

Women Can't Win: Electoral Double Standards in the Face of Corruption

Online Appendix

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A. Result tables

In the main text we report our findings using figures. In this section we present tables with the numerical results underlying those figures. Table A1 reports the results underlying Figure 2. While Tables A2-A3 report the results underlying Figure 3.

	1. Run (pooled)	2. Run (male)	3. Run (female)	4. Win (pooled)	5. Win (male)	6. Win (female)
Infractions	0.04* (0.01)	0.04 (0.01)	-0.01 (0.02)	0.00 (0.00)	0.00 (0.01)	-0.04 (0.03)
R ²	0.01	0.01	0.04	0.01	0.01	0.05
Adj. R ²	0.01	0.01	0.02	0.00	0.01	0.03
Num. obs.	2213	2025	180	2209	2021	180
RMSE	0.46	0.44	0.46	0.30	0.26	0.48
N Clusters	4	4	4	4	4	4

* $p < 0.05$

Table A1: Numerical results underlying Figure 2 in the main text. Columns 1-3 denote models with a binary outcome whether at least one female candidate runs for mayor. Columns 4-6 denote models with electing a female mayor as the outcome. Parenthesis in columns indicate the corresponding sample. All models include election-year fixed effects. Election-year clustered standard errors reported in parenthesis

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	1. Run (male)	2. Run (female)	3. Win (male)	4. Win (female)
Infractions	0.03 (0.01)	-0.00 (0.04)	0.01 (0.01)	-0.04 (0.04)
R ²	0.01	0.08	0.01	0.09
Adj. R ²	0.01	0.05	0.00	0.05
Num. obs.	1384	120	1380	120
RMSE	0.44	0.48	0.29	0.38
N Clusters	4	4	4	4

* $p < 0.05$

Table A2: Numerical results corresponding to the left panel of Figure 3 in the main text in the sample of first-term incumbents. Columns denote corresponding outcome and sample. All models include election-year fixed effects. Election-year clustered standard errors in parenthesis

	1. Run (male)	2. Run (female)	3. Win (male)	4. Win (female)
Infractions	0.06* (0.01)	-0.03 (0.02)	0.00 (0.00)	-0.04 (0.03)
R ²	0.02	0.16	0.01	0.17
Adj. R ²	0.01	0.10	-0.00	0.11
Num. obs.	641	60	641	60
RMSE	0.43	0.34	0.18	0.38
N Clusters	4	4	4	4

* $p < 0.05$

Table A3: Numerical results corresponding to the right panel of Figure 3 in the main text in the sample of second-term incumbents. Columns denote corresponding outcome and sample. All models include election-year fixed effects. Election-year clustered standard errors in parenthesis

B. Robustness Checks

In this section we report robustness checks mentioned in the main text.

Logistic regression

The main text reports the results of linear probability models. As a robustness check, we report results from logistic regression. Tables B1-B3 reproduce the main results using logistic regression. The substantive conclusion is the same as in the main text.

	1. Run (pooled)	2. Run (male)	3. Run (female)	4. Win (pooled)	5. Win (male)	6. Win (female)
Infractions	0.16* (0.05)	0.18* (0.07)	-0.06 (0.10)	0.00 (0.04)	0.05 (0.07)	-0.17 (0.14)
AIC	2680.08	2311.28	224.35	1429.36	1043.54	241.76
BIC	2708.59	2339.35	240.31	1457.86	1071.60	257.72
Log Likelihood	-1335.04	-1150.64	-107.17	-709.68	-516.77	-115.88
Deviance	2670.08	2301.28	214.35	1419.36	1033.54	231.76
Num. obs.	2213	2025	180	2209	2021	180

* $p < 0.05$

Table B1: Replicating results in Figure 2 of the main text using logistic regression. Columns denote corresponding outcome and sample. All models include election-year fixed effects. Election-year clustered standard errors in parenthesis

	1. Run (male)	2. Run (female)	3. Win (male)	4. Win (female)
Infractions	0.14 (0.07)	-0.01 (0.17)	0.05 (0.08)	-0.27 (0.34)
AIC	1593.95	159.92	838.46	117.36
BIC	1620.11	173.85	864.61	131.29
Log Likelihood	-791.97	-74.96	-414.23	-53.68
Deviance	1583.95	149.92	828.46	107.36
Num. obs.	1384	120	1380	120

* $p < 0.05$

Table B2: Replicating results in the left panel of Figure 3 of the main text using logistic regression in the sample of first-term incumbents. Columns denote corresponding outcome and sample. All models include election-year fixed effects. Election-year clustered standard errors in parenthesis

	1. Run (male)	2. Run (female)	3. Win (male)	4. Win (female)
Infractions	0.30* (0.08)	-0.18 (0.12)	0.09 (0.07)	-0.21 (0.13)
AIC	725.33	52.69	198.31	60.48
BIC	747.64	63.16	220.63	70.95
Log Likelihood	-357.66	-21.35	-94.16	-25.24
Deviance	715.33	42.69	188.31	50.48
Num. obs.	641	60	641	60

* $p < 0.05$

Table B3: Replicating results in the right panel of Figure 3 of the main text using logistic regression in the sample of second-term incumbents. Columns denote corresponding outcome and sample. All models include election-year fixed effects. Election-year clustered standard errors in parenthesis

Using alternative outcomes

In the main text we use two binary outcome variables: Whether a municipality-election year has at least one female mayoral candidate, and whether a female candidate wins the election. While we discuss in the main text why those operationalizations are preferable, we report the results of OLS regressions using alternative versions of those outcomes. Respectively: The number of female candidates and the vote share for female candidates (conditional on having at least one female candidate). Figures B4-B6 reports results using these new outcomes. The point estimates go in the same direction of the main text, yet they are not distinguishable from zero.

This aligns with our justification in the main text. Since very few municipalities have more than one female candidate, we marginal effect of one additional female candidate is not as impactful as the binary change of having none versus having some. Moreover, the results using female vote shares exhibit the same null finding as with the probability of having a female candidate winning the election, even after conditioning for having at least one female candidate.

	1. Candidates (pooled)	2. Candidates (male)	3. Candidates (female)	4. Vote (pooled)	5. Vote (male)	6. Vote (female)
Infractions	0.03 (0.01)	0.04 (0.02)	-0.04 (0.02)	-0.01 (0.01)	-0.00 (0.01)	-0.01 (0.03)
R ²	0.01	0.01	0.03	0.01	0.02	0.03
Adj. R ²	0.01	0.01	0.00	0.01	0.02	0.00
Num. obs.	2213	2025	180	657	525	125
RMSE	0.58	0.55	0.69	0.23	0.22	0.20
N Clusters	4	4	4	4	4	4

* $p < 0.05$

Table B4: Results corresponding to Figure 2 using alternative outcomes. Columns denote corresponding outcome variable (number of female candidates and vote share for female candidates) and sample. All models include election-year fixed effects. Election-year clustered standard errors in parenthesis

	1. Candidates (male)	2. Candidates (female)	3. Vote (male)	4. Vote (female)
Infractions	0.03 (0.02)	-0.03 (0.05)	-0.00 (0.01)	0.00 (0.04)
R ²	0.01	0.07	0.02	0.08
Adj. R ²	0.01	0.04	0.01	0.03
Num. obs.	1384	120	362	74
RMSE	0.56	0.72	0.23	0.20
N Clusters	4	4	4	4

* $p < 0.05$

Table B5: Results corresponding to the left panel of Figure 3 using alternative outcomes in the sample of first-year incumbents. Columns denote corresponding outcome variable and sample. All models include election-year fixed effects. Election-year clustered standard errors in parenthesis

	1. Candidates (male)	2. Candidates (female)	3. Vote (male)	4. Vote (female)
Infractions	-0.01 (0.05)	-0.01 (0.04)	0.01 (0.01)	-0.02 (0.01)
R ²	0.13	0.04	0.02	0.01
Adj. R ²	0.11	-0.02	-0.00	-0.05
Num. obs.	163	51	163	51
RMSE	0.33	0.42	0.20	0.17
N Clusters	4	3	4	3

* $p < 0.05$

Table B6: Results corresponding to the right panel of Figure 3 using alternative outcomes in the sample of second-year incumbents. Columns denote corresponding outcome variable and sample. All models include election-year fixed effects. Election-year clustered standard errors in parenthesis

C. Null results on the sample of female incumbents

As we point out in the main text, one limitation of our study is that very few municipalities with female mayors are randomly selected for auditing, mainly because Brazil in the period under study has very few female mayors to begin with. Our main results, along with this appendix, systematically report estimates that are indistinguishable from zero in this sample. With few observations, this may be a function of a few influential observations masking potential non-zero effects.

To address the influence of specific observations, we compute jackknife estimates and confidence intervals by iteratively omitting one observation at a time in the sample of female incumbents. Figure C1 depicts the distribution of these estimates and confidence intervals along the ranking of our corruption variable (sorted from lowest to highest, deciding ties with a coin flip). The figure suggests that estimates do not vary with influential observations.

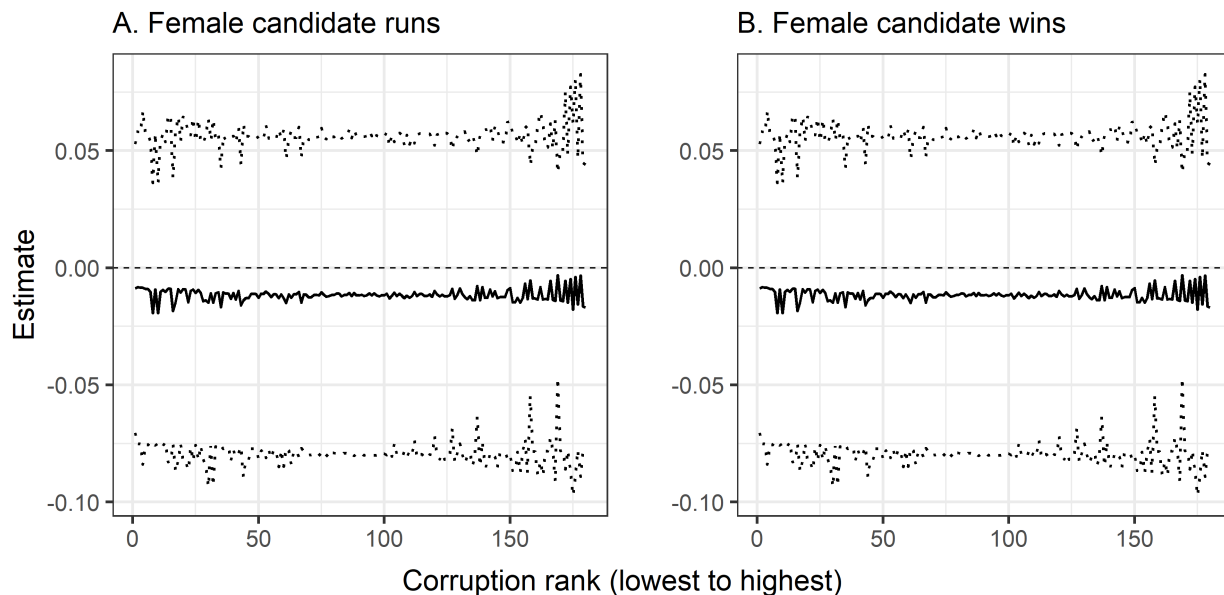


Figure C1: Distribution of jackknife estimates and confidence intervals along the ranking of our corruption variable. Values in the horizontal axis denote an estimation that omits the specific observation. Solid lines indicate point estimates and dotted lines indicate confidence intervals.

Next we explore the possibility of the null result being driven by female incumbents who choose to run for reelection. As we mention on the main text, the incumbent chooses to run for reelection in about 28% of the municipality-election years with a female mayor (50/180). To complement this information, Table C1 depicts

the overall distribution of incumbents by gender, whether they choose to run for reelection, and whether they win the election in the sample of municipality years with first term (reelection eligible) mayors.

Gender	Runs	Wins	Observations	Proportion
Male	No	No	855	0.57
Male	Yes	No	387	0.26
Male	Yes	Yes	136	0.09
Female	No	No	70	0.05
Female	Yes	No	38	0.03
Female	Yes	Yes	12	0.01

Table C1: Distribution of first term incumbents by gender, decision to seek reelection, and election result

The table shows that female incumbents choose to run in only 4% of the cases, and they win only in 1%. While it is unlikely that the results are affected by this group of observations, Table C2 reproduces the findings in the main text for the sample of municipality-election years with female mayors, redefining the outcomes of interest so that they indicate whether female candidates other than the incumbent choose to run or win the election. The results do not change with regards to the main text.

	1. Run (all)	2. Run (first term)	3. Win (all)	4. Win (first term)
Infractions	-0.04 (0.02)	-0.05 (0.02)	-0.01 (0.03)	-0.00 (0.04)
R ²	0.02	0.02	0.04	0.02
Adj. R ²	0.00	-0.02	0.01	-0.01
Num. obs.	180	120	180	120
RMSE	0.37	0.41	0.27	0.29
N Clusters	4	4	4	4

* $p < 0.05$

Table C2: Reproducing results in the sample of municipality-election years with female mayors. Columns denote the corresponding outcome (Run: At least one female candidate other than the incumbent mayor, Win: A female candidate other than the incumbent wins) and sample (all: All municipality-election years with female incumbents, first-term: Municipality-years with a female incumbent eligible for reelection). All models include election year fixed effects. Election-year clustered standard errors in parenthesis.