Gender differences in re-contesting decisions: New evidence from French municipal elections *Online Appendix*

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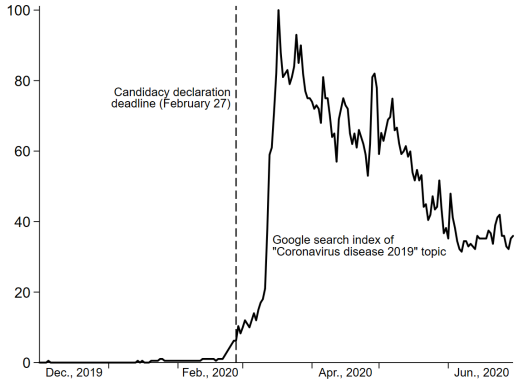
A Supplementary tables and figures

Figure A1: Illustrative sample of campaign posters.

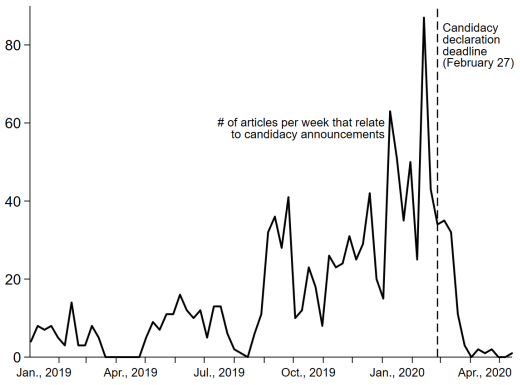
Pictures of campaign posters used in the 2008 and 2014 municipal elections, collected via *Google Images*.

Figure A2: COVID-related online search, press coverage of candidacy announcements, COVID-related hospitalizations and press coverage that report about postponing the election around the 2020 candidacy declaration deadline.

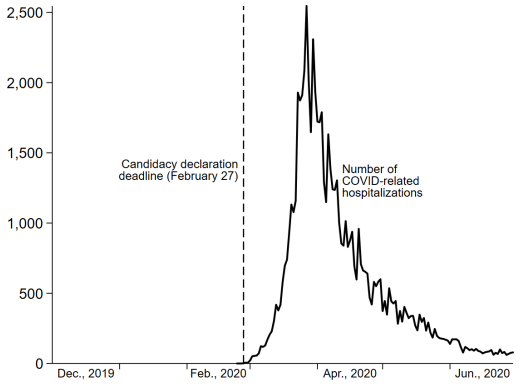
(a) COVID-19 topic online search.



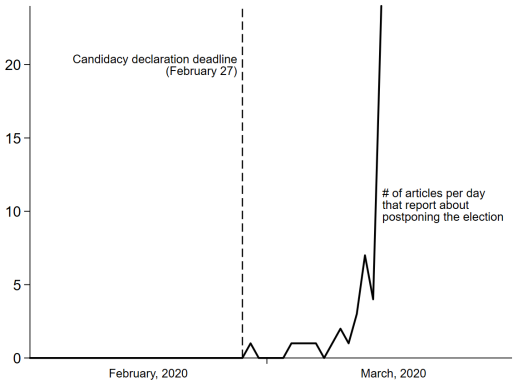
(b) Press coverage of candidacy announcements.



(c) COVID-related hospitalizations.



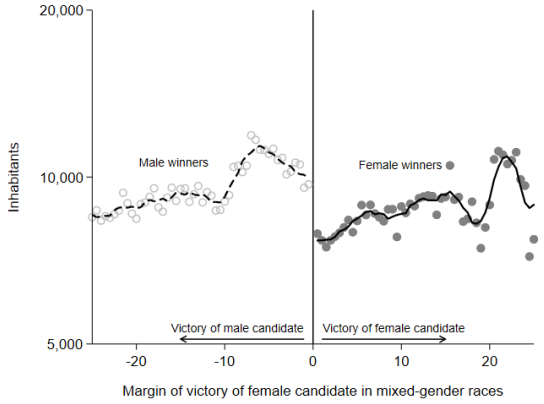
(d) Press coverage about postponing elections.



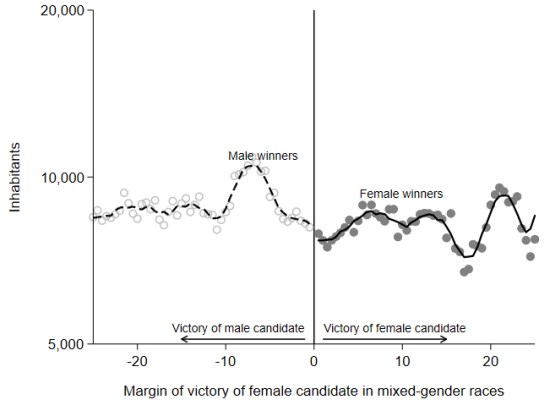
Sub-figure (a) displays the search volume index—from Google Trends—of "Coronavirus disease 2019" topic for France from December 1, 2019 to June 30, 2020. Sub-figure (b) uses data from *Cision Europresse* and plots the weekly number of French press articles that contain the words "*annonce* (announcement)", "*candidature* (candidacy)" and "*élection municipale* (municipal election)" from January 1, 2019 to April 30, 2020. Sub-figure (c) plots the daily national count of COVID-related hospitalizations—available from *Santé publique France*—from the earliest available date (February 24, 2020) to June 30, 2020. Sub-figure (d) uses *Cision Europresse* data and plots the dailty number of French press articles that contain the words "*premier tour* (first round)", "*élection municipale* (municipal election)", "*report* (postponement) or *annulation* (cancellation) or *maintien* (confirmed organization)" and "*covid* or *coronavirus*" for February 1 to March 15, 2020.

Figure A3: Differences in municipality size.

(a) Population.



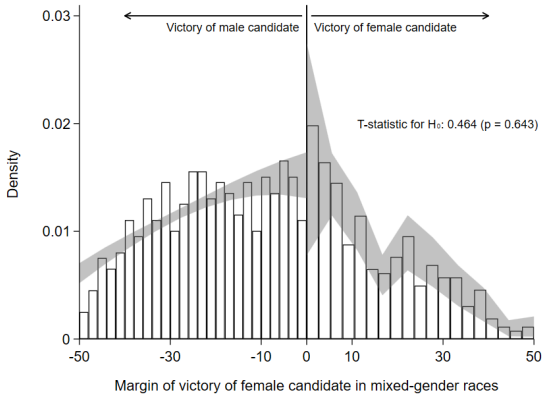
(b) Population, excluding municipalities of more than 100,000 inhabitants.



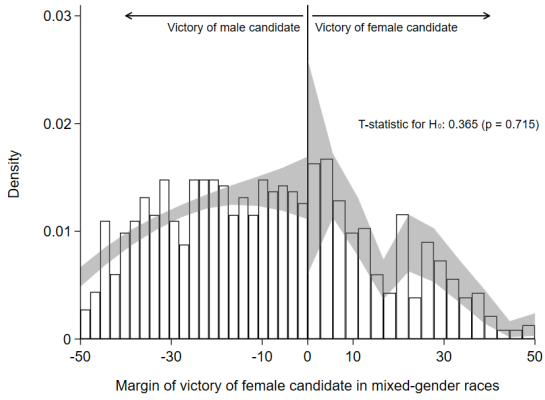
The sample is made of 2008 and 2014 elections whose two best candidates are of different genders. Each sub-figure plots the local average of municipalities' size along the margin of victory of the female candidate using 2.5% vote share intervals. Lines are locally smoothed series using a 5-dot window. Sub-figure (b) excludes 35 municipalities with more than 100,000 inhabitants.

Figure A4: Distribution of mixed-gender races in municipalities of more than 4,500 inhabitants.

(a) Mixed-gender races in municipalities of more than 4,500 inhabitants.

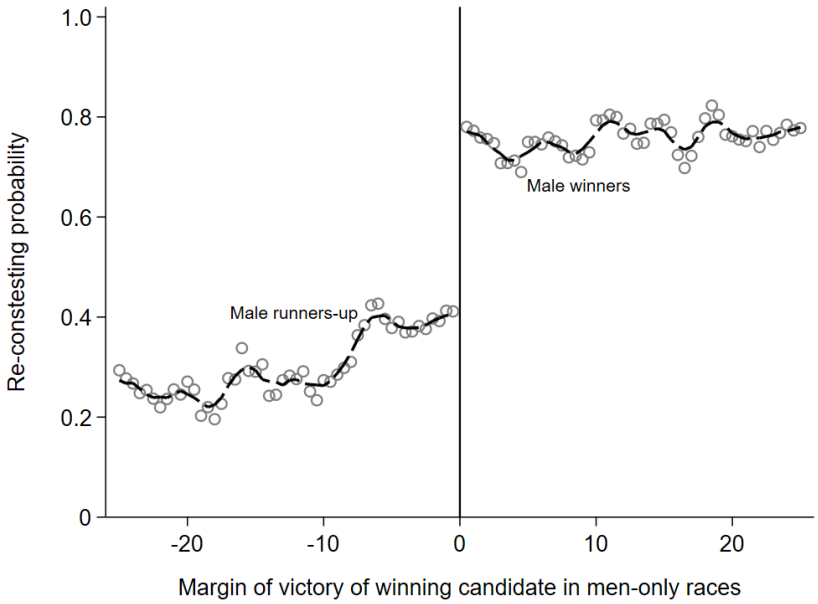


(b) Mixed-gender races in municipalities of more than 5,500 inhabitants.



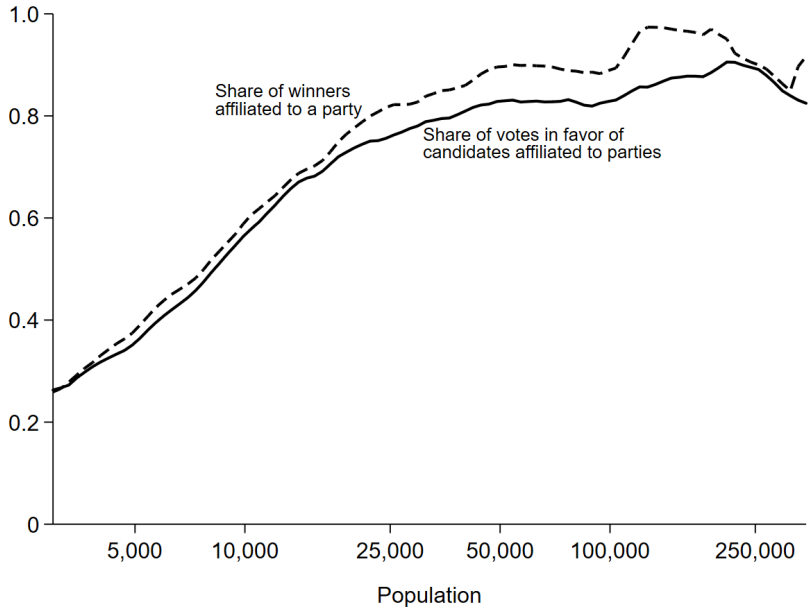
The sample is made of 2008 and 2014 elections whose two best candidates are of different genders. Sub-figure (a) further restricts the sample to municipalities of more than 4,500 inhabitants, and sub-figure (b) to municipalities above 5,500 inhabitants. Each sub-figure plots the distribution of gender-mixed races along the margin of victory of the female candidate. The displayed t-statistic tests for the null hypothesis of no manipulation. It is obtained following Cattaneo et al. (2020) using bandwhith selection based on MSE criteria for each side of the cutoff separately and a first-order polynomial.

Figure A5: Re-contesting probability of runners-up and winners in men-only races.



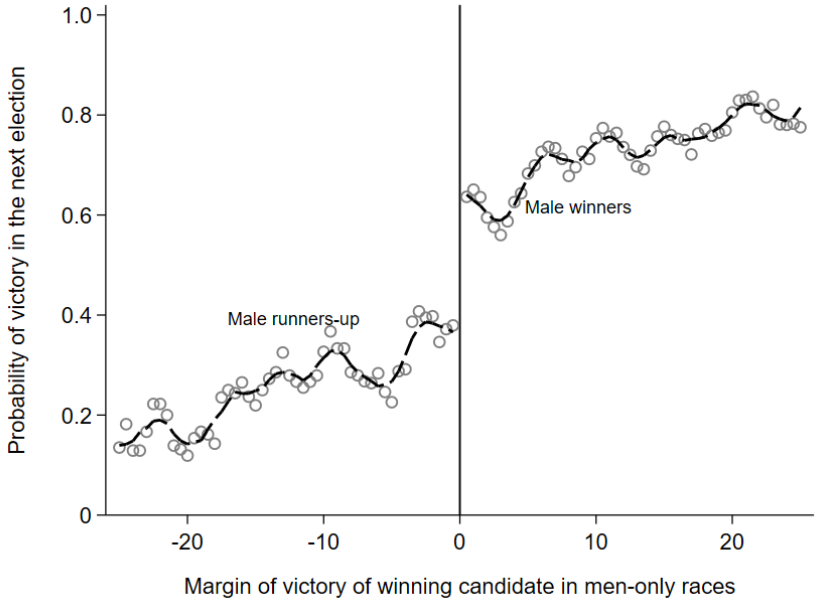
Observations are candidates who ran in the 2008 and 2014 municipal elections. A 2008 (2014) candidate is considered as re-contesting if she will run again for office in 2014 (2020). The sample is restricted to the best two candidates of each election and to *men-only* races. Dots represent averages within windows of 2% vote margin that moves in 0.5% steps. Lines are locally smoothed series using a 5-dot window. Graphical representation is restricted to the $[-25\%, 25\%]$ interval.

Figure A6: Relationship between municipality size and party presence.



The sample is made of 2008 and 2014 elections. Lines are locally smoothed averages of the share of elections around each municipality population value that have a winner who is formally affiliated to a political party or of the share of first round votes that are in favor of candidates formally affiliated to a political party.

Figure A7: Probability of victory in the next election of runners-up and winners in men-only races.



Observations are candidates who ran in the 2008 and 2014 municipal elections and who will run again for office in the next election. A 2008 (2014) candidate is considered as (re-)elected if she wins in the 2014 (2020) election. The sample is restricted to the best two candidate of each election and to *men-only* races. Dots represent averages within windows of 2% vote margin that moves in 0.5% steps. Lines are locally smoothed series using a 5-dot window. Graphical representation is restricted to the $[-25\%, 25\%]$ interval.

Table A1: Incomplete terms by gender.

	Female winners	Male winners	Total
# of races	478	815	1,293
Complete terms	450 (94.1%)	743 (91.2%)	1,193 (92.3%)
Incomplete terms	28	72	100
Ageing or health	8 (28.6%)	20 (27.8%)	28 (28.0%)
Death	1 (3.6%)	15 (20.8%)	16 (16.0%)
Move to other position	15 (53.6%)	23 (31.9%)	38 (38.0%)
Political scandal or *coup*	2 (7.1%)	8 (11.1%)	10 (10.0%)
Other	2 (7.1%)	6 (8.3%)	8 (8.0%)

This table lists reasons of incomplete terms by winning candidates of 2008 and 2014 municipal elections. The sample is restricted to elections with top two candidates of different genders and to elections that won't be followed by a by-election before the next national wave of municipal elections. Information manually collected from *ad-hoc* online searches using media websites and municipalities' pages on *Wikipedia*.

Table A2: Predicted probability of victory for runners-up and winners by gender in mixed-gender elections.

	Runners-up	Winners	Win - loss gap
Males	45.7	49.7	4.1 [0.116]
Females	45.7	47.6	1.8 [0.436]
Females - Males	0.1 [0.973]	-2.1 [0.400]	-2.2 [0.520]

P-values of differences reported in brackets. Estimate from expression (1) with gender- and vote outcome-specific optimal bandwidths and triangular kernel weights, using as dependent variable the predicted probability of victory estimated from expression (2) with a random forest model. The model is trained with men-only elections and used to predict the probabilities of winning in mixed-gender elections. Observations are candidates who ran in the 2008 and 2014 municipal elections. The sample is restricted to the best two candidates of each election. *Mixed-gender* races are elections whose two best candidates are of different genders. *Men-only* races are elections who two best candidates are both males. P-values of differences across genders and vote outcomes calculated from $1,000$ permutations of gender and outcome respectively.

Table A3: Re-contesting probability of runners-up and winners by gender: Regression's form coefficients.

A - Mixed-gender races	Will run in next election
Winner $(\alpha_m^W - \alpha_m^L)$	0.284
	[0.000]
Margin	0.031
	[0.043]
Winner × Margin	-0.029
	[0.071]
Female $(\alpha_m^L - \alpha_f^L)$	-0.094
	[0.067]
Winner × Female $\left((\alpha_m^W - \alpha_m^L) - (\alpha_f^W - \alpha_f^L)\right)$	0.139
	[0.026]
Female × Margin	-0.024
	[0.143]
Winner × Female × Margin	0.019
	[0.312]
Constant (α_m^L)	0.455
	[0.000]

	Optimal bandwidth	# of observations
Female winners	16.86	261
Female runners-up	18.90	297
Male winners	19.18	299
Males runners-up	11.44	204
Total		1,061

B - Men-only races	Will run in next election
Winner $(\alpha^W - \alpha^L)$	0.319
	[0.000]
Margin	-0.012
	[0.000]
Winner × Margin	0.012
	[0.005]
Constant (α^L)	0.425
	[0.000]

	Optimal bandwidth	# of observations
Winners	16.82	1,442
Runners-up	17.28	1,482
Total		2,924

P-values calculated from 1,000 permutations reported between brackets. Estimated coefficients from expression (1) with gender- and vote outcome-specific optimal bandwidths, and triangular kernel weights. Observations are candidates who ran in the 2008 and 2014 municipal elections. A 2008 (2014) candidate is considered as re-contesting if she will run again for office in 2014 (2020). The sample is restricted to the best two candidates of each election. *Mixed-gender* races are elections whose two best candidates are of different genders. *Men-only* races are elections who two best candidates are both males. Panel A reports estimated coefficients from expression (1) estimated simultaneously from female and male candidates in mixed-gender races by supplementing (1) with gender-related interaction terms. Panel B reports estimated coefficients from expression (1) estimated from candidates in men-only races.

Table A4: Re-contesting probability of runners-up and winners by gender: Robustness checks.

A - Gender-specific optimal bandwidths

	Runners-up	Winners	Win - loss gap
Males	41.2	73.7	32.5 [0.000]
Females	36.2	78.8	42.6 [0.000]
Females - Males	-5.0 [0.279]	5.1 [0.204]	10.1 [0.083]
Males in men-only races	42.5	74.4	31.9 [0.000]
Males - Males in men-only races	-1.3 [0.722]	-0.8 [0.817]	0.5 [0.910]
Females - Males in men-only races	-6.3 [0.071]	4.4 [0.172]	10.6 [0.017]

B - Unique optimal bandwidth

	Runners-up	Winners	Win - loss gap
Males	42.3	75.5	33.2 [0.000]
Females	36.2	78.4	42.2 [0.000]
Females - Males	-6.1 [0.172]	2.9 [0.492]	9.1 [0.144]
Males in men-only races	42.6	74.4	31.8 [0.000]
Males - Males in men-only races	-0.2 [0.956]	1.1 [0.749]	1.3 [0.783]
Females - Males in men-only races	-6.4 [0.085]	4.0 [0.225]	10.4 [0.027]

C - 2008 elections

	Runners-up	Winners	Win - loss gap
Males	42.4	77.8	35.4 [0.000]
Females	33.3	80.7	47.5 [0.000]
Females - Males	-9.1 [0.293]	3.0 [0.591]	12.1 [0.211]
Males in men-only races	41.7	75.1	33.4 [0.000]
Males - Males in men-only races	0.7 [0.915]	2.7 [0.532]	2.0 [0.780]
Females - Males in men-only races	-8.4 [0.164]	5.6 [0.285]	14.1 [0.064]

D - 2014 elections

	Runners-up	Winners	Win - loss gap
Males	46.3	72.0	25.7 [0.001]
Females	33.5	76.3	42.8 [0.000]
Females - Males	-12.8 [0.043]	4.3 [0.448]	17.1 [0.037]
Males in men-only races	44.0	74.2	30.2 [0.000]
Males - Males in men-only races	2.3 [0.696]	-2.3 [0.581]	-4.5 [0.512]
Females - Males in men-only races	-10.5 [0.022]	2.1 [0.661]	12.6 [0.045]

E - Municipalities with more than $5,500$ inhabitants.

	Runners-up	Winners	Win - loss gap
Males	42.7	71.9	29.3 [0.000]
Females	21.1	84.7	63.6 [0.000]
Females - Males	-21.6 [0.000]	12.8 [0.009]	34.4 [0.000]
Males in men-only races	45.0	74.8	29.8 [0.000]
Males - Males in men-only races	-2.3 [0.658]	-2.9 [0.412]	-0.6 [0.925]
Females - Males in men-only races	-23.9 [0.000]	10.0 [0.012]	33.8 [0.000]

P-values of differences reported in brackets. Re-contesting probabilities estimated from expression (1) with triangular kernel weights and optimal bandwidths. Bandwidths are gender-specific in panel A, while a unique common bandwidth is used in panel B. Bandwidths are gender- and vote outcome-specific in panels C and D. Observations are candidates who ran in the 2008 and 2014 municipal elections. In panels C and D, the sample is restricted to 2008 and 2014 candidates, respectively. A 2008 (2014) candidate is considered as re-contesting if she will run again for office in 2014 (2020). The sample is restricted to the best two candidates of each election. *Mixed-gender* races are elections whose two best candidates are of different genders. *Men-only* races are elections who two best candidates are both males. P-values of differences across genders, vote outcomes, and groups calculated from $1,000$ permutations of gender, outcome, and group, respectively.

Table A5: Re-contesting probability of runners-up and winners by gender: Accounting for past participation, incumbency status, age, political orientation, occupation, municipality size and party involvement.

A - Accounting for past participation

	Runners-up	Winners	Win-loss gap
Males	45.0	72.4	27.4 [0.000]
Females	35.4	78.3	42.9 [0.000]
Females - Males	-9.7 [0.056]	5.9 [0.149]	15.5 [0.012]
Males in men-only races	43.2	75.0	31.8 [0.000]
Males - Males in men-only races	1.9 [0.645]	-2.5 [0.429]	-4.4 [0.385]
Females - Males in men-only races	-7.8 [0.027]	3.3 [0.290]	11.1 [0.015]

B - Accounting for incumbency status

	Runners-up	Winners	Win-loss gap
Males	43.2	75.9	32.7 [0.000]
Females	33.5	76.5	43.0 [0.000]
Females - Males	-9.7 [0.050]	0.6 [0.864]	10.3 [0.087]
Males in men-only races	42.7	71.7	29.0 [0.000]
Males - Males in men-only races	0.5 [0.916]	4.1 [0.177]	3.7 [0.453]
Females - Males in men-only races	-9.2 [0.007]	4.7 [0.132]	13.9 [0.002]

C - Accounting for age

	Runners-up	Winners	Win-loss gap
Males	48.0	71.5	23.6 [0.000]
Females	35.8	77.9	42.1 [0.000]
Females - Males	-12.1 [0.020]	6.4 [0.111]	18.5 [0.002]
Males in men-only races	45.8	74.4	28.6 [0.000]
Males - Males in men-only races	2.2 [0.593]	-2.9 [0.341]	-5.1 [0.307]
Females - Males in men-only races	-10.0 [0.006]	3.5 [0.254]	13.4 [0.003]

D - Accounting for political orientation

	Runners-up	Winners	Win-loss gap
Males	42.9	72.8	29.9 [0.000]
Females	35.2	80.3	45.1 [0.000]
Females - Males	-7.7 [0.139]	7.5 [0.075]	15.2 [0.017]
Males in men-only races	42.5	75.1	32.6 [0.000]
Males - Males in men-only races [0.926]	-2.3 [0.499]	-2.7 [0.601]	
Females - Males in men-only races	-7.2 [0.045]	5.2 [0.128]	12.4 [0.008]

E - Accounting for occupation

	Runners-up	Winners	Win-loss gap
Males	44.2	73.5	29.4 [0.000]
Females	37.2	76.5	39.4 [0.000]
Females - Males	-7.0 [0.166]	3.0 [0.458]	10.0 [0.110]
Males in men-only races	43.7	74.5	30.8 [0.000]
Males - Males in men-only races	0.4 [0.921]	-1.0 [0.755]	-1.4 [0.779]
Females - Males in men-only races	-6.6 [0.060]	2.0 [0.528]	8.6 [0.071]

Continued on next page. See notes on page 12.

Table A5: Re-contesting probability of runners-up and winners by gender: Accounting for past participation, incumbency status, age, political orientation, occupation, municipality size and party involvement (continued).

F - Accounting for municipality size

	Runners-up	Winners	Win-loss gap
Males	47.9	73.0	25.1 [0.000]
Females	35.5	80.2	44.7 [0.000]
Females - Males	-12.4 [0.017]	7.2 [0.088]	19.5 [0.002]
Males in men-only races	41.6	74.4	32.8 [0.000]
Males - Males in men-only races	6.3 [0.125]	-1.4 [0.694]	-7.7 [0.141]
Females - Males in men-only races	-6.0 [0.089]	5.8 [0.087]	11.8 [0.011]

G - Accounting for party involvement

	Runners-up	Winners	Win-loss gap
Males	46.5	74.0	27.5 [0.000]
Females	36.6	79.0	42.4 [0.000]
Females - Males	-9.9 [0.047]	5.0 [0.237]	14.9 [0.016]
Males in men-only races	42.5	74.4	32.0 [0.000]
Males - Males in men-only races	4.0 [0.317]	-0.5 [0.880]	-4.5 [0.380]
Females - Males in men-only races	-5.9 [0.098]	4.6 [0.161]	10.4 [0.023]

H - Accounting for past participation, incumbency, age, political orientation, occupation, municipality size and party involvement

	Runners-up	Winners	Win-loss gap
Males	43.8	74.3	30.6 [0.000]
Females	35.0	81.1	46.1 [0.000]
Females - Males	-8.7 [0.081]	6.8 [0.093]	15.5 [0.013]
Males in men-only races	46.4	73.8	27.4 [0.000]
Males - Males in men-only races	-2.6 [0.541]	0.6 [0.851]	3.1 [0.532]
Females - Males in men-only races	-11.3 [0.001]	7.3 [0.019]	18.7 [0.000]

P-values of differences reported in brackets. Re-contesting probabilities estimated from expression (1) with gender- and vote outcome-specific optimal bandwidths and triangular kernel weights, supplemented by mean-centred variables (interacted with genders and election outcomes) that identify correspond to dimensions indicated in each panel's head. Dummy variables are used for past-participation, incumbency status, political orientation, occupation and party involvement. See notes of Table 1 for the definition of the different categories. Continuous variables are uses for candidates' age and municipality's size, measured with the log of a municipality's population. Observations are candidates who ran in the 2008 and 2014 municipal elections. A 2008 (2014) candidate is considered as re-contesting if she will run again for office in 2014 (2020). The sample is restricted to the best two candidates of each election. *Mixed-gender* races are elections whose two best candidates are of different genders. *Men-only* races are elections who two best candidates are both males. P-values of differences across genders, vote outcomes, and groups calculated from $1,000$ permutations of gender, outcome, and group, respectively.

Table A6: Re-contesting probability of runners-up and winners by gender: Differences across subgroups along past participation, age, occupation, political orientation, municipality size and party involvement.

A - New and former candidates

	Former candidates - New candidates		
	Runners-up	Winners	Win-loss gap
Males	-20.0 [0.004]	-34.1 [0.000]	-14.1 [0.105]
Females	-16.8 [0.013]	-3.9 [0.511]	12.9 [0.145]
Females - Males	3.2 [0.742]	30.2 [0.000]	27.0 [0.030]
Males in men-only races	-10.8 [0.000]	-24.7 [0.000]	-13.9 [0.000]
Males - Males in men-only races	9.2 [0.221]	9.3 [0.098]	0.2 [0.985]
Females - Males in men-only races	-6.0 [0.424]	20.9 [0.001]	26.9 [0.006]

B - Challengers and incumbents

	Incumbents - Challengers		
	Runners-up	Winners	Win-loss gap
Males	-19.1 [0.003]	-22.5 [0.001]	-3.3 [0.719]
Females	-20.8 [0.000]	-21.7 [0.000]	-0.9 [0.919]
Females - Males	-1.7 [0.845]	0.8 [0.930]	2.5 [0.844]
Males in men-only races	-5.8 [0.024]	-41.6 [0.000]	-35.8 [0.000]
Males - Males in men-only races	13.3 [0.059]	-19.1 [0.010]	-32.5 [0.001]
Females - Males in men-only races	-15.0 [0.022]	19.9 [0.005]	34.9 [0.000]

C - Young and old candidates

	Older candidates - Younger candidates		
	Runners-up	Winners	Win-loss gap
Males	-12.9 [0.068]	-37.5 [0.000]	-24.6 [0.003]
Females	-22.4 [0.001]	-24.3 [0.000]	-1.9 [0.823]
Females - Males	-9.6 [0.326]	13.2 [0.062]	22.7 [0.053]
Males in men-only races	-20.8 [0.000]	-25.9 [0.000]	-5.1 [0.163]
Males - Males in men-only races	-8.0 [0.300]	11.6 [0.026]	19.5 [0.034]
Females - Males in men-only races	-1.6 [0.828]	1.6 [0.770]	3.2 [0.724]

D - Political orientation

	Left-wing candidates - Right-wing candidates		
	Runners-up	Winners	Win-loss gap
Males	11.3 [0.107]	-11.6 [0.062]	-23.0 [0.013]
Females	-2.8 [0.669]	-6.0 [0.263]	-3.2 [0.702]
Females - Males	-14.1 [0.142]	5.6 [0.496]	19.8 [0.115]
Males in men-only races	6.0 [0.034]	2.7 [0.286]	-3.3 [0.376]
Males - Males in men-only races	-5.3 [0.477]	14.3 [0.033]	19.6 [0.050]
Females - Males in men-only races	-8.8 [0.230]	-8.7 [0.142]	0.1 [0.989]

Continued on next page. See notes on page 14.

Table A6: Re-contesting probability of runners-up and winners by gender: Differences across sub-groups along past participation, age, occupation, political orientation, municipality size and party involvement (continued).

E - Candidates' occupation

	Public sector job - Private sector job		
	Runners-up	Winners	Win-loss gap
Males	7.1 [0.393]	-14.9 [0.045]	-22.0 [0.049]
Females	-2.6 [0.678]	-24.7 [0.001]	-22.1 [0.022]
Females - Males	-9.7 [0.352]	-9.8 [0.357]	-0.1 [0.993]
Males in men-only races	1.8 [0.572]	-8.4 [0.003]	-10.2 [0.018]
Males - Males in men-only races	-5.3 [0.544]	6.5 [0.404]	11.8 [0.313]
Females - Males in men-only races	-4.4 [0.532]	-16.3 [0.035]	-11.9 [0.254]
	Retired candidates - Non retired candidates		
	Runners-up	Winners	Win-loss gap
Males	1.5 [0.836]	-42.4 [0.000]	-44.0 [0.000]
Females	-17.8 [0.006]	-25.2 [0.005]	-7.4 [0.507]
Females - Males	-19.3 [0.050]	17.3 [0.118]	36.6 [0.014]
Males in men-only races	-12.9 [0.000]	-29.8 [0.000]	-16.9 [0.000]
Males - Males in men-only races	-14.4 [0.105]	12.6 [0.036]	27.0 [0.009]
Females - Males in men-only races	-4.9 [0.535]	4.6 [0.535]	9.6 [0.379]

F - Municipality size

	Large municipalities - Small municipalities		
	Runners-up	Winners	Win-loss gap
Males	-5.9 [0.413]	-18.4 [0.005]	-12.6 [0.195]
Females	-30.2 [0.000]	10.2 [0.066]	40.4 [0.000]
Females - Males	-24.3 [0.017]	28.6 [0.001]	52.9 [0.000]
Males in men-only races	9.4 [0.000]	3.7 [0.132]	-5.7 [0.111]
Males - Males in men-only races	15.3 [0.039]	22.2 [0.002]	6.9 [0.502]
Females - Males in men-only races	-39.6 [0.000]	6.4 [0.287]	46.0 [0.000]

G - Political party involvement

	Affiliated candidates - Non affiliated candidates		
	Runners-up	Winners	Win-loss gap
Males	11.2 [0.126]	-6.0 [0.291]	-17.2 [0.058]
Females	-12.7 [0.045]	1.7 [0.754]	14.4 [0.082]
Females - Males	-23.9 [0.014]	7.8 [0.328]	31.6 [0.010]
Males in men-only races	5.1 [0.064]	2.0 [0.409]	-3.1 [0.398]
Males - Males in men-only races	-6.1 [0.434]	8.0 [0.176]	14.1 [0.145]
Females - Males in men-only races	-17.7 [0.010]	-0.3 [0.965]	17.5 [0.055]

P-values of differences reported in brackets. Differences of coefficients reported in Table 3. Observations are candidates who ran in the 2008 and 2014 municipal elections. A 2008 (2014) candidate is considered as re-contesting if she will run again for office in 2014 (2020). The sample is restricted to the best two candidates of each election. *Mixed-gender* races are elections whose two best candidates are of different genders. *Men-only* races are elections who two best candidates are both males. P-values of differences across genders, vote outcomes, and groups calculated from 1,000 permutations of gender, outcome, and group, respectively. In each panel, the sample is split in sub-samples. See notes of Table 1 for the definition of the different categories.

Table A7: Probability of victory in the next election of runners-up and winners by gender: Separate estimates for 2008 and 2014 elections.

A - 2008 elections

	Runners-up	Winners	Win - loss gap
Males	50.5	73.4	22.9 [0.032]
Females	30.1	57.8	27.7 [0.007]
Females - Males	-20.4 [0.091]	-15.6 [0.043]	4.8 [0.725]
Males in men-only races	45.9	48.1	2.2 [0.582]
Males - Males in men-only races	4.7 [0.628]	25.4 [0.000]	20.7 [0.136]
Females - Males in men-only races	-15.8 [0.079]	9.7 [0.136]	25.5 [0.034]

B - 2014 elections

	Runners-up	Winners	Win - loss gap
Males	61.2	69.8	8.6 [0.421]
Females	37.6	45.5	7.8 [0.506]
Females - Males	-23.6 [0.085]	-24.3 [0.004]	-0.8 [0.968]
Males in men-only races	27.6	73.7	46.1 [0.000]
Males - Males in men-only races	33.6 [0.000]	-3.9 [0.522]	-37.5 [0.005]
Females - Males in men-only races	10.1 [0.270]	-28.2 [0.000]	-38.3 [0.005]

P-values of differences reported in brackets. Election and re-election probabilities estimated from expression (1), using a dummy equal to one if the candidate wins the next election, with gender- and vote outcome-specific optimal bandwidths and triangular kernel weights. Observations are candidates who ran in the 2008 and 2014 municipal elections and who will run again for office in the next election. A 2008 (2014) candidate is considered as (re-)elected if she wins in the 2014 (2020) election. The sample is restricted to the best two candidate of each election. *Mixed-gender* races are elections whose two best candidates are of different genders. *Men-only* races are elections who two best candidates are both males. P-values of differences across genders, vote outcomes, and groups calculated from $1,000$ permutations of gender, outcome, and group, respectively. In panel A (B), the sample is restricted to 2008 (2014) candidates who run again in 2014 (2020).

B Matching algorithm used to track candidates across consecutive elections

The matching algorithm we use to identify 2008 and 2014 candidates who run again in 2014 and 2020, respectively, proceeds in two steps and was applied separately to the two pairs of consecutive elections (2008–2014 and 2014–2020).

We first use official administrative codes and occasional manual corrections to create a comprehensive correspondence matrix between municipalities for which electoral data are available for consecutive elections.

Second, we create within each municipality all possible pairs between candidates of an election and candidates of the next election. We then calculate the similarity scores between both first names and last names of paired candidates using bigrams (Raffo and Lhuillery 2009). We consider that a candidate of the early election is the same person as a candidate of the next election if any of the following condition is met:

1. First names and last names are identical, i.e., both similarity scores are equal to 1;
2. Family names are identical and one first name contains the other one, i.e., the exact chain of characters of a first name can be found in the other one;
3. First names are identical and one family name contains the other one, i.e., the exact chain of characters of a family name can be found in the other one;
4. Family names are identical and the similarity score between first names is above some threshold chosen after inspection of the data;
5. First names are identical and the similarity score between family names is above some threshold chosen after inspection of the data;
6. Similarity scores between first names and between family names are above some thresholds chosen after inspection of the data.

Condition 2 deals with cases where people have either a first name made of multiple first names, or sometimes use their second and/or third first names in addition to their main first name, but do not always appear with the same first names (by choice or because of data entry issues). Condition 3 deals with cases where people have a family name composed of two original names (either their parents' family names or their maiden name and the name of their husband) but do not always use both (by choice or because of data entry issues). Conditions 4–6 allow us to increase the number of matches while avoiding false positive matches thanks to a careful inspection of the data that relies on visual inspection and occasional manual verification using online search engines.

All the above conditions rely on similarities between first and family names. While condition 3 already accounts for the case of women changing their family name when marrying or divorcing, it only accommodates cases where women keep using a name that has a constant component, i.e., adding or removing the name of their husband to their maiden name. It might however be the case that some women choose to use the family name of their husband as their only name in an election and their maiden name in the other one (by choice, by chance, or because their marital status has changed). While using the husband's family name as the only surname is less and less frequent and *a prioi* less spread among women of higher social status or who are publicly exposed, it might still produce false negative matches, i.e., candidates that we would consider as different according to conditions 1–6 while they are identical. We developed an *ad-hoc* approach to assess the importance of such cases and to

recast some false negative matches as actual matches. Restricting the data to pairs that were not matched using conditions 1–6, we first list all the pairs for which first names are identical. This provides us with about 300 pairs for each pair of consecutive elections. We next go through each pair of candidates that share a female first name and use manual online queries to check whether the two paired women are actually identical or different. Out of the 47 verified pairs of women candidates, only 4 turned out to be identical and were re-qualified as matches. Collected information shows that the remaining pairs are made of factually different women that are correctly considered non-matches. While the rate (4/47) of re-qualified false negative matches might look high, it is worth noting that this situation is likely limited to these cases only. We indeed further checked 127 unmatched pairs (in both pairs of elections) that have a similarity score between first names that is above 0.8 but could not find any other case of women that should actually be considered as identical.

Table B1 displays the frequencies of conditions that lead to matching 2008 and 2014 candidates to candidates of 2014 and 2020 elections, respectively.

Assessing the risk of false positive matches that is associated with our matching routine is difficult. It is however likely small as we perform within-municipality comparisons and use quite strict matching conditions as described by conditions 1–6. These two facts make the probability that we wrongly consider as identical two candidates of the same municipality in 4 years apart elections very low.

Table B1: Conditions used to match candidates running in an election to candidates running in the next election.

	2008 candidates matched to 2014 candidates	2014 candidates matched to 2020 candidates
Condition 1	2,945	2,589
Conditions 2 or 3	79	60
Conditions 4 or 5	27	8
Condition 6	4	0
Re-qualified	3	1
Unmatched	4,032	4,634
Total	7,090	7,292

See the text for more details.

C Incomplete information about 2001 candidates and imputed past participation of 2008 candidates

Available data for the 2001 municipal elections are separated into two distinct data sets. On the one side, official election results are made available at the list level, but the data do not contain the name of the list or the name of the candidate who leads it. Only the political orientation code created by the *Ministère de l'intérieur* is available from these data. On the other hand, a list of all heads of the list is available. This data set also contains the name of the list and its political orientation code. The data set is however incomplete because not all municipalities are included in these data and because the name of the candidate is blank for 35.01% of the observations. Additionally, in only 42.40% of the 2008 municipalities, can all 2001 candidates be identified. Neither source can thus be used to directly identify 2008 candidates who ran in 2001.

We developed an *ad hoc* procedure to distinguish between new and former candidates among participants in the 2008 municipal elections.

Figure C1(a) illustrates the initial situation in a fictitious municipality. This municipality has 7 and 5 candidates in the 2008 and 2001 municipal elections, respectively.[1] The data allow us to identify all of the 2008 candidates but only a share s_{2001} of the 2001 candidates as illustrated by the presence of (fictitious) first names or question marks next to candidates' symbols. Starred 2008 candidates are the top two candidates in this election.

We first use the comprehensive list of 2008 candidates and link them to identifiable 2001 candidates using a fuzzy matching *à la* Raffo and Lhuillery (2009) on candidates' first and last names within each municipality (see Online Appendix B). Matches allow us to identify some 2008 candidates who were former 2001 candidates, such as Gabriel and Emma in Figure C1(b), as well as 2001 candidates who will not run in 2008 as illustrated by the case of Lucas in Figure C1(b). This step leaves us with a set $\mathbb{N}_{2001}$ of n_{2001} non-identifiable 2001 candidates and two types of 2008 candidates: $n^*_{2008} \in \{0, 1, 2\}$ candidates of type $\mathbb{N}^*_{2008}$ who belong two the top two candidates in this election and n_{2008} other candidates of type $\mathbb{N}_{2008}$. In Figure C1(b), the set $\mathbb{N}_{2001}$ is composed of the two anonymous candidates, $\mathbb{N}^*_{2008} = \{\text{Léo}\}$ and $\mathbb{N}_{2008} = \{\text{Raphaël, Louis, Arthur, Jade}\}$.

Let us denote by p^* and p the probabilities that type $\mathbb{N}^*_{2008}$ and type $\mathbb{N}_{2008}$ candidates ran in 2001. Similarly, let q be the probability that a type $\mathbb{N}_{2001}$ candidate will run again in 2008. This structure is illustrated by Figure C1(c). By construction, the number of 2008 candidates who are former candidates cannot be larger than the number of 2001 candidates:

$$n^*_{2008}p^* + n_{2008}p \leq n_{2001}, \tag{C1}$$

the number of re-contesting 2001 candidates cannot exceed the number of 2008 candidates:

$$n_{2001}q \leq n^*_{2008} + n_{2008}, \tag{C2}$$

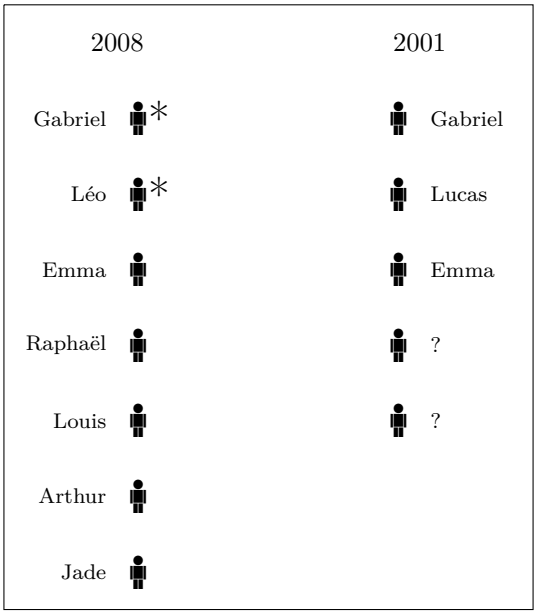
and both quantities must match:

$$n^*_{2008}p^* + n_{2008}p \leq n_{2001}q. \tag{C3}$$

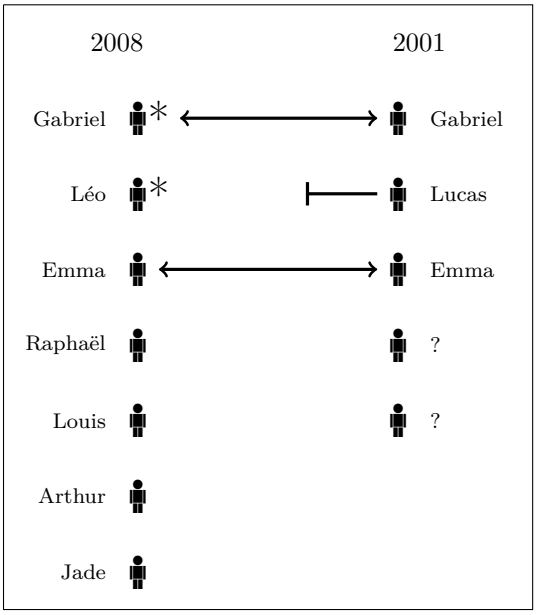
[1] We use official results to retrieve the number of candidates running in 2001 in municipalities that are missing from the list of candidates.

Figure C1: Illustration the procedure used to input past candidacy status of 2008 candidates running in cities with incomplete information about 2001 candidates.

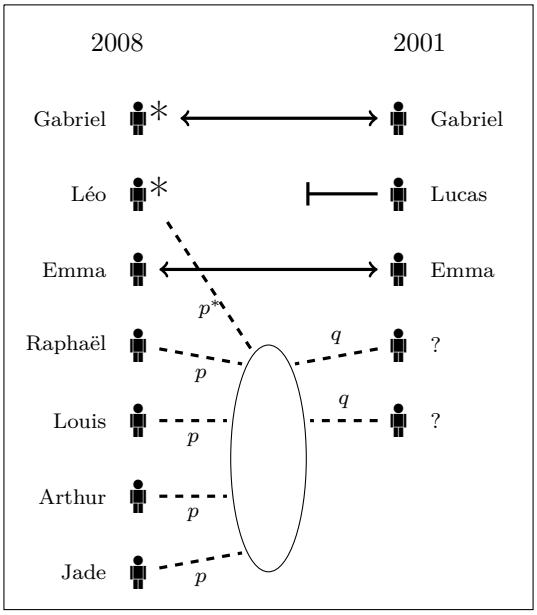
(a) Starting situation.



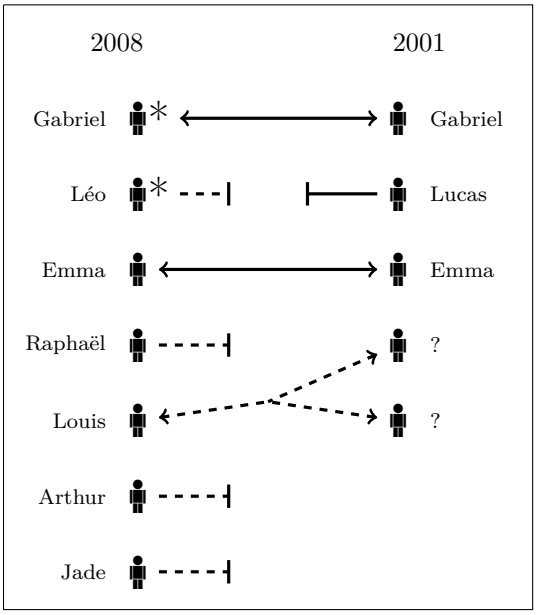
(b) Outcome of fuzzy matching.



(c) Matching probabilities.



(d) Final realization.



Sub-figures illustrate steps of the imputation procedure using a fictitious illustrative municipality. See the text for more details.

By combining conditions (C1)–(C3), we obtain:

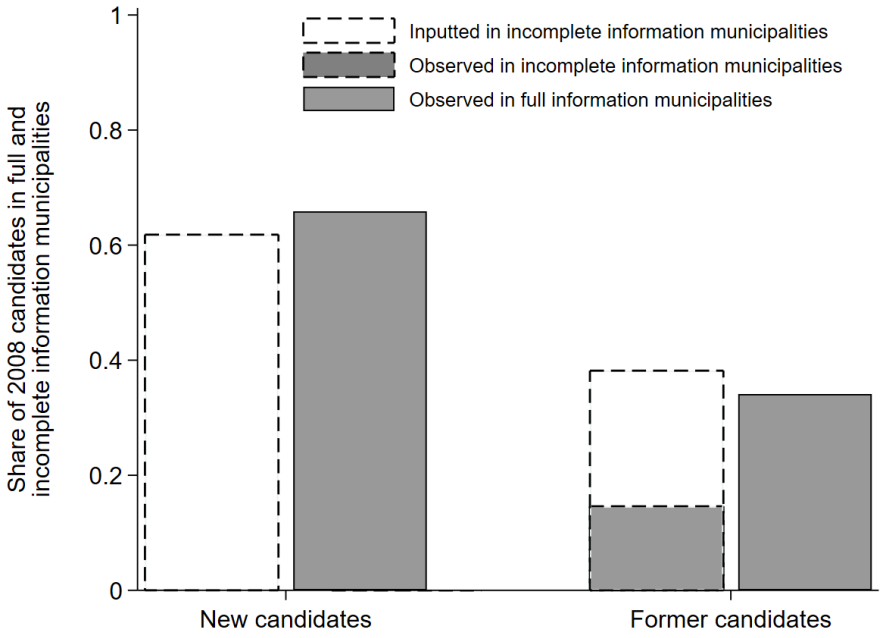
$$n^*_{2008}p^* + n_{2008}p \leq \min(n^*_{2008} + n_{2008}, n_{2001}) \Leftrightarrow \begin{cases} p \leq \frac{\min(n^*_{2008}+n_{2008},n_{2001})-n^*_{2008}p^*}{n_{2008}} \\ p^* \leq \frac{\min(n^*_{2008}+n_{2008},n_{2001})-n_{2008}p}{n^*_{2008}} \end{cases} \quad \text{(C4)}$$

Condition (C4) defines the space of possible values of p^* and p and holds for each municipality. We solve for these probabilities in municipalities where $s_{2001} < 1$—that is, municipalities in which not all the 2001 candidates are identifiable—by selecting a realization of municipality-specific probabilities that satisfy condition (C4) for each municipality and minimize the distance between the average 2008 past candidacy rates in these municipalities and that of candidates in municipalities where $s_{2001} = 1$—that is, municipalities for which all 2001 candidates are identifiable.

Figure C1(d) displays the final outcome of the procedure for the fictitious illustrative municipality. The realization of probabilities is such that only one 2008 candidate (Louis) was finally regarded as matched to a 2001 candidate. Figure C2 further describes the outcome of the procedure thanks to the distributions of past candidacy statuses of 2008 candidates across municipalities with full or incomplete information about 2001 candidates.

To ensure that the above-presented procedure introduced no bias in the reported estimates, Table C1 reproduces the sub-sample decomposition along past electoral participation of candidates but excluding all 2008 municipalities for which information about 2001 candidates is incomplete. Estimates differ little from those displayed in panel A of Table 3.

Figure C2: Distributions of past candidacy status of 2008 candidates across municipalities with incomplete and full information about 2001 candidates.



Grey solid-outlined bars represent the shares of observed new and former candidates in 2008 municipalities for which the identity all 2001 candidates is known. The grey dash-outlined bar represents the share of observed former candidates in 2008 municipalities for which not all 2001 candidates are identifiable. White dash-outlined bars represent the shares of inputted new and former candidates in 2008 municipalities for which not all 2001 candidates are identifiable. See the text for more details about the imputation procedure.

Table C1: Re-contesting probability of runners-up and winners by gender: Heterogeneity along past participation, excluding 2008 municipalities in which candidates' past candidacy status is inputted.

	New candidates			Former candidates		
	Runners-up	Winners	Win-loss gap	Runners-up	Winners	Win-loss gap
Males	53.0	87.1	34.2 [0.000]	25.6	52.9	27.4 [0.000]
Females	38.8	76.9	38.0 [0.000]	3.2	76.8	73.6 [0.000]
Females - Males	-14.1 [0.039]	-10.3 [0.093]	3.8 [0.675]	-22.4 [0.012]	23.8 [0.003]	46.2 [0.000]
Males in men-only races	52.0	89.6	37.7 [0.000]	39.1	59.7	20.6 [0.000]
Males - Males in men-only races	1.0 [0.900]	-2.5 [0.565]	-3.5 [0.658]	-13.5 [0.021]	-6.7 [0.167]	6.8 [0.351]
Females - Males in men-only races	-13.1 [0.004]	-12.8 [0.006]	0.3 [0.958]	-35.9 [0.000]	17.1 [0.007]	53.0 [0.000]

P-values of differences reported in brackets. Re-contesting probabilities estimated from expression (1) with gender- and vote outcome-specific optimal bandwidths and triangular kernel weights. Observations are candidates who ran in the 2008 and 2014 municipal elections. A 2008 (2014) candidate is considered as re-contesting if she will run again for office in 2014 (2020). The sample is restricted to the best two candidates of each election, and to 2014 elections and 2008 elections in municipalities for which information about 2001 candidates is complete. *Mixed-gender* races are elections whose two best candidates are of different genders. *Men-only* races are elections who two best candidates are both males. P-values of differences across genders, vote outcomes, and groups calculated from $1,000$ permutations of gender, outcome, and group, respectively.

D Participation of winners and runners-up in higher-level elections

As stated in the main text, the French institutional setting does not make it possible to properly study cross-gender differences in the decisions of municipal election candidates to run in other local elections. *Départemental*, regional and parliamentary elections are indeed elections in which (national) political parties are much more involved than in municipal elections, and gender quotas directly or indirectly apply in these elections. These features would therefore make it difficult to draw conclusions about cross-gender differences in candidates' decisions to participate.

In *départemental* elections, which use a uni-nominal majority two-round voting system at the *canton* level to elect members of the *départemental* assembly, representatives are elected in unordered pairs consisting of one female and one male candidate since 2015, such that exactly 50% of candidates are female. The scope of regional elections, which use the same proportional two-round ordered- and closed-list voting system as municipal elections, mechanically reduces the number of heads of list, whose gender is unregulated, such that only the detailed lists would contain a sufficient number of observations. Lists must however be gender-balanced such that half of the candidates are female. Finally, funding penalties have been imposed since 2002 on political parties that do not nominate enough women in parliamentary elections, which use a uni-nominal majority two-round voting system at the legislative constituency level to elect members of the French parliament, such that the proportion of women in candidates has consistently increased, reaching approximately 40% in 2017 (Lippmann 2021).

Ultimately, *départemental*, regional and parliamentary elections are contexts that do not allow us to cleanly investigate cross-gender differences in individuals' decisions to run. To nevertheless explore these dimensions, we collected the lists of candidates running in local elections that followed the 2008 and 2014 municipal elections. We collected the names of the 10,357 (18,187) candidates running in the 2011 (2015) *départemental* elections and of the 262 (183) heads and 20,671 (21,880) members of lists in the 2010 (2015) regional elections. In parliamentary elections, candidates run in ordered pairs consisting of a main and a substitute candidate. We collected the composition of the 6,602 (7,877) pairs of candidates that participated in the 2012 (2017) parliamentary elections.

We next matched these lists to that of candidates in the municipal elections to assess whether the latter decided to run in higher administrative level elections before the next municipal election took place. We matched 2008 candidates to candidates in the 2010 regional, 2011 *départemental* and 2012 parliamentary elections and 2014 candidates to candidates in the 2015 regional, 2015 *départemental* and 2017 parliamentary elections. We then estimated model (1) using as the dependent variable a dummy variable equal to one if a candidate in the 2008 or 2014 municipal elections ran in any of the next higher-level elections. Table D1 displays the estimates of interest and shows that candidates in municipal elections are less likely to run for other local elections than to re-contest the next municipal election (see Table 2). This fact is however likely to be largely mechanical because there are more positions to be taken in municipal elections than in other local elections.

Table D1 conveys several important messages. It first shows that female runners-up's decisions about participating in other elections do not significantly differ from those of male runners-up. Second, while female winners appear slightly less likely than male winners to

participate in other elections, so do the latter when compared to male winners of men-only races. Third, win-induced changes in running probabilities are lower than those estimated for the probabilities to run again in municipal elections. Ultimately, the estimates do not provide evidence of female candidates having an attitude that strikingly differs from that of male candidates regarding decisions about participating in other elections, and the revealed differences in these attitudes cannot account for the documented cross-gender differences in re-contesting decisions.

Table D1: Probability to participate in higher-level elections of runners-up and winners by gender.

	Runners-up	Winners	Win - loss gap
Males	23.4	34.9	11.5 [0.011]
Females	25.1	31.0	6.0 [0.294]
Females - Males	1.7 [0.732]	-3.9 [0.463]	-5.6 [0.428]
Males in men-only races	30.7	40.5	9.8 [0.000]
Males - Males in men-only races	-7.3 [0.035]	-5.6 [0.084]	1.8 [0.701]
Females - Males in men-only races	-5.6 [0.172]	-9.5 [0.029]	-3.8 [0.530]

P-values of differences reported in brackets. Probabilities to participate in higher-level elections estimated from expression (1) with gender- and vote outcome-specific optimal bandwidths and triangular kernel weights. Observations are candidates who ran in the 2008 and 2014 municipal elections. The sample is restricted to the best two candidates of each election. *Mixed-gender* races are elections whose two best candidates are of different genders. *Men-only* races are elections who two best candidates are both males. P-values of differences across genders, vote outcomes, and groups calculated from 1,000 permutations of gender, outcome, and group, respectively. A 2008 (2014) candidate is considered as participating in higher levels elections if she runs as head or member of a list in the 2010 (2015) regional elections, as candidate in the 2011 (2015) *départemental* elections, or as main or substitute candidate in the 2012 (2017) parliamentary elections.

E Comparison of the relative importance of channels in explaining the gender gap in office-holding

Let us consider a population of female and male candidates who run for office in pairs. Genders are denoted by $g = f, m$. Candidates can be either *new* or *experienced* depending on whether they are running for the first time. These types are denoted by N and E, respectively. Label shares of types of candidates in the population at time t as $s_f^N(t)$, $s_f^E(t)$, $s_m^N(t)$ and $s_m^E(t)$.

Denote by e_g^Y the exogenous campaigning effort of a candidate of gender $g = f, m$ and experience $Y = N, E$. Let us assume that experienced candidates benefit from an electoral advantage E and that female candidates suffer from a disadvantage F because of voters discrimination. The campaigning efforts of the different types of candidates are:

$$\begin{cases} e_f^N = 1 - F, \\ e_f^E = 1 - F + E, \end{cases} \quad \text{and} \quad \begin{cases} e_m^N = 1, \\ e_m^E = 1 + E. \end{cases}$$

Let us model the victory probability of candidate i who is opposed to candidate j using a simple contest success function:

$$\mathbb{P}\left(e_i, e_j\right) = \frac{e_i}{e_i + e_j},$$

where $(i, j) \in \left\{\binom{f}{N}, \binom{f}{E}, \binom{m}{N}, \binom{m}{E}\right\}^2$.

After elections have taken place in t, the quantity of winners of type $\binom{g}{Y}$ is given by:

$$\mathbb{W}_g^Y(t) = s_g^Y(t)^2 + 2s_g^Y(t) \sum_{j \in \left\{\binom{f}{N}, \binom{f}{E}, \binom{m}{N}, \binom{m}{E}\right\} \setminus \binom{g}{Y}} s_j(t) \mathbb{P}\left(e_g^Y, j\right), \tag{E1}$$

and the quantity of losers of the same type is:

$$\mathbb{L}_g^Y(t) = 2s_g^Y(t) \sum_{j \in \left\{\binom{f}{N}, \binom{f}{E}, \binom{m}{N}, \binom{m}{E}\right\} \setminus \binom{g}{Y}} s_j(t) \left(1 - \mathbb{P}\left(e_g^Y, j\right)\right). \tag{E2}$$

These quantities enable us to express the share of women among elected candidates as:

$$S_f(t) = \frac{\mathbb{W}_f^N(t) + \mathbb{W}_f^E(t)}{1/2}. \tag{E3}$$

Let us further model candidate persistence in political competition with p_g^W and p_g^L being the probabilities that a candidate of gender g will re-contest the next election if she won or lost, respectively.[2] Using the above expressions, the quantity of t candidates of gender

[2]This simplified framework neglects the possibility of an incumbency (dis)advantage and, therefore, of a possible difference in this dimension between genders. However, if relevant in explaining the gender gap in office-holding, such a mechanism would mostly translate into cross-gender differences in persistence as discussed in the main text, which is explicitly modelled here.

$g = f, m$ who will re-contest in $t+1$ and be considered experienced by this time is:

$$s_g^E(t+1) = p_g^W \mathbb{W}_g^Y(t) + p_g^L \mathbb{L}_g^Y(t), \tag{E4}$$

and, assuming that exiting candidates are randomly replaced by new candidates among whom the share of women is denoted by $\theta \lesseqgtr 0.5$ that captures whether women are less, equally, or more likely than men to enter political competition, the quantity of new female candidates running in the next elections is:

$$s_f^N(t+1) = \theta \left(1 - \sum_{g=f,m} (1 - p_g^W)\mathbb{W}_g^Y(t) + (1 - p_g^L)\mathbb{L}_g^Y(t)\right), \tag{E5}$$

while that of new male candidates is:

$$s_m^N(t+1) = (1-\theta) \left(1 - \sum_{g=f,m} (1 - p_g^W)\mathbb{W}_g^Y(t) + (1 - p_g^L)\mathbb{L}_g^Y(t)\right). \tag{E6}$$

Denote by $\mathbb{S}_t = \left(S_f(t), s_f^N(t), s_f^E(t), s_m^N(t), s_m^E(t)\right)$ the state vector that describes the outcome of elections and the composition of the pool of candidates at time t. $\mathbb{S}_{t+1}$ is linked to $\mathbb{S}_{t+1}$ via equations (E1)–(E6). It can be verified that the $\mathbb{S}_t$ series converges to $\mathbb{S}^*$, the stationary equilibrium value of the series.

While the model can *a priori* be solved analytically, the number of possible pairs of candidates makes the necessary expressions nearly intractable. We thus opt for a numerical solution approach. For each potential value of θ, we simulate the model over $1,000$ periods and store the average value of the share of women among office-holders in the last 90% of periods.[3]

We set the model's parameters to different values that will help us to compare the mechanisms at play. To neutralize or activate voters' discrimination, we set F equal to zero or such that $\mathbb{P}([f,N] \text{ wins against} [m,N]) = 0.37$ (from Figure 6(a)). To disallow or allow for experienced candidates to be advantaged, we either set E to zero or, arbitrarily, such that $\mathbb{P}([m,E] \text{ wins against} [m,N]) = 0.60$. Finally, we assume equal persistence of female and male candidates by setting $p_f^L = p_m^L = 0.43$ and $p_f^W = p_m^W = 0.75$ (from Table 2) and introduce cross-gender differences in persistence by setting $p_m^L = 0.43$, $p_f^L = p_m^L - 0.07$, $p_m^W = 0.75$, and $p_f^W = p_m^W + 0.04$ (also from Table 2).

Figures E1(a) and (b) plot S^*, the value of women among office-holders, at different values of θ, the share of women among new candidates, in different scenarios. The grey dashed line describes the situation with a gender gap in persistence only. As shown by the location of the line with respect to the 45° line, the gender gap in persistence has hardly any effect per se, as it only slightly reduces the share of female candidates who participate in elections. It actually only reduces the share of women among office-holders because the parameters are set such that female winners' excess re-contesting does not fully compensate for the lower re-contesting likelihood of female losers. In contrast, voters discrimination substantially reduces

[3]The number of replications ensures that numerical solutions converge to the solution that would be obtained after the model is solved analytically.

office-holding by women as shown by the black dashed line. Combining both mechanisms moves the situation farther away from the 45° as illustrated by the solid black curve.

Finally, introducing an electoral advantage in favour of experienced candidates makes the situation, as depicted by the sold grey line, closer to gender parity because, among winners—who are more likely to re-contest than losers—women are marginally more likely to re-contest than men and are therefore more likely to benefit from this experience premium.[4]

The curves in Figure E1(a) allow us to compute the share of women among newly entering candidates that would be necessary to achieve gender parity among office-holders under the different scenarios. If voters discrimination against women is the only active mechanism, then women should represent 59% of new candidates. This necessary share is further increased by 1% if the gender gap in persistence is at play. This discrepancy sharply underlines the relative importance of both channels in explaining the gender gap in office-holding.

Alternatively, the share of women among office-holders for a given share of women among new candidates can also help to grasp the relative importance of the channels. As shown by Figure E1(b) for a gender-balanced set of new candidates ($\theta = 0.5$), this quantity amounts to 39.5% when both voters discrimination and the gender gap in persistence are at play, against 40.9% and 49.0% when only the former and the latter are active. This suggests that differences in persistence explain only 10% of the gender gap in office-holding (as measured with respect to the share of women among new candidates).[5]

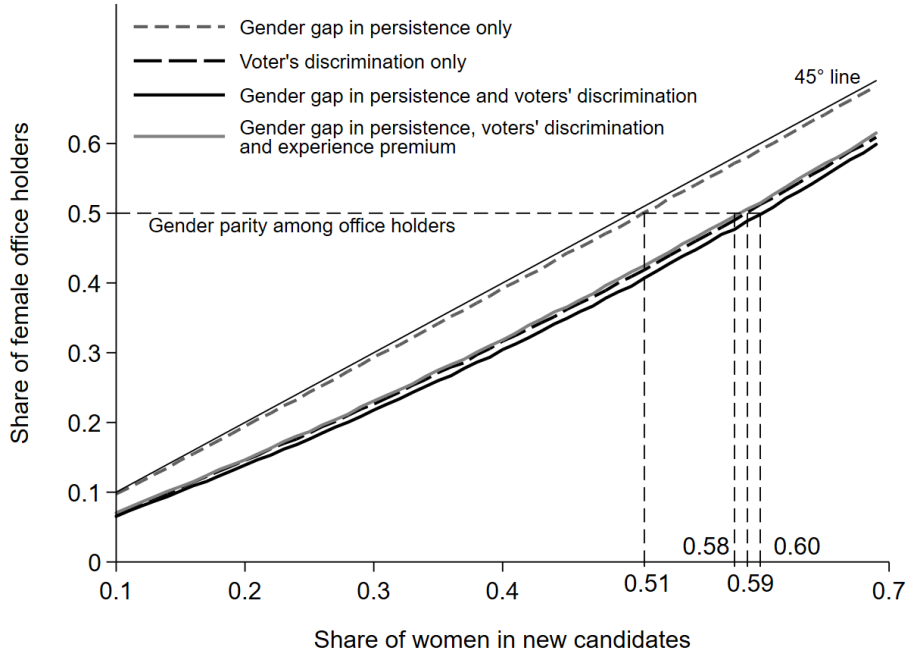
Finally, the overall pattern of Figures E1(a) and (b) makes clear that none of the above-discussed mechanisms can account for the gender gap in office-holding as much as a simple shortage of female candidates. This suggests that the latter remains the main driver of women's under-representation in politics.

[4]Introducing only the experience premium has no impact on the share of women among office-holders because it has no gender-related effect in the absence of voters discrimination or a gender gap in persistence.

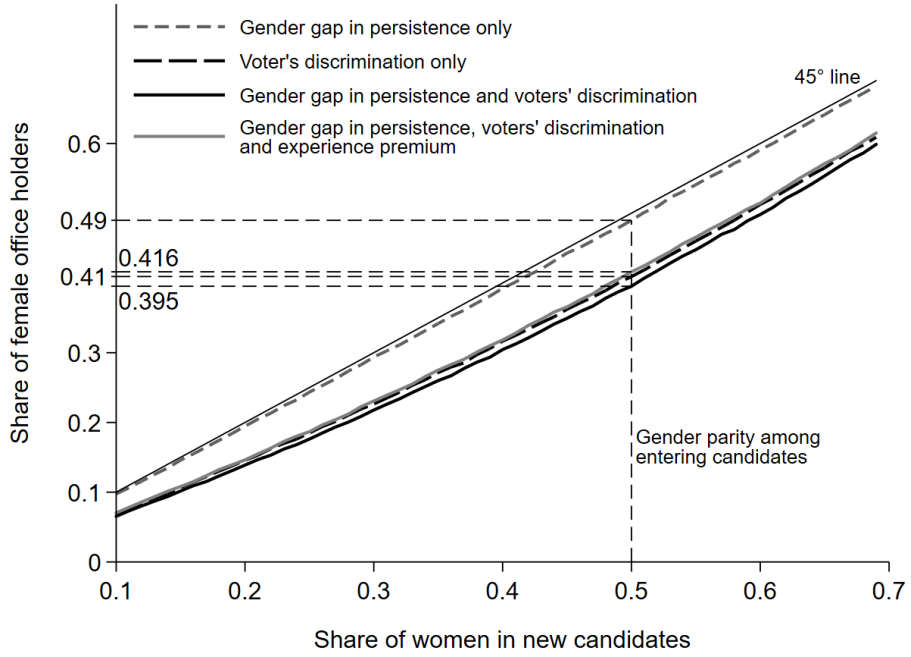
[5]The share that can be attributed to differences in persistence between genders is $\frac{50-49.0}{50-39.5} = 0.097$. The share that can be attributed to voters discrimination against women is $\frac{50-40.9}{50-39.5} = 0.867$. The share that can be attributed to the interaction of the two channels is $1 - 0.097 - 0.867 = 0.036$. Performing the same calculation at other values of θ leads to similar results.

Figure E1: Share of female office-holders under different scenarios.

(a) Showing women's share in new candidates necessary to achieve gender parity among office-holders.



(b) Showing women's share among office-holders implied by gender parity among new candidates.



The two sub-figures are identical. Only the vertical and horizontal lines used for interpretation change. See the text for more details.

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