Voter Registration Costs and Disenfranchisement: Experimental Evidence from France

Online Appendix

January 2017

Appendix A: Sampling frame

In each precinct, we identified addresses and apartments in which unregistered and misregistered citizens were likely to reside as follows. We first collected the list of citizens registered at the precinct as of January 2011 and ordered it by address. Between May and September 2011, surveyors went to each address and wrote down names found on the mailboxes or on intercoms and the corresponding apartment numbers. This preliminary work was conducted at 6,030 addresses, excluding addresses that were not found or were inaccessible to the canvassers. When all names found on a mailbox also appeared on the voter roll, we excluded the corresponding apartment from the experiment, given the low probability of finding unregistered or misregistered citizens there. In 17 percent of addresses, it was impossible to link apartments to mailboxes, due to the lack of any number or available identification, so that all apartments were covered by canvassers, whether included in the sample or not. Overall, 20,502 apartments likely to host unregistered or misregistered citizens, located at 4,118 addresses, were included in the experimental sample.

Appendix B: Formal model

The following model extends the standard cost-benefit model of the voting decision (Downs 1957; Riker and Ordeshook 1968) to account for registration as a first separate

stage and model its connection with the second stage, voting. In addition, we describe likely type differences between compliers (citizens registered as a result of the visits) and always-takers (newly registered citizens who would have registered regardless of whether or not they receive a visit) along two dimensions that explain individuals' decisions to register and vote: benefits of voting and the registration cost.

Two stages: registration, and voting

Each unregistered citizen needs to decide whether to register and second, whether to vote.

Individual i is characterized by her net registration cost c_i and her average net benefits of voting b_i. c_i includes gathering information about the registration process and actually going through the process. It is higher for those who are less comfortable with bureaucratic tasks, who live further away from the town hall or work during opening hours, who have unconventional living situations that do not easily meet residency requirements, or who move frequently and thus have to re-register more often. c_i may also depend on the person's wealth: a given time spent to go to the town hall and register imposes a higher monetary cost on the rich, but it may impose a higher utility cost on the poor, whose marginal utility of consumption is higher (e.g., Alatas et al. 2013). b_i includes expressive and instrumental benefits, minus the cost of voting. For simplicity, we assume that there is only one electoral round and that there is no intertemporal actualization rate.

In the first stage, if i registers, she has to pay c_i and expects to get second-stage utility $g(b_i)$. i decides to register if $c_i \leq g(b_i)$. If she receives the visit of canvassers, her registration cost decreases to λc_i with $\lambda \in [0, 1)$, and i decides to register if $\lambda c_i \leq g(b_i)$.

In the second stage, i can cast a vote if she registered in the first stage. She decides to vote if $b_i + \varepsilon_i \geq 0$, where ε_i is a shock realized after registering, with density f_ε, distribution F_ε, and $E[\varepsilon_i] = 0$. ϵ represents all factors that affect the benefits of voting and which are unknown at the time of registering, including, for instance, corruption scandal affecting the candidate i was planning to vote for; new polls affecting her expectations about the

closeness of the election; transition to or from unemployment which affects her views about the general economic situation; unexpected travel plans which force her to be absent on election day thereby increasing the cost of voting.

We infer that i's second-stage utility, conditional on being registered, is

$$g\left(b_i\right) \equiv \int_{-b_i}^{\infty} \left(b_i + \varepsilon\right) f_{\varepsilon}(\varepsilon) d\varepsilon.$$

Her propensity to vote, conditional on being registered, is

$$v(b_i) \equiv P\left(b_i + \varepsilon_i \geq 0\right) = 1 - F_{\varepsilon}\left(-b_i\right)$$

such that $v\left(b\right)$ and $g\left(b\right)$ both increase in b.

Two simple cases: uniform benefits of voting or registration cost

Let us now analyze the differences between compliers and always-takers along benefits of voting and the registration cost. Since the compliers only register when registration is facilitated, we expect them to be characterized by lower benefits of voting and/or a higher registration cost on average. This is indeed the conclusion that we reach when we consider two simple cases, where benefits of voting or registration cost are uniform across all individuals.

We first consider the case where the benefits of voting are uniform across all i's ($b_i = b$). Always-takers and compliers are characterized respectively by $c_i \leq g\left(b\right)$ and by $g\left(b\right) < c_i \leq {}^{g(b)}/_{\lambda}$ (see Figure A4a). Compliers face a higher registration cost than always-takers, but have identical benefits of voting and the same propensity to vote, conditional on being registered.

We next consider the case where the registration cost is uniform across all i's ($c_i = c$). The always-takers are then characterized by $g^{-1}\left(c\right) \leq b_i$ and the compliers by $g^{-1}\left(\lambda c\right) \leq b_i < g^{-1}\left(c\right)$ (Figure A4b). The visits result in the registration of citizens who face the same registration cost as always-takers but have lower benefits of voting and a lower propensity to vote, conditional on being registered.

General case

In the more general case, in which both benefits of voting and registration cost vary across citizens, it is not necessarily the case that the compliers are characterized by lower benefits of voting and/or a higher registration cost than always-takers.

The distribution of types over the entire population of unregistered citizens is now described by the continuous bivariate random vector of benefits of voting and registration costs (B, C), with joint density function $f(b, c)$ and marginal density functions $f_B(b)$ and $f_C(c)$.

The always-takers are characterized by $c_i \leq g(b_i)$ and the compliers by $g(b_i) < c_i \leq {}^{g(b_i)}/_{\lambda}$ (Figure A4c). Among citizens facing a given registration cost, it is immediate that compliers have lower expected benefits of voting than always-takers. Similarly, among citizens with a given expected benefit of voting, compliers face a higher registration cost than always-takers. However, these results do not mechanically extend to the comparison of all compliers and always-takers. As an example, consider the case represented in Figure A4d. The density function $f(b, c)$ is such that $g(b_i) \leq g_1$ or $g(b_i) \geq g_2$ any i. In addition, for all i such that $g(b_i) \leq g_1$, $c_i \leq g(b_i)$; and for all i such that $g(b_i) \geq g_2$, $c_i \geq g(b_i)$. Then, all the always-takers have benefits of voting lower than g_1, and all the compliers have benefits of voting higher than g_2: on average, compliers have higher benefits of voting than always-takers. It is equally easy to construct density functions such that, on average, compliers have a lower registration cost than always-takers.

It is, however, possible to identify a set of sufficient conditions that rule out these cases, including the condition that $-f(b, c)$ satisfies log-increasing differences in b and c. Under these conditions, we obtain that compliers have lower benefits of voting and face a higher registration cost on average than always-takers. They have a lower propensity to vote, and those who vote have lower benefits of voting. The full statement of all conditions and the formal derivation of these results are available upon request.

Appendix C: Estimating bounds on the participation of the compliers

As shown in Section 4.3 of the paper, the difference between the participation of compliers and always-takers can be expressed as

$$V_{C,T} - V_{A,T} = \frac{1}{P_{C,T}} (V_T - V_0) - \frac{1}{P_{C,T}} (V_{A,T} - V_{A,0}) \qquad (3)$$

To put a lower bound on $V_{C,T} - V_{A,T}$, we allow for the highest possible treatment effect on the always-takers, $V_{A,T} - V_{A,0}$: we plug in Equation [3] the 95% upper confidence limit of the get-out-the-vote effect estimates presented in Table A8. Similarly, using the 95% lower confidence limit of these estimates, we obtain an upper bound of the difference between the participation of compliers and always-takers. The results are as follows:

Difference between the part. of compliers and always-takers	Lower bound	Upper bound
Presidential elections, 1st round	-0.072	0.135
Presidential elections, 2nd round	-0.194	0.009
Parliamentary elections, 1st round	-0.284	-0.036
Parliamentary elections, 2nd round	-0.212	0.036
Average on all rounds	-0.167	0.018
One vote at least	-0.086	0.104

To put bounds on the participation of the compliers, we transform Equation [3] as follows:

$$\begin{aligned} V_{C,T} &= \tfrac{1}{P_{C,T}} (V_T - V_0) - \tfrac{1}{P_{C,T}} (V_{A,T} - V_{A,0}) + V_{A,T} \\ &= \tfrac{1}{P_{C,T}} (V_T - V_0) - \left(\tfrac{1}{P_{C,T}} - 1\right) (V_{A,T} - V_{A,0}) + V_0 \end{aligned}$$

where the last step uses the equality $V_0 = V_{A,0}$.

Note that the treatment effect on the always-takers is now scaled up by a different factor, $\frac{1}{P_{C,T}} - 1$ (instead of $\frac{1}{P_{C,T}}$). Again, we plug the 95% upper and lower confidence limits of the treatment effect estimates in this equation and obtain the following results:

Participation of compliers	Lower bound	Upper bound
Presidential elections, 1st round	0.812	0.973
Presidential elections, 2nd round	0.721	0.878
Parliamentary elections, 1st round	0.264	0.456
Parliamentary elections, 2nd round	0.303	0.495
Average on all rounds	0.545	0.688
One vote at least	0.872	1.000

Note that the mathematical upper bound is 1.019 for one vote at least. Since the fraction of people who voted at least once cannot be larger than 100%, we replace this value by 1.000.

Appendix D: Controlling for compositional effects in turnout estimations

Differences between the propensity to vote of compliers and always-takers might capture compositional effects. Indeed, as shown in Section 3.2, the impact of the visits was larger among unregistered than misregistered citizens. As a result, the compliers account for relatively more citizens who were initially unregistered than the always-takers. But citizens with different initial registration statuses might have different propensities to vote. To compare compliers and always-takers who share the same initial registration status, we allow the γ and the δ_t's to vary by initial registration status r in Equation [2]:

$$V_{i,b} = \alpha + \sum_{r=1}^{4} \left(\gamma^r N_{i,b}^r + \sum_{t=1}^{6} \delta_t^r T_b^t \times N_{i,b}^r \right) + \epsilon_{i,b} \qquad (A1)$$

where $N_{i,b}^1$, $N_{i,b}^2$, $N_{i,b}^3$ and $N_{i,b}^4$ are dummies equal to 1 if i is newly registered and if she was, respectively, previously unregistered, registered in another city, registered at another address in the same city, or automatically registered. The results are presented in Table A5. On average, controlling for the initial registration status, the propensity to vote of newly

registered citizens was 2.7 points lower in the treatment groups than in the control group. The difference with the estimate we obtain without controlling for initial registration status (2.2) is not statistically significant (p-value of 0.88).

Similarly, in Table A7, we control for the initial registration status when comparing the percent turnout decline between the presidential and the parliamentary elections between newly registered citizens in the control and treatment groups. We first compute the percent turnout decline among newly registered citizens by treatment group and initial registration status (previously unregistered, registered in another city, registered at another address in the same city, or automatically registered). We then compute the weighted average of the difference in turnout decline between the control and treatment groups across newly registered citizens with different initial registration statuses. Each weight corresponds to the fraction of citizens with a particular initial registration status. We find that the turnout decline was larger by 3 percentage points among newly registered citizens in the treatment groups, a difference significant at the 10 percent level.

Appendix E: Sampling frame of the postelectoral survey

The postelectoral survey was administered between June 18, the day following the second round of the parliamentary elections, and July 15. All 50 surveyors were students in political science, economics, social sciences, or law. To facilitate the coordination of the surveyors, the survey took place in only four cities, Saint-Denis, Cergy, Sevran and Montpellier, which account for 84 percent of the entire sample.

The survey was administered only to French citizens who were not registered at their address as of January 2011. For this purpose, for each address, surveyors were given a list of names of individuals that they should NOT survey: citizens who were registered on the 2011 voter rolls and citizens who were automatically registered in 2011. After introducing themselves

and explaining the purpose of their visit, the surveyors asked the person who had opened the door whether he was a French citizen. If yes, they asked him whether he accepted to respond, wrote down his first and last name and rapidly checked that he was not listed on their list. If not, they went on administering the questionnaire. If their interlocutor was not French, not willing to answer, or if his name appeared on the list, they asked whether they could survey another member of the household. Surveyors were instructed to survey no more than one person in each apartment. In total, the survey plan included 14030 apartments and 1465 surveys were conducted. The fraction of apartments in which one survey was conducted was not significantly different between the control and treatment groups.

The surveyors did not know the treatment condition of the buildings where they conducted surveys. Still, we could not exclude ex ante that the response rate might be different in the control and treatment groups. Therefore, half of the addresses were randomly selected to be covered twice: in these addresses, surveyors knocked again at all doors that had remained closed the first time. Since we do not find any statistically significant difference between the answer rates in the control and in the treatment groups, we do not exploit this feature when analyzing the data.

Finally, administering the questionnaire required 15 to 20 minutes on average. Only 2 percent of respondents who started answering the questionnaire refused to go to the end.

Appendix F: Prediction of political preferences based on demographics

To predict differences between the political preferences of the newly registered and the previously registered citizens and between newly registered citizens in the control and treatment groups based on their demographics, we proceed in three steps. First, we regress the preferences expressed by the respondents to the postelectoral survey on three demographic characteristics available on the voter rolls for all registered citizens, as specified in the following

equation:

$$\text{Left}_{i,b} = \alpha_1 + \alpha_2 \text{Gender}_{i,b} + \alpha_3 \text{Age}_i + \alpha_4 \text{Immigrant}_{i,b} + \epsilon_i \qquad (A2)$$

where $\text{Left}_{i,b}$ is a dummy equal to 1 if the respondent located himself on the left of the left-right axis or had a preference for a left candidate (and 0 if he located himself on the right), $\text{Gender}_{i,b}$ is equal to 1 if the respondent is a male and $\text{Immigrant}_{i,b}$ is equal to 1 if the respondent is an immigrant. The results are presented in Table A12, Panel A. Age and being an immigrant are strong predictors of preference on the left, and have the expected sign.

Second, we use the estimated coefficients $\widehat{\alpha_1}$, $\widehat{\alpha_2}$, $\widehat{\alpha_3}$ and $\widehat{\alpha_4}$ to predict the political preferences of all registered citizens in the sample, $\widehat{\text{Left}_{i,b}}$.

Third, we estimate differences between the predicted political preferences of the newly registered and the previously registered citizens and between newly registered citizens in the control and treatment groups. Formally, we estimate the following model:

$$\widehat{\text{Left}_{i,b}} = \alpha + \beta N_{i,b} + \delta T_b \times N_{i,b} + \epsilon_{i,b} \qquad (A3)$$

where $N_{i,b}$ is a dummy equal to 1 if i is a newly registered citizen. Table A12, Panel B performs this analysis.

A possible limitation of this exercise is that vote choices of newly registered citizens in the treatment groups may reflect their underlying preferences (and their sociodemographic characteristics), but they may also have been affected by the discussions with the canvassers. In that case, using self-reports of newly registered in the treatment groups to predict the vote choices of citizens who did not receive the visit (newly registered citizens in the control group or previously registered citizens) would be problematic. While we cannot rule out that canvassers belonging to political parties indeed affected the preferences of the citizens

they interacted with, any such direct effect is less likely for visits conducted by the other groups of canvassers (students and NGO members), who were non-partisan. We thus test the robustness of our results to excluding precincts covered by partisan canvassers and find very similar results (results available upon request).

To the extent that vote choices – and in particular vote choices of always-takers – were not affected by the visits, then the difference between the vote choices of compliers and always-takers can be inferred from the difference between the vote choices of newly registered citizens in the treatment and control groups, using the same method as in Section 4.3. In particular, the lack of significant difference between the vote choices of newly registered citizens in the treatment and control groups implies that vote choices of always-takers and compliers were similar as well.

Appendix G: Estimate of the effect of the intervention "Early Home registration & Late Home registration" on overall turnout

To estimate the effect of the intervention "Early Home registration & Late Home registration" on overall turnout in the sample addresses, we use the apartment as the unit of observation and proceed in several steps. First, we estimate the number of votes at each electoral round in the average control apartment. To this end, we add the participation of previously registered citizens to the participation of newly registered citizens. The former is obtained as follows. From Table 2, column 1, we get the individual participation of previously registered citizens at the first round of the presidential elections, 70.3 percent, which we multiply by the average number of previously registered citizens in the sample apartments (1.39). We obtain 0.978 votes. The participation of newly registered citizens is computed as follows. From Table 2, column 1, we get the individual participation of newly registered citizens at the first round of the presidential elections in the control group, 87.4 percent (70.3 + 17.1). We multiply it

by the number of newly registered citizens in the average control group apartment, obtained from Table 1, column 2, 0.168, and obtain 0.147 votes. The number of votes at the first round of the presidential elections in the average control apartment is thus 1.124 (0.978 + 0.147). Using the same method for the other electoral rounds, we obtain 1.159, 0.710 and 0.680 votes at the second round of the presidential elections and the first and second rounds of the parliamentary elections, respectively.

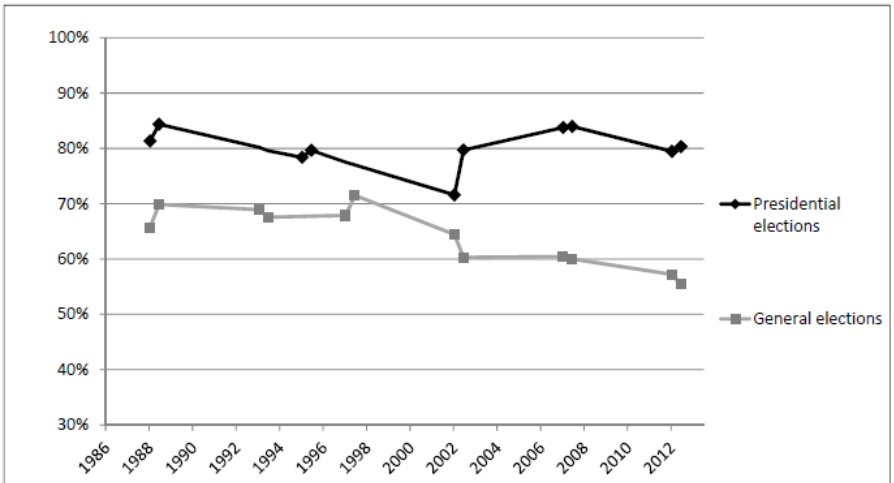
We then estimate the number of additional votes at each electoral round in the average apartment of the "Early Home registration & Late Home registration" group. From column 2 of Table 1, we have that the additional number of new registrations in the average apartment of this group was 0.096. We multiply it by their average participation, obtained from Table 2, Panel B. At the first round of the presidential elections, for instance, it was 0.872 (0.703 + 0.171 - 0.002), which gives 0.084 votes. Not all these votes, however, should be considered as "additional": a fraction of the newly registered citizens who were initially misregistered would have participated in the elections by travelling back to their previous address or voting by proxy, had they remained misregistered. While we do not observe their counterfactual participation rate, we can proxy it based on the observed participation of their counterparts: citizens who are registered here but live elsewhere (as signaled by the fact that their name was not found on any mailbox):[1] 58.4 percent and 61.3 percent at the presidential elections, and 37.2 percent and 35.9 percent at the parliamentary elections. We multiply this by the number of new registrations among citizens who were initially misregistered in the group "Early Home registration & Late Home registration", which we obtain from Table A3, Panel B, columns 3 and 4: 0.045 (0.032 + 0.013). At the first round of the presidential elections, 0.026 votes (0.584 * 0.045) need to be subtracted from 0.084: we conclude that the number of additional votes in the average apartment in the "Early Home registration & Late Home registration"

[1] The implicit assumptions here are that the participation of misregistered citizens who move out is similar to the participation of those who move in, and that the participation rate of misregistered compliers would have been identical to the participation rate of other misregistered citizens had they not registered. The latter assumption is valid to the extent that the decision to register, by misregistered compliers, signals a higher cost of voting at the previous address (predicting lower participation) as much as a higher interest in the elections (predicting higher participation).

group was 0.057. Divided by the number of votes in the average control apartment (1.124), this represents an increase of 5.1 percent. Using the same method for the other electoral rounds, we obtain increases of 4.9, 3.9, and 4.4 percent at the second round of the presidential elections and the first and second rounds of the parliamentary elections, respectively.

Appendix H: Appendix tables and figures

Figure A1. Turnout at French Presidential and Parliamentary elections, 1988-2012



Source: French Ministry of the Interior
Notes: These official turnout figures use the number of registered citizens (not the number of eligible citizens) as the denominator.

Figure A2: Localization of the 10 cities included in the experiment

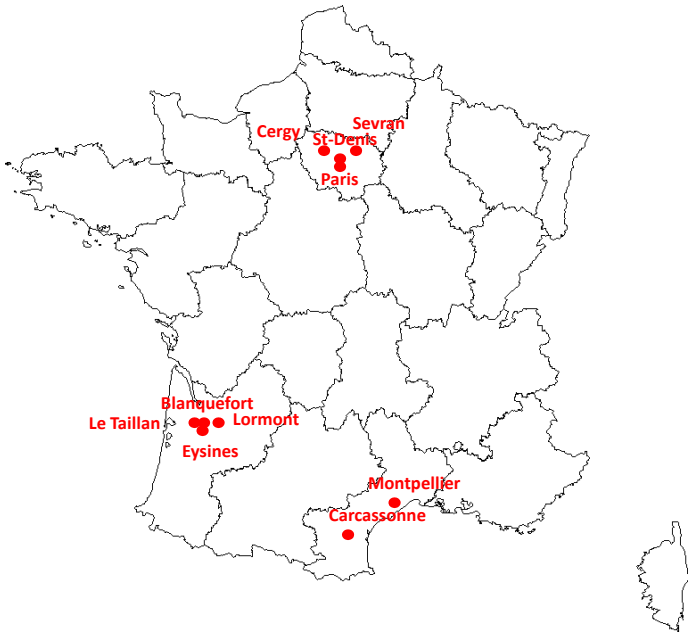


Figure A3: Example of leaflets handed out by the canvassers

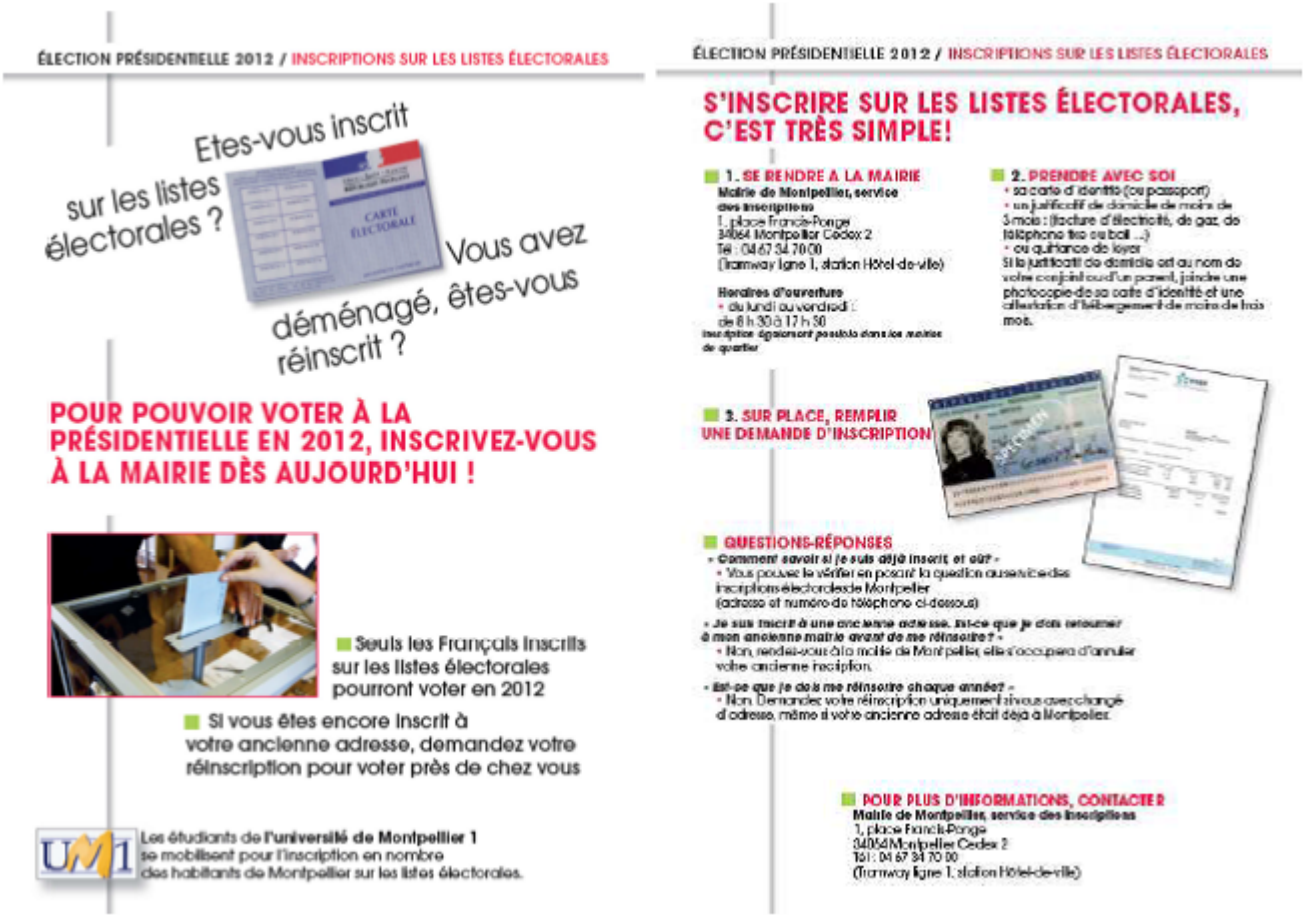
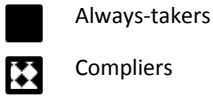
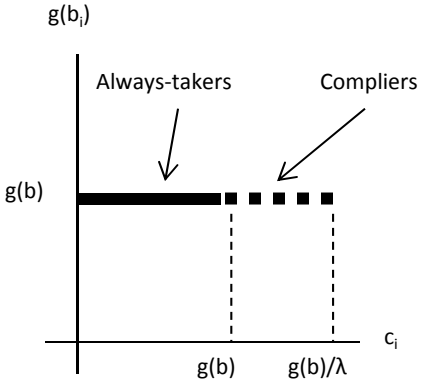


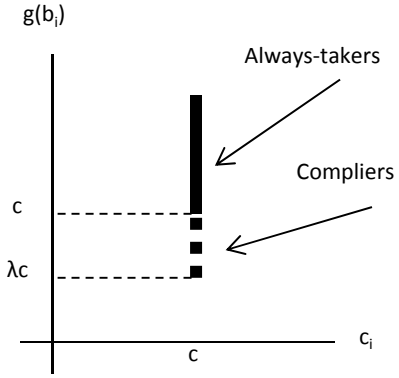
Figure A4. Graphic representation of the different cases discussed in the model



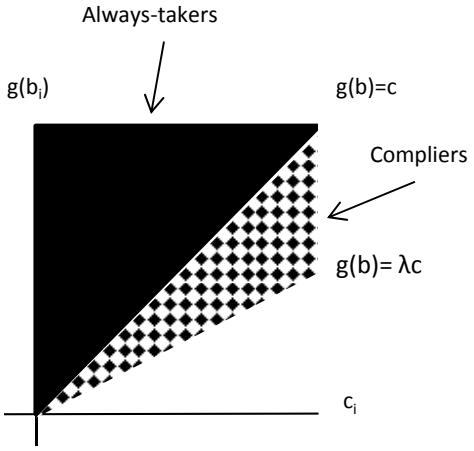
A3a. Uniform benefits of voting



A3b. Uniform registration costs



A3c. General case



A3d. Compliers with higher benefits of voting than always-takers

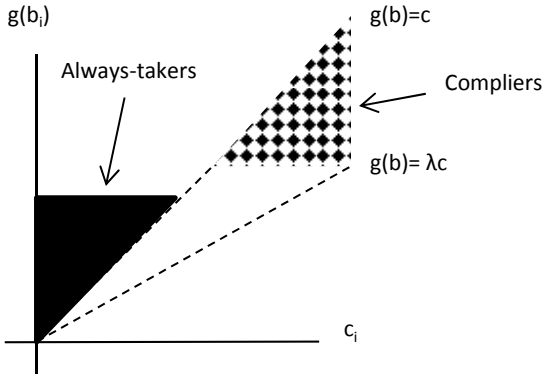


Table A1: Summary statistics

	Any treatment					Treatment groups included separately	
	Control group		Treatment groups		*P-value* Treatment	Test: joint significance of treatment dummies	Number of obs.
	Mean	SD	Mean	SD	= Control	*P-value*	
Panel A. At the address level							
Number of mailboxes	7.9	11.0	7.8	10.3	0.661	0.995	4118
Number of apartments included in sample	5.1	7.7	4.9	7.0	0.600	0.993	4118
Housing price	3103	871	3150	874	0.476	0.977	941
Panel B. At the apartment level							
Number of additional names on mailbox	1.3	0.7	1.3	0.7	0.213	0.747	20502
Panel C. At the individual level							
Age	36.3	13.6	36.3	13.0	0.978	0.016	1450
Gender	0.403	0.491	0.425	0.495	0.461	0.909	1464
In couple	0.543	0.499	0.523	0.500	0.508	0.148	1458
Number of other household members	1.9	1.6	2.0	1.7	0.694	0.357	1463
Education							
No diploma	0.146	0.354	0.146	0.354	0.994	0.831	1450
Less than end-of-high-school	0.278	0.449	0.278	0.448	0.994	0.013	1450
End-of-high-school	0.256	0.437	0.218	0.413	0.163	0.101	1450
More than end-of-high-school	0.320	0.467	0.357	0.479	0.204	0.222	1450
Activity							
Employed	0.623	0.485	0.615	0.487	0.806	0.021	1458
Unemployed	0.103	0.305	0.112	0.315	0.650	0.278	1458
Inactive	0.274	0.447	0.273	0.446	0.970	0.364	1458
Housing situation							
Owner	0.139	0.347	0.113	0.317	0.297	0.192	1440
Tenant, social housing	0.554	0.498	0.598	0.490	0.356	0.622	1440
Tenant, private housing	0.307	0.462	0.289	0.453	0.681	0.148	1440
Personal monthly income							
Less than 700 euros	0.225	0.418	0.197	0.398	0.312	0.292	1281
700 - 1100 euros	0.206	0.405	0.210	0.408	0.869	0.823	1281
1100 - 1500 euros	0.260	0.440	0.277	0.448	0.557	0.641	1281
Above 1500 euros	0.309	0.463	0.315	0.465	0.840	0.856	1281
Born in France	0.758	0.429	0.753	0.432	0.823	0.468	1455
Born in same département	0.246	0.431	0.232	0.422	0.608	0.045	1450
Was naturalized French	0.210	0.408	0.238	0.426	0.295	0.264	1393
Holds another citizenship	0.213	0.410	0.234	0.423	0.428	0.114	1404
Speaks French with family members							
French only	0.581	0.494	0.612	0.487	0.349	0.579	1457
Some French, some other language	0.404	0.491	0.371	0.483	0.301	0.646	1457
Other language only	0.014	0.118	0.017	0.130	0.671	0.696	1457
Has lived in the city							
For 2 years	0.168	0.374	0.185	0.389	0.487	0.239	1458
2 - 5 years	0.179	0.384	0.156	0.363	0.366	0.087	1458
5 - 10 years	0.156	0.364	0.157	0.364	0.970	0.310	1458
More than 10 years	0.497	0.501	0.501	0.500	0.919	0.307	1458
Adherent of a religion	0.667	0.472	0.687	0.464	0.537	0.079	1414
Regular churchgoer	0.355	0.479	0.323	0.468	0.330	0.770	1373

Notes: For each variable, we report the means and standard deviations in both the control group and in all treatment groups pooled together and indicate the p-value of the difference. We then take each treatment group separately and test the hypothesis of joint significance of the treatment dummies. Unit of observation is the address in Panel A, the apartment in Panel B, and the respondent to the post-electoral survey in Panel C. In Panels B and C, standard errors are adjusted for clustering at the address level.

Table A2: Spillovers from treatment to control buildings

	(1)	(2)
	Number of new registrations	
Closest building is in the treatment group	0.004	0.003
	(0.025)	(0.025)
Strata fixed effects	Yes	Yes
Apartment & Building controls	No	Yes
Observations	3932	3932
R-squared	0.05	0.06
Mean when closest building is in the control group	0.183	0.183

Notes: Clustered standard errors are in parentheses. ***, **, * indicate significance at 1, 5 and 10%. We take the apartment as the unit of observation and include all newly registered citizens in the sample apartments.
The sample is restricted to buildings in the control group. "Closest building is in the treatment group" is equal to 1 if the closest building is in the treatment group, and 0 if it is in the control group. Buildings for which the closest building could not be identified (for instance because two buildings have the same GPS coordinates) are excluded from the analysis.
The control variables are the number of mailboxes in the building and the number of last names found on the mailbox of the apartment that were absent from the 2011 voter rolls.

Table A3: Impact of the interventions on the number of new registrations, by initial registration status

	(1) All newly registered	(2) Not registered before	(3) Registered in another city before	(4) Registered at another address in this city before	(5) "Automatically" registered
Panel A. All treatments pooled together					
Any treatment	0.048***	0.022***	0.014**	0.008***	0.004*
	(0.008)	(0.004)	(0.006)	(0.003)	(0.002)
Strata fixed effects	Yes	Yes	Yes	Yes	Yes
Apartment & Building controls	Yes	Yes	Yes	Yes	Yes
Observations	20458	20458	20458	20458	20458
R-squared	0.03	0.02	0.04	0.02	0.02
Mean in Control Group	0.168	0.047	0.079	0.025	0.013
Panel B. Each treatment included separately					
Early Canvassing	0.014	0.01	-0.005	0.003	0.004
	(0.012)	(0.007)	(0.008)	(0.004)	(0.003)
Late Canvassing	0.031**	0.006	0.012	0.010*	0.004
	(0.012)	(0.006)	(0.009)	(0.005)	(0.003)
Early Home registration	0.032**	0.012*	0.01	0.007	0.004
	(0.013)	(0.006)	(0.009)	(0.005)	(0.003)
Late Home registration	0.054***	0.022***	0.020**	0.008*	0.004
	(0.013)	(0.007)	(0.008)	(0.005)	(0.003)
Early Canvassing & Late Home	0.060***	0.035***	0.015*	0.007	0.005
registration	(0.013)	(0.007)	(0.009)	(0.004)	(0.003)
Early Home registration & Late	0.096***	0.047***	0.032***	0.013**	0.002
Home registration	(0.014)	(0.007)	(0.009)	(0.005)	(0.003)
Strata fixed effects	Yes	Yes	Yes	Yes	Yes
Apartment & Building controls	Yes	Yes	Yes	Yes	Yes
Observations	20458	20458	20458	20458	20458
R-squared	0.03	0.02	0.05	0.02	0.02
Mean in Control Group	0.168	0.047	0.079	0.025	0.013
Linear combinations of estimates:					
Average effect of Canvassing	0.022**	0.008	0.004	0.006*	0.004*
1/2 (EC + LC)	(0.010)	(0.005)	(0.007)	(0.004)	(0.002)
Average effect of Home registration	0.043***	0.017***	0.015**	0.007*	0.004
1/2 (EH + LH)	(0.011)	(0.005)	(0.007)	(0.004)	(0.002)
Difference between average effect of Home reg. and Can.	0.021*	0.009	0.012*	0.001	0.000
1/2 (EH + LH) - 1/2 (EC + LC)	(0.011)	(0.006)	(0.007)	(0.004)	(0.003)
Difference between average effect of Late visit and Early visit	0.020*	0.003	0.013*	0.004	0.000
1/2 (LH + LC) - 1/2 (EH + EC)	(0.011)	(0.006)	(0.007)	(0.004)	(0.003)

Notes: Unit of observation is the apartment. We include all newly registered citizens in the sample apartments (column 1), those who were not registered before (column 2), those who were registered in another city before (column 3), those who were registered at another address in the same city before (column 4) and those who were "automatically" registered (column 5). Control variables include: number of mailboxes in the building and number of last names found on the mailbox of the apartment that were absent from the 2011 voter rolls. Clustered standard errors in parentheses.

***, **, * indicate significance at 1, 5 and 10%.

Table A4: Impact on the number of new registrations, by group of canvassers

	(1)	(2)
	Number of new registrations	
Treatment administered by students	0.048***	0.050***
	(0.010)	(0.010)
Treatment administered by NGO members	0.051***	0.038**
	(0.018)	(0.018)
Treatment administered by party activists	0.048**	0.044**
	(0.022)	(0.021)
Strata fixed effects	Yes	Yes
Apartment & Building controls	No	Yes
Observations	20458	20458
R-squared	0.02	0.03
Mean in Control Group	0.168	0.168

Notes: Clustered standard errors are in parentheses. ***, **, * indicate significance at 1, 5 and 10%. We take the apartment as the unit of observation and include all newly registered citizens in the sample apartments.
All treatments are pooled together. The control variables are the number of mailboxes in the building and the number of last names found on the mailbox of the apartment that were absent from the 2011 voter rolls.

Table A5: Electoral participation of citizens by registration status, treatment group, and previous registration status

	(1)	(2)	(3)	(4)	(5)	(6)
	Presidential elections		General elections		Average on	One vote at
	1st round	2nd round	1st round	2nd round	all rounds	least
Newly reg., previously not reg. x Any treatment (1)	0.012	-0.023	-0.061*	-0.005	-0.020	0.010
	(0.021)	(0.019)	(0.034)	(0.034)	(0.020)	(0.015)
Newly reg., previously reg. in another city x Any treatment (2)	-0.048***	-0.040***	-0.041	-0.038	-0.040**	-0.007
	(0.013)	(0.015)	(0.030)	(0.029)	(0.016)	(0.009)
Newly reg., previously reg. at another address in this city x Any treatment (3)	-0.001	-0.005	-0.029	-0.069	-0.023	-0.001
	(0.030)	(0.025)	(0.047)	(0.046)	(0.027)	(0.019)
Newly reg., automatically reg. x Any treatment (4)	0.034	-0.019	-0.043	-0.016	-0.010	-0.036
	(0.045)	(0.041)	(0.043)	(0.042)	(0.030)	(0.036)
Newly reg., previously not reg.	0.171***	0.179***	0.049	0.042	0.111***	0.154***
	(0.019)	(0.017)	(0.031)	(0.030)	(0.018)	(0.015)
Newly reg., previously reg. in another city	0.242***	0.209***	0.136***	0.098***	0.171***	0.186***
	(0.011)	(0.012)	(0.026)	(0.025)	(0.014)	(0.008)
Newly reg., previously reg. at another address in this city	0.189***	0.185***	0.172***	0.191***	0.181***	0.165***
	(0.027)	(0.022)	(0.041)	(0.040)	(0.024)	(0.017)
Newly reg., automatically reg.	-0.048	0.017	-0.116***	-0.145***	-0.073***	0.047
	(0.039)	(0.036)	(0.038)	(0.037)	(0.026)	(0.031)
Constant	0.703***	0.725***	0.447***	0.430***	0.577***	0.786***
	(0.003)	(0.003)	(0.004)	(0.004)	(0.003)	(0.003)
Observations	33773	33772	33788	33754	33665	33665
R-squared	0.02	0.02	0.01	0.01	0.02	0.02
Linear combinations of estimates:						
Av. difference between newly reg. in treatment gr. and control, controlling for	-0.011	-0.027**	-0.046**	-0.028	-0.027**	-0.004
previous reg. status (Weighted average of (1), (2), (3) and (4))	(0.011)	(0.011)	(0.019)	(0.019)	(0.011)	(0.008)

Notes: Unit observation is the individual participation at a given electoral round. We include all previously registered citizens (registered before 2011) and all newly registered citizens (registered in 2011). Previously registered citizens are the omitted category. Newly registered citizens are included separately, according to their former registration status. Sample size is slightly smaller than in Table 2 since we drop a few newly registered citizens whose previous registration status is unknown.

We estimate differences in the propensity to vote of newly registered citizens in the control and the treatment groups. Column 6: "One vote at least" is equal to 1 if the individual participated in any of the four rounds. Clustered standard errors are in parentheses.

***, **, * indicate significance at 1, 5 and 10%.

Table A6: Percent decline in turnout between the presidential and general elections, by registration status and treatment group

Panel A. Comparison between newly registered citizens and previously registered citizens

	(1)
Previously reg. citizens, all groups	-0.384
	(0.005)***
Newly reg. citizens, control group	-0.428
	(0.016)***
Difference between newly reg. citizens and previously reg. Citizens	-0.044
	(0.016)***

Panel B. Comparison between newly registered citizens in the treatment groups and in the control group

	(1)	(2)	(3)
	All treatment gr.	Canvassing gr.	Home registration gr.
Newly reg. citizens, treatment groups	-0.453	-0.434	-0.467
	(0.008)***	(0.016)***	(0.013)***
Difference between newly reg. citizens in treatment groups and control group	-0.025	-0.006	-0.039
	(0.018)	(0.022)	(0.021)*
Difference between newly reg. citizens in treatment groups and control group, controlling for initial registration status	-0.030	-0.011	-0.042
	(0.018)*	(0.023)	(0.021)**

Notes: We report the point estimates and standard errors of non-linear combinations of coefficients obtained after running seemingly unrelated regressions of Equation [2]. Panel A estimates the turnout decline between the presidential and general elections among previously registered citizens and among newly registered citizens in the control group. As an example of how to read the table, the coefficients in Panel A mean that the participation of previously registered citizens declined by 38.4% between the presidential and general elections. Newly registered citizens in the control group experienced a decline of 42.8%, 4.4 percentage points stronger than the previously registered. Panel B estimates the turnout decline among newly registered citizens in the control group and treatment groups. The last line reports the weighted average of the difference between participation decline for newly registered citizens with different initial registration status in the treatment and control groups.

***, **, * indicate significance at 1, 5 and 10%.

Table A7: Percent decline in turnout between the presidential and general elections among newly registered citizens by treatment group and previous registration status

	(1) All treatment gr.	(2) Canvassing gr.	(3) Home registration gr.
Panel A. Newly reg. citizens who were previously unregistered			
Control group		-0.456	
		(0.028)***	
Treatment groups	-0.49	-0.476	-0.527
	(0.014)***	(0.029)***	(0.021)***
Difference between treatment groups and control group	-0.034	-0.02	-0.07
	(0.031)	(0.040)	(0.035)**
Panel B. Newly reg. citizens who were previously registered in another city			
Control group		-0.409	
		(0.023)***	
Treatment groups	-0.423	-0.39	-0.434
	(0.013)***	(0.025)***	(0.021)***
Difference between treatment groups and control group	-0.015	0.019	-0.026
	(0.026)	(0.033)	(0.031)
Panel C. Newly reg. citizens who were previously registered at another address in this city			
Control group		-0.312	
		(0.036)***	
Treatment groups	-0.364	-0.346	-0.381
	(0.021)***	(0.036)***	(0.038)***
Difference between treatment groups and control group	-0.052	-0.034	-0.069
	(0.042)	(0.051)	(0.052)
Panel D. Newly reg. citizens who were automatically registered			
Control group		-0.559	
		(0.046)***	
Treatment groups	-0.605	-0.619	-0.546
	(0.021)***	(0.033)***	(0.038)***
Difference between treatment groups and control group	-0.046	-0.059	0.013
	(0.051)	(0.057)	(0.059)

Notes: We report the point estimates and standard errors of non-linear combinations of coefficients obtained after running seemingly unrelated regressions of Equation [A1].
As an example of how to read the table, the coefficients in Table A mean that the participation of newly registered citizens who previously unregistered declined by 45.6% and by 49% between the presidential and general elections in the control group and in the treatment groups, for a difference of 3.4 percentage points between treatment and control.
***, **, * indicate significance at 1, 5 and 10%.

Table A8: Impact of the visits on the participation of citizens registered prior to the visits

	(1)	(2)	(3)	(4)	(5)	(6)
	Presidential elections		General elections		Average on all	One vote at
	1st round	2nd round	1st round	2nd round	rounds	least
Any treatment	-0.013	-0.005	-0.006	0.000	-0.006	-0.004
	(0.012)	(0.012)	(0.014)	(0.014)	(0.010)	(0.011)
Strata fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Individual and Building controls	Yes	Yes	Yes	Yes	Yes	Yes
Observations	8367	8367	8401	8394	8349	8349
R-squared	0.05	0.05	0.10	0.10	0.09	0.04
Mean in Control Group	0.733	0.752	0.472	0.452	0.602	0.808
95% Conf. Int. on "Any treatment"	[-0.036 ; 0.010]	[-0.027 ; 0.018]	[-0.034 ; 0.021]	[-0.027 ; 0.028]	[-0.026 ; 0.015]	[-0.025 ; 0.017]

Notes: Unit observation is the individual participation at a given electoral round. We include all citizens registered prior to the visits. We estimate differences in the electoral participation of these citizens in the control group and all treatment groups pooled together. Column 6: "One vote at least" is equal to 1 if the individual participated in any of the four rounds. Controls include: age, gender, number of previously registered citizens in the apartment, and number of mailboxes in the building. Clustered standard errors in parentheses.

***, **, * indicate significance at 1, 5 and 10%.

Table A9: Characteristics of newly registered citizens in apartments which opened their door for a late home registration visit

	(1)	(2)	(3)	(4)	(5)
	Individual characteristics			Apartment and building characteristics	
	Gender	Age	Born abroad	Number of names of citizens not registered	Number of mailboxes
Early Home registration + Late	0.010	-0.243	0.097	-0.004	-2.182
Home registration	(0.040)	(1.443)	(0.059)	(0.076)	(2.950)
Constant	0.449***	37.438***	0.304***	1.330***	19.383***
	(0.028)	(0.926)	(0.037)	(0.059)	(1.901)
Observations	460	460	459	460	460
R-squared	0.00	0.00	0.01	0.00	0.01

Notes: The sample includes all newly registered citizens living in apartments which opened their door at the late visit in the treatment groups "Early Canvassing & Late Home registration" and "Early Home registration & Late Home registration". Omitted group is "Early Canvassing & Late Home registration". We consider individual characteristics (columns 1 through 3) as well as the number of names of citizens not registered initially found on the mailbox corresponding to the person's apartment and the total number of mailboxes and baseline registration rate at her address. Clustered standard errors in parentheses.

***, **, * indicate significance at 1, 5 and 10%.

Table A10: Impact of the interventions on level of politicization

	(1)	(2)
	Index of politicization	
Panel A. All treatments pooled together		
Any treatment	0.047*	0.056**
	(0.024)	(0.025)
Individual controls	No	Yes
Observations	1465	1219
R-squared	0.00	0.18
Panel B. Each treatment included separately		
Early Canvassing (EC)	-0.019	0.021
	(0.040)	(0.040)
Late Canvassing (LC)	0.073**	0.090***
	(0.034)	(0.035)
Early Home registration (EH)	0.095**	0.095**
	(0.038)	(0.038)
Late Home registration (LH)	0.053	0.036
	(0.035)	(0.035)
Early Canvassing & Late Home registration (EC&LH)	0.046	0.046
	(0.038)	(0.036)
Early Home registration & Late Home registration (EH&LH)	0.031	0.044
	(0.039)	(0.037)
Individual controls	No	Yes
Observations	1465	1219
R-squared	0.01	0.18
Linear combinations of estimates:		
Av. difference between newly registered in Canvassing gr. and control	0.027	0.056
1/2 (EC + LC)	(0.030)	(0.031)*
Av. difference between newly registered in Home registration gr. and control	0.074	0.065
1/2 (EH + LH)	(0.030)**	(0.030)**
Av. difference between newly registered in Two visits gr. and control	0.038	0.045
1/2 (EC&LH + EH&LH)	(0.031)	(0.030)

Notes: Unit of observation is the respondent to the post-electoral survey. The outcome is the standardized average of 36 indicators of level of politicization. Control variables include: gender, age, age squared, unemployed, inactive, less than end-of-high-school diploma, end-of-high-school diploma, higher than end-of-high-school diploma, household size, single, speaks some French and some other language, speaks other language only, tenant in social housing, tenant in private housing, less than 1100 euros income, income between 1100 and 1500 euros, income above 1500 euros, has lived in the city for less than 5 years, between 5 and 10 years, more than 10 years, and country of birth. Clustered standard errors in parentheses.
***, **, * indicate significance at 1, 5 and 10%.

Table A11: Impact on the selection operated by the registration process

Joint significativity of all selection variables interacted with…		(1) Registered in his city	(2) Registered (in his city or elsewhere)	(3) Registered at his address	(4) Average turnout	(5) One vote at least
Panel A. Any treatment						
Constant	statistic	315.7	52.9	52.1	219.0	111.6
	p-value	0.000***	0.003***	0.004***	0.000***	0.000***
Any treatment group	statistic	65.8	41.4	27.6	67.3	63.1
	p-value	0.000***	0.049**	0.488	0.000***	0.000***
Observations		1012	1009	1012	998	998
R-squared		0.18	0.11	0.09	0.12	0.10
Panel B. Treatment groups included separately						
Constant	statistic	315.7	52.9	52.1	219.0	111.6
	p-value	0.000***	0.003***	0.004***	0.000***	0.000***
Door-to-door canvassing group	statistic	45.8	34.6	33.0	39.7	45.4
	p-value	0.018**	0.183	0.235	0.070*	0.020**
Home registration group	statistic	40.9	41.7	22.2	48.6	41.8
	p-value	0.055*	0.046**	0.771	0.009***	0.046**
Two visits group	statistic	70.1	58.5	33.5	55.0	69.2
	p-value	0.000***	0.001***	0.218	0.002***	0.000***
Home registration group -	statistic	16.8	37.2	30.1	23.1	29.4
Door-to-door canvassing group	p-value	0.953	0.115	0.358	0.729	0.394
Two visits group -	statistic	43.0	47.3	30.0	25.4	32.2
Home registration group	p-value	0.035**	0.013**	0.365	0.609	0.266
Observations		1012	1009	1012	998	998
R-squared		0.23	0.17	0.14	0.16	0.14

Notes: Unit of observation is the respondent to the post-electoral survey. We consider five outcomes: registration in the individual's city (column 1); registration in this or another city (column 2); registration at his address (column 3); average participation at the four electoral rounds of 2012 (column 4); and a dummy equal to 1 if the individual participated in any of the four rounds (column 5). The first and third outcomes are administrative data. The second, fourth, and fifth are self-reported.

We regress individual registration or participation on various individual characteristics and their interaction with treatment dummies. In Panel A, we report the joint significativity of all characteristics and of the characteristics interacted with a treatment dummy. In Panel B, we report the joint significativity of all characteristics, of the characteristics interacted with three treatment dummies (Door-to-door canvassing, Home registration, and Two visits), and of the difference between characteristics interacted with two different treatment dummies.

***, **, * indicate significance at 1, 5 and 10%.

Table A12: Impact on the political preferences selected by the registration process

	(1)	(2)	(3)	(4)	(5)
	Position on the left	Vote for left candidate			
		Presidential elections		General elections	
		1st round	2nd round	1st round	2nd round
Panel A. Determinants of left/right position and vote choice among respondents to the postelectoral survey					
Gender	-0.036	-0.005	0.013	-0.030	0.006
	(0.043)	(0.040)	(0.034)	(0.048)	(0.045)
Age	-0.021	-0.031**	-0.030**	0.012	-0.014
	(0.015)	(0.016)	(0.015)	(0.018)	(0.021)
Immigrant	0.151***	0.109***	0.084***	0.155***	0.158***
	(0.038)	(0.038)	(0.032)	(0.042)	(0.041)
Constant	0.845***	0.893***	0.951***	0.747***	0.864***
	(0.059)	(0.060)	(0.054)	(0.075)	(0.085)
Observations	424	421	415	249	197
R-squared	0.03	0.02	0.02	0.04	0.05
Panel B. Predicted position on the left and vote shares for the entire sample of registered citizens					
Newly registered x Any treatment	0.001	0.001	0.001	-0.002	0.001
	(0.003)	(0.003)	(0.002)	(0.005)	(0.005)
Newly registered	0.027***	0.034***	0.032***	-0.005	0.017***
	(0.003)	(0.003)	(0.002)	(0.004)	(0.004)
Constant	0.773***	0.779***	0.847***	0.837***	0.846***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Observations	28083	20196	20792	12365	9782
R-squared	0.02	0.05	0.05	0.00	0.01

Notes: In Panel A, the unit of analysis is the respondent to the post-electoral survey and the outcomes are reported left/right position and vote choice at each of the four rounds. Only respondents who are actually registered in their city are included in the sample and only citizens who voted are included in the sample for the regression of the corresponding electoral round. The outcomes are regressed on all variables available both for respondents to the postelectoral survey and for the entire sample: age, gender, immigrant.
Panel B uses the coefficients estimated in Panel A to predict the left/right position and vote choice of each registered citizen in the four cities included in the survey sample and compares the predicted position of different types of citizens. Only citizens who actually voted are included in the sample for the regression of the corresponding electoral round. For the second round of the general elections, we exclude the cities Saint-Denis and Sevran, in which only one (left-wing) candidate remained at the second round. Clustered standard errors in parentheses.
***, **, * indicate significance at 1, 5 and 10%.