

Money or Power? COVID Aid in Kenya

On-line Appendix

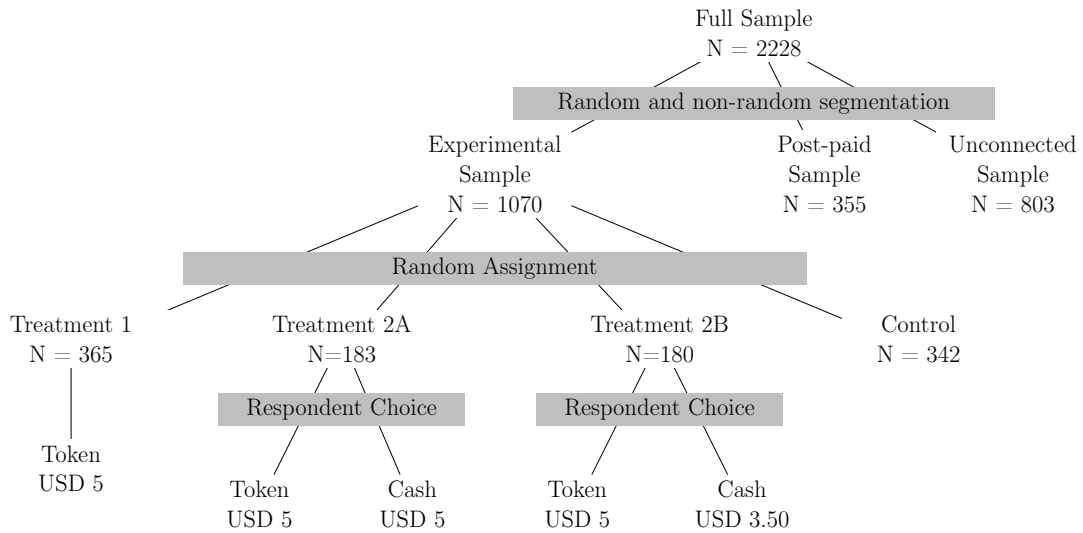
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February 15, 2022

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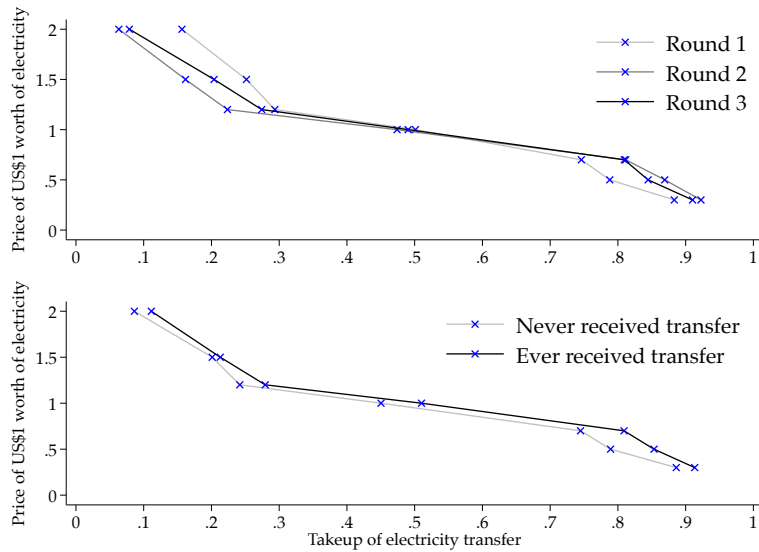
Appendix A: Additional Figures

Figure A1: Experimental design and sample sizes in rural Kenya



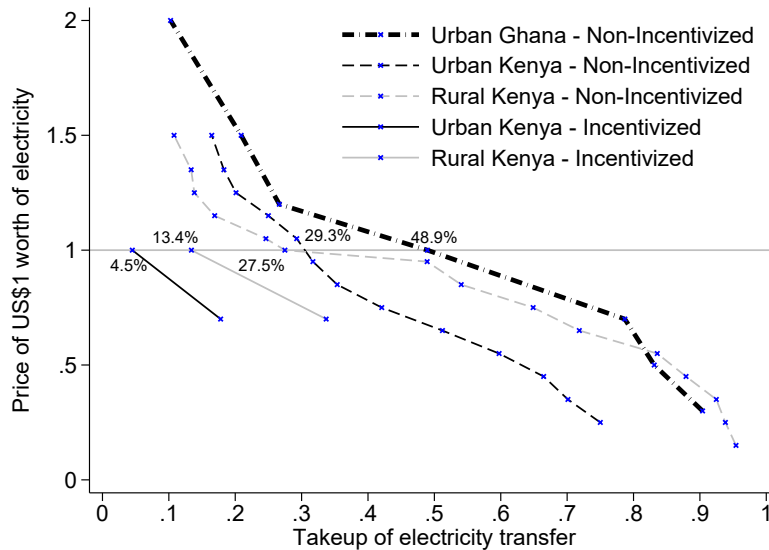
The non-experimental sample as well as treatment assignment within the experimental sample for rural households. To avoid spillover contamination, treatments for the rural sample are randomly assigned at the village level, stratified by the number of respondents in each village and the study each village was originally a part of. [Figure 2](#) displays the random treatments for the urban sample.

Figure A2: Demand for Electricity Transfers by Round and Transfer Receipt in Ghana



Demand for USD 1 of electricity expressed in USD of mobile money, from a series of hypothetical choices between receiving a 50 GHS electricity transfer or receiving a specific mobile money transfer amount. We compare responses across survey rounds and by whether the respondent had ever received an electricity transfer through the government's pandemic relief program.

Figure A3: Demand for Electricity Transfers by Context and Incentivization



Demand for USD 1 of electricity expressed in USD of mobile money. The horizontal line represents the point where USD 1 of electricity costs USD 1 in mobile money. The numbers shown indicate the share of respondents who prefer electricity to cash in an equal trade-off, by context. Solid lines indicate incentivized elicitation, where transfers that respondents receive depend on their responses. Dashed lines indicate non-incentivized elicitation, where respondents indicate preferences over hypothetical tradeoffs between electricity and cash transfers.

Appendix B: Additional Tables

Table A1: Summary statistics, Ghana sample

	N	Mean	SD	Min	25 th	50 th	75 th	Max	Accra Pop Mean
<i>Household characteristics</i>									
Number of adults in the household	911	2.96	1.82	1.0	2.0	2.0	4.0	11.0	2.11 ^a
Number of children	911	1.37	1.69	0.0	0.0	1.0	2.0	15.0	1.34 ^a
Respondent age*	911	29.48	9.21	18.0	22.0	27.0	34.0	65.0	45.39 ^a
Respondent is male*	911	0.70	0.46	0.0	0.0	1.0	1.0	1.0	0.67 ^a
High quality roof material	88	0.65	0.48	0.0	0.0	1.0	1.0	1.0	0.48 ^b
High quality wall material	88	0.97	0.18	0.0	1.0	1.0	1.0	1.0	0.91 ^b
Has generator	911	0.04	0.21	0.0	0.0	0.0	0.0	1.0	0.02 ^a
Has TV	911	0.94	0.24	0.0	1.0	1.0	1.0	1.0	0.85 ^b
Has refrigerator	911	0.79	0.41	0.0	1.0	1.0	1.0	1.0	0.62 ^b
Number of household phones	499	1.78	2.49	1.0	1.0	1.0	2.0	23.0	3.02 ^a
Consumption per capita in past 7 days (USD)	2417	34.48	49.20	0	14.06	21.93	35.81	730.1	27.72 ^a
Food spending per capita in past 7 days (USD)	2403	8.94	8.70	0.0	4.0	6.9	11.5	121.1	10.87 ^a
<i>Electricity connection and use</i>									
Shares meter with other users	854	0.30	0.46	0.0	0.0	0.0	1.0	1.0	.
Current balance on prepaid meter (USD)	1045	5.75	8.08	0.0	1.0	3.3	6.9	51.9	.
Count of prepaid meter topups in last 30 days	2186	1.83	1.32	0.0	1.0	2.0	2.0	9.0	.
Average topup amount in last 30 days (USD)	2188	10.48	15.50	0.0	4.5	8.6	10.4	519.0	.
Electricity spending in past month (USD)	2392	14.63	12.79	0.0	6.9	10.4	17.3	69.2	15.34 ^a
Lifeline customer according to March spending	826	0.08	0.28	0.0	0.0	0.0	0.0	1.0	.
<i>Government relief</i>									
Ever received electricity relief	824	0.75	0.43	0.0	0.0	1.0	1.0	1.0	.
Received electricity relief in last 30 days	2405	0.39	0.49	0.0	0.0	0.0	1.0	1.0	.
Electr. transfer received in last 30 days (USD)	2218	3.45	7.69	0.0	0.0	0.0	5.2	173.2	.
Electr. relief received in total (USD)	638	15.09	20.01	0.0	0.0	10.4	23.9	259.5	.
Received cash from govt/NGO in last 7 days	2417	0.01	0.09	0.0	0.0	0.0	0.0	1.0	.
Received food from govt/NGO in last 7 days	2417	0.01	0.12	0.0	0.0	0.0	0.0	1.0	.
Ever received water subsidy	824	0.43	0.50	0.0	0.0	0.0	1.0	1.0	.

The Ghana sample is drawn entirely from urban households in three Accra West electricity districts in the Greater Accra Region. For time-invariant characteristics, we report means for the first time a household is surveyed. For time-varying characteristics, we report summary statistics across survey rounds. Data on housing materials and phones are drawn from prior surveys administered to this sample. Summary statistics for the Ghana Statistical Service's 2017 Ghana Living Standards Survey (GLSS)^a and the 2015 Labor Force Survey (LFS)^b and are for urban households in the Greater Accra Region. Both of these surveys are designed to be representative at the region level and by urban/rural location. Survey weights are applied to generate representative estimates. *The respondent for the Ghana sample may be an adult other than the head of household. For the LFS and GLSS, we present data on the head of household for comparison.

Table A2: Summary statistics, Kenya sample
Panel A: Urban Sample

	N	Mean	SD	Min	25 th	50 th	75 th	Max	Kenya Pop Mean (Urban)
Number of adults in the household	995	2.32	1.33	1.00	1.00	2.00	3.00	10.00	1.94
Number of children	993	1.10	1.47	0.00	0.00	1.00	2.00	8.00	1.21
Respondent age	992	28.16	59.82	18.00	23.00	25.00	28.00	1901.00	34.00
Has TV	995	0.73	0.44	0.00	0.00	1.00	1.00	1.00	0.62
Has Refrigerator	995	0.14	0.35	0.00	0.00	0.00	0.00	1.00	0.19
Consumption per capita in past 7 days (USD)	977	17.71	20.49	0.07	5.73	11.87	21.53	258.77	9.20
Food spending per capita in past 7 days (USD)	981	6.63	9.31	0.00	2.29	4.58	8.02	192.36	4.46
Electricity spending in past 2 weeks (USD)	983	1.63	2.65	0.00	0.00	0.92	1.83	45.80	.
Meter balance (kWh)	807	9.29	21.78	0.00	2.15	4.50	10.00	300.00	.
Received any gov't or NGO assistance in past 14 days	985	0.02	0.13	0.00	0.00	0.00	0.00	1.00	0.07

Panel B: Rural Sample

	N	Mean	SD	Min	25 th	50 th	75 th	Max	Kenya Pop Mean (Rural)
Number of adults in the household	1014	3.10	1.49	1.00	2.00	3.00	4.00	11.00	2.22
Number of children	1014	2.93	2.10	0.00	1.00	3.00	4.00	15.00	2.18
Respondent age	913	46.63	17.62	18.00	33.00	45.00	60.00	102.00	38.60
Respondent is male	1024	0.39	0.49	0.00	0.00	0.00	1.00	1.00	0.50
Completed Secondary School	997	0.16	0.37	0.00	0.00	0.00	0.00	1.00	0.21
High quality roof material	1023	0.95	0.21	0.00	1.00	1.00	1.00	1.00	0.87
High quality wall material	1023	0.29	0.45	0.00	0.00	0.00	1.00	1.00	0.26
High quality floor material	1023	0.41	0.49	0.00	0.00	0.00	1.00	1.00	0.37
Has TV	890	0.57	0.50	0.00	0.00	1.00	1.00	1.00	0.27
Has Refrigerator	890	0.02	0.15	0.00	0.00	0.00	0.00	1.00	0.02
Consumption per capita in past 7 days (USD)	1008	4.82	4.12	0.16	2.30	3.81	5.71	31.06	9.20
Food spending per capita in past 7 days (USD)	1011	3.32	2.92	0.05	1.56	2.60	3.90	29.77	4.46
Electricity spending in past 2 weeks (USD)	1009	0.82	1.60	0.00	0.00	0.00	0.92	18.32	.
Meter balance (kWh)	864	11.86	42.03	0.00	2.00	5.00	12.00	1077.00	.
Received any gov't or NGO assistance in past 14 days	1013	0.09	0.28	0.00	0.00	0.00	0.00	1.00	0.07

This table presents summary statistics for the Kenya rural (panel A) and urban (panel B) samples from the baseline survey. The Kenyan rural sample is from Western Kenya, Nyanza, and Rift Valley. The Kenyan urban sample is from Nairobi, Mombasa, Kisumu, Eldoret, Nakuru, and other major cities. Rural and urban population means are taken from the 2019 Kenyan Census.

Table A3: Correlates of choosing electricity credit over a cash transfer of equal value

	(1) Ghana	(2) Kenya
Count of appliance types held	0.013*** (0.005)	-0.006 (0.014)
Has TV	0.066 (0.060)	-0.083 (0.051)
Has Refrigerator	0.002 (0.035)	0.164*** (0.055)
Total spending in last 7 days excl. food (USD 10s)	-0.000 (0.001)	0.001 (0.001)
Food spending in last 7 days (USD 10s)	-0.002 (0.006)	-0.003 (0.002)
Electricity spending in last 7 days (USD)	-0.002 (0.005)	-0.011 (0.024)
Meter balance (kWh)		-0.000 (0.001)
Received any gov't or NGO assistance in past 14 days	0.052 (0.073)	0.143 (0.106)
Received any electricity relief	0.047* (0.029)	
Respondent age	0.004*** (0.001)	0.003 (0.004)
Number of adults (≥ 18)	-0.002 (0.008)	0.002 (0.018)
Number of children (< 18)	0.004 (0.009)	0.003 (0.018)
Observations	1902	126
Dep. Var. Mean	0.503	0.04

This table presents estimates of the correlations between respondent characteristics and preference for electricity relative to cash. The dependent variable is a dummy for preferring an electricity credit transfer to a mobile money transfer of equal value. Column (1) includes 3 rounds of households surveys in which households were offered a hypothetical choice between a transfer of electricity or mobile money of the same value. Estimates include week and district fixed effects along with controls (not included in the Kenya survey) for respondent sex, household generator ownership, meter sharing, electricity top-up timing, and outage experiences. SEs are clustered by household. Column (2) includes households in Kenya in the experimental treatment arm T2A that were offered an incentivized choice between a transfer of electricity or mobile money of the same value.

Table A4: Impact of transfers on energy and other consumption, rural Kenya

	N	Control Mean (SD)	Token Treatment (SE)	500 Ksh vs Tokens (SE)	350 Ksh vs Tokens (SE)
Electricity usage since baseline (kWh)	1305	47.47 (46.29)	28.81*** (3.62)	18.08*** (5.63)	6.10 (4.60)
Electricity usage since baseline (approx value in USD)	1305	4.35 (4.24)	2.64*** (0.33)	1.66*** (0.52)	0.56 (0.42)
Prepaid electricity expenditure in the past 2 weeks in USD	1803	1.05 (1.49)	-0.41*** (0.09)	0.06 (0.13)	-0.25** (0.11)
Meter balance (kWh)	1413	11.64 (20.88)	12.95*** (1.56)	1.19 (1.84)	7.73*** (2.11)
Energy spending in the past 7 days in USD (excl. electricity)	1814	0.66 (1.64)	0.31** (0.12)	-0.21* (0.12)	0.14 (0.17)
Energy spending in the past 7 days in USD (excl. electricity and charcoal)	1812	0.48 (1.27)	0.02 (0.08)	-0.03 (0.11)	-0.02 (0.10)
Non-energy spending in the past 7 days in USD	1847	24.43 (23.04)	3.49** (1.63)	0.29 (1.78)	0.99 (2.04)
Dissaving (pc) in the past 14 days in USD	1850	1.86 (24.14)	-1.50 (1.22)	-3.09* (1.74)	-2.35* (1.39)
Total consumption in the past 7 days in USD	1847	25.54 (23.82)	3.73** (1.71)	0.07 (1.84)	1.04 (2.13)

Estimates of Equation 1 for rural Kenya. Regressions include baseline controls for sex, education, banking status, and housing quality (from Lee et al. (2020) or Wolfram et al. (2021)); and the Covid-19 survey baseline value for each outcome. FDR q-values for all coefficients are statistically insignificant at $\alpha = 0.10$, except for electricity usage for T1 (FDR q-value = 0.00). Electricity usage since baseline (kWh) is the sum of (1) the difference between baseline and endline meter balance, (2) household top-ups since baseline, (3) kWh received through treatment (if any). Table 3 presents the corresponding outcomes for urban Kenya.

Table A5: Socioeconomic Outcomes

Panel A: Rural Sample					
	N	Control Mean (SD)	Token Treatment (SE)	500 Ksh vs Tokens (SE)	350 Ksh vs Tokens (SE)
Total household income (pc) in the past 14 days in USD	1860	3.11 (8.87)	0.22 (0.65)	-1.47** (0.64)	-0.63 (0.74)
Total labor supply in hours	1372	44.72 (40.46)	1.16 (2.83)	3.58 (4.08)	0.62 (3.57)
Total earnings from enterprises in the past 14 days in USD	1821	9.42 (36.15)	0.31 (1.97)	-2.17 (2.06)	2.72 (2.98)
Food security index (SD)	1821	0.06 (1.09)	-0.02 (0.08)	0.04 (0.10)	-0.01 (0.09)
Child education index (SD)	1354	0.01 (1.10)	-0.08 (0.08)	-0.06 (0.10)	-0.03 (0.09)
COVID knowledge index (SD)	1777	-0.01 (1.03)	0.11* (0.06)	0.05 (0.07)	0.06 (0.07)
Number of COVID-19 symptoms in the past 14 days (out of 11)	14821	0.49 (1.01)	-0.03 (0.06)	-0.05 (0.07)	0.01 (0.06)
Number of in-person interactions in the last 14 days	1817	17.74 (24.53)	2.18 (1.37)	0.86 (1.50)	3.47* (1.82)
CES-D-10 index	1868	8.97 (5.23)	0.12 (0.30)	-0.21 (0.36)	-0.60 (0.44)

Panel B: Urban Sample					
	N	Control Mean (SD)	Token Treatment (SE)	500 Ksh vs Tokens (SE)	350 Ksh vs Tokens (SE)
Total household income (pc) in the past 14 days in USD	914	19.54 (41.10)	-5.08* (2.97)	-2.22 (4.13)	-2.49 (3.47)
Total labor supply in hours	848	25.48 (32.87)	-1.71 (2.63)	-0.42 (3.34)	1.18 (2.99)
Total earnings from enterprises in the past 14 days in USD	908	13.52 (48.53)	-2.12 (3.79)	-2.52 (5.12)	-10.29*** (3.92)
Food security index (SD)	902	0.06 (0.92)	-0.19** (0.09)	0.02 (0.09)	-0.11 (0.09)
Child education index (SD)	225	0.01 (1.05)	0.10 (0.16)	0.10 (0.18)	0.88*** (0.25)
COVID knowledge index (SD)	878	-0.01 (1.02)	0.01 (0.08)	0.08 (0.10)	-0.07 (0.10)
Number of COVID-19 symptoms in the past 14 days (out of 11)	1400	0.20 (0.62)	-0.01 (0.05)	-0.03 (0.06)	0.06 (0.07)
Number of in-person interactions in the last 14 days	888	33.45 (48.82)	-4.68 (4.03)	-4.33 (4.72)	-1.12 (4.73)
CES-D-10 index	900	8.12 (5.23)	0.60 (0.44)	0.57 (0.51)	0.66 (0.54)

This table presents estimates of Equation 1 for major socioeconomic outcomes. From left to right, the columns show the number of observations, the control mean, and the treatment effects of T1, T2A, and T2B (all relative to control). Regressions include baseline controls for sex, education, banking status, and housing quality; all collected during enrollment in Lee et al. (2020) or Wolfram et al. (2021), as well as the Covid-19 survey baseline round value for each outcome. FDR q-values for all coefficients are statistically insignificant at the $\alpha = 0.10$ level.