**Supplementary Material: Online Appendix for**

**"The Machine Works: Why Turnout Buying is More Effective than it Appears"**

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# **Appendix A. Meta-Analysis**

Criteria for Inclusion and Search Procedure

To identify the census of relevant estimates, I searched for studies that fit all three of the following criteria: 1) the study reports the results of a regression analysis or, for experimental studies, another statistical procedure, that 2) estimates the impact of a plausible indicator of vote-buying attempts, on 3) turnout at the individual-level or in electoral constituencies. Analyses may be of elections for any public office and from any country-election-year. However, if two studies used the same data on the same country-election year, I included one only.[[1]](#footnote-1)

I first collected the studies I already knew based on my knowledge of the literature. I then conducted a Google Scholar search using the following terms: "vote buying", "turnout buying", "abstention buying", "negative vote buying", "clientelism", "electoral clientelism", and "patronage" in English and Spanish. I also sent personal queries to experts on the topic. The search included published books, articles, and book chapters, as well as unpublished working papers and dissertations. When a qualifying source was identified, I then examined the references for sources that the other search strategies had not uncovered. Finally, I did a Google Scholar search of all the citations of the qualifying studies.

Included and Excluded Studies

These searches produced the 13 studies referenced in the table below. I read many other promising studies that did not qualify. Some were disqualified because their findings could not be associated with individual or constituency-level turnout, such as works by Calvo and Murrillo (2019), Cantú (2019) and Frye, Reuter, and Szakonyi (2019). This was also the case with Larreguy and colleagues' (2016) clever natural experiment that estimates turnout at the ballot-box level. Others were disqualified because they estimate vote shares for the competing parties but not turnout, such as Bowles, Larreguy, and Liu (2020). I also disqualified observational studies that did not include control variables or matching techniques, such as Muhtadi's (2019: 212) cross-tabulation of cross-sectional data showing gift receipt and self-reported participation.

The included experimental studies are best known for their estimates of the effects of suppressing the effects of vote buying on election results. Here, I note that they also focus on turnout as an outcome of interest.

* Vicente (2014): The abstract reads, "To infer effects of vote buying on electoral behaviour, I designed and conducted a randomised field experiment during an election in São Tomé and Príncipe...Results show that the campaign reduced the influence of money offered on voting, decreased voter turnout and favoured the incumbent. This evidence suggests that vote buying increases participation and counteracts the incumbency advantage." Effects on turnout appear in Table 7, p. 377.
* Fujiwara and Wantchekon (2013): The abstract reads, "This paper studies the electoral effects of town hall meetings based on programmatic, nonclientelist platforms....We find that treatment reduces the prevalence of clientelism and does not affect turnout." The section titled "C. Turnout and Vote Share" on p. 250 reports "Panel B of Table 2 provides the results using the electoral data. First, we find an almost zero (and statistically insignificant) effect on turnout..." Table 2 appears on p. 249.
* Blattman et al. (2019): The authors' pre-analysis plan included a primary focus on the effects of the intervention on vote-buying efforts and a secondary focus on the effects on turnout (p. 17). The first sentence of the section titled "6.3 Electoral Outcomes" reads, "Table 2 reports treatment effects on candidate vote shares as well as voter turnout." (p. 20). Also see Table 2 on p. 22.
* Cruz et al. (2016): In the abstract, the authors write that the treatment "left voters more knowledgeable about candidates’ proposed policies and increased the salience of spending, but did not affect vote shares and turnout." Effects on turnout are reported in Table 8, columns 6 and 7 on p. 45.
* Banerjee et al. (2011): The first line of the paragraph reporting findings in the introduction reads "Official voter turnout statistics show that our caste field experiment mobilized voters, particularly male voters" (p. 3). The main comparative statics from the formal model reported on p. 10-11 are for turnout. The first line of the section titled "6 Did the Caste Campaign Change Behavior?" reads "We start by examining the impact of the campaign on voter turnout."
* Schechter and Vaduvesan (2022): The second sentence of the section titled "4.1 Electoral Outcomes" on p.12 reads "Outcomes of interest include the vote share of putative vote-buying parties, the vote share of the anti-corruption party, and the voter turnout rate." Footnote 11 reads "The two primary outcomes in our PAP were the vote share of parties identified by the journalists as buying votes, and voter turnout." Effects of the radio campaign on turnout are reported section "5.2 Turnout" and in "Table 3: Impact of the Radio Campaign on Voter Turnout Rate (%)" on p. 22.

**Table A1. Studies on Turnout- and Abstention-Buying Included in the Meta-Analysis**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Study** | **No. of est.** | **N** | **Countries, years, and data sources** | **Study type and units of analysis** | **Measure of electoral clientelism** | **Measure of turnout** |
| ***Individual-level studies*** | | | | | | | |
| Guardado & Wantchekon (2018: 146) | 17 | 20,143 | 17 countries in sub-Saharan Africa circa 2007 (Afrobarometer Round 3) | Observa-  tional,  Individuals | Q57: “And during the [year] elections, how often (if ever) did a candidate or someone from a political party offer you something, like food or a gift, in return for your vote?” | Survey self-reports of turnout in prior election |
| Carreras & Irepoğlu (2013: 616) | 18 | 23,364 | 18 Latin American countries circa 2010 (America’s Barometer 2010) | CLIEN1: “In recent years and thinking about election campaigns, has a candidate or someone from a political party offered you something, like a favor, food, or any other benefit or thing in return for your vote or support?” |
| Buendía & Somuano (2003: 300, 320) | 1 | 1,502 | Mexico 2000 (CSES 2000, post-election) | Q61\_3 “It’s well known that some candidates send letters, give gifts, and organize canvassers to get out the vote. Have any of the presidential candidates' campaigns given you a gift?” |
| Cornelius (2004: 59) | 3 | 1,142 | Mexico 2000 (Mexico 2000 Panel Study, post-election) | Q25 “In recent weeks, have you received gifts or assistance from any political party?” |
| Imai, Park, & Greene (2015: 12) | 1 | 901 | Mexico 2012 (Mexico 2012 Panel Study, post-election) | List experiment, sensitive item “Receive a gift, favor, or access to a service in exchange for your vote” | Survey enumerator examines mark on voter ID card |
| Bratton (2008: 626) | 1 | 2,229 | Nigeria 2007 (Afrobarometer Round 3) | Same as above | Survey self-reports of turnout intention in next election |
| **Hicken et al.** (2017: 6) | 2 | 883 | Philippines 2013 | Experimen-  tal,  Individuals | Anti-vote buying messages: 1) "I won't take the money", 2) "I'll take the money, but will vote my conscience". | Survey self-reports of turnout in prior election |
| ***Aggregate studies*** | | | | | | | |
| **Cruz et al.** (2016: 45) | 1 | 284 | Philippines 2013 | Experimen-  tal,  Villages | Flyers to households with information about development funds and each candidate's intended fund allocation | Public records |
| **Fujiwara & Wantchekon** (2013: 249) | 1 | 1,920 | Benin 2006 | Exposure to programmatic town hall meetings (assigned) or clientelist campaign events (null) |
| **Banerjee et al.** (2011: 3, 35) | 1 | 601 | India 2007 | Experimen-  tal, precincts | Pamphlet on legislator responsibilities and report card on incumbent performance |
| **Vicente** (2014: 377) | 1 | 228 | Sao Tome e Principe 2006 | Exposure to anti-vote-buying messages |
| **Blattman et al.** (2019: 22) | 1 | 3,659 | Uganda 2016 | Experimen-  tal,  Parishes | Pre-election distribution of anti-vote buying leaflets and posters, village meetings and resolution against vote-buying, turnout phone calls night before the election. |
| **Schechter & Vasudevan** (2021: 25) | 1 | 615 | India 2014 | Experimen-  tal,  Assembly constituen-cies | 60-second dramatized radio spot including anti-vote buying and anti-corruption messages (p. 10-11, Appendix A) |

Note: Experimental studies appear in bold; observational studies appear in Roman. I report the total N for all estimates by each author even if the component studies were not pooled.

Meta-Regressions

For all qualifying studies, I recorded the estimated effect of vote-buying offers on turnout and 95% confidence intervals. In most cases, these quantities of interest were discernible from the regression table or reported in the text. If authors report results from multiple models, I prioritize constituency-level findings using electoral data over survey self-reports. I also used the models with the most control variables.[[2]](#footnote-2) For Cornelius (2004) and Carreras and Irepoglu (2013), I could not discern estimates for the appropriate units from the regression tables. I thus used their data and coding procedures to reproduce models and generated predicted probabilities. I report those tables below.

Figures 1 and 2 in the main text summarize the results of the meta-analyses. I report one analysis for studies using individual-level turnout data. All of these use observational data, except Hicken et al. (2017) that randomizes an information treatment. However, participants in that study could decline treatment (uptake was around 50%), making this study more similar in treatment and outcome to the observational studies than the experimental ones. The analysis in Figure 2 is of experimental studies that use aggregate constituency-level outcomes.

The figures are based on a random-effects meta-analysis model to account for the inclusion of studies of different country-election-years where the strategic conditions yield incentives for different levels of turnout buying.Unlike a fixed-effects model that assumes that all the studies estimate the same true effect size, the random-effects model assumes that the effect sizes across studies are drawn from a normal distribution centered on the grand mean across all included estimates with variance . The mean effect across the studies is computed as the weighted average of study-specific effect sizes where and the variance of is estimated by . To estimate the variance , I use the restricted maximum likelihood (REML) estimator (Raudenbush 2009).

Meta-Regression for Mexico Studies

Figure A1.



Estimates for Selected Studies

Several studies reported results that could not be used to derive estimates of the effects of vote buying on turnout. I reestimated the models in Cornelius (2004) and Carreras and Irepoglu (2013). The results appear below.

Table A2: Reproduction of the Cornelius (2004: 59, Table 3.6) Model

turnout | Coef. Std. Err. z P>|z| [95% Conf. Interval]

-----------------+----------------------------------------------------------------

female | .11111 .0855211 1.30 0.194 -.0565083 .2787282

educ | .1439284 .0428381 3.36 0.001 .0599674 .2278895

age3049 | .1947481 .2492829 0.78 0.435 -.2938374 .6833336

age50plus | -.2127868 .2348347 -0.91 0.365 -.6730544 .2474808

ses\_house | -.0423904 .0449083 -0.94 0.345 -.130409 .0456282

rural | .1782142 .1064526 1.67 0.094 -.0304291 .3868574

pan\_canvassed\_w4 | .0454487 .2029496 0.22 0.823 -.3523252 .4432226

prd\_canvassed\_w4 | .2217002 .2245181 0.99 0.323 -.2183471 .6617476

pri\_canvassed\_w4 | -.0075351 .1378078 -0.05 0.956 -.2776334 .2625632

pri\_vb\_w4 | .0121441 .1739039 0.07 0.944 -.3287014 .3529895

pan\_vb\_w4 | -.237379 .2931997 -0.81 0.418 -.81204 .3372819

prd\_vb\_w4 | .341119 .4224962 0.81 0.419 -.4869582 1.169196

\_cons | .8607305 .3105196 2.77 0.006 .2521231 1.469338

----------------------------------------------------------------------------------

I then generated changes in the predicted probability of turnout, given a gift from each of the main parties. These estimates and their 95% confidence intervals are included the meta-analysis.

------------------------------------------------------------------------------

| Delta-method

| dy/dx Std. Err. z P>|z| [95% Conf. Interval]

-------------+----------------------------------------------------------------

pri\_vb\_w4 | .0031542 .0451692 0.07 0.944 -.0853759 .0916843

------------------------------------------------------------------------------

------------------------------------------------------------------------------

| Delta-method

| dy/dx Std. Err. z P>|z| [95% Conf. Interval]

-------------+----------------------------------------------------------------

pan\_vb\_w4 | -.0616552 .0761201 -0.81 0.418 -.2108479 .0875375

------------------------------------------------------------------------------

------------------------------------------------------------------------------

| Delta-method

| dy/dx Std. Err. z P>|z| [95% Conf. Interval]

-------------+----------------------------------------------------------------

prd\_vb\_w4 | .0885999 .1096842 0.81 0.419 -.1263772 .303577

------------------------------------------------------------------------------

Carreras and Irepoglu's (2013) study also qualified, but these authors only showed the pooled analysis across all 18 Latin American countries. The authors shared their code so that I could replicate their model on the individual country cases. Please contact these authors for replication materials. I first show a replication of their pooled model that matches Table 2, Model 1 on p. 615 exactly.

Table A3. Carreras and Irepoglu (2013: 615, Table 2, Model 1) Replication

-----------------------------------------------------------------------------

vb2 | Coef. Std. Err. z P>|z| [95% Conf. Interval]

-------------+----------------------------------------------------------------

b47 | .0585026 .0104704 5.59 0.000 .0379811 .0790242

clien1 | .0968698 .0373143 2.60 0.009 .0237351 .1700046

eff1 | -.0249582 .0095406 -2.62 0.009 -.0436574 -.006259

q10 | .0043832 .0095506 0.46 0.646 -.0143357 .0231021

ed | .2902092 .0288053 10.07 0.000 .2337518 .3466665

age | .6605228 .0179471 36.80 0.000 .6253471 .6956984

pol1 | .121999 .0210044 5.81 0.000 .0808312 .1631668

vb10 | .5544631 .0449178 12.34 0.000 .4664259 .6425003

gi0 | .1079746 .0193256 5.59 0.000 .0700972 .1458521

ocup4a | .4531525 .0369756 12.26 0.000 .3806817 .5256233

civic | .197386 .0212872 9.27 0.000 .1556638 .2391082

country\_id |

2 | .0224689 .0963018 0.23 0.816 -.1662792 .211217

3 | .5610117 .0963437 5.82 0.000 .3721815 .7498419

5 | .4829448 .0986126 4.90 0.000 .2896677 .6762219

6 | -.749714 .097447 -7.69 0.000 -.9407067 -.5587213

7 | .6602325 .1017369 6.49 0.000 .4608318 .8596332

8 | -.5746244 .0909036 -6.32 0.000 -.7527921 -.3964567

9 | 1.876816 .1041569 18.02 0.000 1.672672 2.08096

10 | 1.475635 .1014444 14.55 0.000 1.276807 1.674462

11 | .5817514 .1024561 5.68 0.000 .3809412 .7825616

12 | -.263745 .09899 -2.66 0.008 -.4577618 -.0697282

13 | 1.240889 .1412609 8.78 0.000 .9640225 1.517755

14 | 1.517753 .1372326 11.06 0.000 1.248782 1.786724

15 | .9963974 .0934849 10.66 0.000 .8131704 1.179624

16 | -.2587098 .0943993 -2.74 0.006 -.443729 -.0736906

17 | .5395042 .1071654 5.03 0.000 .3294639 .7495445

21 | .0470482 .0998473 0.47 0.637 -.1486489 .2427453

\_cons | -2.739545 .1360549 -20.14 0.000 -3.006208 -2.472883

------------------------------------------------------------------------------

I now show the individual country-elections using the same model as above. The predicted probabilities and 95% confidence intervals from these models, also shown below, were used in the meta-analysis.

Table A4, Panel A. Mexico

------------------------------------------------------------------------------

vb2 | Coef. Std. Err. z P>|z| [95% Conf. Interval]

-------------+----------------------------------------------------------------

b47 | .08909 .0395039 2.26 0.024 .0116639 .1665161

1.clien1b | .1597514 .1829238 0.87 0.382 -.1987726 .5182754

eff1 | -.0156483 .0355044 -0.44 0.659 -.0852356 .053939

q10 | -.029465 .0296236 -0.99 0.320 -.0875262 .0285961

ed | .4291292 .1137541 3.77 0.000 .2061752 .6520832

age | .8873614 .0740025 11.99 0.000 .7423191 1.032404

pol1 | .1525461 .08012 1.90 0.057 -.0044863 .3095784

vb10 | .5620664 .1706835 3.29 0.001 .2275329 .8966

gi0 | .1350638 .0791148 1.71 0.088 -.0199983 .2901258

ocup4a | .082868 .1385741 0.60 0.550 -.1887323 .3544682

civic | .2179123 .0798274 2.73 0.006 .0614534 .3743712

\_cons | -3.51811 .4866002 -7.23 0.000 -4.471829 -2.564392

------------------------------------------------------------------------------

--------------------------------------------------------------

| Delta-method

| Contrast Std. Err. [95% Conf. Interval]

-------------+------------------------------------------------

clien1b |

(1 vs 0) | .0269708 .0304044 -.0326208 .0865623

--------------------------------------------------------------

Table A4, Panel B. Guatemala

------------------------------------------------------------------------------

vb2 | Coef. Std. Err. z P>|z| [95% Conf. Interval]

-------------+----------------------------------------------------------------

b47 | .0538502 .0424563 1.27 0.205 -.0293626 .137063

1.clien1b | .1379337 .2048386 0.67 0.501 -.2635426 .5394101

eff1 | -.0764401 .0378881 -2.02 0.044 -.1506993 -.0021808

q10 | -.0172845 .038526 -0.45 0.654 -.0927941 .058225

ed | .5245031 .1191578 4.40 0.000 .2909582 .7580481

age | .7465568 .0694787 10.75 0.000 .610381 .8827326

pol1 | .0681989 .0845454 0.81 0.420 -.0975071 .2339048

vb10 | .4349481 .2016777 2.16 0.031 .0396671 .8302292

gi0 | .1021309 .0652235 1.57 0.117 -.0257048 .2299666

ocup4a | .8964593 .1503398 5.96 0.000 .6017987 1.19112

civic | .3329374 .0798633 4.17 0.000 .1764081 .4894666

\_cons | -3.355973 .4483723 -7.48 0.000 -4.234767 -2.47718

------------------------------------------------------------------------------

--------------------------------------------------------------

| Delta-method

| Contrast Std. Err. [95% Conf. Interval]

-------------+------------------------------------------------

clien1b |

(1 vs 0) | .0233156 .0341271 -.0435722 .0902034

--------------------------------------------------------------

Table A4, Panel C. El Salvador

------------------------------------------------------------------------------

vb2 | Coef. Std. Err. z P>|z| [95% Conf. Interval]

-------------+----------------------------------------------------------------

b47 | .079989 .0439816 1.82 0.069 -.0062134 .1661914

1.clien1b | -.3192078 .2243548 -1.42 0.155 -.7589352 .1205195

eff1 | -.033359 .0390537 -0.85 0.393 -.1099029 .0431848

q10 | -.0099981 .0385847 -0.26 0.796 -.0856228 .0656266

ed | .4617498 .1042239 4.43 0.000 .2574747 .6660249

age | .5198804 .0669606 7.76 0.000 .3886401 .6511208

pol1 | .1237715 .0814338 1.52 0.129 -.0358358 .2833789

vb10 | .3898675 .1693478 2.30 0.021 .0579519 .7217831

gi0 | .0846064 .067871 1.25 0.213 -.0484184 .2176311

ocup4a | .3056796 .1436062 2.13 0.033 .0242165 .5871426

civic | .4074823 .0809995 5.03 0.000 .2487261 .5662384

\_cons | -2.177087 .4497376 -4.84 0.000 -3.058557 -1.295617

------------------------------------------------------------------------------

--------------------------------------------------------------

| Delta-method

| Contrast Std. Err. [95% Conf. Interval]

-------------+------------------------------------------------

clien1b |

(1 vs 0) | -.0493393 .0365625 -.1210004 .0223219

--------------------------------------------------------------

Table A4, Panel D. Nicaragua

------------------------------------------------------------------------------

vb2 | Coef. Std. Err. z P>|z| [95% Conf. Interval]

-------------+----------------------------------------------------------------

b47 | .0492411 .03705 1.33 0.184 -.0233755 .1218577

1.clien1b | -.2194 .2715524 -0.81 0.419 -.7516329 .3128329

eff1 | -.0022061 .0331038 -0.07 0.947 -.0670883 .0626761

q10 | .0528033 .0429259 1.23 0.219 -.03133 .1369366

ed | .1120393 .1012167 1.11 0.268 -.0863419 .3104204

age | .4875649 .0713068 6.84 0.000 .3478062 .6273236

pol1 | .180144 .0883703 2.04 0.041 .0069413 .3533466

vb10 | .6882911 .1621378 4.25 0.000 .370507 1.006075

gi0 | .0724647 .053822 1.35 0.178 -.0330246 .1779539

ocup4a | .13147 .1454198 0.90 0.366 -.1535475 .4164874

civic | .244613 .0795202 3.08 0.002 .0887564 .4004696

\_cons | -1.692826 .3948662 -4.29 0.000 -2.46675 -.9189026

------------------------------------------------------------------------------

--------------------------------------------------------------

| Delta-method

| Contrast Std. Err. [95% Conf. Interval]

-------------+------------------------------------------------

clien1b |

(1 vs 0) | -.0371564 .0476262 -.1305019 .0561892

--------------------------------------------------------------

Table A4, Panel E. Costa Rica

------------------------------------------------------------------------------

vb2 | Coef. Std. Err. z P>|z| [95% Conf. Interval]

-------------+----------------------------------------------------------------

b47 | .0524754 .0388339 1.35 0.177 -.0236377 .1285885

1.clien1b | -.1379888 .2723351 -0.51 0.612 -.6717558 .3957782

eff1 | -.0435411 .0349896 -1.24 0.213 -.1121193 .0250372

q10 | .0699494 .0385329 1.82 0.069 -.0055736 .1454724

ed | .1694589 .1202555 1.41 0.159 -.0662376 .4051553

age | .8756667 .0740239 11.83 0.000 .7305826 1.020751

pol1 | .1915033 .079734 2.40 0.016 .0352275 .3477791

vb10 | 1.173429 .1644555 7.14 0.000 .8511019 1.495756

gi0 | .154446 .0922922 1.67 0.094 -.0264434 .3353353

ocup4a | .0709881 .1520207 0.47 0.641 -.2269671 .3689433

civic | .0503126 .0944891 0.53 0.594 -.1348825 .2355078

\_cons | -4.3177 .5620168 -7.68 0.000 -5.419232 -3.216167

------------------------------------------------------------------------------

--------------------------------------------------------------

| Delta-method

| Contrast Std. Err. [95% Conf. Interval]

-------------+------------------------------------------------

clien1b |

(1 vs 0) | -.0245641 .0486723 -.1199601 .0708319

--------------------------------------------------------------

Table A4, Panel F. Panama

------------------------------------------------------------------------------

vb2 | Coef. Std. Err. z P>|z| [95% Conf. Interval]

-------------+----------------------------------------------------------------

b47 | .1276562 .0536028 2.38 0.017 .0225965 .2327158

1.clien1b | .021741 .2270328 0.10 0.924 -.4232351 .4667171

eff1 | -.1077961 .0428746 -2.51 0.012 -.1918287 -.0237635

q10 | -.0673566 .0506681 -1.33 0.184 -.1666644 .0319511

ed | .3120367 .1386231 2.25 0.024 .0403404 .5837329

age | .6872649 .0823624 8.34 0.000 .5258376 .8486921

pol1 | -.0063847 .0928826 -0.07 0.945 -.1884313 .1756618

vb10 | 1.55828 .2519409 6.19 0.000 1.064485 2.052075

gi0 | .0724302 .0977079 0.74 0.459 -.1190737 .2639342

ocup4a | .6253971 .1640332 3.81 0.000 .3038979 .9468963

civic | .1412303 .0933812 1.51 0.130 -.0417935 .3242542

\_cons | -1.681357 .5916412 -2.84 0.004 -2.840953 -.521762

------------------------------------------------------------------------------

--------------------------------------------------------------

| Delta-method

| Contrast Std. Err. [95% Conf. Interval]

-------------+------------------------------------------------

clien1b |

(1 vs 0) | .0027094 .0282026 -.0525666 .0579854

--------------------------------------------------------------

Table A4, Panel G. Colombia

------------------------------------------------------------------------------

vb2 | Coef. Std. Err. z P>|z| [95% Conf. Interval]

-------------+----------------------------------------------------------------

b47 | .1397239 .040331 3.46 0.001 .0606765 .2187712

1.clien1b | .3188128 .1833 1.74 0.082 -.0404486 .6780742

eff1 | -.0204287 .0347301 -0.59 0.556 -.0884984 .0476411

q10 | .0361006 .0404595 0.89 0.372 -.0431985 .1153997

ed | -.0313289 .1106917 -0.28 0.777 -.2482808 .1856229

age | .9426807 .0710281 13.27 0.000 .8034682 1.081893

pol1 | .2176259 .0810289 2.69 0.007 .0588123 .3764396

vb10 | .3037849 .152928 1.99 0.047 .0040516 .6035182

gi0 | .0973787 .0889142 1.10 0.273 -.0768899 .2716472

ocup4a | .5164696 .1369262 3.77 0.000 .2480992 .7848399

civic | .3061089 .0801508 3.82 0.000 .1490163 .4632015

\_cons | -4.027944 .5078123 -7.93 0.000 -5.023238 -3.03265

------------------------------------------------------------------------------

--------------------------------------------------------------

| Delta-method

| Contrast Std. Err. [95% Conf. Interval]

-------------+------------------------------------------------

clien1b |

(1 vs 0) | .0566935 .0320597 -.0061423 .1195294

--------------------------------------------------------------

Table A4, Panel H. Ecuador

------------------------------------------------------------------------------

vb2 | Coef. Std. Err. z P>|z| [95% Conf. Interval]

-------------+----------------------------------------------------------------

b47 | -.0210844 .0498385 -0.42 0.672 -.1187661 .0765973

1.clien1b | -.094636 .2856306 -0.33 0.740 -.6544617 .4651897

eff1 | .0574953 .0441827 1.30 0.193 -.0291012 .1440918

q10 | -.0251423 .0544165 -0.46 0.644 -.1317967 .0815121

ed | .3789052 .1245057 3.04 0.002 .1348784 .622932

age | .104838 .0689208 1.52 0.128 -.0302442 .2399202

pol1 | -.0816129 .0957132 -0.85 0.394 -.2692073 .1059816

vb10 | .1195529 .2439712 0.49 0.624 -.3586218 .5977276

gi0 | .1322365 .08725 1.52 0.130 -.0387704 .3032434

ocup4a | .6465361 .1620146 3.99 0.000 .3289934 .9640788

civic | .1466353 .095388 1.54 0.124 -.0403216 .3335923

\_cons | .6742082 .5294282 1.27 0.203 -.363452 1.711868

------------------------------------------------------------------------------

--------------------------------------------------------------

| Delta-method

| Contrast Std. Err. [95% Conf. Interval]

-------------+------------------------------------------------

clien1b |

(1 vs 0) | -.0063769 .0198783 -.0453377 .0325839

--------------------------------------------------------------

Table A4, Panel I. Bolivia

------------------------------------------------------------------------------

vb2 | Coef. Std. Err. z P>|z| [95% Conf. Interval]

-------------+----------------------------------------------------------------

b47 | .0371025 .0567465 0.65 0.513 -.0741187 .1483237

1.clien1b | .4382487 .2369799 1.85 0.064 -.0262234 .9027207

eff1 | .0653692 .0535627 1.22 0.222 -.0396117 .1703501

q10 | .0607943 .0478961 1.27 0.204 -.0330803 .154669

ed | .3410414 .1211817 2.81 0.005 .1035297 .5785532

age | .5618989 .080238 7.00 0.000 .4046352 .7191626

pol1 | .2714425 .0918501 2.96 0.003 .0914196 .4514654

vb10 | .0902184 .1836607 0.49 0.623 -.2697499 .4501867

gi0 | .1466164 .0775676 1.89 0.059 -.0054134 .2986461

ocup4a | .4589813 .1596915 2.87 0.004 .1459918 .7719709

civic | .0297867 .0814004 0.37 0.714 -.1297551 .1893285

\_cons | -1.924341 .5627383 -3.42 0.001 -3.027288 -.8213942

------------------------------------------------------------------------------

--------------------------------------------------------------

| Delta-method

| Contrast Std. Err. [95% Conf. Interval]

-------------+------------------------------------------------

clien1b |

(1 vs 0) | .0306857 .0147491 .001778 .0595934

--------------------------------------------------------------

Table A4, Panel J. Peru

------------------------------------------------------------------------------

vb2 | Coef. Std. Err. z P>|z| [95% Conf. Interval]

-------------+----------------------------------------------------------------

b47 | -.0382994 .0576138 -0.66 0.506 -.1512203 .0746216

1.clien1b | .2667335 .2850618 0.94 0.349 -.2919774 .8254445

eff1 | .0472514 .0544368 0.87 0.385 -.0594427 .1539456

q10 | .0027568 .0487626 0.06 0.955 -.0928161 .0983298

ed | .8402239 .1531828 5.49 0.000 .5399911 1.140457

age | 1.19833 .0971542 12.33 0.000 1.007911 1.388748

pol1 | -.1382228 .1062823 -1.30 0.193 -.3465323 .0700867

vb10 | .1434264 .2389716 0.60 0.548 -.3249494 .6118021

gi0 | -.0134534 .1037801 -0.13 0.897 -.2168587 .1899519

ocup4a | .9009002 .1768548 5.09 0.000 .5542711 1.247529

civic | .2793995 .1030871 2.71 0.007 .0773524 .4814466

\_cons | -3.391536 .6422522 -5.28 0.000 -4.650327 -2.132745

------------------------------------------------------------------------------

--------------------------------------------------------------

| Delta-method

| Contrast Std. Err. [95% Conf. Interval]

-------------+------------------------------------------------

clien1b |

(1 vs 0) | .0279409 .0287544 -.0284167 .0842985

--------------------------------------------------------------

Table A4, Panel K. Paraguay

------------------------------------------------------------------------------

vb2 | Coef. Std. Err. z P>|z| [95% Conf. Interval]

-------------+----------------------------------------------------------------

b47 | .03338 .0436451 0.76 0.444 -.0521628 .1189228

1.clien1b | .5289404 .2198305 2.41 0.016 .0980804 .9598003

eff1 | .0283809 .0419348 0.68 0.499 -.0538099 .1105716

q10 | .0017034 .0304927 0.06 0.955 -.0580612 .0614681

ed | .3526218 .1185163 2.98 0.003 .1203342 .5849094

age | .8934868 .0846084 10.56 0.000 .7276574 1.059316

pol1 | .3288796 .0881922 3.73 0.000 .1560261 .501733

vb10 | .6227087 .1725484 3.61 0.000 .2845201 .9608973

gi0 | .2506823 .1045608 2.40 0.017 .0457469 .4556176

ocup4a | .6456891 .158576 4.07 0.000 .3348858 .9564924

civic | .0530659 .0805649 0.66 0.510 -.1048383 .2109702

\_cons | -4.784949 .6141267 -7.79 0.000 -5.988615 -3.581283

------------------------------------------------------------------------------

--------------------------------------------------------------

| Delta-method

| Contrast Std. Err. [95% Conf. Interval]

-------------+------------------------------------------------

clien1b |

(1 vs 0) | .0846821 .0332417 .0195296 .1498345

--------------------------------------------------------------

Table A4, Panel L. Chile

------------------------------------------------------------------------------

vb2 | Coef. Std. Err. z P>|z| [95% Conf. Interval]

-------------+----------------------------------------------------------------

b47 | .1124266 .0804378 1.40 0.162 -.0452285 .2700817

1.clien1b | -.8092635 .441454 -1.83 0.067 -1.674498 .0559705

eff1 | -.0606606 .064879 -0.93 0.350 -.1878212 .0665

q10 | -.0309821 .0545068 -0.57 0.570 -.1378134 .0758492

ed | -.0745252 .2071395 -0.36 0.719 -.4805112 .3314607

age | .0043632 .1388913 0.03 0.975 -.2678587 .2765851

pol1 | .2979768 .1685669 1.77 0.077 -.0324083 .6283619

vb10 | .7919196 .5385795 1.47 0.141 -.2636768 1.847516

gi0 | .1325127 .1410558 0.94 0.348 -.1439515 .4089769

ocup4a | .426826 .2700281 1.58 0.114 -.1024192 .9560713

civic | .2422033 .1552867 1.56 0.119 -.062153 .5465597

\_cons | 1.102071 1.050995 1.05 0.294 -.9578407 3.161983

------------------------------------------------------------------------------

--------------------------------------------------------------

| Delta-method

| Contrast Std. Err. [95% Conf. Interval]

-------------+------------------------------------------------

clien1b |

(1 vs 0) | -.0647275 .0455981 -.1540981 .0246432

--------------------------------------------------------------

Table A4, Panel M. Uruguay

------------------------------------------------------------------------------

vb2 | Coef. Std. Err. z P>|z| [95% Conf. Interval]

-------------+----------------------------------------------------------------

b47 | .1869621 .0775678 2.41 0.016 .0349321 .3389922

1.clien1b | .4088235 .5494615 0.74 0.457 -.6681012 1.485748

eff1 | -.0757781 .0654285 -1.16 0.247 -.2040157 .0524595

q10 | .0288116 .0507125 0.57 0.570 -.0705831 .1282062

ed | .3566405 .2053963 1.74 0.083 -.0459288 .7592099

age | .710977 .1069259 6.65 0.000 .5014061 .920548

pol1 | .0085552 .1290064 0.07 0.947 -.2442927 .2614031

vb10 | .2329544 .266065 0.88 0.381 -.2885234 .7544322

gi0 | -.2923039 .1988859 -1.47 0.142 -.682113 .0975053

ocup4a | .5787309 .2440657 2.37 0.018 .1003709 1.057091

civic | .4708826 .2033114 2.32 0.021 .0723995 .8693656

\_cons | .0825174 .9941534 0.08 0.934 -1.865988 2.031022

------------------------------------------------------------------------------

--------------------------------------------------------------

| Delta-method

| Contrast Std. Err. [95% Conf. Interval]

-------------+------------------------------------------------

clien1b |

(1 vs 0) | .0193387 .0225604 -.0248788 .0635563

--------------------------------------------------------------

Table A4, Panel N. Brazil

------------------------------------------------------------------------------

vb2 | Coef. Std. Err. z P>|z| [95% Conf. Interval]

-------------+----------------------------------------------------------------

b47 | .0561919 .0350456 1.60 0.109 -.0124962 .12488

1.clien1b | .0270451 .1794527 0.15 0.880 -.3246757 .3787658

eff1 | -.0021687 .0360235 -0.06 0.952 -.0727735 .068436

q10 | -.1059874 .0416482 -2.54 0.011 -.1876163 -.0243585

ed | .2725133 .1212048 2.25 0.025 .0349562 .5100704

age | .7346027 .0672224 10.93 0.000 .6028492 .8663562

pol1 | .0369478 .0797698 0.46 0.643 -.1193981 .1932936

vb10 | .2576555 .1552096 1.66 0.097 -.0465498 .5618608

gi0 | .1041446 .0673908 1.55 0.122 -.0279389 .2362281

ocup4a | .7003611 .1342002 5.22 0.000 .4373335 .9633887

civic | .2780103 .0923364 3.01 0.003 .0970342 .4589864

\_cons | -1.533627 .4252333 -3.61 0.000 -2.367069 -.7001849

------------------------------------------------------------------------------

--------------------------------------------------------------

| Delta-method

| Contrast Std. Err. [95% Conf. Interval]

-------------+------------------------------------------------

clien1b |

(1 vs 0) | .0031365 .0207075 -.0374495 .0437225

--------------------------------------------------------------

Table A4, Panel O. Venezuela

------------------------------------------------------------------------------

vb2 | Coef. Std. Err. z P>|z| [95% Conf. Interval]

-------------+----------------------------------------------------------------

b47 | .1086198 .0382539 2.84 0.005 .0336435 .1835961

1.clien1b | -.4235517 .2150488 -1.97 0.049 -.8450397 -.0020637

eff1 | -.0443543 .0365998 -1.21 0.226 -.1160886 .0273801

q10 | .0936043 .039464 2.37 0.018 .0162563 .1709522

ed | .2382246 .1099188 2.17 0.030 .0227878 .4536615

age | .635311 .0680912 9.33 0.000 .5018547 .7687673

pol1 | .0046104 .0775985 0.06 0.953 -.1474799 .1567008

vb10 | .7607181 .1681642 4.52 0.000 .4311223 1.090314

gi0 | .1778442 .071952 2.47 0.013 .0368208 .3188675

ocup4a | .5155851 .1430757 3.60 0.000 .2351618 .7960084

civic | .2433962 .0767061 3.17 0.002 .093055 .3937374

\_cons | -3.438397 .4821616 -7.13 0.000 -4.383416 -2.493377

------------------------------------------------------------------------------

--------------------------------------------------------------

| Delta-method

| Contrast Std. Err. [95% Conf. Interval]

-------------+------------------------------------------------

clien1b |

(1 vs 0) | -.0782787 .0409715 -.1585814 .002024

--------------------------------------------------------------

Table A4, Panel P. Argentina

------------------------------------------------------------------------------

vb2 | Coef. Std. Err. z P>|z| [95% Conf. Interval]

-------------+----------------------------------------------------------------

b47 | -.001067 .0442775 -0.02 0.981 -.0878494 .0857153

1.clien1b | .36342 .2371475 1.53 0.125 -.1013805 .8282205

eff1 | -.0775007 .0436174 -1.78 0.076 -.1629892 .0079878

q10 | .0907215 .0454935 1.99 0.046 .0015558 .1798872

ed | .1801054 .1225242 1.47 0.142 -.0600376 .4202485

age | .3487543 .0738649 4.72 0.000 .2039817 .4935269

pol1 | .2740511 .0932356 2.94 0.003 .0913126 .4567896

vb10 | .3680936 .2507064 1.47 0.142 -.1232819 .8594691

gi0 | .2452184 .0839525 2.92 0.003 .0806745 .4097624

ocup4a | .1805519 .1700035 1.06 0.288 -.1526489 .5137527

civic | -.2033864 .1183312 -1.72 0.086 -.4353114 .0285385

\_cons | -1.854553 .4758109 -3.90 0.000 -2.787125 -.9219803

------------------------------------------------------------------------------

--------------------------------------------------------------

| Delta-method

| Contrast Std. Err. [95% Conf. Interval]

-------------+------------------------------------------------

clien1b |

(1 vs 0) | .0570156 .0349624 -.0115094 .1255406

--------------------------------------------------------------

Table A4, Panel Q. Dominican Republic

------------------------------------------------------------------------------

vb2 | Coef. Std. Err. z P>|z| [95% Conf. Interval]

-------------+----------------------------------------------------------------

b47 | -.006888 .0403755 -0.17 0.865 -.0860226 .0722465

1.clien1b | .7145385 .192763 3.71 0.000 .3367299 1.092347

eff1 | -.0258266 .0356667 -0.72 0.469 -.0957321 .0440789

q10 | .0147518 .0361822 0.41 0.683 -.056164 .0856676

ed | .2002544 .1146069 1.75 0.081 -.0243709 .4248797

age | .6128321 .0709544 8.64 0.000 .473764 .7519002

pol1 | .2408854 .0823328 2.93 0.003 .0795161 .4022547

vb10 | .7346597 .1678192 4.38 0.000 .4057401 1.063579

gi0 | -.0251391 .0952141 -0.26 0.792 -.2117554 .1614771

ocup4a | .2356355 .1541292 1.53 0.126 -.0664522 .5377232

civic | .1888306 .0795208 2.37 0.018 .0329727 .3446884

\_cons | -1.935985 .5513987 -3.51 0.000 -3.016707 -.8552634

------------------------------------------------------------------------------

--------------------------------------------------------------

| Delta-method

| Contrast Std. Err. [95% Conf. Interval]

-------------+------------------------------------------------

clien1b |

(1 vs 0) | .0988912 .024087 .0516817 .1461008

# 

# **Appendix B. The Gans-Morse et al. (2014) Strategy Diversification Model**

This appendix details how I derived the relative use of abstention buying, vote-choice buying, and turnout buying plus double persuasion from the GNM (2014) model represented in Figure 3.

First, I derive the equations for the labeled lines in Figure 3. As noted in the main text, supporting non-voters have a reservation value of 0 and ideal points between and . Buying turnout requires paying them . The maximum cost that the machine is willing to pay for one vote (and therefore the height of the areas designated A, D, and T) is . Substituting for and solving for , yields the equation for the turnout-buying line as and for as . Opposition voters have a reservation value of and lie between and . Inducing abstention requires the machine to pay . Following the same procedure as above yields the equation for as and as . Finally, because buying a vote choice benefits the machine twice as much as any of the other strategies, it is willing to pay (the expression for line ) to voters whose cost of voting is less than - (the expression for line ).[[3]](#footnote-3) These equations differ from GNM 2014: fn 23, 24, and 28 because I explicitly incorporate the *k*-term that the authors discuss in "Salience of Political Preferences" (p. 427) and that appears in "Machine Support" (p. 428).

Second, I generate the Cartesian coordinates for the vertices of each labeled area. Starting at the highest point and moving counterclockwise, the vertices for each area are as follows:

* Area T
* Area A
* Area D
* Starting at the upper-left and moving counter-clockwise, the vertices for area V are

Third, I use Gauss' Area Formula (also known as the Shoelace Algorithm) to determine the four areas. Let *P* be a polygon with vertices {*p*1​, *p*2​, … *pn*​}. Then the signed or oriented area of P is given by

where the sum wraps around because .[[4]](#footnote-4)

To apply the formula, it is easiest to visualize the cross-products.

Area T

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| x-coordinate |  |  |  |  |
|  |  |  |  |  |
| y-coordinate |  |  |  |  |

Area A

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| x-coordinate |  |  |  |  |
|  |  |  |  |  |
| y-coordinate |  |  |  |  |

Area V

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| x-coordinate |  |  |  |  |
|  |  |  |  |  |
| y-coordinate |  |  |  |  |

Area D

|  |  |  |  |
| --- | --- | --- | --- |
| x-coordinate |  |  |  |
|  |  |  |  |
| y-coordinate |  |  |  |

The proportion of total voters that are offered an electoral gift for turnout is ; the proportion of voters given a gift to abstain is ; and the proportion of voters given a gift for their choice only is .

The GNM model requires the party locations to be fixed and symmetric. Thus, adopting x=1 does not lose generality. In addition, for the model to go through k=1/2. Finally, to produce an interior solution that satisfies fn 12, 0<b<.5.

# **Appendix C. How compound measures underestimate the effects of turnout buying**

Compound measures of electoral clientelism may include instances of turnout buying, abstention buying, and vote-choice buying. When the goal is to estimate the effects of turnout buying, including the other two causes an underestimate of turnout buying's impact on turnout.

To see why, imagine that all three strategies work without fail. Each case of turnout buying would cause electoral participation, resulting in scores on the compound measure of vote buying and turnout of [1, 1]. Each case of abstention buying would result in abstention, represented by [1, 0] and each case of vote-choice buying would have no effect on turnout, leading to either [1, 1] or [1, 0]. A dataset comprised of these scores would underestimate the influence of turnout buying because abstention buying exerts countervailing effects and vote-choice buying adds null effects.

As an illustration, consider 12 voters, as in the table below. Note that voters 1-3 were not targeted for any kind of vote buying; voters 4-6 were targeted for abstention buying, voters 7-9 were targeted for vote-choice buying, and voters 10-12 were targeted for turnout buying.

**Table C1. Simulated Effect of Compound Measures**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Case** | ***Correct coding*** | ***Incorrect coding*** | | |  |
|  | **Turnout buying** | **Turnout buying or vote-choice buying** | **Turnout buying or abstention buying** | **Compound measure** | **Turnout** |
| 1 | 0 | 0 | 0 | 0 | 0 |
| 2 | 0 | 0 | 0 | 0 | 1 |
| 3 | 0 | 0 | 0 | 0 | 0 |
| 4 | 0 | 0 | 1 | 1 | 0 |
| 5 | 0 | 0 | 1 | 1 | 0 |
| 6 | 0 | 0 | 1 | 1 | 0 |
| 7 | 0 | 1 | 0 | 1 | 0 |
| 8 | 0 | 1 | 0 | 1 | 1 |
| 9 | 0 | 1 | 0 | 1 | 0 |
| 10 | 1 | 1 | 1 | 1 | 1 |
| 11 | 1 | 1 | 1 | 1 | 1 |
| 12 | 1 | 1 | 1 | 1 | 1 |
| Correlation of turnout buying and turnout | *0.68* | *0.51* | *0.17* | *0.10* |  |

Based on the correct coding, turnout buying works well in this example. Among voters paid to turnout, 3/3 vote. Among voters not paid to turnout, 2/9 vote. With the correct coding, the correlation between turnout buying and turnout is 0.68.

Now examine the three versions of incorrect coding. First, if clientelism codes for turnout buying or vote-choice buying, then voters 7-9 are included as targets. But because vote-choice buying has null effects on turnout, only 1/3 of these voters votes. The correlation between gifts and turnout falls to 0.51.

Second, if clientelism codes for turnout buying or abstention buying, then voters 4-6 are included as targets. Among these voters, 0/3 vote. The correlation between gifts and turnout falls to 0.17.

Finally, if we were to employ a compound measure like existing studies do, voters 4-12 would be considered targets of clientelism. The correlation between gifts and turnout falls to 0.10.

# **Appendix D. The Mexico 2021 Survey Sample Characteristics**

The Mexico 2021 Electoral Justice Survey sampled from four of the seven NSE (Socio-Economic Level) categories employed by marketing firms in Mexico and many other countries (https://www.amai.org/NSE/). I excluded the three most affluent categories that represented 31.6% of Mexicans in 2020. Thus, the sampling frame included nearly 70% of citizens.

Below are the descriptions by AMAI, the Mexican organization that collects NSE data, translated into English.

Not included in my sample:

* A/B: The majority of heads of household in this category have a professional or graduate-level degree (80%). Seven of ten households (72.5%) have at least three bedrooms and 67% have at least two automobiles. Nearly all households have internet (99%).
* C+: 72% of heads of household in this category are high school graduates or have higher levels of education. 54% of the houses have at least three bedrooms, 30% have at least two automobiles, and 97% have internet. Slightly more than a third of the household budget is used to buy food (34%).
* C: 82% of heads of household in this category are secondary school graduates or have higher levels of education. 40% of the houses have at least three bedrooms and 91% have internet. 37% of the household budget is used to buy food. 14% of households have at least two automobiles.

Included in my sample:

* C-: 63% of heads of household in this category are secondary school graduates. 68% of the houses have two or more bedrooms. Eight or 10 houses (78%) have internet. About 40% of the household budget is used to buy food and 18% for transportation.
* D+: 74% of heads of household in this category have some secondary school education. Eight of ten houses have at least two bedrooms and 55% have internet. 42% of the household budget is used to buy food.
* D: 53% of heads of household in this category have some primary school education. 86% of houses have at least one bedroom. Only 14% have internet. Slightly less than half of the household budget is used to buy food (48%).
* E: The majority of heads of household in this category have less than a primary school education. Seven of ten houses have just one bedroom and 83% do not have a complete bathroom. Household internet is very low (0.3%). More than half of the household budget is used to buy food (52%) and just 1% is used for education.

I limited the sample to citizens that range from the lower middle-class to poor for three reasons. First, affluent citizens are infrequently targeted by political machines. Theorists argue that the marginal value of a given electoral gift rises with poverty (Dixit and Londregan 1986, Stokes 2009). Nationally representative samples show supporting evidence. Using LAPOP's America's Barometer survey in 2014 and the only available SES variable, the table below shows that only a few percent of those that can save money -- arguably associated with the middle and upper class and thus with NSE 1-3 -- receive vote-buying offers.

**Table D1. Vote-Buying Offers Across Economic Circumstances in Latin America**

|  |  |  |  |
| --- | --- | --- | --- |
|  | LAPOP Mexico 2014 | LAPOP Argentina 2014 | LAPOP 2014 all countries |
| Good enough and can save | 4.4% | 2.9% | 5.5% |
| Good enough, with no major problems | 29.7% | 37.1% | 26.2% |
| Not enough, and are stretched | 49.1% | 31.3% | 39.9% |
| Not enough, and having a hard time | 16.2% | 28.6% | 28.4% |

Further evidence comes from the Mexico 2006, 2012, and 2018 panel studies that collected information from nationally representative samples in the first wave. As above, almost no affluent citizens received offers.

**Table D2. Vote-Buying Offers Across Economic Circumstances in Mexico**

|  |  |  |  |
| --- | --- | --- | --- |
|  | MX 2018 | MX 2012 | MX 2006 |
| We can buy luxury products | 1.4% | 0.0% | 0.8% |
| We can buy electric home goods, but not luxury goods | 19.0% | 14.5% | 7.6% |
| We can buy basic products and closthes, but not electric home products | 27.5% | 33.7% | 28.0% |
| We can buy basic goods, but it's difficult to buy clothes | 25.5% | 21.7% | 35.2% |
| We cannot buy basic goods | 26.6% | 30.1% | 28.8% |

Second, I oversampled lower middle-class to poor citizens because credible models of turnout buying's effects should use analysis samples that downweigh or exclude unlikely targets of vote buying offers. Samples that include unlikely targets would bias results against efficacy. To illustrate, imagine a two-class society of 12 voters as in the table below. If all voters are included in the analysis, the correlation between turnout buying and voting is 0.58. But if the high SES voters that are not potential targets of the machine are excluded, the (true) correlation is a perfect 1.0.

**Table D3. Including Never-Targeted Respondents Underestimates the Effectiveness of Turnout Buying**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Case** | **Voter SES** | **Including high SES voters that are unlikely targets** | **Excluding high SES voters** | **Turnout** |
| 1 | High | 0 |  | 1 |
| 2 | High | 0 |  | 0 |
| 3 | High | 0 |  | 1 |
| 4 | High | 0 |  | 0 |
| 5 | High | 0 |  | 1 |
| 6 | High | 0 |  | 0 |
| 7 | Low | 1 | 1 | 1 |
| 8 | Low | 1 | 1 | 1 |
| 9 | Low | 1 | 1 | 1 |
| 10 | Low | 1 | 1 | 1 |
| 11 | Low | 1 | 1 | 1 |
| 12 | Low | 1 | 1 | 1 |
| Correlation of turnout buying and turnout | | *0.58* | *1.00* |  |

Clearly, this issue can be mitigated with control variables and matching on the variables the machine uses to select its targets (both of which I do in the paper); however, including unlikely targets sacrifices statistical power. If 10% of the electorate is targeted for vote-buying offers and furnishes responses to all other needed variables, a standard national survey of n=1,000 would yield only 100 observations of vote buying. Using the proportions in Table 3 in the main text, there would be only about 20 respondents that were targeted for turnout buying. I thus decided to oversample the 70% of the electorate spanning the lower middle-class to poor.

Could the exclusion of affluent citizens lead to other biases if, contra the evidence, they are recipients of vote-buying offers and are more resistant to the effects of turnout buying? There are too few affluent recipients of turnout buying offers in publicly available survey datasets to test this proposition directly. However, the Mexico 2021 data show that there is no difference in propensity to turnout having received an electoral gift across the four included NSE categories. I re-ran the same regression as used in Figure 6 in the main text, except that I now condition turnout-buying offers on NSE. The following table shows the predicted differences in propensity to turnout for NSE=5-7 compared to NSE=4. The differences are small and indistinguishable from zero.

**Table D4. Variation in Effectiveness of Turnout Buying Across SES Categories**

|  |  |  |  |
| --- | --- | --- | --- |
| Compared to NSE 4 | Mean | 95% low | 95% high |
| 5 | -0.308 | -0.761 | 0.145 |
| 6 | 0.092 | -0.171 | 0.356 |
| 7 | -0.043 | -0.387 | 0.301 |

This null finding is notable, given that there are major differences in socio-economic levels across the included groups, ranging from C- to E.

# **Appendix E. Models comparing compound and new decomposed measures of vote buying**

## The Demand-Side Measure: Mexico 2021 Survey

. imb pol\_int ses\_subjective educ female if vb\_obs\_2021~=. & credential==1 & vb\_obs\_2021~=-8, treatment(vb\_obs\_2021)

(using the scott break method for L1 distance)

Multivariate L1 distance: .49595445

Univariate imbalance:

L1 mean min 25% 50% 75% max

pol\_int .03808 .06934 0 0 0 0 0

ses\_subjective .06137 .10038 0 0 0 0 0

educ .12403 .05131 0 -1 0 1 0

female .05765 .05765 0 0 0 0 0

. cem pol\_int ses\_subjective educ female if vb\_obs\_2021~=. & credential==1 & vb\_obs\_2021~=-8, treatment(vb\_obs\_2021)

(using the scott break method for imbalance)

Matching Summary:

-----------------

Number of strata: 295

Number of matched strata: 107

0 1

All 953 196

Matched 539 175

Unmatched 414 21

Multivariate L1 distance: .00571429

Univariate imbalance:

L1 mean min 25% 50% 75% max

pol\_int 1.3e-15 -1.8e-15 0 0 0 0 0

ses\_subjective 1.2e-15 4.9e-15 0 0 0 0 .

educ .00571 -.00571 -1 0 0 0 0

female 1.1e-15 -7.8e-16 0 0 0 0 0

. reg dip\_2021\_turnout vb\_obs\_2021 age educ ses\_subjective female pol\_int if credential==1 [iweight=cem\_weights]

Source | SS df MS Number of obs = 675

-------------+---------------------------------- F(6, 668) = 17.07

Model | 17.6827453 6 2.94712421 Prob > F = 0.0000

Residual | 115.386797 668 .172734726 R-squared = 0.1329

-------------+---------------------------------- Adj R-squared = 0.1253

Total | 133.069542 674 .197432555 Root MSE = .41556

--------------------------------------------------------------------------------

dip\_2021\_tur~t | Coef. Std. Err. t P>|t| [95% Conf. Interval]

---------------+----------------------------------------------------------------

vb\_obs\_2021 | .0465795 .0372056 1.25 0.211 -.0264745 .1196334

age | .0082463 .0012467 6.61 0.000 .0057985 .0106941

educ | .0227205 .0075449 3.01 0.003 .0079059 .0375351

ses\_subjective | .0573523 .0170158 3.37 0.001 .0239414 .0907633

female | .0661335 .0339377 1.95 0.052 -.0005039 .1327709

pol\_int | .1360066 .0186583 7.29 0.000 .0993706 .1726427

\_cons | -.1601286 .1069124 -1.50 0.135 -.3700535 .0497962

--------------------------------------------------------------------------------

. margins, dydx(vb\_obs\_2021) saving(vb\_file1, replace) level(95)

Average marginal effects Number of obs = 680

Model VCE : OLS

Expression : Linear prediction, predict()

dy/dx w.r.t. : vb\_obs\_2021

------------------------------------------------------------------------------

| Delta-method

| dy/dx Std. Err. t P>|t| [95% Conf. Interval]

-------------+----------------------------------------------------------------

vb\_obs\_2021 | .0465795 .0372056 1.25 0.211 -.0264745 .1196334

------------------------------------------------------------------------------

. reg dip\_2021\_turnout what\_do\_turnout what\_do\_abstain what\_do\_choice\_only age educ ses\_subjective female pol\_int [iweight=cem\_w

> eights] if credential==1

Source | SS df MS Number of obs = 675

-------------+---------------------------------- F(8, 666) = 13.49

Model | 18.5514485 8 2.31893107 Prob > F = 0.0000

Residual | 114.518093 666 .171949089 R-squared = 0.1394

-------------+---------------------------------- Adj R-squared = 0.1293

Total | 133.069542 674 .197432555 Root MSE = .41462

-------------------------------------------------------------------------------------

dip\_2021\_turnout | Coef. Std. Err. t P>|t| [95% Conf. Interval]

--------------------+----------------------------------------------------------------

what\_do\_turnout | .1809897 .0911483 1.99 0.047 .0020171 .3599622

what\_do\_abstain | -.2513839 .2094669 -1.20 0.231 -.6626788 .1599111

what\_do\_choice\_only | .0697145 .0479895 1.45 0.147 -.0245145 .1639435

age | .0082064 .0012438 6.60 0.000 .0057642 .0106485

educ | .021839 .0075402 2.90 0.004 .0070336 .0366444

ses\_subjective | .0575924 .0169783 3.39 0.001 .024255 .0909297

female | .0716561 .0339742 2.11 0.035 .0049466 .1383655

pol\_int | .1366713 .0186819 7.32 0.000 .0999888 .1733539

\_cons | -.1589093 .10605 -1.50 0.134 -.3671418 .0493233

-------------------------------------------------------------------------------------

. margins, dydx(what\_do\_turnout) saving(vb\_file4, replace) level(95)

Average marginal effects Number of obs = 680

Model VCE : OLS

Expression : Linear prediction, predict()

dy/dx w.r.t. : what\_do\_turnout

---------------------------------------------------------------------------------

| Delta-method

| dy/dx Std. Err. t P>|t| [95% Conf. Interval]

----------------+----------------------------------------------------------------

what\_do\_turnout | .1809897 .0911483 1.99 0.047 .0020171 .3599622

---------------------------------------------------------------------------------

. margins, dydx(what\_do\_abstain) saving(vb\_file3, replace) level(95)

Average marginal effects Number of obs = 680

Model VCE : OLS

Expression : Linear prediction, predict()

dy/dx w.r.t. : what\_do\_abstain

---------------------------------------------------------------------------------

| Delta-method

| dy/dx Std. Err. t P>|t| [95% Conf. Interval]

----------------+----------------------------------------------------------------

what\_do\_abstain | -.2513839 .2094669 -1.20 0.231 -.6626788 .1599111

---------------------------------------------------------------------------------

. margins, dydx(what\_do\_choice) saving(vb\_file2, replace) level(95)

Average marginal effects Number of obs = 680

Model VCE : OLS

Expression : Linear prediction, predict()

dy/dx w.r.t. : what\_do\_choice\_only

-------------------------------------------------------------------------------------

| Delta-method

| dy/dx Std. Err. t P>|t| [95% Conf. Interval]

--------------------+----------------------------------------------------------------

what\_do\_choice\_only | .0697145 .0479895 1.45 0.147 -.0245145 .1639435

-------------------------------------------------------------------------------------

I also show the results using two alternative measures of turnout buying. Hypothetically, responses that I code as vote-choice buying attempts (V) might instead be instances of turnout buying (T). For due diligence, I create a hybrid measure that starts with the self-reports used in the main text and then recodes those that answered V as T if they were supporters of the party that offered them an electoral gift.

Results appear below. Figure E1, Panel A below uses party identification to measure support. Panel B uses party feeling thermometer ratings of 8-10 on a scale from 1-to-10. Both plots still support the main finding in the paper; however, now the coefficients on turnout buying + double persuasion just miss at the 95% significance level. For party identification, the effect is 15.7pp [-1.6, 33.0]. For the feeling thermometer, the effect is 15.0pp [-1.1, 31.1].

**Figure E1. Alternative Measurement of Turnout Buying**

|  |  |
| --- | --- |
| Panel A. Party Identification | Panel B. Feeling Thermometers |
|  |  |

N=693. Mexico 2021 Electoral Justice Survey.

My intuition is that the results are attenuated when using this coding strategy because it requires adopting the assumption of perfect targeting. Evidence that machines cannot target perfectly (Schneider 2019, Ravanilla et al. 2021, Greene 2021, Stokes et al. 2013) implies that some genuine targets of vote-choice buying are recoded as targets of turnout buying, thus adding null effects to the analysis. It is worth noting that machines can rationally target supporters for vote-choice buying in the shadow of stochastic campaign effects (Lindbeck and Weibull 1986, Zarazaga 2016).

## **The Supply-Side Measure: State of Mexico 2017 "The Pentagon" Strategy Document**

. factor p\_seguro\_popular p\_illiterate p\_dirt\_floor p\_no\_electricity p\_no\_running\_water p\_no\_toilet, pcf

Factor analysis/correlation Number of obs = 6,126

Method: principal-component factors Retained factors = 1

Rotation: (unrotated) Number of params = 6

--------------------------------------------------------------------------

Factor | Eigenvalue Difference Proportion Cumulative

-------------+------------------------------------------------------------

Factor1 | 4.07032 3.49133 0.6784 0.6784

Factor2 | 0.57899 0.05597 0.0965 0.7749

Factor3 | 0.52302 0.08827 0.0872 0.8621

Factor4 | 0.43474 0.22196 0.0725 0.9345

Factor5 | 0.21279 0.03264 0.0355 0.9700

Factor6 | 0.18015 . 0.0300 1.0000

--------------------------------------------------------------------------

LR test: independent vs. saturated: chi2(15) = 2.4e+04 Prob>chi2 = 0.0000

Factor loadings (pattern matrix) and unique variances

---------------------------------------

Variable | Factor1 | Uniqueness

-------------+----------+--------------

p\_seguro\_p~r | 0.7171 | 0.4858

p\_illiterate | 0.8952 | 0.1986

p\_dirt\_floor | 0.8832 | 0.2200

p\_no\_elect~y | 0.7524 | 0.4338

p\_no\_runni~r | 0.7678 | 0.4105

p\_no\_toilet | 0.9050 | 0.1810

---------------------------------------

. imb poverty\_index turnout\_2015 if all\_vb\_v3~=., treatment(all\_vb\_v3)

Multivariate L1 distance: .57642183

Univariate imbalance:

L1 mean min 25% 50% 75% max

poverty\_index .32119 .17921 .09923 .14891 .23166 .2738 -3.0843

turnout\_2015 .22757 -.04001 .27036 -.04321 -.01788 -.02292 -.14127

. cem poverty\_index (-.6 -.3 2.2) turnout\_2015 (.33 .45 .7) if all\_vb\_v3~=., treatment(all\_vb\_v3)

(using the scott break method for imbalance)

Matching Summary:

-----------------

Number of strata: 24

Number of matched strata: 10

0 1

All 6266 175

Matched 5786 175

Unmatched 480 0

Multivariate L1 distance: .48798551

Univariate imbalance:

L1 mean min 25% 50% 75% max

poverty\_index .12696 .00979 .09923 .02735 .0325 -.02597 -3.0843

turnout\_2015 .12588 -.0019 .03276 -.00491 .01341 -.00199 -.14127

. reg turnout all\_vb\_v3 [iweight=cem\_weights]

Source | SS df MS Number of obs = 5,951

-------------+---------------------------------- F(1, 5949) = 2.86

Model | .026997722 1 .026997722 Prob > F = 0.0909

Residual | 56.1751249 5,949 .009442784 R-squared = 0.0005

-------------+---------------------------------- Adj R-squared = 0.0003

Total | 56.2021226 5,950 .009445735 Root MSE = .09717

------------------------------------------------------------------------------

turnout | Coef. Std. Err. t P>|t| [95% Conf. Interval]

-------------+----------------------------------------------------------------

all\_vb\_v3 | -.0126074 .007456 -1.69 0.091 -.0272239 .0020091

\_cons | .5222617 .0012786 408.47 0.000 .5197552 .5247682

------------------------------------------------------------------------------

. reg turnout tb\_v3 ab\_v3 vcb\_v3 [iweight=cem\_weights]

Source | SS df MS Number of obs = 5,951

-------------+---------------------------------- F(3, 5947) = 7.52

Model | .212394308 3 .070798103 Prob > F = 0.0001

Residual | 55.9897283 5,947 .009414785 R-squared = 0.0038

-------------+---------------------------------- Adj R-squared = 0.0033

Total | 56.2021226 5,950 .009445735 Root MSE = .09703

------------------------------------------------------------------------------

turnout | Coef. Std. Err. t P>|t| [95% Conf. Interval]

-------------+----------------------------------------------------------------

tb\_v3 | .0980611 .0269412 3.64 0.000 .0452465 .1508756

ab\_v3 | -.0105185 .0120115 -0.88 0.381 -.0340653 .0130283

vcb\_v3 | -.0290299 .0099849 -2.91 0.004 -.0486039 -.0094558

\_cons | .5222617 .0012767 409.08 0.000 .5197589 .5247645

------------------------------------------------------------------------------

**Figure E2. PRI Vote Buying in the State of Mexico, 2017 (Unmatched Data)**



# **Appendix F. An application of the "perfect compliance" assumption**

I reestimate Guardado and Wantchekon’s (2018) finding that turnout buying was effective in just six of 17 countries in sub-Saharan Africa. I add a measure of abstention buying, relying on the assumption of *perfect compliance* with abstention-buying, and instead find that turnout buying was effective in 11 countries and its average association with turnout propensity increases by nearly 60% in the pooled analysis across all countries in the dataset.

Guardado and Wantchekon’s (2018) study uses cross-sectional Afrobarometer Round 3 data to estimate self-reported participation in the prior elections among individual survey respondents. Their measure of selective benefits is a question that reads “During the [year] elections, how often (if ever) did a candidate or someone from a political party offer you something, like food or a gift, in return for your vote?” Some 17.4% of respondents said yes to this question. The authors' regression models also control for age, gender, membership in the country’s majority ethnic group, employment status, formal education, and both objective and subjective indexes of poverty. The pooled cross-country analysis also includes country fixed effects.

The authors generously supplied their code, making it easy to reproduce their findings precisely in column 1 of Table F1 below. Please contact these authors for replication materials. The pooled analysis shows that the provision of selective incentives increased turnout by 4.6pp. Nevertheless, significant cross-country variation lurks below this estimate. Selective benefits only reach statistical significance in six of the 17 individual country regression models. Several countries show large positive estimates that pull the pooled results up, including Botswana at 20.2pp, Mali at 10.8, and Kenya at 10.1. At the same time, negative estimates emerge from three countries – Namibia, Lesotho, and Cape Verde – where providing benefits appears to have backfired if buying turnout was the main goal.

**Table F1. Turnout Buying in 17 Sub-Saharan African Countries**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Country** | **Original study** | | **New estimate** | | **Change in** | **N** |
|  | **TB effect (%)** | **Sig** | **TB effect (%)** | **Sig** | **TB estimate** |  |
| All | 4.59 | \*\*\* | 7.24 | \*\*\* | 2.65 | 20143 |
| Zambia | 5.86 | \* | 8.35 | \*\* | 2.49 | 965 |
| Uganda | 5.27 | \*\*\* | 6.90 | \*\*\* | 1.63 | 2067 |
| Tanzania | 0.18 |  | 0.18 |  | 0.00 | 1071 |
| South Africa | 3.04 |  | 5.18 |  | 2.13 | 2108 |
| Senegal | 5.69 |  | 9.55 | \* | 3.86 | 972 |
| Nigeria | 3.87 | \* | 6.44 | \*\* | 2.57 | 1967 |
| Namibia | -3.89 |  | 0.04 |  | 3.93 | 968 |
| Mozambique | 4.78 |  | 6.81 | \* | 2.03 | 802 |
| Mali | 10.77 | \*\*\* | 13.81 | \*\*\* | 3.04 | 1170 |
| Malawi | 4.99 |  | 8.62 | \*\* | 3.63 | 1088 |
| Madagascar | 1.33 |  | 3.89 | \* | 2.56 | 1219 |
| Lesotho | -11.47 |  | -6.59 |  | 4.87 | 1015 |
| Kenya | 10.13 | \*\*\* | 15.33 | \*\*\* | 5.20 | 1033 |
| Ghana | 0.24 |  | 5.22 | \* | 4.99 | 1064 |
| Cape Verde | -10.36 |  | -3.79 |  | 6.57 | 495 |
| Botswana | 20.18 | \*\* | 25.20 | \*\* | 5.02 | 1045 |
| Benin | 1.03 |  | 1.93 |  | 0.90 | 1094 |

The original study estimates reproduce the results in Guardado and Wantchekon (2018) Table 3 using code generously supplied by the authors. The new estimates use the same code but adds a variable to measure abstention buying, as described in the main text.

\*\*\* p < .001, \*\* p < .05, \* p < .1

I re-estimate the models using the identical specifications and procedures, but I add a measure of abstention buying. The Afrobarometer Round 3 surveys did not measure which parties offered selective benefits to each voter, nor did it measure recipients’ perception of the intent behind the electoral gifts. As the best available approach, I count an act as abstention buying if a registered voter reported receiving an electoral gift and did not vote, citing either that they were prevented from voting or that they abstained for a reason other than personal decision, logistical challenges, or lack of time. This measure counts 0.53% of the pooled sample as having been targeted for abstention buying.

The new regression estimates in Table F1 show substantial increases in the estimated efficacy of turnout buying. The pooled estimate across countries shows that turnout buying is now associated with a 7.2pp increase in propensity to vote. In addition, 11 country estimates reach statistical significance, nearly twice as many as in the original specification. What were large negative estimates for Cape Verde, Lesotho, and Namibia also rise. Overall, these new estimates imply that turnout buying is more effective than previously thought.

Clearly, however, the assumption of perfect compliance is limiting and it remains unclear if the resulting estimate of turnout-buying's effect is accurate. By effectively removing a group of abstainers from the measure of vote buying, the analysis might overestimate the impact of turnout buying. Yet, by continuing to lump vote-choice buying in with turnout buying, the analysis might underestimate the latter.

# **Appendix G. An application of the "perfect targeting" assumption**

I examine Buendía and Somuano’s (2003: 307) finding that electoral gifts *reduced* turnout by a statistically significant 9.1pp in Mexico’s fateful 2000 presidential election. The authors interpret this finding to mean that “Electoral gifts did not work” and argue that “It’s likely that citizens saw electoral gifts as an extension of the old authoritarian regime and so they caused backlash” (2003: 314). On the basis of this and a similar study by Cornelius (2003), analysts have concluded that voters behaved strikingly differently in 2000 compared to prior elections. In this view, the PRI’s storied political machine became a liability and 71 years of single-party dominance ended in part because the PRI’s loyalists were induced to stay home by the type of material incentives credited with driving up turnout in prior elections. My reestimate instead implies that the PRI’s strategy of abstention buying depressed turnout by up to 9.9pp among its opponents.

I first come as close as possible to recreating Buendía and Somuano’s (2003: Table 6) model. I was unable to reproduce their results precisely due to questions over the operationalization of four control variables. Nevertheless, the closest specification to theirs shows that gift receipt is associated with an 8.1pp reduction in turnout (one percent higher than their estimate). I show this and subsequent results in Figure G1.

I next modify the model by parsing electoral gifts into those intended to increase turnout, to cause abstention, and to influence vote choices. The Comparative Study of Electoral Systems (CSES), Mexico 2000 survey asked respondents not only whether they received electoral gifts, but also which party supplied them. Assuming *perfect targeting*, I categorize voters into the types shown in Table 1 and induce strategies from targeting. I operationalize turnout buying as gifts supplied to voters by a party that they rated seven or higher on a feeling thermometer scale from 0 to 10. I count gifts as designed to buy abstention when supplied by parties that the recipients rated three or lower on the same scale. I assume the intent of gifts was to buy vote choices when given to those that rated the party between four and six on the feeling thermometer.

I ran the model with all parties and separately with just the PRI given its greater experience with machine politics. I retain all other variables and procedures as they were in the original model. The main results appear in Figure G1.

**Figure G1. Effects of Vote-Buying Strategies on Turnout in Mexico’s 2000 Elections**



Note: Points represent first-differences; bars show 95% CIs.

These reestimated findings show that abstention buying appears to have functioned as the parties intended, by demobilizing their opponents. When all parties are pooled to mitigate estimation errors due to multiple targeting, gifts given to opponents increase the recipients’ likelihood of abstaining by 7.6pp. When just the more experienced PRI is considered, the effect rises to 9.9pp. Models that include only the PRI’s main opponents – the PAN and PRD – do not show any impact of abstention buying, implying that the incumbent party’s efforts to demobilize opposition voters accounts for Buendía and Somuano’s (2003) seemingly surprising finding. Neither turnout buying of supporters nor vote-choice buying of wavering voters appear to have worked.

The PRI’s backfiring political machine thus seems to be an artefact of measurement. An analysis that distinguishes the plausible rationale behind the provision of electoral gifts instead implies that the PRI managed to demobilize a significant portion of its challengers’ supporters, even if it failed to mobilize its faithful with material incentives.[[5]](#footnote-5) The PRI’s machine might have sputtered in 2000 because brokers underestimated the lack of enthusiasm for the party’s candidate and thus paid supporters too little or because voters disbelieved the PRI could monitor turnout. Either interpretation would imply that machine politics lives on in Mexico rather than becoming fundamentally discredited in 2000.

The Mexico CSES 2000 data improve measurement, but suffer from two problems. First, unlike the Afrobarometer Round 3 data, the Mexico data do not require us to assume that abstention buying was always successful, but it does require the strict assumption that the parties targeted their strategies perfectly. On the basis of this assumption, I induced that goods flowing to strong supporters were for turnout, benefits to strong opponents were for abstention, and gifts to those wavering in the middle were for vote choices. As noted above, however, the literature on clientelism, however, often shows failed targeting (Greene 2021, Schneider 2019, Stokes et al. 2013). Second, both of the analyses offered thus far come from cross-sectional data that do not allow controlling for recipients’ pre-gift support for the machine or propensity to turnout. They thus likely still underestimate the influence of turnout buying.

**References that do not appear in the main text**

**McCann J and Domínguez J** (1998) "Mexicans react to electoral fraud and political corruption" *Electoral Studies* 17(4): 483–503.

**Raudenbush S** (2009) "Analyzing effect sizes: Random-effects models. In H Cooper, LV Hedges, and JC Valentine (eds.), *The handbook of research synthesis and meta-analysis*. Washington DC: Russell Sage Foundation, pp. 295-315.

**Simpser A** (2013) *Why Governments and Parties Manipulate Elections*. New York: Cambridge University Press.

1. I include Guardado and Wantchekon's (2018) estimate for Kenya 2002 using AfroBaromer data, but not Kramon's (2013) estimate using the same data and measurement strategy. [↑](#footnote-ref-1)
2. I include constituency-level findings for Vicente (2014) and Cruz et al. (2016), but not their less precisely measured findings using self-reported turnout in surveys. [↑](#footnote-ref-2)
3. When the cost of voting rises above , it is more efficient to pay opposing voters to abstain (p. 423). The strategy equivalence functions as theorized when . [↑](#footnote-ref-3)
4. For a helpful discussion, see https://alexkritchevsky.com/2018/08/06/oriented-area.html [↑](#footnote-ref-4)
5. Hypothetically, the finding could also be an artefact of beliefs among the PRI’s opponents that the elections would be fraudulent and thus participation would be useless (McCann and Domínguez 1998, Simpser 2013). But the correlation between our measure of abstention buying and the evaluations of the cleanliness of elections is a statistically insignificant -0.0251. [↑](#footnote-ref-5)