

## Online Appendix:

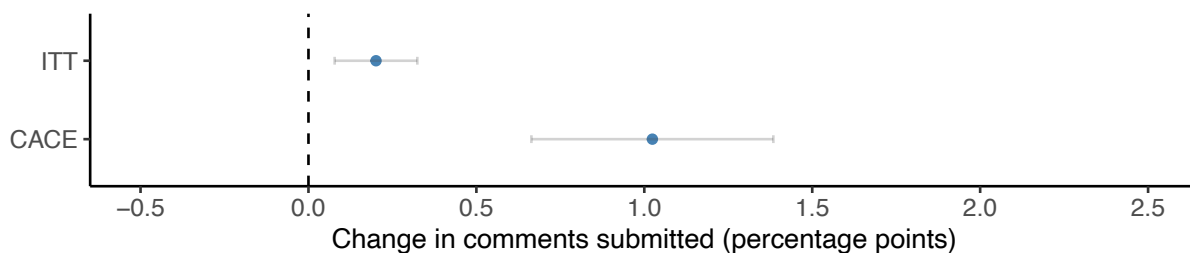
# Countering capture in local politics: Evidence from eight field experiments

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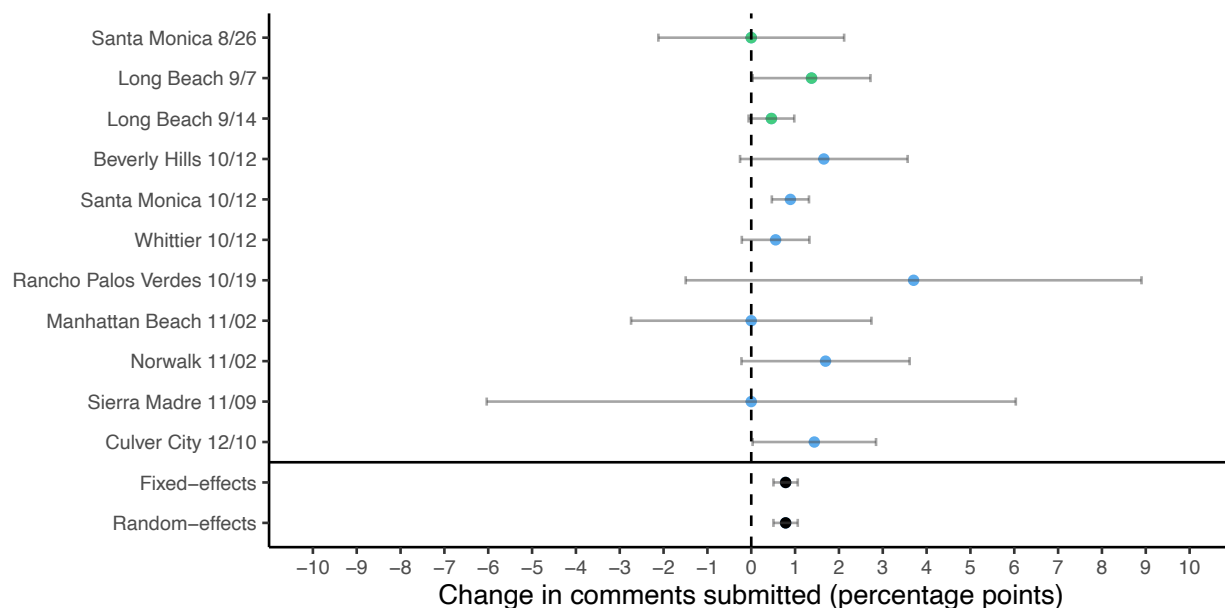
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*Additional figures*



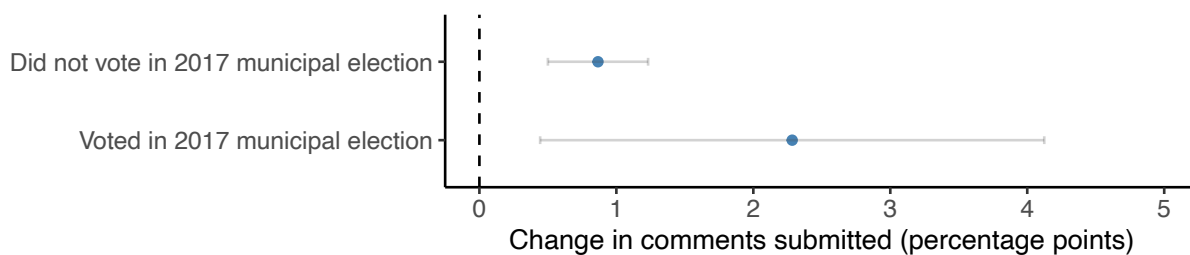
**Figure A1: Intent-to-treat effect and complier average causal effect, all cities**

*Note: Tabular results can be found in Table A7 and Table A8*



**Figure A2: Meta-analysis of complier average causal effects, by council meeting**

*Note: Pilot studies in green. Tabular results can be found in Table A10 and Table A11.*



**Figure A3: Complier average causal effects by turnout**

*Note: Tabular results can be found in Table A12.*

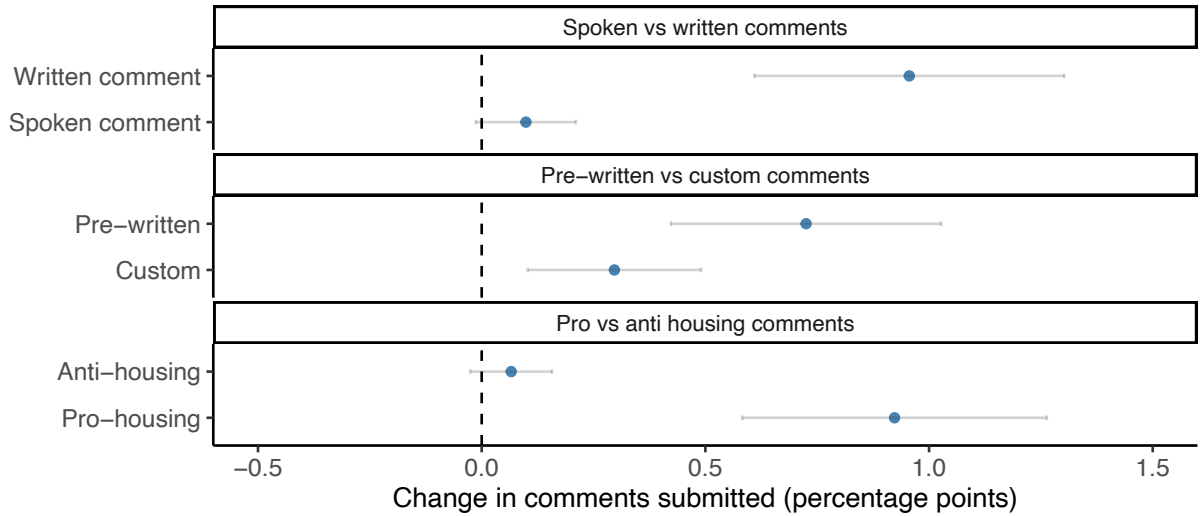


Figure A4: CACE by type of comment

Note: Tabular results can be found in Table A13.

| Meeting                   | Total comments (incl. treatment induced) | Pro-housing comments (not incl. treatment induced) | Pro-housing comments (incl. treatment-induced) | Anti-housing comments (incl. treatment-induced) |
|---------------------------|--|--|--|---|
| Beverly Hills 10/12       | 19                                       | 4  | 5  | 5   |
| Santa Monica 10/12        | 67                                       | 15   | 30   | 11  |
| Whittier 10/12            | 4  | 0  | 1  | 0   |
| Rancho Palos Verdes 10/19 | 121                                      | 2  | 3  | 54  |
| Manhattan Beach 11/02     | 225                                      | 0  | 0  | 0   |
| Norwalk 11/02             | 7  | 0  | 1  | 0   |
| Sierra Madre 11/09        | 20                                       | 0  | 0  | 8   |
| Culver City 12/10         | 71                                       | 25   | 11   | 23  |
| <b>Total</b>              | <b>534</b>                               | <b>46</b>  | <b>85</b>                                      | <b>101</b>                                      |

Table A1: Examination of public comments in treated council meetings

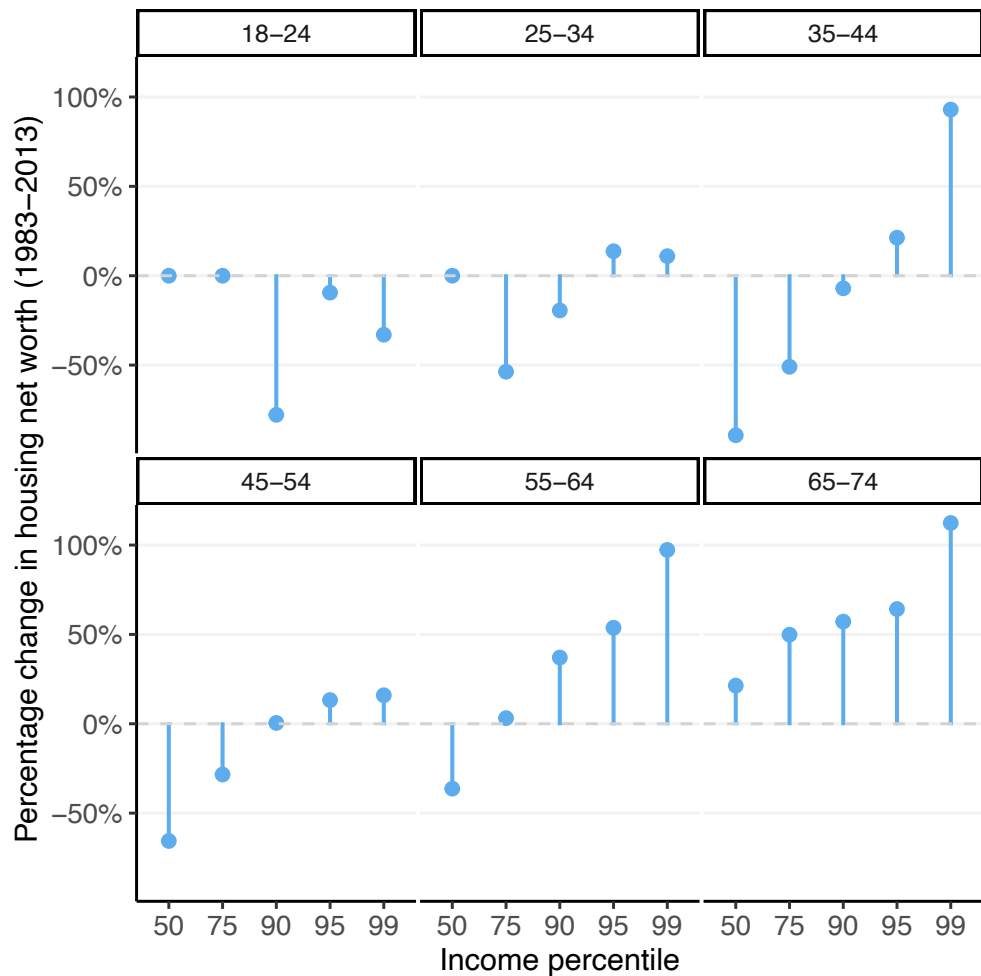


Figure A5: Change in housing net worth by age and income percentile

Source: Glaeser and Gyourko (2018)

*Voter file descriptive statistics*

|                                  | Confirmed renter (N=6,411,84) |           | Not confirmed renter (N=5,045,990) |           | Diff. in Means | p      |
|----------------------------------|-------------------------------|-----------|------------------------------------|-----------|----------------|--------|
|                                  | Mean                          | Std. Dev. | Mean                               | Std. Dev. |                |        |
| Email                            | 0.41                          | 0.49      | 0.34                               | 0.48      | -0.07          | <0.001 |
| Phone                            | 0.52                          | 0.50      | 0.52                               | 0.50      | -0.005         | <0.001 |
| Age                              | 43.39                         | 17.70     | 47.84                              | 18.90     | 4.46           | <0.001 |
| Years registered                 | 3.98                          | 6.53      | 6.29                               | 9.82      | 2.31           | <0.001 |
| Female                           | 0.54                          | 0.50      | 0.53                               | 0.50      | -0.009         | <0.001 |
| Speak English                    | 0.93                          | 0.25      | 0.94                               | 0.24      | 0.003          | <0.001 |
| CA native                        | 0.48                          | 0.50      | 0.54                               | 0.50      | 0.07           | <0.001 |
| Democrat                         | 0.57                          | 0.49      | 0.52                               | 0.50      | -0.05          | <0.001 |
| Republican                       | 0.11                          | 0.31      | 0.18                               | 0.38      | 0.07           | <0.001 |
| Independent                      | 0.25                          | 0.43      | 0.24                               | 0.43      | -0.01          | <0.001 |
| Voted in 2020 general election   | 0.69                          | 0.46      | 0.74                               | 0.44      | 0.05           | <0.001 |
| Voted in 2017 municipal election | 0.10                          | 0.30      | 0.14                               | 0.35      | 0.04           | <0.001 |
| Voted in 2016 general election   | 0.43                          | 0.49      | 0.53                               | 0.50      | 0.10           | <0.001 |

**Table A2: Balance table: confirmed renters vs. non-confirmed renters**

|                                  | Email listed (N=266,057) |           | Email not listed (N=3,751,27) |           | Diff. in Means | p      |
|----------------------------------|--------------------------|-----------|-------------------------------|-----------|----------------|--------|
|                                  | Mean                     | Std. Dev. | Mean                          | Std. Dev. |                |        |
| Phone                            | 0.80                     | 0.40      | 0.32                          | 0.47      | -0.48          | <0.001 |
| Age                              | 38.43                    | 14.75     | 46.91                         | 18.75     | 8.48           | <0.001 |
| Years registered                 | 1.87                     | 2.99      | 5.47                          | 7.83      | 3.59           | <0.001 |
| Female                           | 0.53                     | 0.50      | 0.54                          | 0.50      | 0.01           | <0.001 |
| Speak English                    | 0.96                     | 0.20      | 0.92                          | 0.28      | -0.04          | <0.001 |
| CA native                        | 0.52                     | 0.50      | 0.44                          | 0.50      | -0.08          | <0.001 |
| Year building constructed        | 1967.48                  | 21.55     | 1966.61                       | 20.93     | -0.87          | <0.001 |
| Units in building                | 43.41                    | 66.82     | 40.60                         | 61.00     | -2.81          | <0.001 |
| Democrat                         | 0.59                     | 0.49      | 0.56                          | 0.50      | -0.04          | <0.001 |
| Republican                       | 0.10                     | 0.30      | 0.11                          | 0.32      | 0.01           | <0.001 |
| Independent                      | 0.24                     | 0.43      | 0.26                          | 0.44      | 0.02           | <0.001 |
| Voted in 2020 general election   | 0.77                     | 0.42      | 0.63                          | 0.48      | -0.13          | <0.001 |
| Voted in 2017 municipal election | 0.09                     | 0.29      | 0.11                          | 0.31      | 0.02           | <0.001 |
| Voted in 2016 general election   | 0.40                     | 0.49      | 0.45                          | 0.50      | 0.05           | <0.001 |

**Table A3: Balance table: renters with emails listed in voter file vs. those without**

## Treatment messages

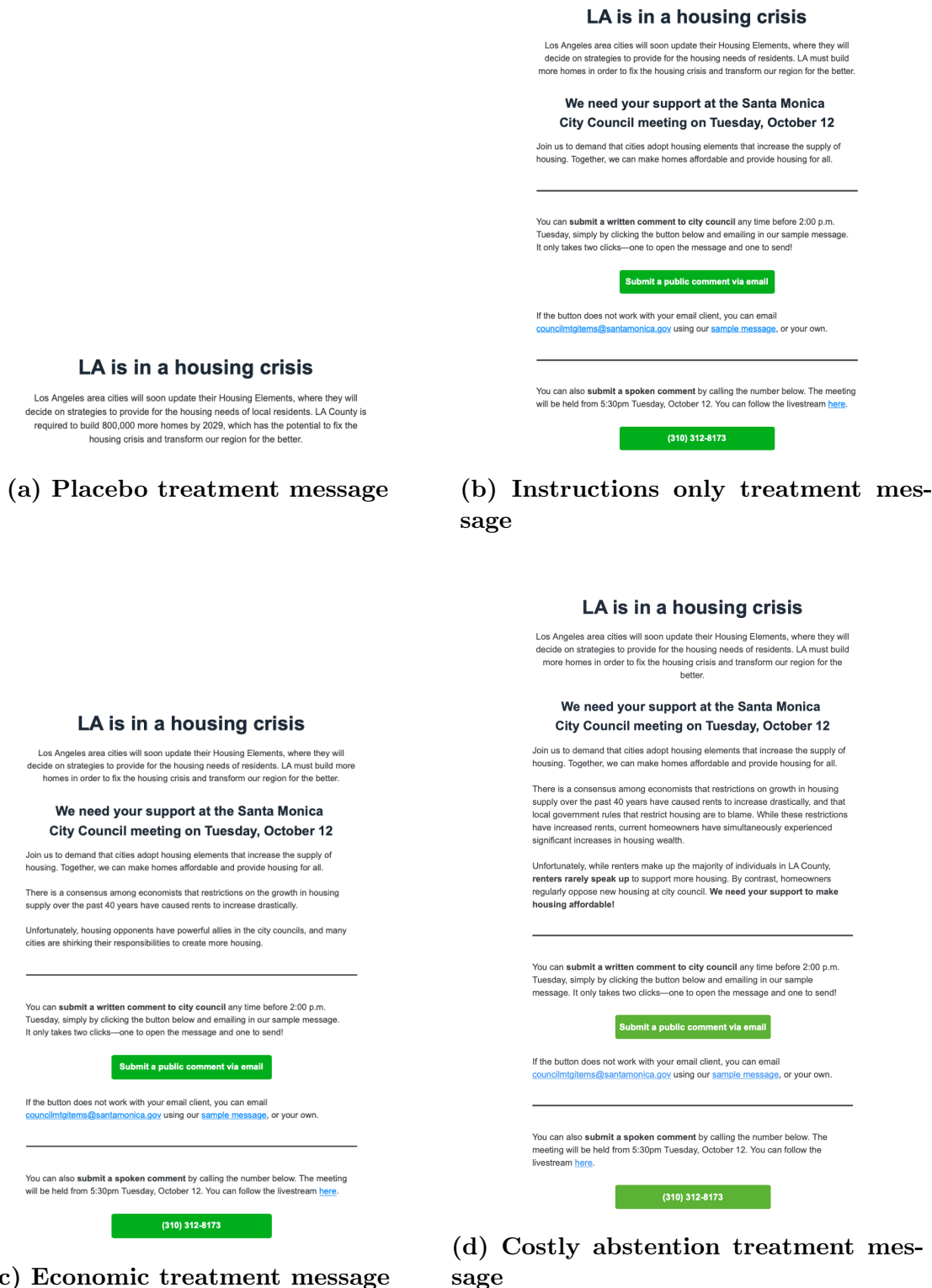
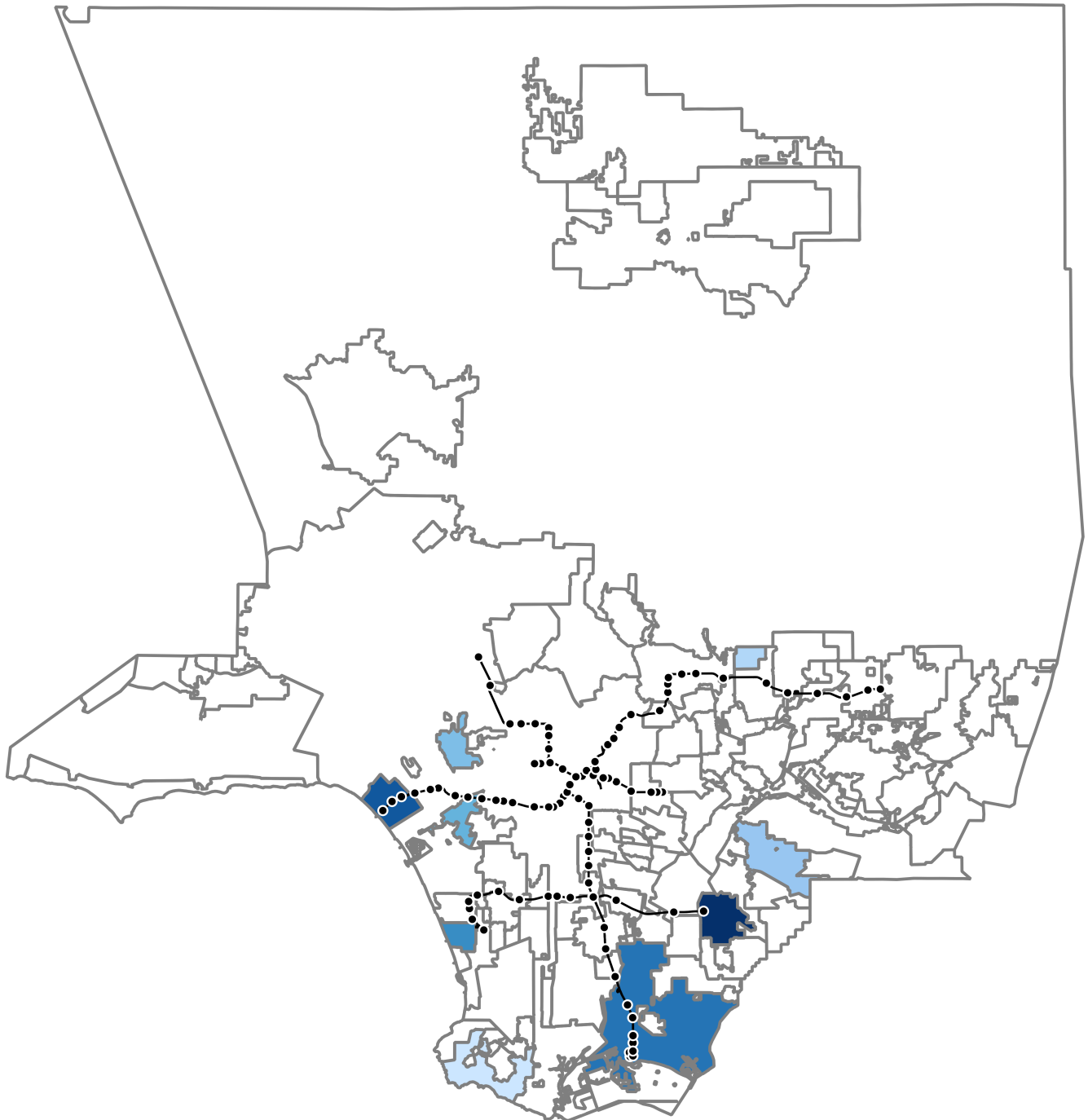


Figure A6: Example treatments and wording (Santa Monica experiment)

*Treatment details*



**Figure A7: Map of cities in Los Angeles county by experiment status**

*Note:* Cities in which an experiment was launched in blue. Cities shaded by population density. Los Angeles Metro rail lines and rail stations in black.



## Sample comment

Subject:

Public comment for [DATE] council meeting agenda item [ITEM NUMBER]

Body:

Dear City Council,

I'm writing to express my concern about our affordable housing shortage and its impact on the future of our city. Exclusionary zoning and land use practices have led to an undersupply of affordable medium- and high-density housing near jobs and transit, and have perpetuated segregated living patterns and the exclusion of historically disadvantaged communities.

[CITY] has an opportunity to address the need for more housing in a way that furthers equity, environmental sustainability, and economic recovery in its housing element update. We should update the housing element in a way that encourages historically high housing growth, while furthering fair housing opportunities and undoing patterns of discrimination in housing. We can't miss this opportunity to fix our city's housing crisis.

I urge you to legalize more housing, make housing easier to build, fund affordable housing and end homelessness, and strengthen tenants' rights.

Sincerely,

FIRSTNAME LASTNAME

## *Ethics*

While there is a vocal anti-development contingent in Los Angeles, the general voting public appears to support additional housing as anti-development ballot measures have recently failed.<sup>1</sup> Only 28% of respondents in a survey of LA County residents oppose a hypothetical local development (Monkkonen and Manville 2019). The geographic and regulatory landscape in Los Angeles also leads to a majority of new housing developments replacing parking lots or commercial buildings, not existing housing stock.<sup>2</sup> Nevertheless, interventions involving participation in governmental processes should be held to high ethical standards.

Any intervention motivating individuals to change their behavior should be held to high ethical standards, particularly when the intervention involves participation in and effects on governmental processes. Beyond IRB approval, I argue this project falls within ethical bounds for the reasons outlined below.

First, these messaging campaigns are commonly conducted by political campaigns and nonprofit organizations, and individuals in the voter file therefore would have received messages with or without researcher randomization and measurement.

Second, the interventions are designed to minimize a pre-existing imbalance in representation by increasing representation amongst a historically underrepresented group. Treatments are designed to encourage renters to participate (albeit not coercively) and make local governance more reflective of the general population.

Third, the interventions do not directly effect electoral outcomes (as highlighted by Slough (2019) and McDermott and Hatemi (2020)). I recognize that local officials may change their votes based on perceived changes in support levels that the experiment might cause. However, ultimate decisions and votes still rest with local elected officials.

Fourth, the interventions focus on increasing the supply of housing generally across the LA

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<sup>1</sup>Measure S, which would have curbed high-density development in the city, failed with 30% support. Measure JJJ—which grants zoning changes to developments that include affordable housing—and Measure H—which instituted a sales tax increase to fund affordable housing—passed.

<sup>2</sup>Roughly 14% of land, or over 200 square miles, is currently dedicated to parking (Chester, Fraser, Matute, Flower and Pendyala 2015). Affordable housing is also required for density above zoning limits.

region, not on particular developments or neighborhoods. Treatment and sample messages also specifically encourage individuals to advocate for *affordable* (i.e., government subsidized) housing developments. We should therefore expect the targeted groups to benefit from the research through decreased rents and increased access to affordable housing.

Fifth, in social-welfare enhancing interventions such as “green nudges,” Bovens (2009) and Schubert (2017) argue that it should be possible “for everyone who is watchful to unmask the manipulation.” The interventions meet this criteria, as the messages come from an advocacy group that is transparent in their motivations.

While informed consent was not received from individuals prior to treatment, the research is: (1) minimal risk compared to similar outreach emails that individuals who listed their email addresses in the voter file would otherwise receive without researcher measurement, (2) permission to obtain the voter file and conduct the research was obtained from the Los Angeles County Registrar in addition to a university IRB, (3) individuals would have received similar messages from advocacy organizations with or without researcher measurement, (4) treatment messages noted that they were part of a “collaboration between Abundant Housing Los Angeles and academic researchers at Yale University” and were transparent in motivation, and (5) participant behavior may have changed if subjects were aware they were part of an academic study. The only potential deception was therefore anonymized data collection for the purpose of measurement.

### *Analytical procedure details*

While random assignment took place simultaneously for all cities, treatments were launched at different points in time for each city. If a unit number was available in an address, clustering took place at the unit level. If a unit number was not available, clustering took place at the building level.

By randomly assigning individuals to a [placebo control](#) with no mention of council meetings, but featuring the same subject line and preview text as the treatment emails, I am able to observe the outcomes of a random sample of compliers (email openers) in the placebo group. Email opens are monitored using software that detects whether an individual opens a message. Tests for differential compliance by treatment group and differential covariate predictiveness of compliance can be found in [Figure A8](#) and [Table A6](#).

For the primary estimand (i.e., the CACE), I use the [Lin \(2013\)](#) estimator, which performs OLS adjustment using treatment-by-covariate interactions and ensures that adjustment does not hurt asymptotic precision. Specifically, I estimate the OLS specifications below:

$$Y_i = \alpha + \beta_1 Z_i + \beta_2 X_i^c + \gamma X_i^c Z_i + \delta_{city} + \epsilon_i \quad (\text{With } \text{Lin (2013)} \text{ covariate adjustment})$$

$$Y_i = \alpha + \beta_1 Z_i + \delta_{city} + \epsilon_i \quad (\text{Without covariate adjustment})$$

where  $Y_i$  is the individual-level comment outcome,  $Z_i$  is an indicator for the treatment group,  $X_i^c$  is a vector of pre-treatment covariates for unit  $i$  that have been centered to have mean zero, and  $\delta_{city}$  are city (block) fixed effects.

The following pre-registered pre-treatment covariates are included in the regression specification: *city, number of units in the building, gender, age, building age, primary language spoken, vote history, and party affiliation*. I show that these variables are balanced between the placebo and treatment groups in [Balance](#). Missing covariates are mean imputed.

Randomization inference p-values for the ITT are calculated by simulating a large number of “fake” random assignments for all units using the same procedure as the real random

assignment, and estimating a treatment effect for each fake random assignment. I then calculate a p value as the proportion of times fake treatment assignments resulted in an effect size larger than the actual treatment effect. For the CACE, I make the additional assumption that observed compliance would exist regardless of treatment status and hold compliers constant across simulations. I conduct 10,000 simulations for the CACE and 1000 simulations for the ITT. All simulations were performed without covariate adjustment due to high computational demands. For CATEs, I generate the full schedule of potential outcomes under the null hypothesis that the true treatment effect is constant and equal to the estimated CACE. Then, I simulate random assignment 10,000 times and calculate the proportion of instances the simulated estimate of the interaction effect is at least as large (in absolute value) as the actual estimate.

Results are also analyzed using precision-weighted fixed effects and random effects meta-analysis. In the precision-weighted fixed effects meta-analysis, weights are equal to the inverse of the variance. For council meetings where no comments are reported in treatment or placebo, I estimate standard errors according to the procedure described in [Gelman and Hill \(2006\)](#). See p. 17, footnote 1: “Consider a survey of size  $n$  with  $y$  Yes responses and  $n - y$  No responses. The estimated proportion of the population who would answer Yes to this survey is  $\hat{p} = y/n$ , and the standard error of this estimate is  $\sqrt{\hat{p}(1 - \hat{p})/n}$ . This estimate and standard error are usually reasonable unless  $y = 0$  or  $n - y = 0$ , in which case the resulting standard error estimate of zero is misleading. A reasonable quick correction when  $y$  or  $n - y$  is near zero is to use the estimate  $\hat{p} = (y + 1)/(n + 2)$  with standard error  $\sqrt{\hat{p}(1 - \hat{p})/n}$ .”

Note that while replication code is available for the creation of the identified renter sample (i.e., merging the voter file with Los Angeles Department of City Planning records of multi-unit housing developments), the full voter file cannot be provided for both legal and ethical reasons. However, all data used in the analyses described in this section are available in anonymized form.

*Balance*

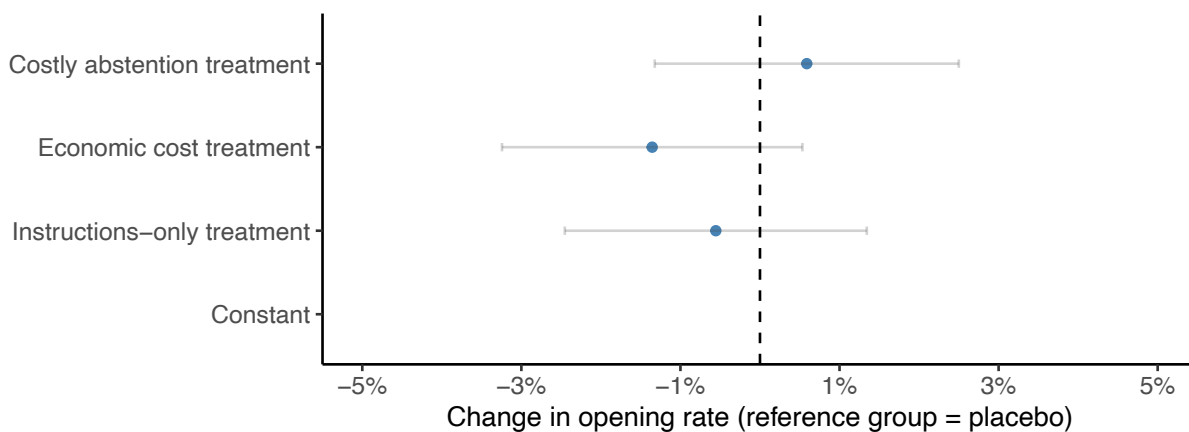
|                                  | Placebo (N=2007) |       | Treatment (N=17944) |       | Diff. in Means | p value |
|----------------------------------|------------------|-------|---------------------|-------|----------------|---------|
|                                  | Mean             | SD    | Mean                | SD    |                |         |
| Female                           | 0.52             | 0.50  | 0.53                | 0.50  | 0.02           | 0.11    |
| Speak English                    | 0.98             | 0.12  | 0.98                | 0.14  | 0.00           | 0.27    |
| Age                              | 41.60            | 15.76 | 41.25               | 15.62 | -0.37          | 0.31    |
| Year building constructed        | 1964.93          | 18.63 | 1964.83             | 18.03 | -0.14          | 0.75    |
| Units in building                | 34.25            | 64.90 | 34.39               | 66.40 | 0.08           | 0.96    |
| Democrat                         | 0.57             | 0.49  | 0.58                | 0.49  | 0.01           | 0.41    |
| Republican                       | 0.13             | 0.33  | 0.11                | 0.32  | -0.01          | 0.21    |
| Independent                      | 0.24             | 0.43  | 0.24                | 0.43  | 0.00           | 0.73    |
| Voted in 2020 general election   | 0.79             | 0.40  | 0.81                | 0.40  | 0.01           | 0.28    |
| Voted in 2017 municipal election | 0.10             | 0.30  | 0.09                | 0.29  | -0.01          | 0.28    |
| Voted in 2016 general election   | 0.45             | 0.50  | 0.44                | 0.50  | 0.00           | 0.75    |

**Table A4: Covariate balance and difference in means test: treatment vs. placebo**

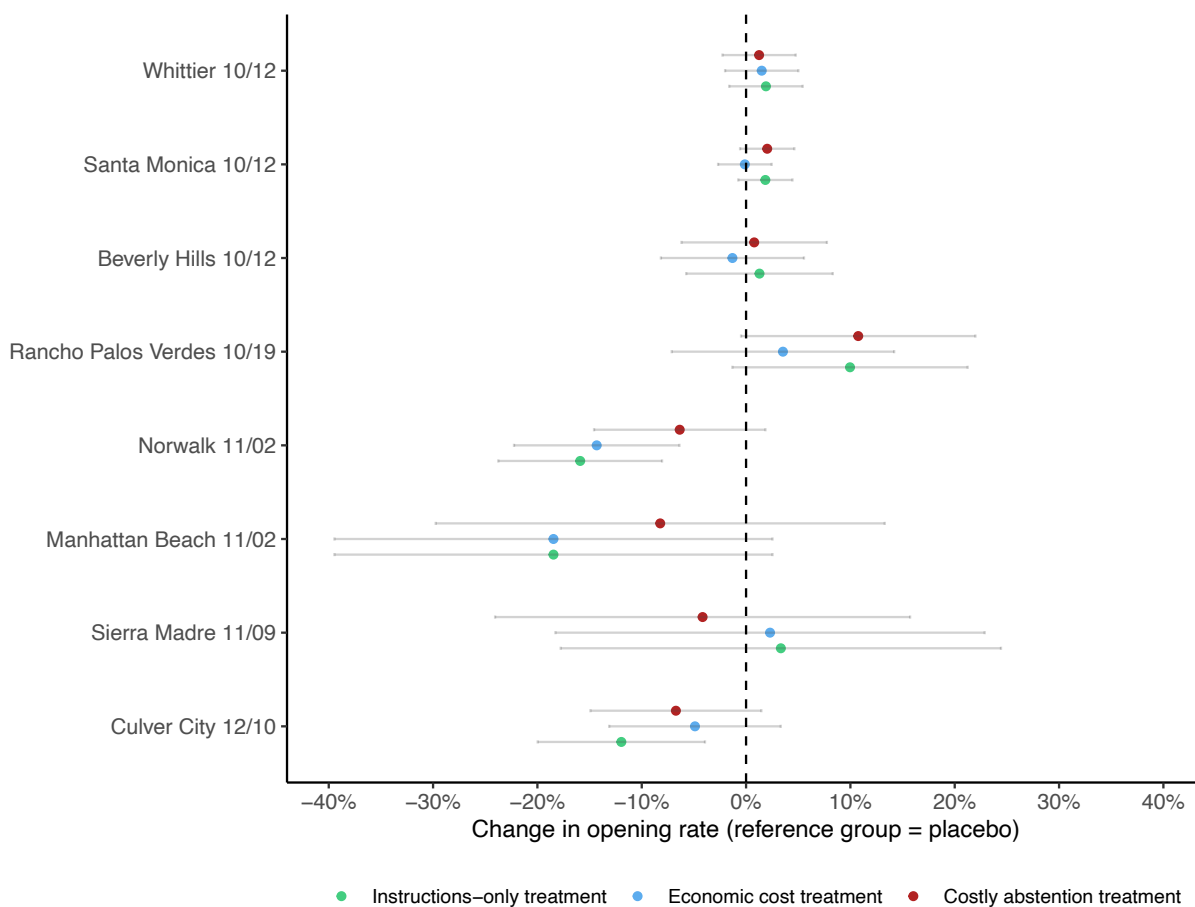
|                                  | Placebo (N=2007) |       | Treatment 1 (N=5984) |       | Treatment 2 (N=6002) |       | Treatment 3 (N=5958) |       |
|----------------------------------|------------------|-------|----------------------|-------|----------------------|-------|----------------------|-------|
|                                  | Mean             | SD    | Mean                 | SD    | Mean                 | SD    | Mean                 | SD    |
| Female                           | 0.52             | 0.50  | 0.52                 | 0.50  | 0.54                 | 0.50  | 0.54                 | 0.50  |
| Speak English                    | 0.98             | 0.12  | 0.98                 | 0.14  | 0.98                 | 0.13  | 0.98                 | 0.14  |
| Age                              | 41.60            | 15.76 | 41.16                | 15.61 | 41.35                | 15.63 | 41.23                | 15.62 |
| Year building constructed        | 1964.93          | 18.63 | 1964.83              | 17.88 | 1964.83              | 18.33 | 1964.84              | 17.88 |
| Units in building                | 34.25            | 64.90 | 34.31                | 66.10 | 34.01                | 66.54 | 34.86                | 66.56 |
| Democrat                         | 0.57             | 0.49  | 0.58                 | 0.49  | 0.60                 | 0.49  | 0.58                 | 0.49  |
| Republican                       | 0.13             | 0.33  | 0.11                 | 0.32  | 0.11                 | 0.31  | 0.12                 | 0.33  |
| Independent                      | 0.24             | 0.43  | 0.25                 | 0.43  | 0.24                 | 0.43  | 0.24                 | 0.43  |
| Voted in 2020 general election   | 0.79             | 0.40  | 0.80                 | 0.40  | 0.81                 | 0.40  | 0.81                 | 0.39  |
| Voted in 2017 municipal election | 0.10             | 0.30  | 0.09                 | 0.29  | 0.10                 | 0.30  | 0.09                 | 0.29  |
| Voted in 2016 general election   | 0.45             | 0.50  | 0.45                 | 0.50  | 0.45                 | 0.50  | 0.43                 | 0.50  |

**Table A5: Covariate balance across all treatment groups**

*Tests for differential compliance*



**Figure A8: Average treatment effect on email opening, all cities**



**Figure A9: Average treatment effect on email opening, by city**

|                                  | Placebo           | Treatment 1        | Treatment 2         | Treatment 3        |
|----------------------------------|-------------------|--------------------|---------------------|--------------------|
| (Intercept)                      | -0.321<br>(0.980) | -0.535<br>(0.569)  | -0.565<br>(0.560)   | 0.216<br>(0.563)   |
| Female                           | -0.028<br>(0.017) | 0.004<br>(0.010)   | -0.012<br>(0.010)   | -0.004<br>(0.010)  |
| Speak English                    | 0.009<br>(0.069)  | 0.045<br>(0.031)   | -0.020<br>(0.037)   | -0.042<br>(0.040)  |
| Age                              | 0.000<br>(0.001)  | 0.000<br>(0.000)   | 0.000<br>(0.000)    | 0.000<br>(0.000)   |
| Year building constructed        | 0.000<br>(0.000)  | 0.000<br>(0.000)   | 0.000<br>(0.000)    | 0.000<br>(0.000)   |
| Units in building                | 0.000<br>(0.000)  | 0.000*<br>(0.000)  | 0.000<br>(0.000)    | 0.000*<br>(0.000)  |
| Democrat                         | 0.033<br>(0.033)  | 0.012<br>(0.020)   | 0.033+<br>(0.019)   | 0.030<br>(0.021)   |
| Republican                       | 0.021<br>(0.039)  | -0.008<br>(0.023)  | 0.003<br>(0.023)    | -0.009<br>(0.024)  |
| Independent                      | 0.054<br>(0.036)  | 0.000<br>(0.021)   | 0.017<br>(0.021)    | 0.011<br>(0.022)   |
| Voted in 2020 general election   | 0.028<br>(0.021)  | 0.031**<br>(0.012) | 0.062***<br>(0.011) | 0.030*<br>(0.013)  |
| Voted in 2017 municipal election | 0.041<br>(0.033)  | 0.057**<br>(0.020) | 0.040*<br>(0.018)   | 0.035+<br>(0.019)  |
| Voted in 2016 general election   | -0.006<br>(0.019) | 0.012<br>(0.011)   | 0.002<br>(0.010)    | -0.019+<br>(0.011) |
| Number of observations           | 2007              | 5984               | 6002                | 5958               |

+  $p < 0.1$ , \*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

**Table A6: Covariate predictiveness of compliance by treatment group**



*Tabular results*

|                             | All treatment groups vs. placebo         |  | Individual treatments vs. placebo        |  |
|-----------------------------|--|--|--|--|
| Constant                    | 0.0005<br>(0.0005)<br>[-0.0005, 0.0015]  | 0.0005<br>(0.0013)<br>[-0.0022, 0.0031]  | 0.0005<br>(0.0005)<br>[-0.0005, 0.0015]  | 0.0005<br>(0.0013)<br>[-0.0022, 0.0031]  |
| Treated                     | 0.0020**<br>(0.0006)<br>[0.0008, 0.0032] | 0.0020**<br>(0.0006)<br>[0.0007, 0.0032] |  |  |
| Instructions-only treatment |  |  | 0.0012<br>(0.0007)<br>[-0.0003, 0.0026]  | 0.0011<br>(0.0007)<br>[-0.0003, 0.0026]  |
| Economic cost treatment     |  |  | 0.0021*<br>(0.0008)<br>[0.0004, 0.0038]  | 0.0021*<br>(0.0009)<br>[0.0004, 0.0038]  |
| Costly abstention treatment |  |  | 0.0026**<br>(0.0009)<br>[0.0009, 0.0044] | 0.0027**<br>(0.0009)<br>[0.0009, 0.0044] |
| Covariate adjustment:       | Yes                                      | No                                       | Yes                                      | No                                       |
| Num.Obs.                    | 19 951                                   | 19 951                                   | 19 951                                   | 19 951                                   |

Notes: Standard errors clustered at the address level in parentheses. 95 percent confidence intervals in brackets.

+  $p < 0.1$ , \*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

**Table A7: Intent-to-treat effects**

|                             | All treatment groups vs. placebo |                   | Individual treatments vs. placebo |                   |
|-----------------------------|----------------------------------|-------------------|-----------------------------------|-------------------|
| Constant                    | 0.0000                           | 0.0061            | 0.0000                            | 0.0063            |
|                             | (0.0000)                         | (0.0086)          |                                   | (0.0086)          |
|                             | [0.0000, 0.0000]                 | [-0.0107, 0.0230] |                                   | [-0.0106, 0.0231] |
| Treated                     | 0.0102***                        | 0.0104***         |                                   |                   |
|                             | (0.0018)                         | (0.0019)          |                                   |                   |
|                             | [0.0066, 0.0138]                 | [0.0066, 0.0141]  |                                   |                   |
| Instructions-only treatment |                                  |                   | 0.0054*                           | 0.0052*           |
|                             |                                  |                   | (0.0025)                          | (0.0023)          |
|                             |                                  |                   | [0.0006, 0.0103]                  | [0.0006, 0.0098]  |
| Economic cost treatment     |                                  |                   | 0.0101**                          | 0.0106**          |
|                             |                                  |                   | (0.0032)                          | (0.0033)          |
|                             |                                  |                   | [0.0039, 0.0163]                  | [0.0041, 0.0171]  |
| Costly abstention treatment |                                  |                   | 0.0144***                         | 0.0148***         |
|                             |                                  |                   | (0.0036)                          | (0.0037)          |
|                             |                                  |                   | [0.0073, 0.0215]                  | [0.0075, 0.0222]  |
| Covariate adjustment:       | Yes                              | No                | Yes                               | No                |
| Num.Obs.                    | 3381                             | 3381              | 3381                              | 3381              |

Notes: Standard errors clustered at the address level in parentheses. 95 percent confidence intervals in brackets.

+  $p < 0.1$ , \*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

**Table A8: Complier average causal effects**

|   | p value    |            |
|---|------------|------------|
|   | Two-tailed | One-tailed |
| Economic cost > Instructions only                       | 0.165      | 0.082      |
| Costly abstention > Economic cost                       | 0.391      | 0.196      |
| Costly abstention > Instructions only                   | 0.025      | 0.013      |
| Costly abstention and economic cost > Instructions only | 0.026      | 0.013      |

**Table A9: Linear hypothesis tests**

| Meeting                   | CACE  | 95% CI           | N     |
|---------------------------|-------|------------------|-------|
| <u>Pilot studies</u>      |       |                  |       |
| Santa Monica 8/26         | 0     | [-2.119 , 2.119] | 91    |
| Long Beach 9/7            | 1.375 | [0.031 , 2.719]  | 346   |
| Long Beach 9/14           | 0.460 | [-0.061 , 0.981] | 727   |
| <u>Primary studies</u>    |       |                  |       |
| Beverly Hills 10/12       | 1.656 | [-0.256 , 3.568] | 194   |
| Santa Monica 10/12        | 0.893 | [0.47 , 1.317]   | 2,102 |
| Whittier 10/12            | 0.556 | [-0.216 , 1.327] | 396   |
| Rancho Palos Verdes 10/19 | 3.704 | [-1.495 , 8.902] | 57    |
| Manhattan Beach 11/02     | 0     | [-2.742 , 2.742] | 70    |
| Norwalk 11/02             | 1.695 | [-0.223 , 3.613] | 213   |
| Sierra Madre 11/09        | 0     | [-6.034 , 6.034] | 31    |
| Culver City 12/10         | 1.439 | [0.031 , 2.847]  | 318   |

*Note:* Standard errors in parenthesis. Figures rounded to nearest thousandth decimal place. N is equal to the number of compliers in each city.

**Table A10: CACEs for each city council meeting**

| Value                                     | Estimate         | 95% CI          | N    |
|---|------------------|-----------------|------|
| Weighted fixed effects, w/ pilot studies  | 0.008<br>(0.001) | [0.005 , 0.011] | 4545 |
| Random effects, w/ pilot studies          | 0.008<br>(0.001) | [0.005 , 0.011] | 4545 |
| Weighted fixed effects, w/o pilot studies | 0.009<br>(0.002) | [0.006 , 0.012] | 3381 |
| Random effects, w/o pilot studies         | 0.009<br>(0.002) | [0.006 , 0.012] | 3381 |

*Note:* Standard errors in parenthesis. N is equal to the number of compliers.

**Table A11: Meta-analysis estimates**

|                                  | CATE                |
|----------------------------------|---------------------|
| Constant                         | 0.006<br>(0.009)    |
| Treated                          | 0.009***<br>(0.002) |
| Voted in 2017 municipal election | 0.000<br>(0.001)    |
| Treated x Voted                  | 0.014+<br>(0.008)   |
| City fixed effects:              | Yes                 |
| Num.Obs.                         | 3381                |

Notes: CATE standard errors clustered at the address level.

+ p < 0.1, \* p < 0.05, \*\* p < 0.01, \*\*\* p < 0.001

**Table A12: Conditional complier average causal effect**

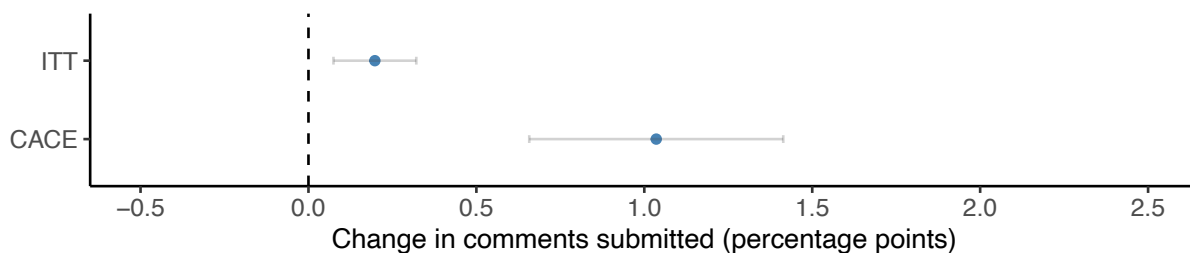
| Comment type | Spoken            | Written             | Pro-housing         | Anti-housing     | Custom             | Pre-written         |
|--------------|-------------------|---------------------|---------------------|------------------|--------------------|---------------------|
| Constant     | 0.000<br>(0.000)  | 0.000<br>(0.000)    | 0.000<br>(0.000)    | 0.000<br>(0.000) | 0.000<br>(0.000)   | 0.000<br>(0.000)    |
| Treated      | 0.001+<br>(0.001) | 0.010***<br>(0.002) | 0.009***<br>(0.002) | 0.001<br>(0.000) | 0.003**<br>(0.001) | 0.007***<br>(0.002) |
| Num.Obs.     | 3381              | 3381                | 3381                | 3381             | 3381               | 3381                |

Notes: Standard errors clustered at the address level.

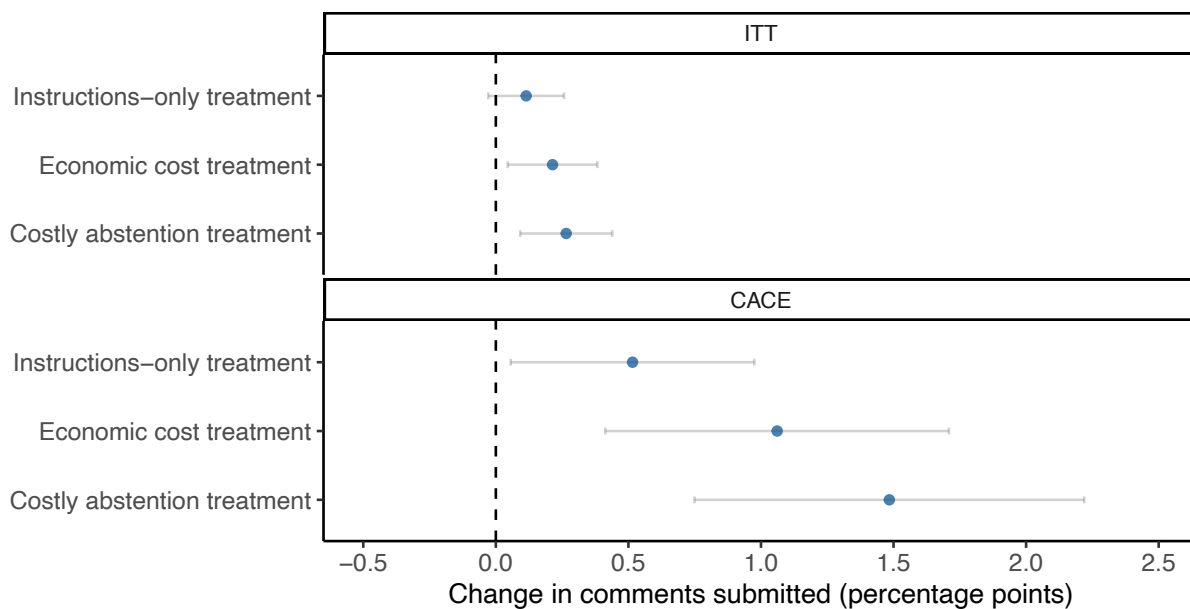
+ p < 0.1, \* p < 0.05, \*\* p < 0.01, \*\*\* p < 0.001

**Table A13: Complier average causal effects by outcome**

*Robustness*



**Figure A10: Intent-to-treat effect and complier average causal effect, all cities (without covariate adjustment)**



**Figure A11: Effects by treatment group, all cities (without covariate adjustment)**

|       | Estimand  | p value |
|-------|---|---------|
| CACE: | All treated vs. placebo                                 | 0.044   |
| CACE: | Instruction-only vs. placebo                            | 0.386   |
| CACE: | Economic cost vs. placebo                               | 0.071   |
| CACE: | Costly abstention vs. placebo                           | 0.011   |
| CACE: | Economic cost vs. instruction-only                      | 0.198   |
| CACE: | Costly abstention vs. instruction-only                  | 0.021   |
| CACE: | Costly abstention vs. economic cost                     | 0.326   |
| CACE: | Costly abstention & economic cost vs. instructions-only | 0.034   |
| ITT:  | All treated vs. placebo                                 | 0.075   |
| ITT:  | Instruction-only vs. placebo                            | 0.380   |
| ITT:  | Economic cost vs. placebo                               | 0.089   |
| ITT:  | Costly abstention vs. placebo                           | 0.039   |
| ITT:  | Economic cost vs. instruction-only                      | 0.266   |
| ITT:  | Costly abstention vs. instruction-only                  | 0.082   |
| ITT:  | Costly abstention vs. economic cost                     | 0.565   |
| ITT:  | Costly abstention & economic cost vs. instructions-only | 0.086   |

**Table A14: Randomization inference p values**

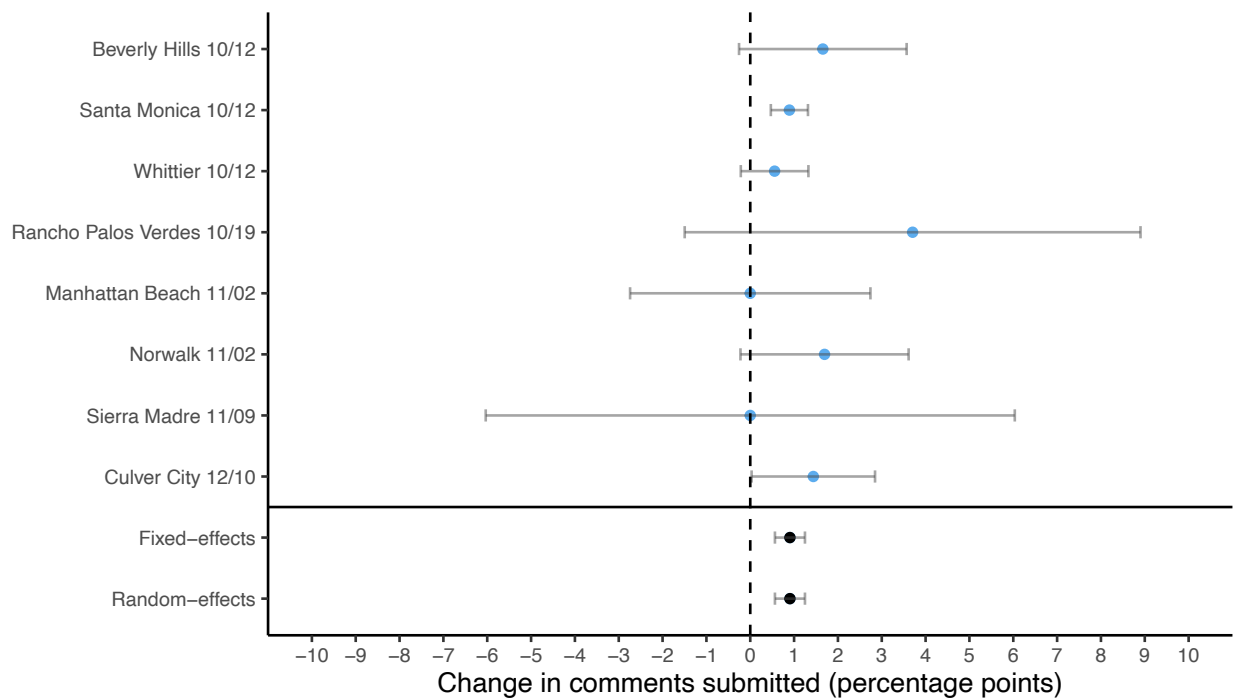
*Note:* Randomization inference conducted using 10,000 simulations for CACEs and 1000 simulations for ITTs. Covariates not included due to computational demand.

|                             | All treatment groups vs. placebo             |   | Individual treatments vs. placebo            |   |
|-----------------------------|--|---|--|---|
|                             | ITT  | CACE  | ITT  | CACE  |
| Constant                    | -7.1987***<br>(0.8170)<br>[-9.3648, -5.9318] | -6.5439***<br>(1.4173)<br>[-11.3781, -4.6301] | -7.1987***<br>(0.8170)<br>[-9.3648, -5.9318] | -6.5439***<br>(1.4173)<br>[-11.3781, -4.6301] |
| Treated                     | 1.2239+<br>(0.8304)<br>[-0.0850, 3.4045]     | 1.9864*<br>(1.4285)<br>[0.0265, 6.8285]       |  |   |
| Instructions-only treatment |  |   | 0.8548<br>(0.8735)<br>[-0.5931, 3.0816]      | 1.3414<br>(1.4804)<br>[-0.8391, 6.2197]       |
| Economic cost treatment     |  |   | 1.3048+<br>(0.8534)<br>[-0.0776, 3.5102]     | 2.0372+<br>(1.4509)<br>[-0.0157, 6.8950]      |
| Costly abstention treatment |  |   | 1.4797*<br>(0.8479)<br>[0.1150, 3.6792]      | 2.3874*<br>(1.4388)<br>[0.3850, 7.2367]       |
| Num.Obs.                    | 19951  | 3381  | 19951  | 3381  |

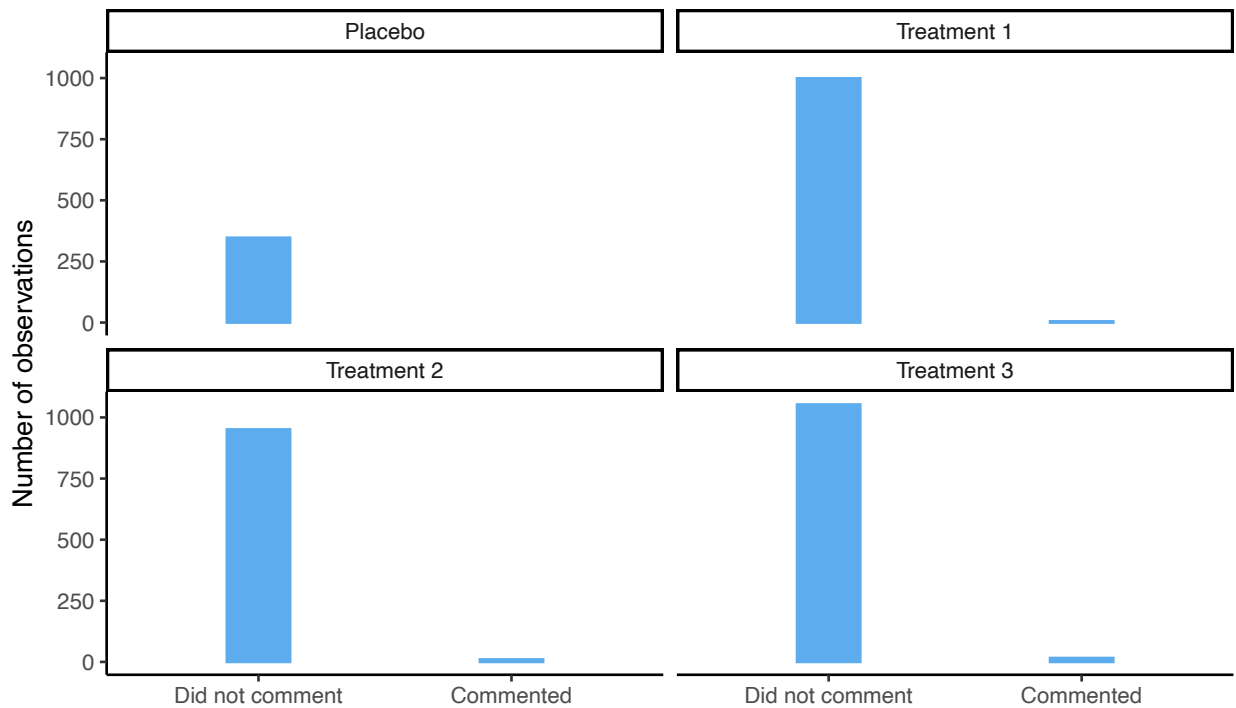
Notes: Standard errors clustered at the address level in parentheses. 95 percent confidence intervals in brackets.

+ p < 0.1, \* p < 0.05, \*\* p < 0.01, \*\*\* p < 0.001

**Table A15: ITT and CACE estimates from penalized maximum likelihood**



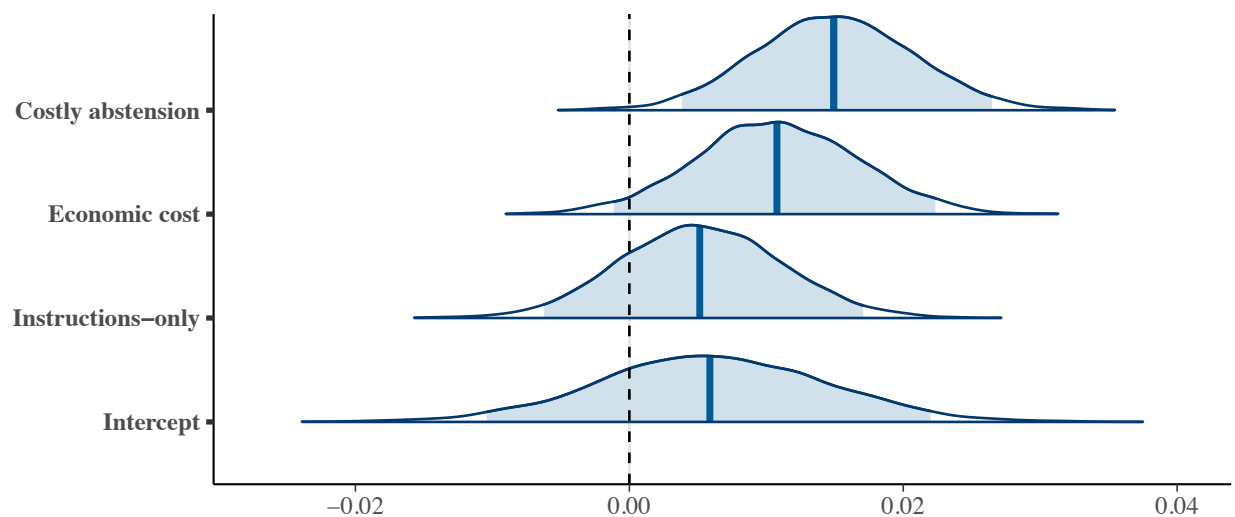
**Figure A12: Meta-analysis of complier average causal effects by city, excluding pilot studies**



**Figure A13: Distribution of outcomes by treatment group (compliers only)**



The Bayes factors in the results section are computed for hypotheses that the differences between treatments are greater than zero (e.g., costly abstention treatment - instructions only treatment  $> 0$ ) and its alternative using the Savage-Dickey density ratio method. The Bayes factors are 97 and 5 for the costly abstention treatment vs. the instructions only treatment and costly abstention treatment vs. economic cost treatment, respectively. The posterior probability exceeds 95% for a one-sided hypothesis test in both comparisons, and exceeds 95% for a two-sided test in the first comparison. Given that the directionality and relative magnitudes of the treatment effects were pre-registered and negative treatment effects are theoretically implausible, a one-sided hypothesis test seems reasonable.



**Figure A14: Bayesian multilevel model: coefficient estimates and posterior distributions (includes city fixed effects)**

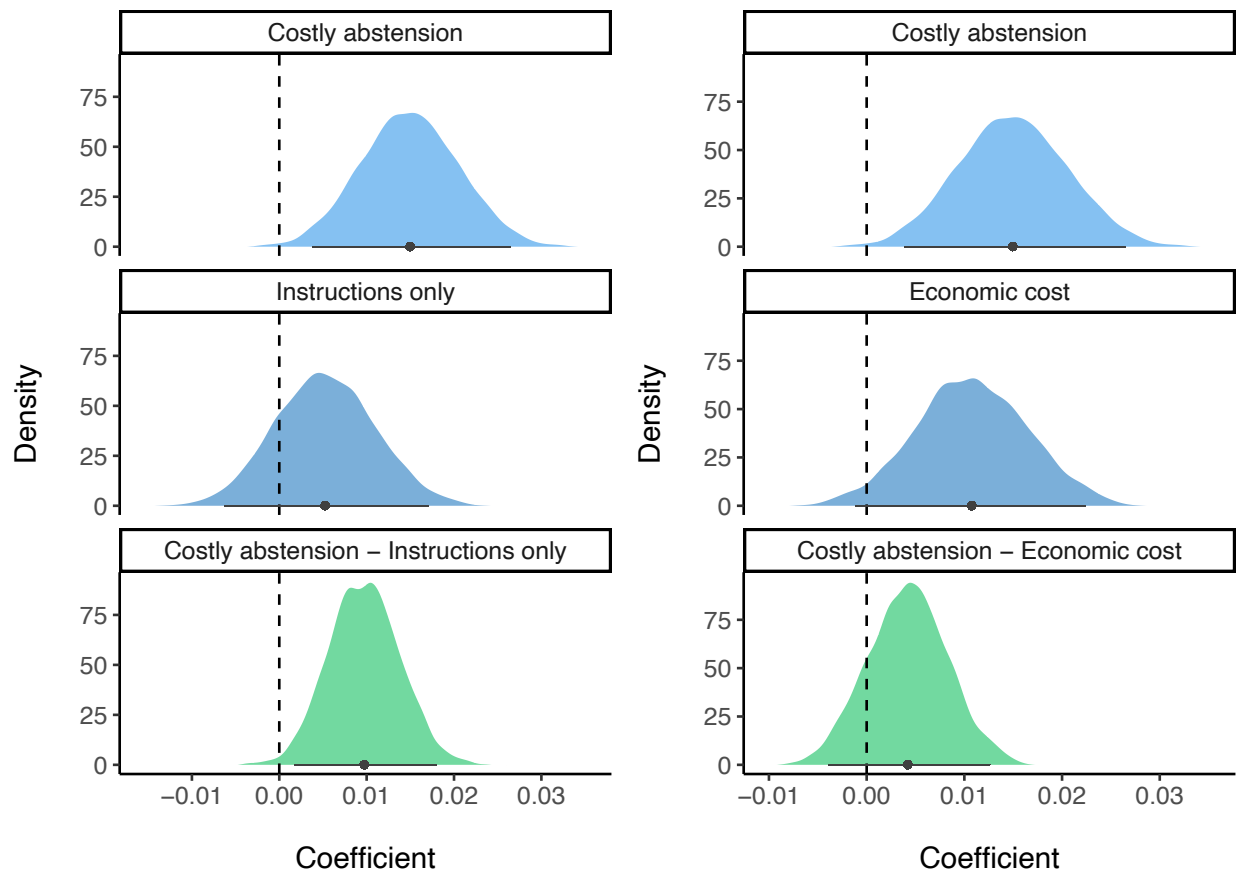


Figure A15: Posterior distributions of costly abstention treatment, instructions only treatment, and difference

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