APPENDIX A

<div align="center">

Table A1
Randomization Verification of the Sample

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	(1) No Letter	(2) Monitor	(3) Punishment	(4) Both	Diff (2–1)	Diff (3–1)	Diff (4–1)	*p*-value 1	*p*-value 2	*p*-value 3
Education	3.276	3.167	3.226	3.180	− 0.109	− 0.050	− 0.096	0.283	0.602	0.293
	(0.989)	(0.984)	(0.914)	(0.863)	(0.102)	(0.096)	(0.092)			
Catholic	0.470	0.504	0.470	0.472	0.035	− 0.000	0.003	0.246	0.998	0.931
	(0.315)	(0.317)	(0.330)	(0.323)	(0.030)	(0.033)	(0.030)			
Protestant	0.332	0.324	0.317	0.302	− 0.007	− 0.015	− 0.030	0.767	0.567	0.240
	(0.273)	(0.276)	(0.279)	(0.283)	(0.025)	(0.026)	(0.026)			
Muslim	0.084	0.063	0.096	0.90	− 0.021	0.013	0.007	0.143	0.470	0.709
	(0.169)	0.140	(0.180)	(0.187)	(0.014)	(0.018)	(0.018)			
Employment	0.372	0.378	0.396	0.387	0.007	0.024	0.016	0.824	0.423	0.590
	(0.309)	(0.317)	(0.313)	(0.308)	(0.030)	(0.030)	(0.029)			
Electrified dwelling	0.191	0.144	0.154	0.156	− 0.047	− 0.037	− 0.034	0.080	0.211	0.200
	(0.292)	(0.256)	(0.261)	(0.266)	(0.027)	(0.029)	(0.027)			
Museveni performance[+]	0.640	0.645	0.628	0.617	0.005	− 0.012	− 0.022	0.867	0.686	0.453
	(0.306)	(0.320)	(0.318)	(0.321)	(0.029)	(0.030)	(0.030)			
NRM support	0.765	0.750	0.696	0.767	− 0.015	− 0.068	0.003	0.602	0.044	0.915
	(0.280)	(0.305)	(0.321)	(0.277)	(0.028)	(0.034)	(0.027)			
Same candidate[++]	0.259	0.247	0.223	0.228	− 0.012	− 0.036	− 0.031	0.673	0.180	0.263
	(0.302)	(0.295)	(0.273)	(0.295)	(0.028)	(0.027)	(0.028)			
Expect violence[+++]	0.479	0.491	0.426	0.468	0.012	− 0.053	− 0.011	0.680	0.069	0.707
	(0.319)	(0.321)	(0.290)	(0.322)	(0.029)	(0.029)	(0.029)			

Notes: All p-values indicate balance across treatment states; standard errors, clustered at the polling center in parenthesis. [+]Respondent rates President Museveni's performance as excellent, [++]Respondents who believe that local residents will vote for the same candidate, [+++]Respondents who expect violence at their polling center on election day.

Table A2
Trimmed Estimates of Effect on Incumbent Votes and Aggregation Irregularities

		Treatment			Treatment effect		
Outcome:	Control Mean (1)	Mean (2)	Trimmed mean E[Y|Y<y (1-p)] (3)	Trimmed mean E[Y|Y>yp] (4)	Point estimate (2)–(1)	Lower bound (3)–(1)	Upper bound (4)–(1)
(i) Museveni vote total per electoral commission	297.864	267.552	210.258	315.667	− 30.312	− 87.605	17.803
	(20.111)	(11.098)	(19.883)	(24.108)	(22.412)	(27.220)	(31.547)
(ii) Museveni vote total from photograph	300.432	265.040	207.337	312.833	− 35.392	− 93.095	12.402
	(20.238)	(11.164)	(20.151)	(24.017)	(22.489)	(27.557)	(31.475)
Difference (i)–(ii)	− 2.568	2.512	− 0.034	3.522	5.080	2.534	6.090
	(2.775)	(1.418)	(0.202)	(2.111)	(3.042)	(2.773)	(3.408)
Absolute Difference (i)–(ii)	2.932	2.560	0.000	3.556	− 0.372	− 2.932	0.624
	(2.763)	(2.560)	(0.205)	(2.109)	(3.176)	(2.780)	(3.553)

Notes: We note that reported estimates in Table A3 are an average of the treatment effect on only the subsample that would provide tallies regardless of treatment status and a difference in the part of the distribution revealed by treatment. To address this, we use Lee's (2009) trimming method, which provides estimates of the effect of treatment in the presence of non-random attrition. The purpose of this method is to trim observations that report outcomes only under treatment from the estimation sample, allowing impacts to be estimated using only units where outcomes would be observed irrespective of treatment assignment. This table provides estimates using this method using: (i) Museveni's vote total from the official electoral commission data; (ii) vote totals from photographs of the paper tallies; (ii) the difference between votes from the Electoral Commission record and at the photographs taken at the polling center; and (iv) the absolute value of this difference. The sample is restricted to the non-North sample and to streams with data from both the picture sample and from the election commission. Note that the restriction means that the point estimates in this table are slightly different from those in Table A3. There are 194 (394) streams in control (treatment) with a non-missing proportion of 0.227 (0.317). These streams are contained in 169 distinct polling centers. This gives a trimming ratio of (0.317-0.227)/0.227 = 0.285. Standard errors reported in this table are obtained by bootstrapping all polling stations in our experimental sample with replacement 1,000 times.

Table A3
OLS Estimates of the Effects of Intervention Letters on Official and Photographed Museveni Vote Totals.

	(1) Museveni vote total from photograph	(2) Museveni vote total per electoral Commission	(3) Commission−photograph
Monitoring	− 29.700	− 25.961	3.739
	(29.389)	(29.187)	(3.020)
Punishment	− 26.507	− 22.964	3.543
	(26.885)	(26.671)	(2.866)
Both	− 48.773*	− 41.045	7.727†
	(25.562)	(25.297)	(4.673)
Constant	300.432	297.864	− 2.568
	(20.209)	(19.943)	(2.762)
North included	No	No	No
Observations	169	169	169
R-squared	0.021	0.015	0.029
Clusters	169	169	169

Notes: P-values are denoted by superscript stars and crosses: ***$p < 0.01$, **$p <0.05$, *$p <0.1$, † $= 0.1$. For example, the "Both" letter reduced Museveni's vote total as found on the photographs by almost 49 votes, at the $p < 0.10$ level of significance. This sample excludes stations in the Northern region. Our methods generated a representative sample for the Central, West, and East regions. Coefficients are the point estimates for effect of each type of letter intervention. Clustered standard errors (by polling center) are in parenthesis.

Table A4
Descriptive Statistics on Outcome Variables "Missing," "Adjacent," and "Museveni Votes (ln)."

	Mean	Std. Dev.	Min	Max	N
Missing					
Treatment	0.75	0.43	0	1	704
Control	0.79	0.41	0	1	324
Total	0.76	0.43	0	1	1,028
Adjacent					
Treatment	0.15	0.36	0	1	703
Control	0.22	0.42	0	1	322
Total	0.17	0.38	0	1	1,025
Museveni Votes (ln)					
Treatment	5.09	0.73	0	6.88	703
Control	5.11	0.74	1.61	6.63	323
Total	5.10	0.73	0	6.88	1,026

Notes: The table shows means, standard deviations, minimum values, maximum values, and sample size (polling streams) for treatment, control, and total groups.

<u>Urgent</u>   February 18th, 2011

ATTENTION: The Presiding Officer, ONIGO CENTRE Polling Station

Re: Election Monitoring at ONIGO CENTRE Polling Station

Greetings! I am working with the University of California, an accredited election observation organization. We are providing this letter to tell you about some important information about your polling station.

As part of our effort to help Uganda have free and fair elections, we would like to take this opportunity to remind you of an important part of Uganda's electoral law. As you know, the Presidential Election Act of 2010 stipulates a punishment of up to a **2.4 million UGS fine** and/or imprisonment of up to **five years** for any election officer who **knowingly gives inaccurate information about the vote returns.**

As another part of the observation effort, I will return to this polling station tomorrow in order to take pictures of the "Declaration of Results" forms that you are required by law to post publicly at this polling station. We will compare the results from the photos with the certified final count published by the EC in Kampala. AFTER the official EC certification, we will report these results on the internet (at www.uganda2011.org) and to newspapers. By doing this, **the people of Uganda will be able to see if any changes have been made to the vote at ONIGO CENTRE Polling Station** after the recording and posting of the "Declaration of Results" form. All Ugandans will be able to tell whether there have been any changes to the vote total, and they will know which candidate any change benefits. The following example shows how we will report this.

Please note that we are only doing this in a small number of randomly selected polling stations, yours included, but not every polling station. As an accredited observer, we are legally authorized to complete this activity.

In recognition that you have read and understood this letter, please sign here:

_____

Thank you kindly for your help and cooperation!

The following is an example of how we will report results:

Polling station: ONIGO CENTRE		
Candidate:	Certified Vote from the EC in Kampala	Total Votes from Photographs at Polling Station	DIFFERENCE
Candidate A	100	600	+500
Candidate B	600	100	-500
Candidate C	14	14	0
Candidate D	0	0	0

Figure A1

Treatment Letter Example 1. An example of the treatment letter including both Monitoring and Punishment messages.

<u>Urgent</u>   February 18th, 2011

ATTENTION: The Presiding Officer PANYAWE CENTRE Polling Station

Re: Election Monitoring at PANYAWE CENTRE Polling Station

Greetings! I am working with the University of California, an accredited election observation organization. We are providing this letter to tell you about some important information about your polling station.

As part of our observation effort to help Uganda have free and fair elections, we have come to remind you of an important part of Uganda's electoral law. As you know, the Presidential Election Act of 2010 stipulates a punishment of up to a **2.4 million UGS fine** and/or **imprisonment of up to five years** for any election officer who **knowingly gives inaccurate information about the vote returns**.

As recognition that you have read and understood this letter, please sign here:

———————————————

Thank you kindly for your help and cooperation!

Figure A2
Treatment Letter Example 2. An example of the Punishment treatment letter.

<u>Urgent</u>   February 18th, 2011

ATTENTION: The Presiding Officer, UMWIA PRIMARY SCHOOL Polling Station

Re: Election Monitoring at UMWIA PRIMARY SCHOOL Polling Station

Greetings! I am working with the University of California, an accredited election observation organization. We are providing this letter to tell you about some important information about your polling station.

As part of our effort to help Uganda have free and fair elections, I will return to this polling station tomorrow in order to take pictures of the "Declaration of Results" forms that you are required by law to post publicly at this polling station. We will compare the results from the photos with the certified final count published by the EC in Kampala. **AFTER the official EC certification, we will report these results on the internet (at www.uganda2011.org) and to newspapers. By doing this, the people of Uganda will be able to see if any changes have been made to the vote at UMWIA PRIMARY SCHOOL Polling Station** after the recording and posting of the "Declaration of Results" form. All Ugandans will be able to tell whether there have been any changes to the vote total, and they will know which candidate any change benefits. The example below shows how we will report this.

Please note that we are only doing this in a small number of randomly selected polling stations, yours included, but not every polling station. As an accredited observer, we are legally authorized to complete this activity.

In recognition that you have read and understood this letter, please sign here:

_____

Thank you kindly for your help and cooperation!

The following is an example of how we will report the results:

Polling station: UMWIA PRIMARY SCHOOL

Candidate:	Certified Vote from the EC in Kampala	Total Votes from Photographs at Polling Station	**DIFFERENCE**
Candidate A	100	600	+500
Candidate B	600	100	-500
Candidate C	14	14	0
Candidate D	0	0	0

Figure A3
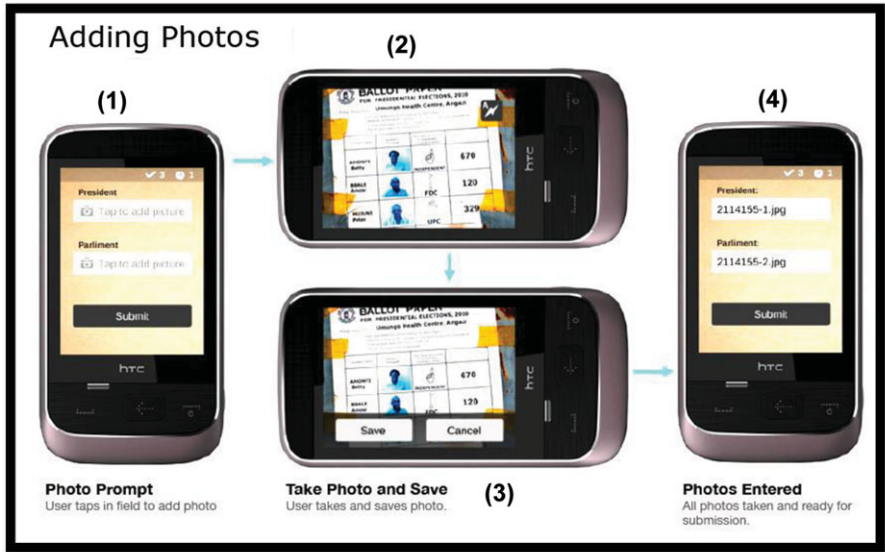**Treatment Letter Example 3. An example of the Monitoring message.**
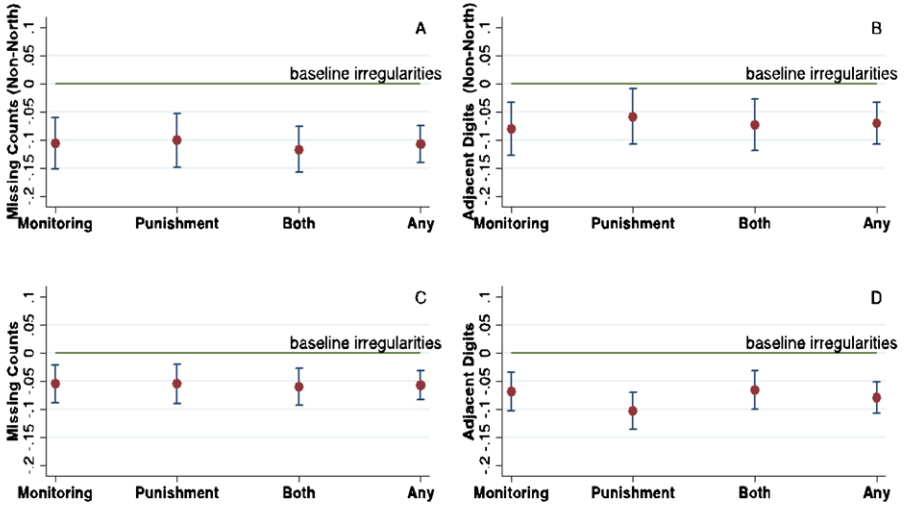
Figure A4

Process and Outcome of Taking Photographs of Election Tallies using the Specialized Application on a Smartphone.

Notes: Figure A4 shows the application at different steps on the smartphone and an example of how to take a photo of a tally. After a prompt asking whether the photo is of the presidential or parliamentary tally results (screenshot 1), the application enables the camera. The user then views a tally through the camera function (screenshot 2). After the user takes the photo, they can save it or cancel using the appropriate buttons seen in screenshot 3. The user may cancel a photo if it appears blurry or out of frame. If canceled, the smartphone immediately returns to the camera-enabled function for another attempt. A user has an unlimited number of attempts to capture the tally in readable form.

Figure A5
**Example of a Tally Photographed by a Smartphone used in this Study. The numbers on the
tally were then transcribed into digital form for subsequent analysis.**

Note: Red points represent estimated coefficeints,
blue whiskers represent Standard Errors,
green lines represent control group irregularity levels set to 0.

Figure A6
Effect of Intervention Letters on two Measures of Possible Electoral Malfeasance: Missing Tallies and Adjacent Digits.

Notes: The four panels are derived from the linear regressions found in Table 1 in the text. We set to zero the average level of irregularity in control stations, represented by the horizontal green line. Points below the line indicate a reduction of irregularities from the control centers. Points are the estimated coefficients of the dependent variables of missing counts and tallies, and the whiskers depict the standard errors. In panels A and C, the "Monitoring," "Punishment," and "Both" letters decreased the percent of missing tallies in both the non-North samples and the full sample, with the largest reduction resulting from the "Both" in each sample (−11.7 percentage points in the non-North sample; −6 percentage points in the full sample). In panels B and D, the three treatment letters also reduced the percentage of adjacent digits in the numbers written on the tallies. For the non-North sample, the largest reduction (−8 percentage points) resulted from the "Monitoring" letter; the largest reduction in the full sample came from the "Punishment" letter (–10.3 percentage points). Across all samples, "Any" letter reduced both measures irregularities. Estimates for "Any" letter come from the lower panel of Table 1.
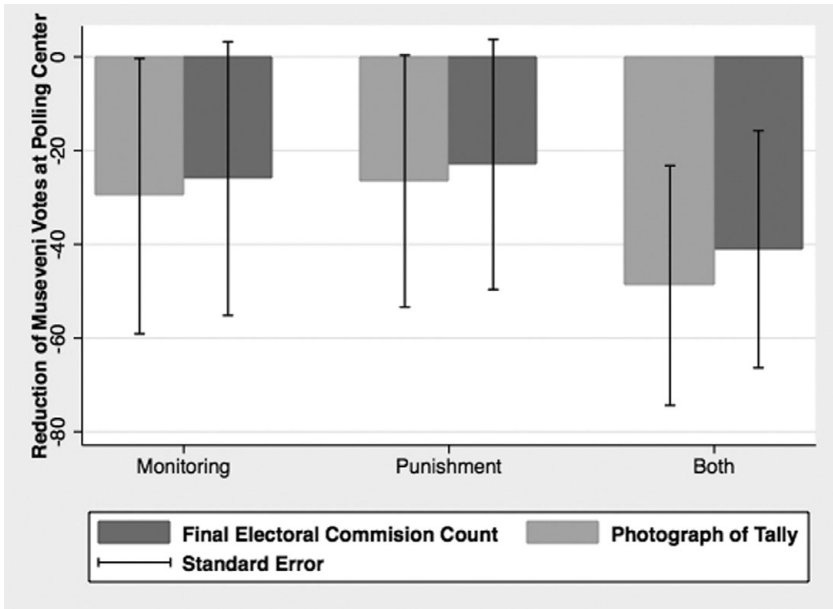
Figure A7
Difference between Treatment and Control Groups for which we have Complete Picture Data

Notes: This sample suffers substantial treatment-related attrition. In Table A2, we therefore report upper and lower bounds on potential treatment effect estimates using the method of Lee (2009). Zero is contained inside of these Lee bounds. The outcome variable are the count of President Museveni's votes as reported by the Ugandan Electoral Commission and the count written on the polling center tallies and captured by photographs using smartphones in Western, Central and Eastern Uganda.