.09)			-0.12 (0.09)	-0.10 (0.08)			-0.16* (0.08)	-0.13 (0.08)		
Discriminated	0.43*** (0.13)	0.46*** (0.13)			0.10 (0.12)	0.04 (0.12)			0.31*** (0.11)	0.28** (0.11)		
Capital City Distance		-0.06 (0.07)		-0.14* (0.08)		0.14** (0.06)		0.07 (0.07)		0.05 (0.07)		-0.02 (0.07)
Border Distance		0.0002 (0.0002)		0.0001 (0.0002)		0.0004** (0.0002)		0.0004** (0.0002)		0.0002 (0.0002)		0.0002 (0.0002)
Conflict		-0.91 (0.61)		-0.04 (0.46)		-1.03* (0.56)		-0.52 (0.54)		-0.42 (0.56)		-0.15 (0.54)
ln(Population)		-0.01 (0.02)		-0.01 (0.02)		-0.02 (0.02)		0.002 (0.02)		-0.01 (0.02)		-0.01 (0.02)
ln(Nightlights)		-0.07** (0.04)		-0.06* (0.04)		-0.02 (0.03)		-0.05 (0.04)		-0.04 (0.03)		-0.04 (0.03)
Oil		-0.20* (0.10)		-0.15* (0.09)		0.09 (0.14)		0.06 (0.13)		0.10 (0.12)		0.10 (0.10)
Female	-0.06*** (0.02)	-0.03** (0.02)	-0.06*** (0.02)	-0.04** (0.02)	0.01 (0.02)	0.01 (0.02)	0.01 (0.02)	0.01 (0.02)	-0.03** (0.02)	-0.03** (0.02)	-0.03** (0.02)	-0.03** (0.02)
Age	-0.0004 (0.003)	-0.002 (0.003)	0.0005 (0.003)	-0.001 (0.003)	0.003 (0.003)	0.0003 (0.003)	0.003 (0.003)	0.001 (0.003)	-0.002 (0.003)	-0.003 (0.003)	-0.0003 (0.003)	-0.001 (0.003)
Age ²	0.0000 (0.0000)	0.0000 (0.0000)	-0.0000 (0.0000)	0.0000 (0.0000)	-0.0000 (0.0000)	0.0000 (0.0000)	-0.0000 (0.0000)	0.0000 (0.0000)	0.0000 (0.0000)	0.0000 (0.0000)	0.0000 (0.0000)	0.0000 (0.0000)

Table D4: Conditional Quasi-Voluntary Compliance (OLS Estimates, Panel B) - Continued

Education	0.04*** (0.01)	0.04*** (0.01)	-0.02*** (0.01)	-0.02*** (0.01)	-0.001 (0.01)	-0.002 (0.01)						
Employed	0.05** (0.02)	0.05** (0.02)	0.05** (0.02)	0.05** (0.02)	0.02 (0.02)	0.02 (0.02)						
Urban	0.01 (0.03)	0.03 (0.02)	-0.03 (0.03)	-0.03 (0.03)	-0.03 (0.03)	-0.01 (0.02)						
LHCE × Junior Partner	-1.65*** (0.59)	-1.52** (0.63)	-2.77*** (0.80)	-2.33*** (0.77)	-1.00* (0.54)	-1.24** (0.54)	-1.09* (0.55)	-1.06** (0.54)	-0.46 (0.50)	-0.59 (0.50)	-0.76 (0.48)	-0.71 (0.47)
LHCE × Powerless	-1.29 (1.36)	-2.94 (2.15)	-0.28 (1.23)	-0.91 (1.29)	-0.56 (1.02)	-1.03 (1.45)	-1.01 (1.34)	-0.96 (1.22)	-0.37 (1.44)	-2.45 (1.66)	-1.26 (1.22)	-1.33 (1.22)
LHCE × Discriminated	-5.07** (2.15)	-4.99** (2.08)	-5.76*** (2.22)	-5.93*** (2.23)	-3.76* (2.21)	-3.33 (2.20)	-4.35* (2.29)	-4.03* (2.27)	-3.12** (1.54)	-2.96* (1.54)	-3.70** (1.53)	-3.64** (1.54)
Country FE	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Ethnic Group FE			✓	✓			✓	✓			✓	✓
N	20,896	20,401	20,896	20,401	21,059	20,553	21,059	20,553	21,270	20,757	21,270	20,757
Adjusted R ²	0.06	0.07	0.08	0.09	0.06	0.06	0.07	0.07	0.07	0.07	0.08	0.08

Notes: Standard errors are clustered at the grid cell level. Pre-treatment controls: water access, soil quality, absolute latitude, mountainous terrain percentage, precipitation, precipitation squared, temperature, malaria index, sex, age, age². Post-treatment controls: capital city distance, border distance, conflict, log of population, log of nightlights, oil, education, formal employment, urban location. Senior partner is the omitted category. OLS = ordinary least squares; FE = fixed effects. Statistical significance: ***p < .01; **p < .05; *p < .1.

5 Marginal Effect Plots (Appendix E)

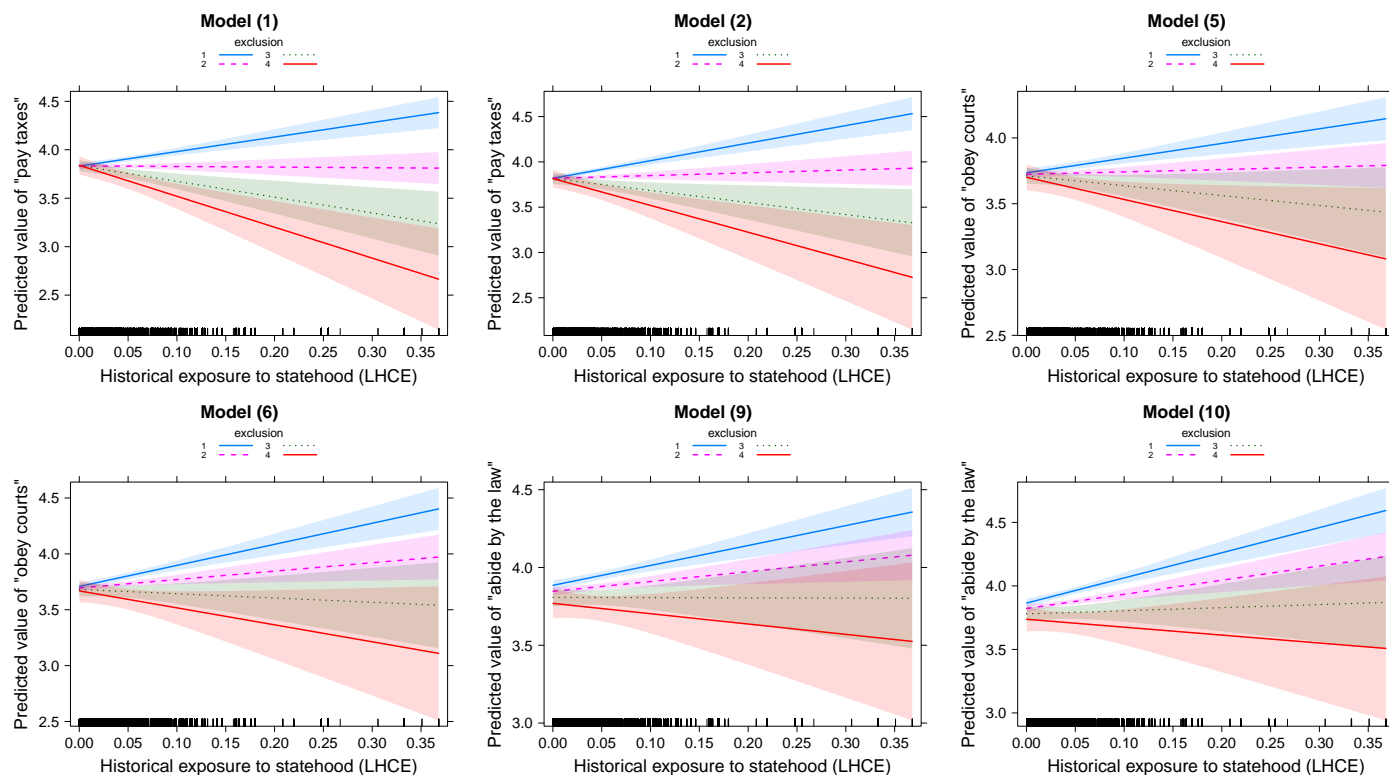


Figure 3: **Conditional Quasi-Voluntary Compliance (Marginal Effect Plots).** Variables displayed on the vertical axis range from 0 to 5, with higher values indicating greater compliance. Exclusion runs from 1 to 4 and higher values indicate greater degrees of exclusion. The plots display effects from models (1), (2), (5), (6), (9), and (10) from Table 1 (Panel A) in the article. Models with ethnic group fixed effects are not displayed because coefficients for exclusion in the presence of ethnic group fixed effects are inestimable.

6 Main Results Without Interaction (Appendix F)

Table F1: Dropping Interaction Between LHCE and Exclusion (OLS Estimates)

	Pay Taxes				Obey Courts				Abide by the Law			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
PANEL A												
LHCE	0.75 (0.46)	1.20** (0.50)	0.58 (0.46)	0.90* (0.51)	0.67* (0.35)	1.38*** (0.38)	0.72** (0.33)	1.33*** (0.35)	0.97*** (0.32)	1.59*** (0.36)	1.01*** (0.29)	1.39*** (0.31)
Exclusion	-0.05** (0.02)	-0.05** (0.02)			-0.04* (0.02)	-0.05* (0.02)			-0.06** (0.03)	-0.07*** (0.03)		
PANEL B												
LHCE	0.70 (0.46)	1.15** (0.49)	0.58 (0.46)	0.90* (0.51)	0.64* (0.35)	1.36*** (0.38)	0.72** (0.33)	1.33*** (0.35)	0.94*** (0.32)	1.55*** (0.36)	1.01*** (0.29)	1.39*** (0.31)
Junior Partner	-0.05* (0.03)	-0.06** (0.03)			-0.04 (0.03)	-0.04 (0.03)			-0.07** (0.03)	-0.08*** (0.03)		
Powerless	-0.19** (0.08)	-0.18** (0.08)			-0.14** (0.07)	-0.13* (0.07)			-0.17** (0.07)	-0.19*** (0.07)		
Discriminated	0.35*** (0.12)	0.38*** (0.13)			0.05 (0.11)	-0.01 (0.11)			0.27** (0.11)	0.24** (0.11)		
Country FE	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Pre-treatment controls	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Post-treatment controls		✓		✓		✓		✓		✓		✓
Ethnic group FE			✓	✓			✓	✓			✓	✓
N	20,896	20,401	20,896	20,401	21,059	20,553	21,059	20,553	21,270	20,757	21,270	20,757
Adjusted R ²	0.06	0.07	0.08	0.09	0.06	0.06	0.07	0.07	0.07	0.07	0.08	0.08

Notes: Standard errors are clustered at the grid cell level. Pre-treatment controls: water access, soil quality, absolute latitude, mountainous terrain percentage, precipitation, precipitation squared, temperature, malaria index, sex, age, age². Post-treatment controls: capital city distance, border distance, conflict, log of population, log of nightlights, oil, education, formal employment, urban location. In Panel B, senior partner is the omitted category. OLS = ordinary least squares; FE = fixed effects. Statistical significance: ***p < .01; **p < .05; *p < .1.

7 Omitting North Africa (Appendix G)

Table G1: Omitting North African Observations (OLS Estimates)

	Pay Taxes				Obey Courts				Abide by the Law			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
PANEL A												
LHCE	3.04*** (0.82)	3.54*** (0.78)	3.94*** (1.01)	3.71*** (0.86)	1.91*** (0.69)	2.91*** (0.66)	2.12*** (0.69)	2.61*** (0.64)	1.89*** (0.64)	2.86*** (0.59)	2.21*** (0.60)	2.51*** (0.59)
Exclusion	0.002 (0.03)	-0.001 (0.03)			-0.01 (0.03)	-0.02 (0.03)			-0.04 (0.03)	-0.04 (0.03)		
LHCE × Exclusion	-1.54*** (0.53)	-1.62*** (0.57)	-2.29*** (0.68)	-1.96*** (0.64)	-0.83* (0.44)	-1.06** (0.46)	-0.94** (0.46)	-0.88** (0.44)	-0.62 (0.44)	-0.88** (0.43)	-0.82** (0.39)	-0.77** (0.38)
PANEL B												
LHCE	1.45*** (0.44)	1.82*** (0.43)	1.79*** (0.47)	1.85*** (0.43)	1.10*** (0.37)	1.88*** (0.35)	1.23*** (0.34)	1.78*** (0.34)	1.17*** (0.33)	1.85*** (0.34)	1.38*** (0.32)	1.72*** (0.34)
Junior Partner	0.01 (0.04)	-0.01 (0.04)			0.001 (0.04)	-0.002 (0.04)			-0.06 (0.04)	-0.06* (0.04)		
Powerless	-0.15 (0.09)	-0.11 (0.09)			-0.12 (0.09)	-0.10 (0.08)			-0.16* (0.08)	-0.13 (0.08)		
Discriminated	0.43*** (0.13)	0.46*** (0.13)			0.07 (0.12)	-0.002 (0.12)			0.33*** (0.11)	0.29** (0.11)		
LHCE × Junior Partner	-1.65*** (0.59)	-1.52** (0.63)	-2.77*** (0.80)	-2.32*** (0.77)	-0.99* (0.54)	-1.24** (0.54)	-1.08* (0.55)	-1.05* (0.54)	-0.47 (0.50)	-0.60 (0.50)	-0.77 (0.48)	-0.72 (0.47)
LHCE × Powerless	-1.30 (1.36)	-2.95 (2.15)	-0.29 (1.23)	-0.93 (1.28)	-0.57 (1.03)	-1.05 (1.45)	-1.02 (1.34)	-0.98 (1.22)	-0.37 (1.44)	-2.45 (1.66)	-1.26 (1.22)	-1.33 (1.23)
LHCE × Discriminated	-4.97*** (1.16)	-4.21*** (1.16)	-4.82*** (1.21)	-4.50*** (1.19)	-0.56 (1.01)	0.40 (0.99)	-0.91 (1.07)	-0.21 (1.03)	-4.55*** (0.99)	-3.81*** (0.99)	-4.82*** (1.12)	-4.31*** (1.12)
Country FE	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Pre-treatment controls	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Post-treatment controls		✓		✓		✓		✓		✓		✓
Ethnic group FE			✓	✓			✓				✓	✓
N	20,863	20,368	20,863	20,368	21,026	20,520	21,026	20,520	21,237	20,724	21,237	20,724
Adjusted R ²	0.06	0.07	0.08	0.09	0.06	0.06	0.07	0.07	0.07	0.07	0.08	0.08

Notes: Standard errors are clustered at the grid cell level. Pre-treatment controls: water access, soil quality, absolute latitude, mountainous terrain percentage, precipitation, precipitation squared, temperature, malaria index, sex, age, age². Post-treatment controls: capital city distance, border distance, conflict, log of population, log of nightlights, oil, education, formal employment, urban location. In Panel B, senior partner is the omitted category. OLS = ordinary least squares; FE = fixed effects. Statistical significance: ***p < .01; **p < .05; *p < .1.

8 Varying LHCE Discount Factors (Appendix H)

Table H1: LHCE Discount Factor: 10% (OLS Estimates)

	Pay Taxes				Obey Courts				Abide by the Law			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
PANEL A												
LHCE	3.63*** (1.00)	4.30*** (0.96)	4.42*** (1.20)	4.33*** (1.04)	2.32*** (0.84)	3.55*** (0.82)	2.58*** (0.85)	3.24*** (0.79)	2.32*** (0.74)	3.52*** (0.67)	2.71*** (0.68)	3.14*** (0.67)
Exclusion	0.01 (0.03)	0.004 (0.03)			-0.01 (0.03)	-0.01 (0.03)			-0.04 (0.03)	-0.04 (0.03)		
LHCE × Exclusion	-1.95*** (0.60)	-2.06*** (0.64)	-2.62*** (0.75)	-2.35*** (0.69)	-1.14** (0.49)	-1.39*** (0.50)	-1.28** (0.51)	-1.23** (0.48)	-0.87* (0.48)	-1.16*** (0.44)	-1.12*** (0.40)	-1.08*** (0.39)
PANEL B												
LHCE	1.66*** (0.55)	2.14*** (0.55)	1.98*** (0.61)	2.08*** (0.57)	1.20*** (0.46)	2.19*** (0.45)	1.32*** (0.44)	2.04*** (0.43)	1.35*** (0.39)	2.23*** (0.42)	1.59*** (0.40)	2.04*** (0.42)
Junior Partner	0.02 (0.04)	0.002 (0.04)			0.01 (0.04)	0.003 (0.04)			-0.05 (0.04)	-0.05 (0.04)		
Powerless	-0.15 (0.09)	-0.11 (0.09)			-0.13 (0.09)	-0.10 (0.08)			-0.16** (0.08)	-0.13* (0.08)		
Discriminated	0.45*** (0.13)	0.48*** (0.13)			0.10 (0.12)	0.04 (0.12)			0.32*** (0.11)	0.29*** (0.11)		
LHCE × Junior partner	-2.12*** (0.70)	-2.00*** (0.74)	-3.16*** (0.98)	-2.69*** (0.90)	-1.30** (0.62)	-1.60*** (0.61)	-1.34** (0.65)	-1.32** (0.60)	-0.77 (0.58)	-0.94* (0.56)	-1.09** (0.55)	-1.03** (0.52)
LHCE × Powerless	-1.43 (1.54)	-3.25 (2.30)	-0.48 (1.50)	-1.23 (1.56)	-0.60 (1.16)	-1.14 (1.64)	-1.03 (1.57)	-1.02 (1.42)	-0.34 (1.61)	-2.63 (1.80)	-1.42 (1.45)	-1.52 (1.45)
LHCE × Discriminated	-6.27** (2.52)	-6.11** (2.47)	-6.96*** (2.67)	-7.13*** (2.71)	-3.91 (2.64)	-3.35 (2.63)	-4.59* (2.77)	-4.16 (2.75)	-3.62** (1.58)	-3.36** (1.59)	-4.29*** (1.56)	-4.16*** (1.58)
Country FE	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Pre-treatment controls	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Post-treatment controls		✓		✓		✓		✓		✓		✓
Ethnic group FE			✓	✓			✓	✓			✓	✓
N	20,896	20,401	20,896	20,401	21,059	20,553	21,059	20,553	21,270	20,757	21,270	20,757
Adjusted R ²	0.06	0.07	0.08	0.09	0.06	0.06	0.07	0.07	0.07	0.07	0.08	0.08

Notes: Standard errors are clustered at the grid cell level. Pre-treatment controls: water access, soil quality, absolute latitude, mountainous terrain percentage, precipitation, precipitation squared, temperature, malaria index, sex, age, age². Post-treatment controls: capital city distance, border distance, conflict, log of population, log of nightlights, oil, education, formal employment, urban location. In Panel B, senior partner is the omitted category. OLS = ordinary least squares; FE = fixed effects. Statistical significance: ***p < .01; **p < .05; *p < .1.

Table H2: LHCE Discount Factor: 50% (OLS Estimates)

	Pay Taxes				Obey Courts				Abide by the Law			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
PANEL A												
LHCE	3.74*	3.86*	3.96*	3.67*	1.84	3.00*	1.83	2.76*	3.36***	4.62***	3.67***	4.37***
	(2.19)	(2.23)	(2.28)	(2.14)	(1.67)	(1.81)	(1.46)	(1.52)	(1.22)	(1.35)	(1.30)	(1.40)
Exclusion	-0.01	-0.01			-0.02	-0.03			-0.03	-0.04		
	(0.03)	(0.03)			(0.03)	(0.03)			(0.03)	(0.03)		
LHCE*Exclusion	-2.54**	-2.45*	-2.76**	-2.60**	-1.29	-1.33	-1.23	-1.22	-1.79**	-1.89**	-1.85***	-1.86***
	(1.27)	(1.29)	(1.36)	(1.23)	(0.95)	(1.00)	(0.87)	(0.85)	(0.71)	(0.75)	(0.71)	(0.68)
PANEL B												
LHCE	1.34	1.55	1.36	1.16	0.68	1.82**	0.69	1.64**	1.64**	2.82***	1.88**	2.58***
	(1.02)	(1.12)	(1.16)	(1.19)	(0.79)	(0.91)	(0.72)	(0.80)	(0.64)	(0.79)	(0.75)	(0.90)
Junior Partner	0.004	-0.01			-0.01	-0.01			-0.04	-0.04		
	(0.04)	(0.03)			(0.04)	(0.04)			(0.04)	(0.04)		
Powerless	-0.20**	-0.17*			-0.16*	-0.14*			-0.18**	-0.18**		
	(0.10)	(0.09)			(0.09)	(0.09)			(0.08)	(0.08)		
Discriminated	0.44***	0.48***			0.08	0.03			0.33***	0.32***		
	(0.13)	(0.13)			(0.12)	(0.12)			(0.11)	(0.11)		
LHCE × Junior Partner	-3.04**	-2.78**	-3.16*	-2.81*	-1.67	-1.74	-1.42	-1.44	-2.06***	-2.11***	-1.99**	-2.00**
	(1.33)	(1.26)	(1.67)	(1.46)	(1.07)	(1.10)	(1.04)	(1.01)	(0.78)	(0.77)	(0.94)	(0.89)
LHCE × Powerless	0.61	-0.84	-1.21	-2.88	0.62	0.55	-0.35	-0.36	0.44	-1.09	-1.77	-1.95
	(2.71)	(2.78)	(2.96)	(2.96)	(2.57)	(2.71)	(2.88)	(2.65)	(2.88)	(2.70)	(3.20)	(3.20)
LHCE × Discriminated	-7.01***	-6.76**	-6.93**	-7.13**	-2.50	-1.96	-3.00	-2.77	-4.77***	-4.56***	-5.34***	-5.27***
	(2.52)	(2.65)	(2.80)	(3.05)	(2.84)	(2.72)	(3.01)	(2.89)	(1.25)	(1.30)	(1.42)	(1.46)
Country FE	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Pre-treatment controls	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Post-treatment controls		✓		✓		✓		✓		✓		✓
Ethnic group FE			✓	✓			✓	✓			✓	✓
N	20,896	20,401	20,896	20,401	21,059	20,553	21,059	20,553	21,270	20,757	21,270	20,757
Adjusted R ²	0.06	0.07	0.08	0.09	0.06	0.06	0.07	0.07	0.07	0.07	0.08	0.08

Notes: Standard errors are clustered at the grid cell level. Pre-treatment controls: water access, soil quality, absolute latitude, mountainous terrain percentage, precipitation, precipitation squared, temperature, malaria index, sex, age, age². Post-treatment controls: capital city distance, border distance, conflict, log of population, log of nightlights, oil, education, formal employment, urban location. In Panel B, senior partner is the omitted category. OLS = ordinary least squares; FE = fixed effects. Statistical significance: ***p < .01; **p < .05; *p < .1.

9 Difference-In-Differences Estimates for Individual Vaccines (Appendix I)

Table I1: Difference-In-Differences Estimates for Individual Vaccines

	BCG	measles	DPT1	DPT2	DPT3	polio0	polio1	polio2	polio3
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Buganda	-0.14*** (0.03)	-0.09** (0.03)	-0.12*** (0.03)	-0.11*** (0.03)	-0.05 (0.03)	-0.23*** (0.03)	-0.11*** (0.03)	-0.08** (0.03)	0.05 (0.04)
Post-2009	0.06 (0.04)	0.09 (0.05)	0.46*** (0.05)	0.44*** (0.05)	0.46*** (0.05)	0.20*** (0.06)	0.09** (0.04)	0.13** (0.05)	0.09 (0.06)
Buganda × post-2009	0.05*** (0.02)	0.01 (0.02)	0.03 (0.02)	0.01 (0.02)	-0.04* (0.02)	0.07*** (0.02)	0.03* (0.02)	-0.02 (0.02)	-0.09*** (0.02)
N	14,904	14,860	14,881	14,873	14,873	14,904	14,898	14,893	14,893
Adjusted R ²	0.04	0.02	0.26	0.23	0.21	0.18	0.02	0.02	0.02

Notes: Standard errors are clustered by mother. Statistical significance: ***p < .01; **p < .05; *p < .1.

10 Trends in Place of Delivery (Appendix J)

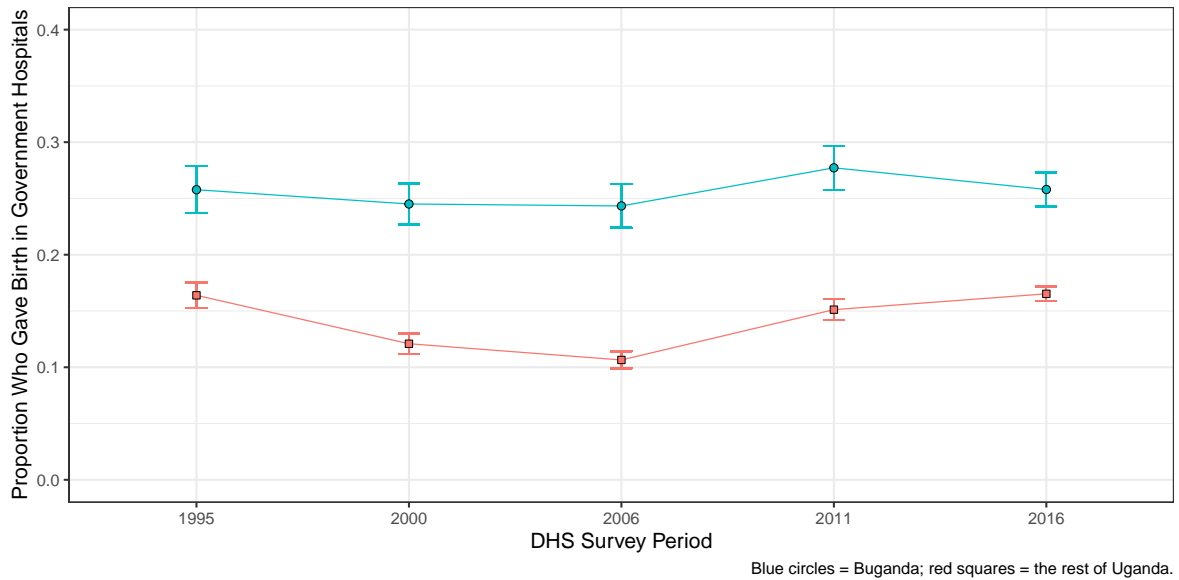


Figure 4: **Mothers Who Gave Birth in Government Hospitals.** The plot shows how rates (and 95 percent confidence intervals) of delivery in government hospitals changed between individual rounds of DHS surveys.

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