The Great Equalizer
Supplementary Material

April 18, 2021

This document contains supplementary material for "The Great Equalizer: Inequality in Tribal Energy Access and Policies to Address It."

A1 Additional Tables

Distribution by caste	
	Caste
SC	250
ST	375
General	629
Other Backward Class	186
N	1440

Table A1: Distribution of respondents by caste. Not weighted.

Explaining electricity access

	(1)	(2)	(3)	(4)	(5)
ST	-0.09***	-0.10***	-0.08**	-0.09***	-0.11**
	(0.03)	(0.04)	(0.03)	(0.04)	(0.05)
SC	-0.08**	-0.08**	-0.08**	-0.08**	-0.06
	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)
Other Backward Class	-0.00	0.00	-0.01	-0.01	-0.01
	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)
Expenditure (log)			0.03*	0.03*	0.02
			(0.02)	(0.01)	(0.02)
Age			0.00	0.00	-0.00
			(0.00)	(0.00)	(0.00)
Female			0.04	0.04	-0.00
			(0.03)	(0.03)	(0.03)
Up to 5th standard			0.03	0.03	0.04
			(0.03)	(0.03)	(0.03)
Up to 10th standard			0.03	0.04	0.02
			(0.04)	(0.03)	(0.03)
12th standard or diploma			0.09**	0.08**	0.05
			(0.04)	(0.04)	(0.04)
Graduate and above			0.08**	0.08**	0.08**
			(0.03)	(0.03)	(0.03)
District FE		✓		✓	
Village FE					✓
Observations	1440	1440	1440	1440	1440
# Villages	144	144	144	144	144
R^2	0.02	0.07	0.03	0.08	0.02
Mean of DV	0.87				

Table A2: Explaining electricity access. Dependent variable: dichotomous indicator that takes value 1 if the household has access of electricity and zero otherwise. Omitted category: general category. Standard errors clustered by village. *: 0.1, **: 0.05, ***: 0.01.

Explaining hours of daily electricity access

	(1)	(2)	(3)	(4)	(5)
ST	0.18	0.01	0.18	0.02	-0.40
	(0.78)	(0.67)	(0.75)	(0.66)	(0.56)
SC	0.43	0.29	0.54	0.36	0.74
	(0.66)	(0.52)	(0.65)	(0.50)	(0.57)
Other Backward Class	0.41	0.09	0.21	-0.05	0.17
	(0.67)	(0.52)	(0.64)	(0.52)	(0.41)
Expenditure (log)			0.44	0.40*	0.20
			(0.28)	(0.23)	(0.16)
Age			0.00	0.01	-0.01
			(0.01)	(0.01)	(0.01)
Female			0.21	0.34	-0.15
			(0.67)	(0.57)	(0.43)
Up to 5th standard			0.51	0.13	0.33
			(0.43)	(0.37)	(0.28)
Up to 10th standard			2.13***	1.50***	0.84**
			(0.46)	(0.41)	(0.35)
12th standard or diploma			0.45	0.33	-0.09
			(0.77)	(0.60)	(0.53)
Graduate and above			1.28	0.26	0.40
			(0.78)	(0.64)	(0.60)
District FE		✓		✓	
Village FE					✓
Observations	1250	1250	1250	1250	1250
# Villages	142	142	142	142	142
R^2	0.00	0.28	0.02	0.30	0.02
Mean of DV	9.94				

Table A3: Explaining hours of daily electricity access. Dependent variable: typical availability of electricity per day (from 0 to 24 hours). Omitted category: general category. Standard errors clustered by village. *: 0.1, **: 0.05, ***: 0.01.

Explaining appliances

	(1)	(2)	(3)	(4)	(5)
ST	-133.04***	-121.27**	-110.94**	-106.53**	-153.92**
	(44.83)	(53.38)	(42.67)	(50.66)	(62.93)
SC	-7.83	-21.16	11.09	-10.24	-43.27
	(85.22)	(96.87)	(78.30)	(89.84)	(116.45)
Other Backward Class	8.48	22.33	-33.91	-14.74	-133.98**
	(62.39)	(65.08)	(60.33)	(62.28)	(60.59)
Expenditure (log)			93.52***	79.88**	71.53**
			(30.66)	(31.15)	(31.51)
Age			2.56**	2.01	1.52
			(1.27)	(1.35)	(1.42)
Female			-34.15	-53.57	-59.91
			(71.47)	(70.74)	(74.22)
Up to 5th standard			126.50***	102.52***	119.14***
			(35.90)	(34.68)	(35.18)
Up to 10th standard			221.31***	192.28***	150.58***
			(44.99)	(43.22)	(46.37)
12th standard or diploma			238.35***	196.01***	180.15***
			(62.07)	(60.23)	(58.84)
Graduate and above			652.76***	629.93***	619.18***
			(159.80)	(153.24)	(155.72)
District FE		✓		✓	
Village FE					✓
Observations	1254	1254	1254	1254	1254
# Villages	142	142	142	142	142
R^2	0.01	0.06	0.09	0.13	0.07
Mean of DV	403.33				

Table A4: Explaining appliance ownership. Dependent variable: total wattage used by a household. Omitted category: general category. Standard errors clustered by village. *: 0.1, **: 0.05, ***: 0.01.

Explaining Saubhagya

	(1)	(2)	(3)	(4)	(5)
ST	0.24***	0.23***	0.23***	0.22***	0.10
	(0.05)	(0.05)	(0.05)	(0.05)	(0.07)
SC	0.02	0.02	0.01	0.02	0.04
	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)
Other Backward Class	-0.03	-0.04	-0.03	-0.03	0.06
	(0.06)	(0.05)	(0.06)	(0.05)	(0.05)
Expenditure (log)			-0.00	-0.01	0.00
			(0.03)	(0.02)	(0.02)
Age			-0.00	-0.00	-0.00
			(0.00)	(0.00)	(0.00)
Female			0.08	0.02	0.01
			(0.07)	(0.07)	(0.07)
Up to 5th standard			-0.08*	-0.09**	-0.08*
			(0.04)	(0.04)	(0.04)
Up to 10th standard			-0.04	-0.07	-0.05
			(0.05)	(0.05)	(0.05)
12th standard or diploma			-0.06	-0.09	-0.08
			(0.06)	(0.06)	(0.07)
Graduate and above			-0.16**	-0.18***	-0.15*
			(0.08)	(0.06)	(0.08)
District FE		✓		✓	
Village FE					✓
Observations	1007	1007	1007	1007	1007
# Villages	141	141	141	141	141
R^2	0.05	0.20	0.06	0.21	0.01
Mean of DV	0.40				

Table A5: Explaining whether households were connected to electricity via Saubhagya. Dependent variable: Saubhagya (1=yes). Omitted category: general category. Standard errors clustered by village. *: 0.1, **: 0.05, ***: 0.01.

Electricity access: Inequality across tribes

	Electricity {0,1}		Hours of electricity [0,24]		Appliances (index)		Saubhagya {0,1}	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Ho	-0.11	0.01	2.24	1.46	-180.41***	-85.66*	0.02	0.03
	(0.09)	(0.07)	(1.43)	(1.05)	(42.63)	(48.17)	(0.08)	(0.16)
Munda	-0.05	-0.07*	-1.42	-0.78	-193.67***	-105.00	0.27***	0.25***
	(0.04)	(0.04)	(1.06)	(0.76)	(68.31)	(70.46)	(0.09)	(0.07)
Oraon	-0.06	-0.07	0.62	0.63	-74.26	-144.49*	0.35***	0.20**
	(0.06)	(0.05)	(1.57)	(1.39)	(64.21)	(77.08)	(0.08)	(0.09)
Santhali	-0.10	-0.09	0.53	-0.16	-156.55***	-110.11	0.23***	0.28***
	(0.06)	(0.06)	(1.17)	(1.16)	(53.90)	(70.65)	(0.07)	(0.08)
Other tribes	-0.17*	-0.17*	0.76	-0.23	-88.03	-62.05	0.16**	0.25***
	(0.09)	(0.09)	(1.25)	(0.73)	(81.96)	(108.70)	(0.08)	(0.08)
Other Backward Class	-0.00	-0.01	0.41	-0.07	8.48	-14.17	-0.03	-0.03
	(0.03)	(0.03)	(0.67)	(0.52)	(62.49)	(62.53)	(0.06)	(0.05)
SC	-0.08**	-0.08**	0.43	0.34	-7.83	-10.21	0.02	0.02
	(0.04)	(0.04)	(0.66)	(0.50)	(85.36)	(89.81)	(0.06)	(0.06)
Expenditure (log)		0.03*		0.39*		80.19**		-0.01
		(0.02)		(0.23)		(31.20)		(0.02)
Age		0.00		0.01		1.94		-0.00
		(0.00)		(0.01)		(1.37)		(0.00)
Female		0.04		0.35		-53.77		0.02
		(0.03)		(0.57)		(70.19)		(0.07)
Up to 5th standard		0.03		0.16		100.72***		-0.09**
		(0.03)		(0.35)		(34.67)		(0.04)
Up to 10th standard		0.04		1.51***		190.02***		-0.07
		(0.03)		(0.40)		(42.72)		(0.05)
12th standard or diploma		0.08**		0.32		195.07***		-0.09
		(0.04)		(0.61)		(59.25)		(0.06)
Graduate and above		0.09***		0.32		624.95***		-0.18***
		(0.03)		(0.63)		(152.59)		(0.06)
District FE		✓		✓		✓		✓
Observations	1440	1440	1250	1250	1254	1254	1007	1007
# Villages	144	144	142	142	142	142	141	141
R^2	0.02	0.09	0.01	0.30	0.01	0.13	0.06	0.21
Mean of DV	0.87		9.94		403.33		0.40	

Table A6: Explaining various facets of electricity access. Omitted category: general population. Standard errors clustered by village. *: 0.1, **: 0.05, ***: 0.01.

	Appliances Capacity		
	(1)	(2)	(3)
ST	-0.47***	-0.45***	-0.35***
	(0.12)	(0.12)	(0.08)
SC	-0.19	-0.15	-0.06
	(0.13)	(0.12)	(0.10)
Other Backward Class	-0.13	-0.18*	0.02
	(0.10)	(0.10)	(0.11)
Expenditure (log)		✓	✓
Age		✓	✓
Gender		✓	✓
Education		✓	✓
Village FE	✓	✓	
District FE			✓
Observations	1254	1254	1254
# Villages	142	142	142
R^2	0.02	0.10	0.18
Mean of DV	-0.00		
SD of DV	1.00		

Table A7: Explaining total capacity of a household's electric appliances. We sum up the capacity needed for each appliance in the household. Omitted category: households belonging to the general population. Standard errors clustered by village. Survey weights used to generate estimates. *: 0.1, **: 0.05, ***: 0.01.

Distance to nearest town

	Distance to nearest town (km)			Distance to nearest town (log)		
	(1)	(2)	(3)	(4)	(5)	(6)
ST	-1.61	-1.29	-1.22	0.00	0.02	0.02
	(2.30)	(2.26)	(2.54)	(0.09)	(0.09)	(0.09)
SC	-3.24	-3.40	-0.69	-0.15	-0.16	-0.07
	(2.16)	(2.15)	(1.84)	(0.10)	(0.10)	(0.09)
Other Backward Class	-1.46	-0.90	-0.84	-0.10	-0.08	-0.07
	(2.26)	(2.27)	(1.79)	(0.14)	(0.14)	(0.11)
Expenditure (log)		✓	✓		✓	✓
Age		✓	✓		✓	✓
Gender		✓	✓		✓	✓
Education		✓	✓		✓	✓
District FE			✓			✓
Observations	1440	1440	1440	1440	1440	1440
# Villages	144	144	144	144	144	144
R^2	0.01	0.03	0.31	0.01	0.03	0.27
Mean of DV	26.51			3.05		
SD of DV	16.94			0.72		

Table A8: Explaining variation in distance to nearest town. Omitted category: households belonging to the general population. Standard errors clustered by village. Survey weights used to generate estimates. *: 0.1, **: 0.05, ***: 0.01.

Population

	Population			Population (log)		
	(1)	(2)	(3)	(4)	(5)	(6)
ST	-632.71**	-691.34**	-786.31*	-0.22	-0.23*	-0.32**
	(298.23)	(324.12)	(420.44)	(0.13)	(0.14)	(0.14)
SC	3.34	-72.04	86.80	0.14	0.13	0.09
	(265.06)	(294.79)	(290.65)	(0.12)	(0.12)	(0.11)
Other Backward Class	1323.04**	1368.30**	1081.25**	0.30**	0.30*	0.19
	(606.64)	(653.83)	(514.14)	(0.15)	(0.15)	(0.13)
Expenditure (log)		✓	✓		✓	✓
Age		✓	✓		✓	✓
Gender		✓	✓		✓	✓
Education		✓	✓		✓	✓
District FE			✓			✓
Observations	1440	1440	1440	1440	1440	1440
# Villages	144	144	144	144	144	144
R^2	0.04	0.05	0.22	0.03	0.04	0.24
Mean of DV	2213.64			7.24		
SD of DV	2938.25			0.93		

Table A9: Explaining variation in village population. Omitted category: households belonging to the general population. Standard errors clustered by village. Survey weights used to generate estimates. *: 0.1, **: 0.05, ***: 0.01.

Electricity access: Controlling for population

	Electricity {0,1}		Hours of electricity [0,24]		Appliances Wattage		Saubhagya {0,1}	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
ST	-0.10***	-0.09**	-0.01	-0.00	-111.94**	-97.38*	0.21***	0.20***
	(0.04)	(0.03)	(0.70)	(0.68)	(55.59)	(53.77)	(0.05)	(0.05)
SC	-0.08**	-0.08**	0.30	0.36	-23.75	-12.51	0.03	0.03
	(0.04)	(0.04)	(0.52)	(0.50)	(95.21)	(88.59)	(0.06)	(0.06)
Other Backward Class	-0.00	-0.01	0.11	-0.04	16.92	-20.12	-0.03	-0.01
	(0.03)	(0.03)	(0.53)	(0.53)	(63.47)	(60.46)	(0.05)	(0.05)
Population (log)	0.01	0.01	-0.08	-0.06	29.03	28.60	-0.06***	-0.07***
	(0.02)	(0.02)	(0.37)	(0.36)	(23.26)	(20.79)	(0.02)	(0.02)
Expenditure (log)		✓		✓		✓		✓
Age		✓		✓		✓		✓
Gender		✓		✓		✓		✓
Education		✓		✓		✓		✓
District FE		✓		✓		✓		✓
Observations	1440	1440	1250	1250	1254	1254	1007	1007
# Villages	144	144	142	142	142	142	141	141
R^2	0.07	0.08	0.28	0.30	0.06	0.13	0.21	0.22
Mean of DV	0.87		9.94		403.33		0.40	
SD of DV	0.34		5.60		623.25		0.49	

Table A10: Explaining various facets of electricity access, controlling for village population. Omitted category: households belonging to the general population. Standard errors clustered by village. Survey weights used to generate estimates. *: 0.1, **: 0.05, ***: 0.01.

Explaining electricity access: ACCESS

	Electricity [0,1]				Saughabya [0,1]		
	(1) All	(2) All	(3) UP	(4) UP	(5) All	(6) All	(7) UP
Scheduled Caste	-0.11***	-0.04	-0.16***	-0.15	0.05	0.08**	0.14**
	(0.01)	(0.03)	(0.02)	(0.09)	(0.04)	(0.04)	(0.07)
Scheduled Tribe	-0.09***	-0.12**	-0.25***	-0.22	0.06	0.06	0.88***
	(0.02)	(0.05)	(0.09)	(0.24)	(0.07)	(0.07)	(0.03)
Other Backward Class	-0.08***	-0.03	-0.09***	-0.15*	0.00	0.02	0.00
	(0.01)	(0.03)	(0.02)	(0.08)	(0.03)	(0.03)	(0.05)
Survey wave	0.17***	0.16***	0.19***	0.17***			
	(0.01)	(0.01)	(0.01)	(0.01)			
Expenditure (log)		✓		✓			
Age		✓		✓			
Gender		✓		✓			
Education		✓		✓			
District FE						✓	
Village FE	✓	✓	✓	✓	✓	✓	✓
Observations	17634	17570	6047	6025	710	710	284
# Villages	745	745	249	249	366	366	142
R^2	0	0	0	0	0	0	0
Mean of DV	0.78	0.78	0.70	0.70	0.13	0.13	0.15
SD of DV	0.41	0.41	0.46	0.46	0.33	0.33	0.36

Table A11: Explaining electricity access. Dependent variable: dichotomous indicator that takes value 1 if the household has access of electricity and zero otherwise. Omitted category: general category. Standard errors clustered by village. *: 0.1, **: 0.05, ***: 0.01.

Share of Tribes

	Frequency	Percent
Ho	53	3.68
Munda	93	6.46
Oraon	93	6.46
Santhali	67	4.65
Other Backward Class	186	12.92
Other tribes	69	4.79
SC	250	17.36
General	629	43.68
Total	1440	100.00
N	1440	

Table A12: Share of people by tribe and caste (unweighted)

Electricity access: conditional logit

	Electricity {0,1}			Saubhagya {0,1}		
	(1)	(2)	(3)	(4)	(5)	(6)
ST	-0.83*	-0.85*	-0.82**	0.56*	0.54*	0.98***
	(0.45)	(0.46)	(0.36)	(0.31)	(0.31)	(0.15)
SC	-0.41	-0.45	-0.67*	0.32	0.29	0.20
	(0.36)	(0.35)	(0.39)	(0.30)	(0.31)	(0.29)
Other Backward Class	-0.20	-0.26	-0.13	0.25	0.27	-0.13
	(0.42)	(0.44)	(0.34)	(0.36)	(0.36)	(0.22)
Expenditure (log)		✓	✓		✓	✓
Age		✓	✓		✓	✓
Gender		✓	✓		✓	✓
Education		✓	✓		✓	✓
Village FE	✓	✓		✓	✓	
District FE			✓			✓
Observations	819	819	1440	806	806	1007
# Villages	82	82	24	107	107	24
R^2						
Mean of DV	0.80			0.46		
SD of DV	0.40			0.50		

Table A13: Explaining various facets of electricity access. Models: conditional logit. Omitted category: households belonging to the general population. See Tables A2 to A5 for full results. Standard errors clustered by village. Survey weights used to generate estimates. *: 0.1, **: 0.05, ***: 0.01.

Electricity access: Naxalite

	Naxalite districts				Non-Naxalite districts			
	(1) Elec	(2) Hours	(3) Appliances	(4) Saubhagya	(5) Elec	(6) Hours	(7) Appliances	(8) Saubhagya
ST	-0.11**	-0.45	-187.45***	0.09	-0.08	-0.67	-14.86	0.06
	(0.05)	(0.63)	(66.82)	(0.07)	(0.15)	(0.80)	(129.08)	(0.19)
SC	-0.05	0.64	-26.12	0.02	-0.10	0.97	-170.49	0.10
	(0.04)	(0.66)	(134.83)	(0.07)	(0.09)	(0.76)	(118.53)	(0.17)
Other Backward Class	-0.02	0.16	-176.45***	0.02	0.02	0.17	27.74	0.18
	(0.04)	(0.49)	(66.01)	(0.06)	(0.05)	(0.73)	(127.96)	(0.12)
Expenditure (log)	✓	✓	✓	✓	✓	✓	✓	✓
Age	✓	✓	✓	✓	✓	✓	✓	✓
Gender	✓	✓	✓	✓	✓	✓	✓	✓
Education	✓	✓	✓	✓	✓	✓	✓	✓
Village FE	✓	✓	✓	✓	✓	✓	✓	✓
Observations	1140	979	983	779	300	271	271	228
# Villages	114	112	112	111	30	30	30	30
R^2	0	0	0	0	0	0	0	0
Mean of DV	0.86	9.85	416.51	0.41	0.90	10.27	355.49	0.39
SD of DV	0.34	5.65	640.12	0.49	0.30	5.41	556.24	0.49

Table A14: Explaining various facets of electricity access. Sample split between districts that are exposed to the Naxalite insurgency and those that are not. Omitted category: households belonging to the general population. See Tables A2 to A5 for full results. Standard errors clustered by village. Survey weights used to generate estimates. *: 0.1, **: 0.05, ***: 0.01.

Electricity access: Lewbel

	Electricity {0,1}			Hours of electricity [0,24]			Appliances Wattage	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
ST	-0.09***	-0.07	0.77	-0.50	-82.60	-101.36	0.18***	0.10*
	(0.03)	(0.05)	(0.90)	(0.55)	(54.06)	(71.46)	(0.07)	(0.06)
SC	-0.09**	-0.03	0.03	0.25	-11.04	-78.80	0.03	0.06
	(0.04)	(0.02)	(0.74)	(0.41)	(67.37)	(60.69)	(0.06)	(0.05)
Other Backward Class	-0.01	-0.02	0.38	0.24	58.47	-82.17	-0.04	0.05
	(0.02)	(0.03)	(0.56)	(0.32)	(81.16)	(54.39)	(0.05)	(0.05)
Village FE		✓		✓		✓		✓
Expenditure (log)		✓		✓		✓		✓
Age		✓		✓		✓		✓
Gender		✓		✓		✓		✓
Education		✓		✓		✓		✓
District FE								
Observations	1440	1440	1250	1250	1254	1254	1007	1007
# Villages	24	24	24	24	24	24	24	24
R^2	0	0	0	1	0	0	0	0
Mean of DV								
SD of DV								

Table A15: Explaining various facets of electricity access. Estimation based on Lewbel (2012). Omitted category: households belonging to the general population. See Tables A2 to A5 for full results. Standard errors clustered by village. Survey weights used to generate estimates. *: 0.1, **: 0.05, ***: 0.01.