Violence against Women in Politics

Gianmarco Daniele[†] Gemma Dipoppa[‡] Massimo Pulejo[§]

March 20, 2025

Abstract

We present the first causal evidence that female politicians are more likely to face political violence. Using fourteen years of data on attacks against Italian politicians, we show that marginally elected female mayors—similar to men and elected in comparable towns—are three times as likely to be attacked. Testing whether violence aims to influence women's policies or stems from gender bias, we find no gender differences in policymaking, performance, or corruption. Instead, consistent with discrimination, the gender gap emerges regardless of women's choices. Female mayors are less likely to seek re-election after attacks, highlighting violence's role in perpetuating the gender gap.

[*] We are grateful to Anna Aizer, Florian Foos, Saad Gulzar, Joanne Haddad, Andrea Junqueira, Eliana La Ferrara, Chiara Margaria, Kostas Matakos, Vincent Pons, Johanna Rickne, Silvia Vannutelli, Hye Young You, and seminar participants at the NBER Political Economy Meeting, CEPR Political Economy Conference, Bocconi University, European University Institute, LSE, New York University, University of Naples "Federico II", University of Pennsylvania, University of Rome "Tor Vergata", the 119th APSA Annual Meeting, the 80th MPSA Annual Meeting, Europe Polmeth, the VII Workshop on the Economics of Organized Crime,the 2nd Resilient Democracy Lab Workshop and the Transatlantic Workshop on the Economics of Crime for comments and suggestions. We thank Francesco Cassano, Noemi Facchetti, Andrea Giglio, and Silvia Pedersoli for excellent research assistance. Gianmarco Daniele acknowledges financial support from the PRIN 2020 grant "The dark side of money" protocol 2020N359HW.

[†]University of Milan. gianmarco.daniele@unimi.it

[‡]Columbia University. gd2733@columbia.edu

[§]Roma Tre University. massimo.pulejo@uniroma3.it

1 Introduction

From the workplace (Goldin, 2021; Folke and Rickne, 2022; Adams-Prassl et al., 2024) and the household (Aizer, 2010; Bhalotra et al., 2021) to the school system (Carlana, 2019), women endure multiple forms of discrimination. Politics is no exception: both voters and parties display biases against female politicians (Huidobro and Falcó-Gimeno, 2021; Le Barbanchon and Sauvagnat, 2022), who are still underrepresented in leadership positions globally (Inter-Parliamentary Union, 2024). The striking persistence of this disparity, despite institutional efforts to mitigate it, underscores that we lack a comprehensive understanding of the barriers to democratic representation between genders.

A potential factor in women's underrepresentation in politics is their exposure to violence at higher rates than men. However, clear evidence remains elusive, as existing research relies on self-reported surveys of mostly small, selected samples, yielding widely varying estimates.[1]

This paper asks whether women in politics are more likely to be attacked than men and, if so, why. Our empirical setting is Italy − a stable democracy, yet a country that ranks low in female labor force participation (World Bank Data, 2021), and high

[1]For instance, a survey by the International Parliamentary Union (IPU, 2016) found that 82% of 55 women parliamentarians across 39 countries had experienced psychological violence. Interviews with 270 U.S. and 150 Mexican politicians suggest that women are twice as likely as men to face psychological abuse (Herrick et al., 2019; Serrano Oswald, 2023). Survey data from Swedish local politicians show a 1-percentage-point gender gap in violence (Håkansson, 2021). Conversely, survey data on 197 Sri Lankan local politicians suggest the gender gap in political violence is minimal or even nonexistent (Bjarnegård et al., 2022).

on intimate partner violence (UNDOC, 2020). Italy also displays high rates of violence against politicians, primarily driven by criminal attempts to influence politics (Daniele and Dipoppa, 2017; Alesina et al., 2019; Pulejo and Querubín, 2023).

We leverage data on attacks against the universe of Italian politicians over fourteen years by Avviso Pubblico, an independent organization collaborating with the Italian police. This data distinguishes whether the attacks are self-reported or not, and it features both online and offline attacks, ranging from verbal threats to violence against individuals and property.

We start by testing whether female mayors are more likely to be targets of violence than male mayors, using a close-election regression discontinuity design (RDD). We find that marginally elected women − governing similar towns and comparable to men along seventeen observable characteristics − are approximately three times more likely to be the victims of an attack. This result holds for a wide range of alternative bandwidths and polynomial orders, and is not specific to any particular region or year.

This differential is not driven by unequal reporting of attacks across genders. In fact, the findings are robust to removing all the attacks reported by the victims, and hold equally for attacks perpetrated in public and private places. The effect is also not explained by a generalized surge in violence, since the frequency of attacks towards other local officials does not change discontinuously at the RDD cutoff. The gender gap in attacks is not specific to close elections: Women winning less contested races face similar levels of political violence. Indeed, the gender differential in the probability of attacks remains positive and significant when fitting a two-way fixed effects model on the entire

sample of elections.

After demonstrating the existence of a gender gap in violence, we unpack the reasons behind it. We propose two sets of explanations: political influence and discrimination.

Political influence is the primary motive for attacks on public officials worldwide (Dal Bó et al., 2006). If women govern differently, as some evidence suggests,[2] violence may be used strategically to influence their policy choices. Similarly, women might be attacked more frequently if perpetrators perceive them as more vulnerable to coercion. For instance, if women are more risk-averse than men (Croson and Gneezy, 2009), they may be more likely to modify their policies in response to threats, making attacks a more effective tool for exerting pressure. In both cases, violence serves as a strategic instrument to shape political outcomes, irrespective of gender.

On the other hand, if violence is driven by discrimination, women might face more attacks despite similar characteristics, decisions, and performances compared to their male colleagues. This would be in line with double-standards documented in public examinations (Bagues and Esteve-Volart, 2010), corporate (Abel, 2024; Ayalew et al., 2021; Chakraborty and Serra, 2024), and academic contexts (Sarsons, 2017). If violence is discriminatory in nature, perpetrators' decisions to attack would not depend on whether

[2]Studies from low and middle-income countries indicate that women tend to reduce corruption (Brollo and Troiano, 2016), invest more in health and sanitation (Chattopadhyay and Duflo, 2004; Pande and Ford, 2009), foster economic growth (Baskaran et al., 2024) and reduce gender-based violence (Bochenkova et al., 2023). However, those differences are mostly absent in high-income countries (Ferreira and Gyourko, 2014; Carozzi and Gago, 2023; Bagues and Campa, 2021; Baskaran and Hessami, 2019), including among Italian mayors (Baltrunaite et al., 2019; Casarico et al., 2022).

violence leads to policy changes: Even if women do not adjust their policymaking in response to threats more than men, they could still be disproportionately targeted.

To explore these mechanisms, we first assess whether female mayors differ in their choices and performance, using administrative data on budget allocation, electoral manifestos, quality of public goods, financial performance, procurement management, and corruption charges. Fitting our RDD model using as outcomes more than 90 measures of policy stances, choices and performance, we find no significant differences between marginally elected female and male mayors. This is true both for policies adopted once in office and for political statements expressed before elections, indicating that results are not simply an outcome of differences in the experience of violence. These null results are consistent with extant studies on Italian mayors (Baltrunaite et al., 2019; Casarico et al., 2022) and advanced economies (Ferreira and Gyourko, 2014; Bagues and Campa, 2021; Carozzi and Gago, 2023). In line with these results, removing from the data all the attacks explicitly linked to policy choices does not eliminate the observed gender differential in attacks.

Even in absence of policy differences, perpetrators might still attack women more if they are more likely to respond to coercion. However, we find that women are not more likely than men to alter their policymaking in response to an attack. This indicates that the gap in attacks is unlikely to be driven by differential efficacy in targeting women. Women are also not differentially more targeted by organized crime, which tends to use attacks strategically to influence policymaking.

Having found limited evidence for political influence, we investigate whether the gen-

der differential in attacks could be explained by discrimination. Proving discrimination while ruling out other explanations for differential treatment is challenging. We follow the approach recently proposed by Gaebler and Goel (2024), who show that a robust test for discrimination requires combining evidence of both benchmark (e.g., conditional on similar characteristics, a group suffers more discrimination) and outcome tests (e.g., a group performs better than the judgment it received).

In our setting, the benchmark test corresponds to the previously presented evidence that women, despite being similar to men on all observable dimensions, are attacked more frequently. Instead, the outcome test examines whether mayors with comparable performances face different risks of attack based on gender. We test this by using detailed, fact-based measures of mayoral performance[3] to divide our sample between high- and low-performing mayors. We test whether the gender differential in attacks is moderated by mayoral performance. The results show that the gender gap in violence exists among both high- and low-performing mayors. Similar conclusions apply when using an expenditure-based measure of performance. Regardless of performance, women are more likely than men to be the targets of violence.

Second, again following Gaebler and Goel (2024), we combine the gender differential in attacks with the differential in performance within the same analysis. We show that, in nearly half of the regions in our sample, women are attacked more than men despite delivering better mayoral performances. Notably, this pattern of discrimination does

[3]We primarily rely on OpenCivitas, a government initiative designed to enhance accountability by providing granular measures of the quality of local public goods provision across various policy areas.

not occur for male mayors in any of the fifteen regions we examine. Political violence disproportionately targets women independent of their performance in office, and in fact even when their performance in office is better. Our results underscore that attacks are a discriminatory reaction to the presence of women in power, not to the distinctive ways in which they use such power.

Our final question is whether discriminatory violence affects women's political persistence. Overall, we find that female mayors are as likely as male mayors to remain in politics at the end of their first mayoral term. However, among those who have been attacked, women are significantly less likely to remain in politics than men, due to a lower likelihood of rerunning for mayor. This suggests that women may withdraw from local politics out of fear of retaliation from members of their own community. Hence − at least in our context − attacks eventually succeed in curtailing women's representation by pushing them out of politics.

This is the first study to provide causal evidence that female political leaders suffer more attacks because of their gender. We expand the empirical literature in economics documenting women discrimination across contexts (Aizer, 2010; Carlana, 2019; Folke and Rickne, 2022; Adams-Prassl et al., 2024) by focusing on a particularly consequential one, politics. Understanding the physical and psychological threats women encounter in the political arena is especially critical in an era of rising polarization and political violence (Canen et al., 2020; Hall, 2019; Kalmoe and Mason, 2022).

Second, by showing that female politicians experience higher levels of violence regardless of their performance, we add to a growing literature on gendered double-standards.

Much of this literature uses controlled environments – laboratory experiments – to identify causal effects(Ayalew et al., 2021; Chakraborty and Serra, 2024). Our study builds on observational work in real-world settings Sarsons (2017), Boring (2017) and Egan et al. (2022), showing that women are evaluated using harsher standards even when in leadership positions. This finding also relates to work on gender gaps in prestigious jobs (Bertrand and Hallock, 2001; Bertrand et al., 2010) by focusing on a larger and more representative population of high-profile careers than corporate executives.

Finally, our paper also speaks to the vast literature on the causes of women's underrepresentation and the policies that may help reduce it (Baltrunaite et al., 2014; Besley et al., 2017; Baltrunaite et al., 2019; Bagues and Campa, 2021; Clayton, 2021). Recent studies have identified lower political persistence as a leading cause of women's underrepresentation (Peveri and Sangnier, 2023; Wasserman, 2023). Complementing this work, our evidence suggests that threats and violence experienced in office might be among the factors forcing women to select out of politics. This finding contributes to explaining why generations of women in politics and gender-affirming policies have not fully closed the gender gap: The problem is not only filling the gap in who selects into politics (Dal Bó et al., 2017; Gulzar, 2021), but also in who selects *out* of it. Our findings thus have direct implications for policy and accountability, flagging the necessity to protect disproportionately affected politicians from violence.

2 Background and Data

2.1 Italian Municipal Governments

Our analysis focuses on mayors, the head of municipal governments – the lowest tier of administration in Italy. As of 2024, Italy has 7,904 municipalities, each governed by a mayor, an executive committee, and a municipal council. Italian mayors hold significant powers and prerogatives, including on security, education, welfare, and the economy. Elections take place every five years, with mayors directly elected for up to two consecutive terms – except in municipalities below 3,000 inhabitants, where they can serve up to three terms since 2014. Municipal councils, also elected, are tied to the mayor through a majority bonus system. The mayor appoints and leads the executive committee, making it the primary and most identifiable municipal policymaker.

2.2 Data on Violence against Politicians

We collect information on attacks and threats against municipal politicians by digitizing the annual reports of the NGO Avviso Pubblico, an independent organization dedicated to preserving the safety and integrity of Italian public officials. One of Avviso Pubblico's core activities is the daily monitoring of both online and offline information on attacks against politicians. This includes gathering direct reports from victims as well as information from secondary sources, such as news articles and police records. The resulting reports are deemed a reliable source of information, which has served as the basis for legislation (Avviso Pubblico, 2017) and academic research (Daniele and Dipoppa, 2017;

Pulejo and Querubín, 2023; Baraldi et al., 2023). Importantly, the data focus exclusively on political violence, always mentioning the specific position of the victim within the administration, and do not instead include instances of private or domestic violence.

In addition to providing the exact date and location, each report specifies the type of attack and the victim(s). We digitize all Avviso Pubblico's reports (2010-2023), covering 4,875 attacks against Italian public officials. As shown in Panel A of Figure A1 in the Appendix, 2,993 attacks target one or more municipal politicians, while the others target non-elected officials, facilities, or politicians at higher levels. Among elected municipal officials, mayors are the most frequent victims (1,646 episodes), followed by councillors (619) and members of the cabinet (507). As shown in Panel B, 46% of the episodes are threats and 54% are physical attacks.

This repository has four advantages over other data sets used in the literature on violence against women in politics. First, it is kept by a reputable independent organization, which classifies when the information is purely based on self-reports, allowing us to test for reporting bias. Second, while previous studies largely rely on data on psychological abuse (Håkansson, 2021; Herrick et al., 2019; Gorrell et al., 2018), surveys indicate that women in politics may be also subject to physical violence (Krook, 2018; Bardall et al., 2020; Krook and Restrepo Sanín, 2020; Piscopo, 2016). Our data includes both verbal and physical attacks, allowing us to study a wide range of strategies employed against female politicians. Third, the data covers a broad range of perpetrators, including criminal groups and ordinary citizens. In 739 instances, it explicitly documents the policy choices or in-office behavior that triggered the attack, providing us with valuable insights

into the underlying reasons. The maps of violence in Figure A2 show that attacks are widespread in all regions of Italy for both genders. Finally, our data span fourteen years − longer than most extant studies − allowing us to study how attacks evolve over time and if and how they respond to changes in policy outcomes over the course of multiple mayoral terms.

3 Empirical Strategy

We aim to assess whether female mayors are more likely than male mayors to be the victims of political violence. Simply comparing towns with mayors of different genders would not allow us to identify a causal effect, as several municipal characteristics may simultaneously affect both the likelihood that a female mayor is elected and the incidence of political violence. We address these potential endogeneities with a close-election regression discontinuity design (Imbens and Lemieux, 2008; Lee and Lemieux, 2010). We compare the frequency of attacks on the mayor in towns where a female candidate narrowly won to the frequency of attacks on the mayor in towns where a female candidate narrowly lost. Our regressions have the form:

$$\begin{aligned} Attacked_{i,t} = \tau_t + \phi_r + \beta FemaleMayor_{i,t} + \gamma f(FemaleMargin)_{i,t} + \\ + \lambda(FemaleMayor \times FemaleMargin)_{i,t} + \theta X'_{i,t-1} + \epsilon_{i,t}, \end{aligned} \tag{1}$$

The parameter of interest is β, which measures the effect of electing a female mayor at

the cutoff of 0 margin of victory of the most voted female candidate ($FemaleMargin_{i,t}$), computed as the difference between her vote share and the one of the most voted male candidate. Equation (1) also incorporates region (ϕ_r) and election-year fixed effects (τ_t), ensuring a comparison of municipalities close to the cutoff within the same region and holding elections in the same year. Finally, for efficiency, it includes a vector of pre-election municipal characteristics, $X'_{i,t-1}$.[4]

In our setting, several institutional provisions change discontinuously at the population threshold of 5,000 inhabitants. First, municipalities above this threshold allow voters to cast a vote for up to two councillors, but require that one of them be a woman (Law n.215, 2012). Also, these municipalities use gender quotas for the municipal council, requiring at least one-third of candidates of each gender. Importantly, both of these rules only affect the choice of councillors, not of the mayor. Second, mayors of towns above 5,000 inhabitants receive 29% higher wages. This affects political selection (Gagliarducci and Nannicini, 2013) and violence against politicians (Pulejo and Querubín, 2023). Third, municipalities below this threshold were subject to budget constraints until 2013, limiting their spending autonomy and impacting corruption and rent-seeking (Daniele and Giommoni, 2021). The effects of these rules are reflected in unbalanced pre-treatment characteristics at this population cutoff. To account for this

[4]Log surface, log longitude, log latitude, log elevation, log distance from regional capital, log population, log population density, log foreign residents per 100 inhabitants, indicator for provincial capital, average age, % high-school educated, % unemployed, % employed in agriculture, presence of mafia as of 2006, vote share in women-related referenda, turnout and vote share of the right-wing coalition in the last national election.

set of differences, which cannot be disentangled one from the other, all our RDD analyses refer to the sample of municipalities above 5,000 inhabitants.[5]

Our design fits the standard identifying assumptions of the RDD: The McCrary (2008) and Cattaneo et al. (2018) tests indicate that the forcing variable is smooth (Figure A3), and pre-treatment municipal characteristics are balanced at the cutoff (Table A1). To make sure that our analyses are comparing similar municipalities, we run these balance tests on an exceptionally large battery of 34 municipal characteristics. On top of geographic characteristics, municipalities close to the cutoff do not differ in terms of their populations' socioeconomic status and political attitudes.

Importantly, our empirical setting also meets the assumptions under which close-election RDDs can effectively identify the impact of winning politicians' characteristics (Sekhon and Titiunik, 2012; Marshall, 2024). Figure A4 indeed demonstrates that narrowly elected female mayors are not different from narrowly elected male mayors across seventeen observable characteristics, including education, profession, prior political experience, and political affiliation, assuaging concerns about compound treatment effects and compensating differentials.

[5]The main results replicate on the full sample, as shown in Table A3 in the Appendix.

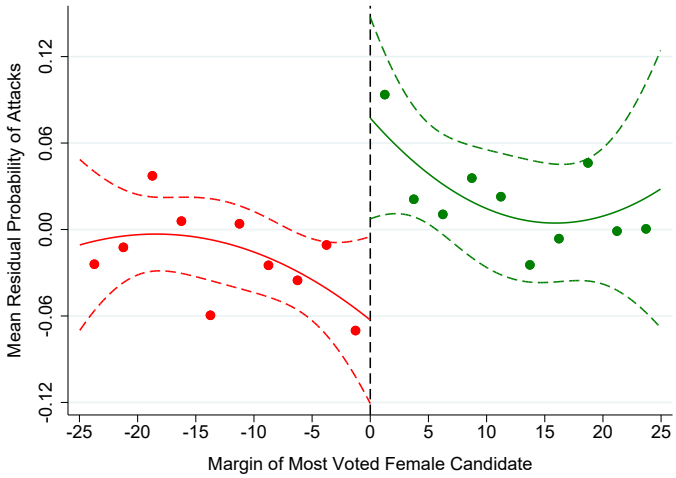
4 Estimating the Gender Differential in Attacks

4.1 Main Results

We first provide graphical evidence of the existence of a gender differential in attacks, by means of an RDD plot. Figure 1 displays a clear jump in the polynomial fit at the cutoff, indicating that the victory of a woman increases the likelihood that the mayor will be attacked while in office. Corroborating this preliminary evidence, Table 1 presents estimates of β from Equation (1). All the RDD coefficients are positive and significant, confirming that narrowly elected female mayors are more likely to suffer violence than narrowly elected male mayors. The effect ranges from 0.51 to 0.57 standard deviations when fitting a linear polynomial (columns 1 and 2) and from 0.48 to 0.52 standard deviations when fitting a quadratic polynomial (columns 3 and 4), and remains stable when introducing controls (even columns).

To contextualize these effects, consider that 8.6% of narrowly elected male mayors experience an attack during their term, while electing a woman nearly *triples* the average probability of a mayor being attacked, raising it to 22.8%. In the Appendix, Table A2, we show that the effect is specific to the extensive margin: using the log or inverse hyperbolic sine of the number of attacks as the outcomes in Equation (1), the RDD coefficient becomes insignificant after controlling for whether the mayor was attacked at all. This is consistent with the fact that repeated attacks on the same mayor are rare: Only 28.7% of attacked mayors experience more than one attack over a single term.

Figure 1: Mayor's Gender and Probability of Attacks, RDD Plot



Notes: Average residual probability of observing at least one attack on the mayor of municipality i during term t (y-axis), for a given binned level of margin of victory of the most voted female candidate (x-axis). The solid lines are quadratic polynomials, fitted separately on each side of the cutoff. The dashed lines are 95% confidence intervals.

Table 1: Mayor's Gender and Probability of Attacks, RDD Estimates

	(1)	(2)	(3)	(4)
Female Mayor	.142***	.160***	.138**	.150***
	(.048)	(.048)	(.054)	(.051)
Polynomial Order	1st	1st	2nd	2nd
Region FEs	Yes	Yes	Yes	Yes
Election-Year FEs	Yes	Yes	Yes	Yes
Controls	No	Yes	No	Yes
Mean Depvar	.086	.086	.093	.093
SD Depvar	.281	.281	.290	.291
Bandwidth	16.87	16.00	26.92	29.70
Effective N	925	853	1,389	1,469
N Left	532	483	853	922
N Right	402	381	526	547

Notes: RDD estimates with triangular weighting kernel and data-driven optimal bandwidth selection (Calonico et al., 2014). In all models, the dependent variable is an indicator for the mayor of municipality i being attacked at least once during term t. The running variable is the margin of victory of the most voted female candidate, computed as the difference between her vote share and the one of the most voted male candidate. The mean and standard deviation of the dependent variable are measured within the left half of the optimal bandwidth selected by the algorithm for each model. Controls: See footnote 4. Robust bias-corrected standard errors clustered at the municipality level in parentheses.

In the Appendix, we present the results of a series of heterogeneity tests that further characterize the baseline result of Table 1. In Figure A5, we show that women are attacked more in towns with both progressive and conservative gender norms. This is consistent with violence against female politicians being driven by the isolated actions of a few perpetrators, and therefore unrelated to the broader gender culture of a given location. We also find that the gap in attacks emerges early in the mayoral term, it is larger for first-term mayors (Figure A6), and it is stronger for threats than for violent attacks (Figure A7). Lastly, we observe that the gender gap in violence persists even after multiple women have been elected as mayor in the same city (Figure A8).

4.2 Robustness Checks

We now briefly summarize the upshots of a battery of tests aimed at ensuring the empirical credibility and the robustness of the baseline results in Table 1.

Validity of RDD Assumptions: To verify the continuity of potential outcomes away from the cutoff as recommended by Cattaneo et al. (2019), we re-estimate our RDD using nominally irrelevant cutoffs. Figure A9 shows that there are no such discontinuities around irrelevant levels of the running variable.

Characterization of RDD: Table 1 already shows that the RDD coefficient remains stable when using a quadratic rather than a linear polynomial. In Figure A10, we document that the results are also robust to using a wide range of symmetric bandwidths,

both smaller and larger than those of Table 1. Third, as attacks are rare events, we make sure that the coefficients are not driven by a handful of observations. As shown in Figure A11, the treatment effect remains positive and strongly significant regardless of which region (Panel A) or which election year (Panel B) is excluded from the sample.

Specificity to Close Elections: While it would not constitute a violation of internal validity, it is informative to check whether the results we obtain are specific to the close elections that make up our effective RDD sample. Indeed, at least in principle, one might think that the victory of a female candidate is more likely to be followed by political violence when it is the result of a contested election.

We begin with a general, descriptive test, where we explore the correlation between the competitiveness of mayoral elections and the likelihood that the winner is attacked during her term in office. As shown by the scatterplots in Figure A12, there seems to be no clear link between these two variables. This is true both for elections won by a man (Panel A) and for those won by a woman (Panel B).

Next, we evaluate if and how much the coefficients in Table 1 are driven by observations very close to the cutoff, i.e., by elections decided by a very narrow margin. We repeat our estimates using a uniform rather than a triangular kernel, thus attributing equal weight to all the observations within the optimal bandwidth. As shown in Table A4, this does not affect the size and significance of the estimates.

We also perform two exercises using panel data estimators on the full sample of elections within our observation period. We begin by fitting a simple, two-way fixed effect model. That is, we estimate the effect of electing a female mayor on the likelihood

that the mayor is attacked, conditional on election-year fixed effects, municipality fixed effects, and a large battery of time-varying controls. The results, displayed in Table A5, confirm that female mayors are significantly more likely to be attacked. However, the magnitude of the effect − about 0.21 standard deviations − is smaller than in the RDD.

To inquire whether this two-way fixed effect coefficients are uniquely driven by close elections, in the last two columns of Table A5 we interact the indicator for electing a female mayor with the margin of victory. The main coefficient of interest remains positive and significant, while the coefficient on the interaction term − being remarkably small − implies that the effect decays very mildly when moving away from the cutoff.[6]

4.3 Alternative Explanations

Before moving to the analysis of mechanisms, we present a series of additional empirical exercises aimed at strengthening the causal interpretation of our main result.

Differential Reporting by Gender: Rather than experiencing more attacks, female mayors may simply be more likely to denounce these episodes. Two complementary tests suggest that this is unlikely: First, Avviso Pubblico flags when an attack was reported by the victim(s). If we repeat our analysis excluding the 452 self-reported episodes, the RDD coefficients become even larger (Table A6). Second, we differentiate between attacks in a private and public space, as the former might be underreported. Our findings are similar across the two samples (Figure A13). Overall, these results show

[6]We also tried to implement the approach proposed in Angrist and Rokkanen (2015), but the algorithm could not find a suitable test of covariates to satisfy their conditional independence assumption.

that reporting bias − a major identification problem for previous studies on the topic − does not constitute an issue in our context.

Generalized Political Violence: We perform two tests: First, we assess whether the results in Table 1 reflect higher levels of generalized political violence in a town *prior* to the election of a female mayor. Using an indicator for attacks on the mayor during the previous term as dependent variable yields null coefficients (Table A7), ruling out potential anticipation effects.

Second, we test whether towns that narrowly elect female mayors experience an overall increase in the frequency of attacks towards other local officials after the elections. Under this scenario, the coefficients in Table 1 may reflect a generalized increase in political violence, not the intention to target female mayors. Figure A14 shows that this is not the case.

5 Explaining the Gender Differential in Attacks

Having established that violence is significantly more likely to target female than male mayors, we now inquire the causal mechanisms behind this differential. As outlined above, we explore two potential explanations: political influence and discrimination.

5.1 Violence on Women as Political Influence

We begin by assessing whether violence against female mayors is linked to their distinctive policy preferences and performance in office. Under this scenario, perpetrators may

attack strategically, with the aim of influencing women's policy agenda and moving it closer to their own preferences. To systematically evaluate this channel, we present the results of seven sets of empirical tests. All of them reject significant differences in policy preferences and performance between male and female mayors, and are inconsistent with policy influence being the main driver of the gender differential in attacks.

No Gender Differences in Budget Allocation: To check whether female mayors prioritize different policy areas, we gather data on municipal expenditures from AidaPA. We fit the RDD model of Equation (1) using as outcomes expenditures on seventeen budgetary items. Figure 2 plots the results for both log total expenditures per capita (Panel A) and share of total expenditures (Panel B). Across all items and for both transformations of these dependent variables, the estimates reject significant differences in budget allocation between narrowly elected female and male mayors. These results align with those of Casarico et al. (2022) and Accettura and Profeta (2021) for the years 2000-2015. Finally, Figures A18 and A19 show that the results are similar when considering only the first year of the term and when excluding attacked mayors from the sample. This result is important, as it rules out that the absence of significant differences in policies is an equilibrium outcome of the gender gap in attacks.

No Gender Differences in Public Goods Provision: Although female and male mayors allocate resources similarly across policy areas, they may still differ in the results they achieve, which could, in turn, explain the gender differential in attacks. To inquire this possibility, we leverage data from OpenCivitas, a government initiative aimed at promoting accountability through independent, expert-based evaluations of the quality

and financial sustainability of local public goods. As part of the program, financial advisors to the Ministry of Finance review detailed data on the revenues, expenditures, and public goods produced by municipalities.[7] They then attribute scores from 0 to 10 to each local administration on seven different categories: overall, public administration, police, education, social services, transportation, and waste management.[8]

To test for differences in mayoral performance, we estimate Equation (1) using as outcome the average of each score over a mayoral term. The results − plotted in Figure 3 − do not reveal significant gender differences in mayoral performance, neither overall nor for each of the six policy areas evaluated by the program. This suggests that the gender differential in attacks is unlikely to be motivated by a dissatisfaction of perpetrators with the quality of public goods and services provided by female mayors.

Women Are not More Extreme Policymakers: While there are no average gender differences in performance, the women in our sample might be more "extreme" policymakers than men. If this were to be the case, the observed gap in attacks would be linked to a higher likelihood of targeting female mayors who systematically deviate from the average performance of their colleagues.

Two complementary tests show that this is not the case. First, the distributions of overall OpenCivitas scores are largely overlapping across genders (Figure A15), and

[7]During our sample period, these data were produced for the years 2010, 2013, 2015, 2016, 2017, 2018, 2019, and 2021. The project does not cover municipalities in the so-called "special status" regions: Friuli-Venezia Giulia, Sardinia, Sicily, Trentino-Alto Adige, and Valle d'Aosta.

[8]To justify the use of this outcome, in the Appendix (Figure A20), we show that the probability of attacks indeed tends to be higher for mayors that perform relatively worse according to OpenCivitas scores.

their variances are statistically indistinguishable (the p-value from a two-tailed variance-comparison test is 0.78). Second, using the absolute deviations of a mayor's OpenCivitas scores with respect to the sample mean as the outcome of Equation (1), all coefficients are not different from zero (Figure A16).

Figure 2: Mayor's Gender and Municipal Budget Allocation

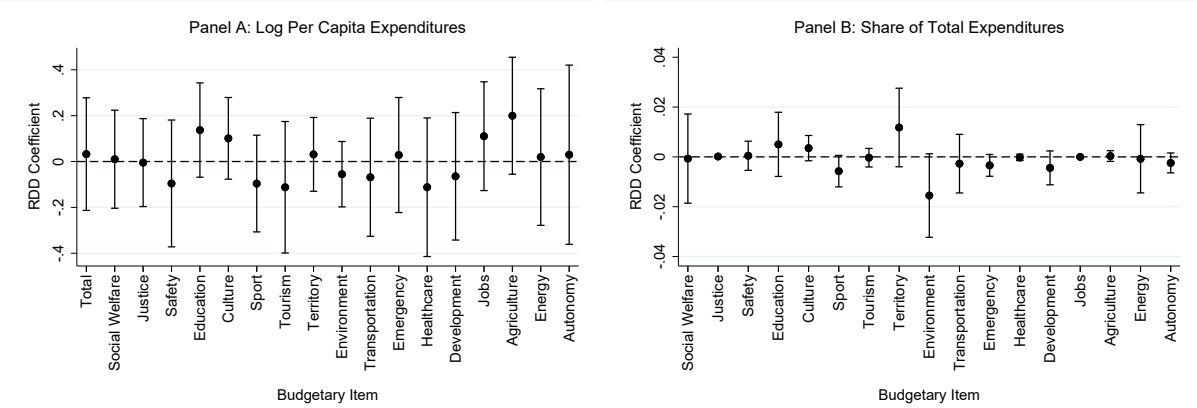
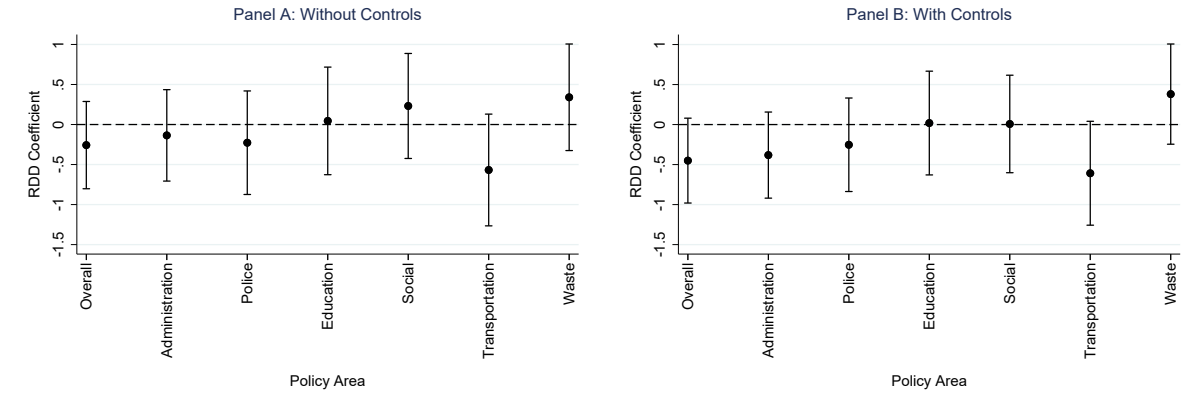


Figure 3: Mayor's Gender and Quality of Local Public Goods



Notes: RDD estimates with triangular weighting kernel and data-driven optimal bandwidth selection (Calonico et al., 2014). Vertical bars are 95% confidence intervals, based on robust, bias-corrected standard errors clustered at the municipality level.

Differential in Attacks not Driven by Differences in Pre-Elections Policy

Stance: A potential critique of the previous tests is that mayors' policymaking could

itself be shaped by attacks. We already show that no significant differences in policy-making emerge even when focusing on mayors in their first year in office and mayors not victims of attacks. As an additional test, we examine mayors' policy stances expressed even before elections took place by analyzing their electoral manifestos. We are able to match 308 mayoral candidates in our sample to the electoral manifestos published online during their campaign.[9] To analyze the content of these manifestos, we measure the prevalence of budget-related topics using a predefined list of words associated with each topic. These topics correspond to the 18 budget categories outlined in Figure 2, covering areas such as social welfare, healthcare, education, and culture, as well as an additional dimension relaged to gender policy. In addition to this, we conduct a bert-based sentiment analysis of the manifesto text trained on Italian language and ranking manifestos on a 1 to 5 scale. As shown in Figure A17, we find no significant gender differences in topic prevalence nor sentiment among winning female candidates. This further reinforces the absence of systematic differences in policymaking both before and after taking office.

No Gender Differences in Financial Performance: Another important goal of mayors' work is preserving the financial health of their municipalities. Indeed, failing to do so may produce tangible negative consequences on the population, such as raising fiscal pressure or dependency on central government's bailouts. To check whether female mayors differ from male mayors in this particular respect, we use two measures of financial performance as outcomes of our RDD model: excess surplus as defined in

[9]We thank Simone Paci for sharing this data, collected for Paci (2025).

Carreri (2021) and a municipality's degree of dependence on external funding. The results, summarized in Table A8, reject any significant differences in financial performance between narrowly elected female and male mayors.

No Gender Differences in Corruption: Across countries, there is evidence that female politicians and bureaucrats are less corrupt than men (Decarolis et al., 2023). If this holds true among the mayors in our sample, it may be driving the observed gender differential in attacks. In particular, failure to corrupt female mayors may push organized criminal groups to use violence as a substitute for bribes (Pulejo and Querubín, 2023). To test for this, we combine two sets of measures for corruption at the municipal level, and use them as outcomes in Equation (1). The first is an official count of corruption-related charges, recorded by the Ministry of Internal Affairs for the period 2006-2014. As shown in Table A9, we find no evidence of changes in corruption at the cutoff for three different transformations of this variable.

Following Pulejo and Querubín (2023), we also test for this channel using as outcome three proxies for corruption in procurement for public works. First, we consider whether municipalities cluster the values of contracts below thresholds associated with additional regulatory requirements. Second, we consider the number of firms invited to bid in negotiated procedures, where a higher number signals more transparent procurement (Decarolis et al., 2021). Finally, we consider the frequency of subcontracting, which has been associated to criminal infiltration (Decarolis et al., 2021).[10] The results, displayed in Table A10, reveal no significant differences in procurement management by women-led

[10] Additional details on these measures are in Pulejo and Querubín (2023), Section 6.

municipal administrations.

Differential in Attacks not Driven by Political Orientation: If women were attacked more due to their political platform, ideology may have a role in explaining attacks. In Table A11, we split our sample based on mayors' political affiliation, and re-estimate our baseline equation. The goal is to assess whether the observed gender differential in attacks is driven by female mayors of a specific ideological leaning. Although the effects are statistically significant only for left-wing mayors, the coefficients are substantially positive also for right-wing ones (likely not significant due to the small sample size). Thus, female mayors are attacked more irrespective of their ideology, suggesting that their political positions are not the main reasons why they are victimized. This result also confirms that the slight imbalance in right-wing women elected at the cutoff − for which we already control for in the main regression − does not in any case drive our findings.

Differential in Attacks not Driven by Policy-Motivated Episodes: For 739 episodes, Avviso Pubblico reports that a particular policy choice or promise is likely to have led to the attack. While this is likely a lower bound of the number of policy-motivated episodes, repeating our analyses after excluding them leaves the coefficients of Table 1 essentially unaffected, as shown in Table A12. This confirms that policy choices are unlikely to be the main motivation behind higher attacks on women.

Differential in Attacks not Driven by Criminal Perpetrators: A complementary approach to exploring whether attacks are motivated by different policies is to examine the perpetrators. In Italy, organized crime often employs attacks against

politicians for strategic, policy-related reasons (Daniele and Dipoppa, 2017; Pulejo and Querubín, 2023). To assess the extent to which the actions of mafia groups may contribute to the observed gender differential in attacks, we conduct two complementary exercises, with results displayed in Figure A21.

First, we re-estimate Equation (1) separately for municipalities with and without a proven presence of organized crime prior to 2006.[11] The coefficients in Panel A indicate that female mayors are more likely to be attacked in both types of municipalities. These patterns are confirmed when separating attacks that − according to our coding of the descriptions in Avviso Pubblico's reports − are likely perpetrated by criminal organizations (Figure A21, Panel B). We thus conclude that the gender differential in violence is not driven by attacks perpetrated by criminal groups, that typically use violence to obtain policy favors.

In total, we analyze over 80 variables related to policy choices, performance, public goods provision, and rent-seeking. To our knowledge, this is the most extensive dataset on municipal-level outcomes in Italy. The absence of significant gender differences across any of these diverse outcomes strongly suggests that policy motivations do not drive the gender gap in attacks in this context. Although we lack data on the spatial allocation of public goods (e.g., a mayor might open a new school in a poor rather than a rich neighborhood), this is a minor concern given that the average size of Italian municipalities

[11] We combine three indicators: *(i) MafiaVictims*, equal to 1 if municipality i experienced at least one mafia-related homicide according to Vittimemafia.it; *(ii) MafiaSeizures*, equal to 1 if municipality i had at least one seizure of goods, properties, or firms belonging to mafias, Law 646/1982; *(iii) MafiaInfiltrated*, equal to 1 if municipality i had at least one dissolution of its city council due to mafia infiltration, Law 221/1991.

(about 7,500 residents) limits the feasibility of spatially targeted policies.

5.2 Violence on Women as Discrimination

We now investigate whether the gender gap in attacks is motivated by discrimination. Disentangling discrimination from other potential motives is challenging, as other factors might explain whether a certain group is evaluated according to unfair standards. As described by Gaebler and Goel (2024), the literature on discrimination has performed two types of tests. The first is a benchmark test, evaluating whether the members of a certain group are treated in a different way (see, e.g., Gelman et al., 2007; Starr and Rehavi, 2013; MacDonald and Raphael, 2020; Grossman et al., 2023 for applications to various contexts). For example, studies on racial profiling show that black loan applicants are less likely to receive loans. Benchmark tests are vulnerable to omitted-variable bias, as unobserved factors might explain differential treatment that is unrelated to discrimination. In our setting, this test corresponds to the RDD regressions of Table 1, which indeed show how female mayors are about three times as likely as men to incur attacks, in spite of governing comparable towns (Table A1) and being similar on other personal attributes (Figure A4).

The second standard machinery to pinpoint discrimination are outcome tests (Becker, 1957, 1993). These focus on success rates: if groups receive equal treatment but their subsequent outcomes are different, then the decision-making process was biased. Following the above example, there would be discrimination if, conditional on receiving loans, black loan receivers were more likely to repay loans. However, this test can fail

due the problem of inframarginality: the same decision threshold may be applied uniformly across groups, but there might be differences in the underlying distributions of outcomes across those groups.[12] Our evidence has already ruled out this possibility: narrowly elected female mayors perform as well as narrowly elected male mayors (Figure 3), they are not more likely to deliver "extreme" performances (Figure A16), and their distribution of performance closely tracks the one of their male colleagues (Figure A15).

As recently demonstrated by Gaebler and Goel (2024), when both the benchmark and the outcome test agree in pointing toward discrimination, then at least one of them must be yielding a correct conclusion. Therefore, in our RDD setting, the fact that female mayors are attacked more while also delivering a comparable performance implies that the perpetrators of attacks are holding them to unfair, discriminatory standards.

Under this scenario, perpetrators are animated by a generalized distaste for the presence of women in positions of power. Hence − even if female mayors adopt similar policy choices and perform in a comparable way − they may be subject to double standards and be more likely than male mayors to be the targets of violence. The results of our tests consistently show that this is the case.

Women Are Attacked More Regardless of Performance: We start by coding an indicator for high- and low-performing mayors based on whether they rank above or below the median of the OpenCivitas scores. We then estimate an augmented version

[12]For example, suppose that the loan repayment rate for Black recipients is 70%, while it is 60% for White recipients. If a bank uniformly applies a lending threshold of 50%, we might incorrectly infer that Black applicants were held to a more stringent lending standard.

of Equation (1), whereby each term is interacted with the indicator for the mayor being high-performing.[13] In other words, we estimate whether the RDD effect of electing a female mayor on the probability of attacks varies by mayoral performance.[14]

The coefficients, plotted in Figure 4, show that the gender gap in violence is large and significant among mayors with relatively poor performance (Panel A). A low-performing woman is significantly more likely to experience attacks than a low-performing man. This differential attenuates − but remains significant in most instances − among mayors displaying a relatively high performance (Panel B).

The results of this exercise deliver two key insights. On the one hand, good performance does not shield female mayors from violence, indicating that discrimination matters above and beyond any potential considerations about what female mayors do in office. On the other hand, these biases also affect the likelihood of incurring violent punishment for a bad performance, which is significantly higher for female mayors.

Women Are Punished More Regardless of Expenditures: As a complementary test for double standards, we check whether female mayors are more likely than male mayors to be punished regardless of their choices on how to allocate the municipal budget. To do so, we proceed in the same way as for performance. First, using official budget data, we classify mayors as setting per-capita spending below or above the sam-

[13]The indicator is interacted to all terms since high-performing mayors may be elected in different towns than low-performing mayors, and differential town characteristics may in turn affect our outcome of interest.

[14]Mayoral performance might significantly vary by gender, which would introduce post-treatment bias. Yet, this is not a concern in our setting since − as shown in Figure 3 − there is no significant discontinuity in Opencivitas scores across our RDD cutoff.

ple median, both in total and for each of the seventeen items listed by AidaPA. Second, we interact the high-expenditure indicators with all the terms of Equation (1), so as to obtain separate estimates of the gender gap in violence for mayors with relatively high and low spending per capita on each policy area. Our intuition is that low-spending mayors may be less favored by voters, not only due to Italians' general preference for higher public spending but also because low spending likely serves as a proxy for mayors who are unable or ineffective in using available resources (Carreri, 2021). The results, displayed in Figure A22, closely track those on performance. While the gender gap in attacks is wider among mayors who spend relatively less, women are significantly more likely to be attacked even when they spend relatively more.

A Test of Discrimination: To better connect our findings on violence and performance, in Figure 5 we follow Gaebler and Goel (2024) and plot the gender differential in the probability of being attacked as a function of the gender differential in performance. For ease of visualization, we display this correlation at the level of fifteen regions, with bins proportional to the number of mayoral races held in each of them during our sample period. The concentration of bins in the upper-right quadrant implies that, in seven of the fifteen regions, women are attacked more than men in spite of delivering better mayoral performances.

Figure 4: Gender Differential in Attacks and Mayoral Performance, by Policy Area

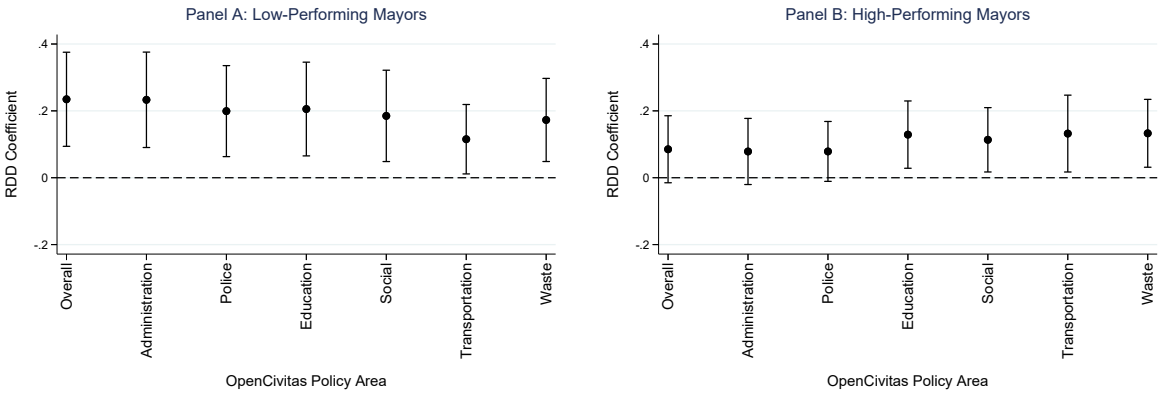
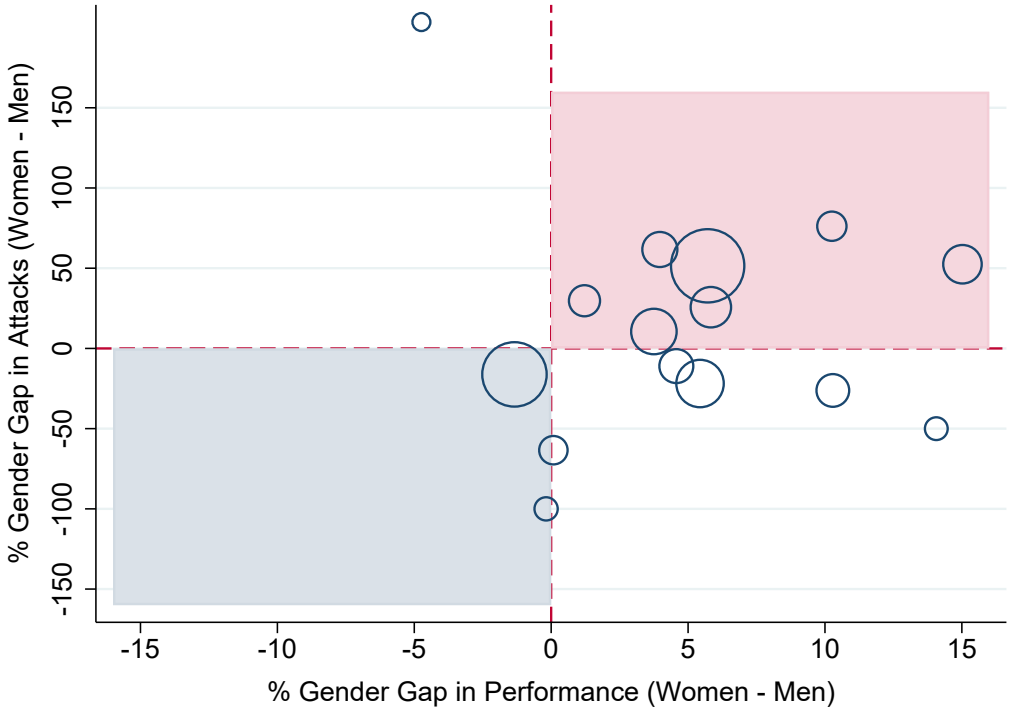


Figure 5: Gender Differential in Performance and Attacks, by Region



Notes (Figure 4): RDD estimates from Equation (1). Vertical bars are 95% confidence intervals, based on robust, bias-corrected standard errors clustered at the municipality level. *(Figure 5)* For each of fifteen regions, the figure plots the percentage differential between female and male mayors in the probability of being attacked (y-axis) against the percentage differential between female and male mayors in OpenCivitas scores for public goods provision (x-axis). The diameter of each bin is proportional to the number of mayoral races held in each region during our sample period. The upper-right quadrant, shaded in red, encompasses cases in which female mayors are more likely to be attacked in spite of delivering a better performance.

Furthermore, and crucially for evaluating the use of discrimination by perpetrators, the lower-left quadrant is empty. That is, the same pattern never replicates for men: There are no regions in which men are attacked more than women in spite of performing better in terms of public goods provision. Therefore, the density of bins in the upper-right quadrant seems more consistent with a bias against female mayors rather than a systematic tendency of perpetrators to attack mayors who perform relatively well.[15]

Taken together, our findings indicate that women are targeted more independently on their characteristics, their choices, and the performance they display while governing. Instead, the gender gap in violence reflects a consistent pattern of attacks on women even when they share similar characteristics with men and they perform well in office, and a higher likelihood to punish women when they deliver a poor performance.

6 Consequences of Attacks against Women

We conclude our empirical exploration by investigating whether attacks on female mayors have different consequences than those on male mayors. This question is motivated by a large literature on gender differences in risk aversion (see Croson and Gneezy, 2009 for a review), and it is relevant for two reasons. First, identifying differential consequences by gender could speak to the efficacy of attacks: If attacks are more successful in driving

[15]While our RDD regressions found no significant differences in performance among female and male mayors, in this exercise we do find regions in which, overall, female mayors perform better than male mayors. The reason is twofold: first, we are simply plotting average gaps at the regional level. Second, we include all mayoral races in this descriptive exercise, not just close elections.

women out of politics or in influencing their choices, this higher efficacy may contribute to explaining the observed gender gap in political violence. Second, as far as political persistence is concerned, differential effects of attacks on women's likelihood to remain in politics might explain part of the gender gap in representation observed across countries.

Before analyzing the consequences of attacks across genders, we first test for gender-based selection in who becomes a target of violence. To do so, we replicate the analysis from Figure A4, which examines the impact of a marginal electoral victory by female candidates on individual characteristics, but here we focus exclusively on mayors who have been attacked. We find minimal differences between male and female victims: of the 14 observable characteristics tested, only one is statistically significant –marginally elected female mayors who are attacked tend to be slightly younger than their male counterparts. Otherwise, attacked female and male mayors are similar in terms of ideology, incumbency status, alignment with regional governments, education, profession, and political experience (Figure A23). This suggests that any gender differences in the consequences of attacks are unlikely to be driven by differences in the characteristics of those targeted.

We begin our inquiry into the effects of attacks by considering political persistence. We measure the political persistence of the mayors in our sample in two ways: *(i)* Whether they run for any political office above the local level, i.e., at the regional, national, or European level, and *(ii)* Whether they run for re-election as mayor. To gauge whether the female mayors in our sample have differential political persistence, we first re-estimate Equation (1), using as outcome each of our two proxies for persistence.

We then subset the results by whether mayors were attacked during their first term. This restriction considerably reduces our sample and creates endogenous subsets. Therefore, we suggest to interpret these results cautiously, as descriptive evidence based on the available data.

On average, female mayors rerun for political office at the same rate as men (Table 2, columns 1 and 4). When restricting the sample to mayors who did *not* experience an attack during the term (columns 2 and 5), we still observe no significant gender differences in political persistence. In columns 3 and 6, we explore gender differences in political persistence among mayors who experienced at least one attack.

Conditional on being attacked, female mayors are more likely to run for office at a higher level (column 3). Yet, once their first mayoral mandate is over, they are 1.46 standard deviations less likely to rerun for mayor (column 6). This is a sizable effect, which suggests that attacked women may fear further retaliation at the local level. However, as pointed out above, we interpret these results cautiously due to the small sample selected based on an endogenous event. Furthermore, to make sure that the result on attacked mayors in column (6) is not driven by the particularly small bandwidth selected by the algorithm, in Figure A24 we show that the effect remains very similar for all bandwidths between 10 and 30 percentage points away from the cutoff.

Table 2: Attacks on Mayor and Persistence in Politics

	(1)	(2)	(3)	(4)	(5)	(6)
	DV: Running for a Higher Office			*DV: Rerunning for Mayoral Office*		
	All Mayors	*Non-Attacked Mayors*	*Attacked Mayors*	*All Mayors*	*Non-Attacked Mayors*	*Attacked Mayors*
Woman Mayor	.009	-.008	.192*	.050	.095	-.742***
	(.036)	(.037)	(.107)	(.078)	(.086)	(.189)
Polynomial	1st	1st	1st	1st	1st	1st
Region FEs	Yes	Yes	Yes	Yes	Yes	Yes
EY FEs	Yes	Yes	Yes	Yes	Yes	Yes
Controls	No	No	No	No	No	No
Mean DV	.051	.049	.053	.609	.627	.560
SD DV	.221	.217	.229	.489	.484	.507
Bandwidth	16.21	15.61	8.81	19.22	16.26	12.94
Effective N	888	767	56	624	466	58
N Left	505	447	19	360	271	19
N Right	383	320	37	264	195	39

Notes: RDD estimates with triangular weighting kernel and data-driven optimal bandwidth selection (Calonico et al., 2014). The running variable is the margin of victory of the most voted female candidate (the difference between her vote share and that of the most voted male candidate). In columns from (1) to (3), the dependent variable is an indicator for whether the mayor runs for election at the regional, national, or European level at the end of the term. In columns from (4) to (6), the dependent variable is an indicator for whether the mayor seeks re-election at the end of the term. In these models, the sample is restricted to mayors who do not face a term limit. The mean and standard deviation of the dependent variable are measured within the left half of the optimal bandwidth selected by the algorithm for each model. Controls: See footnote 4. Robust bias-corrected standard errors clustered at the municipality level in parentheses. *** p<.01, ** p<.05, * p<.1.

On top of pushing women to select out of local politics, perpetrators may also wish to change their policy choices or to induce them to step down before the end of their mayoral mandate. To gauge whether attacks have differential effects by gender on each of these two dimensions, Table A13 summarizes the results of difference-in-discontinuity analyses (Grembi et al., 2016), using as outcomes the log of per-capita expenditures (columns 1 and 2) and an indicator for whether the mayor resigns at year t (columns 3

and 4). The coefficients displayed are estimates of whether the effect of narrowly electing a female mayor on each outcome of interest changes in the years after the winning mayor is attacked, compared to the years before.

All models show that, following an attack, female mayors are not more likely to change their spending choices or to renounce to their mayoral job. Therefore, in terms of the efficacy of attacks from the point of view of perpetrators, the analyses in this section offer mixed findings. On the one hand, attacking female mayors may convince them to leave local politics at the end of their mandate. On the other hand, it might also convince them to run for higher offices and achieve even more powerful positions than before. Additionally, if perpetrators wish to influence local policies or induce the mayor to resign, the data do not suggest that these goals are more easily achieved when targeting a woman as opposed to a man. Lastly, the efficacy mechanism implies that perpetrators anticipate higher success from targeting women. However, an observational setting like the one of our study clearly does not allow to pin down the underlying expectations of perpetrators.

7 Conclusion

Taking Italian local politics as a case study, this article finds a large gender gap in violence against politicians: Narrowly elected female mayors, similar to male mayors on a large set of personal characteristics and elected in comparable towns, are almost three times as likely to be attacked. While the literature on the economics of gender

has explored discrimination against women in a variety of settings, our study causally identifies differential treatments in one of the most consequential contexts − politics − and on a critical dimension − violence. Furthermore, significantly advancing with respect to extant work on violence against women in politics, we use third-party data and exploit as-if random variation in the gender of elected officials.

This study also furthers our understanding of the underlying reasons for the gender gap in violence on politicians. Drawing on a large body of work in political economy and economics of gender, we propose and evaluate two sets of hypotheses. First, attacks may be motivated by political influence, with perpetrators aiming to change the behavior of female politicians to make it consistent with their own preferences. Alternatively, attacks may be driven by perpetrators' discriminatory attitudes, whereby they are more likely to attack a woman independent of her behavior, and to punish her more harshly than a comparable man.

Our RDD analyses show no significant differences between female and male mayors in budget allocation, public goods provision, financial performance, and propensity to be corrupt. This suggests that women's choices are unlikely to be the main driver of the gender gap in attacks. Instead, our evidence consistently shows that the gender differential in attacks is driven by discrimination on behalf of perpetrators. Female mayors are more likely to be attacked irrespective of their performance, consistent with perpetrators using double standards.

We conclude providing suggestive evidence that attacked women select out of politics at higher rates than attacked men, as they are significantly less likely to seek re-election

as mayors. Thus, our findings point to political violence as an additional, important determinant of women's underrepresentation in politics.

From a policy perspective, these findings underscore the importance of ensuring the safety of newly elected women. From an institutional perspective, our findings emphasize the importance of not only encouraging women's participation in politics, but also preventing their selection out of it. Although other papers have focused on women's persistence in politics after an electoral defeat (Peveri and Sangnier, 2023; Wasserman, 2023), our results indicate that high exit rates could remain a concern even after women's victories, shedding further light on the enduring gender gap in representation.

In terms of external validity, we believe that there are at least three elements to consider. In Italy, mayors are directly elected and wield significant influence over the municipal budget, establishing them as pivotal players in local politics and highly visible public figures. It remains unclear whether comparable findings would emerge in contexts where mayors have less authority or are appointed by the council rather than directly elected. On the contrary, we do not identify any divergences in policymaking. In settings where women enact different policies, there could be a heightened potential for gendered violence if policymaking is an additional factor triggering hostility.

This study presents evidence on several aspects of violence against women in politics, delving into the link between in-office behavior and attacks. Yet, there are other dimensions of women's political leadership, such as their public discourse and campaign style, which deserve scholarly attention. While research indicates that female politicians employ a unique rhetoric (Hayes and Lawless, 2016), the lack of systematic data on polit-

ical discourse in Italian local politics prevented us from examining gender differences in political speech in the context of this study. Future research should investigate whether women's public expressions trigger attacks, furthering our understanding of the causes behind the gender gap in political violence.

References

Abel, M. (2024). Do Workers Discriminate against Female Bosses? *Journal of Human Resources 59*(2), 470–501.

Accettura, C. and P. Profeta (2021). Gender Differences in Political Budget Cycles. *Working Paper, Axa Gender Lab on Gender Equality*.

Adams-Prassl, A., K. Huttunen, E. Nix, and N. Zhang (2024). Violence against Women at Work. *The Quarterly Journal of Economics 139*(2), 937–991.

Aizer, A. (2010). The Gender Wage Gap and Domestic Violence. *American Economic Review 100*(4), 1847–1859.

Alesina, A., S. Piccolo, and P. Pinotti (2019). Organized Crime, Violence, and Politics. *The Review of Economic Studies 86*(2), 457–499.

Angrist, J. D. and M. Rokkanen (2015). Wanna Get Away? Regression Discontinuity Estimation of Exam School Effects Away from the Cutoff. *Journal of the American Statistical Association 110*(512), 1331–1344.

Ayalew, S., S. Manian, and K. Sheth (2021). Discrimination from below: Experimental evidence from Ethiopia. *Journal of Development Economics 151*, 102653.

Bagues, M. and P. Campa (2021). Can gender quotas in candidate lists empower women? Evidence from a regression discontinuity design. *Journal of Public Economics 194*, 104315.

Bagues, M. F. and B. Esteve-Volart (2010). Can Gender Parity Break the Glass Ceiling? evidence from a Repeated Randomized Experiment. *The Review of Economic Studies 77*(4), 1301–1328.

Baltrunaite, A., P. Bello, A. Casarico, and P. Profeta (2014). Gender quotas and the quality of politicians. *Journal of Public Economics 118*, 62–74.

Baltrunaite, A., A. Casarico, P. Profeta, and G. Savio (2019). Let the voters choose women. *Journal of Public Economics 180*, 104085.

Baraldi, A. L., G. Immordino, E. Papagni, and M. Stimolo (2023). An Unintended Consequence of Gender Balance Laws: Mafia Fuels Political Violence. *CSEF Working Paper, No. 693*.

Bardall, G., E. Bjarnegård, and J. M. Piscopo (2020). How Is Political Violence Gendered? Disentangling Motives, Forms, and Impacts. *Political Studies 68*(4), 916–935.

Baskaran, T., S. Bhalotra, B. Min, and Y. Uppal (2024). Women legislators and economic performance. *Journal of Economic Growth 29*(2), 151–214.

Baskaran, T. and Z. Hessami (2019). Competitively Elected Women as Policy Makers. *CESifo Working Paper N. 8005*.

Becker, G. S. (1957). *The Economics of Discrimination*. University of Chicago Press.

Becker, G. S. (1993). Nobel Lecture: The Economic Way of Looking at Behavior. *Journal of Political Economy 101*(3), 385–409.

Bertrand, M., C. Goldin, and L. F. Katz (2010). Dynamics of the gender gap for young professionals in the financial and corporate sectors. *American economic journal: applied economics 2*(3), 228–255.

Bertrand, M. and K. F. Hallock (2001). The gender gap in top corporate jobs. *Ilr Review 55*(1), 3–21.

Besley, T., O. Folke, T. Persson, and J. Rickne (2017). Gender Quotas and the Crisis of the Mediocre Man: Theory and Evidence from Sweden. *American Economic Review 107*(8), 2204–2242.

Bhalotra, S., D. Britto, P. Pinotti, and B. Sampaio (2021). Job Displacement, Unemployment Benefits and Domestic Violence. *Working Paper*.

Bjarnegård, E., S. Håkansson, and P. Zetterberg (2022). Gender and Violence against Political Candidates: Lessons from Sri Lanka. *Politics & Gender 18*(1), 33–61.

Bochenkova, A., P. Buonanno, and S. Galletta (2023). Fighting violence against women: The role of female political representation. *Journal of Development Economics 164*, 103140.

Boring, A. (2017). Gender biases in student evaluations of teaching. *Journal of Public Economics 145*, 27–41.

Brollo, F. and U. Troiano (2016). What Happens when a Woman Wins an Election? Evidence from Close Races in Brazil. *Journal of Development Economics 122*, 28–45.

Calonico, S., M. D. Cattaneo, and R. Titiunik (2014). Robust Nonparametric Confidence Intervals for Regression-Discontinuity Designs. *Econometrica 82*(6), 2295–2326.

Canen, N., C. Kendall, and F. Trebbi (2020). Unbundling Polarization. *Econometrica 88*(3), 1197–1233.

Carlana, M. (2019). Implicit Stereotypes: Evidence from Teachers' Gender Bias. *The Quarterly Journal of Economics 134*(3), 1163–1224.

Carozzi, F. and A. Gago (2023). Who promotes gender-sensitive policies? *Journal of Economic Behavior & Organization 206*, 371–405.

Carreri, M. (2021). Can Good Politicians Compensate for Bad Institutions? Evidence from an Original Survey of italian Mayors. *The Journal of Politics 83*(4), 1229–1245.

Casarico, A., S. Lattanzio, and P. Profeta (2022). Women and Local Public Finance. *European Journal of Political Economy 72*(March 2023), 102096.

Cattaneo, M. D., N. Idrobo, and R. Titiunik (2019). *A Practical Introduction to Regression Discontinuity Designs: Foundations*. Cambridge University Press.

Cattaneo, M. D., M. Jansson, and X. Ma (2018). Manipulation Testing Based on Density Discontinuity. *The Stata Journal 18*(1), 234–261.

Chakraborty, P. and D. Serra (2024). Gender and Leadership in Organisations: The Threat of Backlash. *The Economic Journal 134*(660), 1401–1430.

Chattopadhyay, R. and E. Duflo (2004). Women as Policy Makers: Evidence from a Randomized Policy Experiment in India. *Econometrica 72*(5), 1409–1443.

Clayton, A. (2021). How Do Electoral Gender Quotas Affect Policy? *Annual Review of Political Science 24*(1), 235–252.

Croson, R. and U. Gneezy (2009). Gender Differences in Preferences. *Journal of Economic Literature 47*(2), 448–474.

Dal Bó, E., P. Dal Bó, and R. Di Tella (2006). "Plata o Plomo?": Bribe and Punishment in a Theory of Political Influence. *American Political Science Review 100*(1), 41–53.

Dal Bó, E., F. Finan, O. Folke, T. Persson, and J. Rickne (2017). Who Becomes a Politician? *The Quarterly Journal of Economics 132*(4), 1877–1914.

Daniele, G. and G. Dipoppa (2017). Mafia, elections and violence against politicians. *Journal of Public Economics 154*, 10–33.

Daniele, G. and T. Giommoni (2021). Corruption under Austerity. *CESifo Working Paper N. 8005*.

Decarolis, F., R. Fisman, P. Pinotti, and S. Vannutelli (2021). Rules, Discretion, and Corruption in Procurement: Evidence from Italian Government Contracting. *Forthcoming, Journal of Political Economy: Microeconomics*.

Decarolis, F., R. Fisman, P. Pinotti, S. Vannutelli, and Y. Wang (2023). Gender and Bureaucratic Corruption: Evidence from Two Countries. *The Journal of Law, Economics, & Organization 39*(2), 557–585.

Egan, M., G. Matvos, and A. Seru (2022). When harry fired sally: The double standard in punishing misconduct. *Journal of Political Economy 130*(5), 1184–1248.

Ferreira, F. and J. Gyourko (2014). Does gender matter for political leadership? The case of us mayors. *Journal of Public Economics 112*, 24–39.

Folke, O. and J. Rickne (2022). Sexual Harassment and Gender Inequality in the Labor Market. *The Quarterly Journal of Economics 137*(4), 2163–2212.

Gaebler, J. D. and S. Goel (2024). A Simple, Statistically Robust Test of Discrimination. *Working Paper, arXiv preprint arXiv:2407.06539*.

Gagliarducci, S. and T. Nannicini (2013). Do Better Paid Politicians Perform Better? Disentangling Incentives from Selection. *Journal of the European Economic Association 11*(2), 369–398.

Gelman, A., J. Fagan, and A. Kiss (2007). An Analysis of the New York City Police Department's "Stop-and-Frisk" Policy in the Context of Claims of Racial Bias. *Journal of the American Statistical Association 102*(479), 813–823.

Goldin, C. (2021). *Career and family: Women's century-long journey toward equity.* Princeton University Press.

Gorrell, G., M. Greenwood, I. Roberts, D. Maynard, and K. Bontcheva (2018). Twits, Twats and Twaddle: Trends in Online Abuse Towards UK Politicians. In *Proceedings of the International AAAI Conference on Web and Social Media*, Volume 12.

Grembi, V., T. Nannicini, and U. Troiano (2016). Do Fiscal Rules Matter? *American Economic Journal: Applied Economics 8*(3), 1–30.

Grossman, J., J. Nyarko, and S. Goel (2023). Racial bias as a multi-stage, multi-actor problem: An analysis of pretrial detention. *Journal of Empirical Legal Studies 20*(1), 86–133.

Gulzar, S. (2021). Who Enters Politics and Why? *Annual Review of Political Science 24*, 253–275.

Håkansson, S. (2021). Do Women Pay a Higher Price for Power? Gender Bias in Political Violence in Sweden. *The Journal of Politics 83*(2), 515–531.

Hall, A. B. (2019). *Who Wants to Run?: How the Devaluing of Political Office Drives Polarization*. University of Chicago Press.

Hayes, D. and J. L. Lawless (2016). *Women on the Run: Gender, Media, and Political Campaigns in a Polarized Era*. Cambridge University Press.

Herrick, R., S. Thomas, L. Franklin, M. L. Godwin, E. Gnabasik, and J. R. Schroedel (2019). Physical Violence and Psychological Abuse against Female and Male Mayors in the United States. *Politics, Groups, and Identities*.

Huidobro, A. and A. Falcó-Gimeno (2021). Women Who Win but Do not Rule. The Effect of Gender in the Formation of Governments. *Journal of Politics 85*(4), 1562.

Imbens, G. W. and T. Lemieux (2008). Regression Discontinuity Designs: A Guide to Practice. *Journal of Econometrics 142*(2), 615–635.

Inter-Parliamentary Union (2024). Women in national parliaments: Monthly ranking of women in national parliaments - january 2024. https://data.ipu.org/women-ranking/?date_month=1&date_year=2024. Accessed: 2024-09-09.

Kalmoe, N. P. and L. Mason (2022). *Radical American Partisanship: Mapping Violent Hostility, Its Causes, & What It Means for Democracy*. University of Chicago Press.

Krook, M. L. (2018). Violence Against Women in Politics: A Rising Global Trend. *Politics & Gender 14*(4), 673–675.

Krook, M. L. and J. Restrepo Sanín (2020). The Cost of Doing Politics? Analyzing Violence and Harassment against Female Politicians. *Perspectives on Politics 18*(3), 740–755.

Le Barbanchon, T. and J. Sauvagnat (2022). Electoral Competition, Voter Bias, and Women in Politics. *Journal of the European Economic Association 20*(1), 352–394.

Lee, D. S. and T. Lemieux (2010). Regression Discontinuity Designs in Economics. *Journal of Economic Literature 48*(2), 281–355.

MacDonald, J. and S. Raphael (2020). Effect of scaling back punishment on racial

and ethnic disparities in criminal case outcomes. *Criminology & Public Policy 19*(4), 1139–1164.

Marshall, J. (2024). Can Close Election Regression Discontinuity Designs Identify Effects of Winning Politician Characteristics? *American Journal of Political Science 68*(2), 494–510.

McCrary, J. (2008). Manipulation of the Running Variable in the Regression Discontinuity Design: A Density Test. *Journal of Econometrics 142*(2), 698–714.

Paci, S. (2025). Tax thy neighbor: How italian mayors increase taxation in their hometowns.

Pande, R. and D. Ford (2009). Gender Quotas and Female Leadership: A Review. *Monthly Labor Review*.

Peveri, J. and M. Sangnier (2023). Gender Differences in Re-Contesting Decisions: New Evidence from French municipal Elections. *Journal of Economic Behavior & Organization 214*(October 2023), 574–594.

Piscopo, J. M. (2016). State Capacity, Criminal Justice, and Political Rights. Rethinking Violence against Women in Politics. *Política y Gobierno 23*(2), 437–458.

Pulejo, M. and P. Querubín (2023). *Plata y Plomo*: How Higher Wages Expose Politicians to Criminal Violence. *NBER Working Paper No. 31586*.

Sarsons, H. (2017). Recognition for Group Work: Gender Differences in Academia. *American Economic Review 107*(5), 141–145.

Sekhon, J. S. and R. Titiunik (2012). When Natural Experiments are Neither Natural nor Experiments. *American Political Science Review 106*(1), 35–57.

Serrano Oswald, S. E. (2023). Gender based political violence against women in Mexico from a regional perspective. *Asia-Pacific Journal of Regional Science 7*, 135–157.

Starr, S. B. and M. M. Rehavi (2013). Mandatory Sentencing and Racial Disparity: Assessing the Role of Prosecutors and the Effects of Booker. *Yale LJ 123*, 2.

Wasserman, M. (2023). Gender Differences in Politician Persistence. *The Review of Economics and Statistics 105*(2), 275–291.

Additional Tables

Table A1: Balance Checks for Relevant Covariates at Cutoff

Dependent Variable	$\hat{\beta}$	(SE)	Dependent Variable	$\hat{\beta}$	(SE)
Log Surface	-.176	(.256)	% Industry	-.005	(.011)
Log Longitude	.011	(.008)	N. of Candidates	.067	(.240)
Log Latitude	-.001	(.001)	N. of Councillors	-.670	(.796)
Log Elevation	-.108	(.163)	Turnout National Election[a]	.004	(.005)
Provincial Capital	-.021	(.025)	VS Center-Right[a] (Pre 2006)	.008	(.011)
Log Km from Reg. Capital	.112	(.119)	Female LFP (2001)	-.000	(.006)
Log Population	-.084	(.103)	Gender Gap LFP (2001)	-.008	(.005)
Pop. Above 10,000	.015	(.081)	Ever Had Female Mayor	.089	(.122)
Pop. Above 15,000	-.039	(.067)	Anti-Women VS Referenda	-.022**	(.009)
Log Population Density	-.017	(.153)	Mafia Presence (Pre 2006)	.067	(.058)
Log Foreigners x 100 Inhab.	.007	(.100)	Mafia Seizures (Pre 2006)	.034	(.059)
Had SPRAR	-.039	(.036)	Mafia Killings (Pre 2006)	.036	(.034)
Average Age	.492	(.352)	Mafia Dissolution (Pre 2006)	.012	(.013)
% High School	-.009	(.006)	Log Transcrime Index	-.146	(.106)
% Unemployed	-.001	(.003)	Has Local Media	.031	(.071)
% Youth Unemployed	-.000	(.009)	Local Media PC	-.007	(.041)
% Agriculture	.007	(.008)	Has Police Station	.007	(.042)

Notes: The coefficients displayed are bias-corrected RD estimates of $\hat{\beta}$ from Equation (1), using a first-order polynomial, with robust variance estimator (Calonico et al., 2014). The outcome variable of each model is listed in each column's title. All regressions include election-year and region fixed effects. Robust standard errors clustered at the municipal level in parentheses. [a]These outcomes are referred to the most recent parliamentary election prior to municipal election t. *** p<.01, ** p<.05, * p<.1.

Table A2: Mayor's Gender and Number of Attacks, RDD Estimates

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Devpar: Logarithm(Attacks +1)				*Depvar: InvHSin(Attacks +1)*			
Female Mayor	.111***	.002	.131***	.010	.142***	.003	.168***	.013
	(.039)	(.011)	(.038)	(.012)	(.051)	(.014)	(.049)	(.016)
Polynomial	1st	1st	1st	1st	1st	1st	1st	1st
Region FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
EY FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Controls	No	No	Yes	Yes	No	No	Yes	Yes
Dummy Attack	No	Yes	No	Yes	No	Yes	No	Yes
Mean DV	.067	.075	.068	.071	.087	.097	.087	.090
SD DV	.229	.250	.230	.242	.295	.322	.296	.310
Bandwidth	16.02	19.57	15.54	16.28	15.99	19.60	15.59	16.15
Effective N	881	1,066	833	863	880	1,067	834	860
N Left	501	630	471	489	500	631	472	487
N Right	380	436	362	374	380	436	362	373

Notes: RDD estimates with triangular weighting kernel and data-driven optimal bandwidth selection (Calonico et al., 2014). The running variable is the margin of victory of the most voted female candidate, computed as the difference between her vote share and the one of the most voted male candidate. The mean and standard deviation of the dependent variable are measured within the left half of the optimal bandwidth selected by the algorithm for each model. Controls: See footnote 4. Robust bias-corrected standard errors clustered at the municipality level in parentheses. *** p<.01, ** p<.05, * p<.1.

Table A3: Mayor's Gender and Probability of Attacks, RDD Estimates, Including Municipalities Below 5,000 Inhabitants

	(1)	(2)	(3)	(4)
Female Mayor	.054**	.056**	.062**	.060**
	(.022)	(.025)	(.029)	(.029)
Polynomial Order	1st	1st	2nd	2nd
Region FEs	Yes	Yes	Yes	Yes
Election-Year FEs	Yes	Yes	Yes	Yes
Controls	No	Yes	No	Yes
Mean Depvar	.061	.059	.059	.061
SD Depvar	.239	.235	.235	.239
Bandwidth	22.55	18.16	26.51	27.44
Effective N	3,011	2,441	3,388	3,372
N Left	1,786	1,401	2,042	2,036
N Right	1,225	1,040	1,346	1,336

Notes: RDD estimates with uniform weighting kernel and data-driven optimal bandwidth selection (Calonico et al., 2014). In all models, the dependent variable is an indicator for the mayor of municipality i being attacked at least once during term t. The running variable is the margin of victory of the most voted female candidate, computed as the difference between her vote share and the one of the most voted male candidate. The mean and standard deviation of the dependent variable are measured within the left half of the optimal bandwidth selected by the algorithm for each model. Controls: See footnote 4. Robust bias-corrected standard errors clustered at the municipality level in parentheses. *** p<.01, ** p<.05, * p<.1.

Table A4: Mayor's Gender and Probability of Attacks, RDD Estimates, Uniform Kernel

	(1)	(2)	(3)	(4)
Female Mayor	.139***	.140***	.135**	.152***
	(.045)	(.044)	(.056)	(.058)
Polynomial Order	1st	1st	2nd	2nd
Region FEs	Yes	Yes	Yes	Yes
Election-Year FEs	Yes	Yes	Yes	Yes
Controls	No	Yes	No	Yes
Mean Depvar	.087	.080	.089	.090
SD Depvar	.281	.271	.285	.286
Bandwidth	15.80	15.34	21.35	18.68
Effective N	874	822	1,149	996
N Left	497	461	694	582
N Right	377	361	455	414

Notes: RDD estimates with uniform weighting kernel and data-driven optimal bandwidth selection (Calonico et al., 2014). In all models, the dependent variable is an indicator for the mayor of municipality i being attacked at least once during term t. The running variable is the margin of victory of the most voted female candidate, computed as the difference between her vote share and the one of the most voted male candidate. The mean and standard deviation of the dependent variable are measured within the left half of the optimal bandwidth selected by the algorithm for each model. Controls: See footnote 4. Robust bias-corrected standard errors clustered at the municipality level in parentheses. *** p<.01, ** p<.05, * p<.1.

Table A5: Mayor's Gender and
Probability of Attacks, TWFE Estimates

	(1)	(2)	(3)	(4)	(5)	(6)
Female Mayor	.058***	.059***	.059**	.060**	.124***	.124***
	(.018)	(.018)	(.027)	(.026)	(.039)	(.039)
Female Margin					-0.001	-0.001
					(0.001)	(0.001)
Female Mayor ×					-0.001	-0.001
Female Margin					(0.002)	(0.002)
Mean Depvar	.125	.127	.091	.092	.091	.092
SD Depvar	.331	.333	.288	.289	.288	.289
Municipality FEs	Yes	Yes	Yes	Yes	Yes	Yes
Election-Year FEs	Yes	Yes	Yes	Yes	Yes	Yes
Controls	No	Yes	No	Yes	No	Yes
Observations	5,938	5,842	1,523	1,507	1,523	1,507

Notes: In all models, the dependent variable is an indicator for the mayor of municipality i being attacked at least once during term t. In columns (1) and (2), the sample includes all the municipality-term observations for municipalities above 5,000 inhabitants. In columns from (3) to (6), the sample is restricted to municipality-term observations following mayoral elections with at least one woman candidate and at least one man candidate. Controls: Log population, log population density, log foreign residents per 100 inhabitants, average age, % high-school educated, unemployment rate, % employed in agriculture, turnout and vote share of the right-wing coalition in the most recent parliamentary election. Robust standard errors clustered at the municipality level in parentheses. *** p<.01, ** p<.05, * p<.1.

Table A6: Mayor's Gender and Probability of Attacks, RDD Estimates, Excluding Attacks Denounced

	(1)	(2)	(3)	(4)
Female Mayor	.141***	.159***	.146***	.156***
	(.043)	(.043)	(.047)	(.045)
Polynomial Order	1st	1st	2nd	2nd
Region FEs	Yes	Yes	Yes	Yes
Election-Year FEs	Yes	Yes	Yes	Yes
Controls	No	Yes	No	Yes
Mean Depvar	.070	.064	.076	.076
SD Depvar	.255	.245	.266	.265
Bandwidth	15.96	15.15	28.12	28.36
Effective N	880	812	1,438	1,402
N Left	500	453	892	870
N Right	380	359	546	532

Notes: RDD estimates with triangular weighting kernel and data-driven optimal bandwidth selection (Calonico et al., 2014). In all models, the dependent variable is an indicator for the mayor of municipality i being attacked at least once during term t, excluding attacks that – according to Avviso Pubblico – were reported by the victim. The running variable is the margin of victory of the most voted female candidate, computed as the difference between her vote share and the one of the most voted male candidate. The mean and standard deviation of the dependent variable are measured within the left half of the optimal bandwidth selected by the algorithm for each model. Controls: See footnote 4. Robust bias-corrected standard errors clustered at the municipality level in parentheses. *** p<.01, ** p<.05, * p<.1.

Table A7: Placebo with Lagged Outcome, Attacks on Mayor

	(1)	(2)	(3)	(4)
Female Mayor	.000	-.033	.009	-.030
	(.065)	(.056)	(.078)	(.069)
Polynomial Order	1st	1st	2nd	2nd
Region FEs	Yes	Yes	Yes	Yes
Election-Year FEs	Yes	Yes	Yes	Yes
Controls	No	Yes	No	Yes
Mean Depvar	.135	.135	.134	.133
SD Depvar	.343	.343	.341	.340
Bandwidth	17.16	17.21	23.96	24.71
Effective N	593	582	794	799
N Left	340	333	484	487
N Right	253	249	310	312

Notes: RDD estimates with triangular weighting kernel and data-driven optimal bandwidth selection (Calonico et al., 2014). In all models, the dependent variable is an indicator for the mayor of municipality i being attacked at least once during term $t-1$. The running variable is the margin of victory of the most voted female candidate, computed as the difference between her vote share and the one of the most voted male candidate. The mean and standard deviation of the dependent variable are measured within the left half of the optimal bandwidth selected by the algorithm for each model. Controls: See footnote 4. Robust bias-corrected standard errors clustered at the municipality level in parentheses. *** p<.01, ** p<.05, * p<.1.

Table A8: Mayor's Gender and Financial Performance, RDD Estimates

	(1)	(2)	(3)	(4)
	Excess Surplus	*Excess Surplus*	*External Dependency*	*External Dependency*
Female Mayor	-.062	-.038	.023	.033
	(.068)	(.064)	(.024)	(.025)
Polynomial Order	1st	1st	1st	1st
Region FEs	Yes	Yes	Yes	Yes
Election-Year FEs	Yes	Yes	Yes	Yes
Controls	No	Yes	No	Yes
Mean Depvar	.683	.681	.069	.071
SD Depvar	.466	.467	.112	.115
Bandwidth	12.40	12.66	16.82	14.61
Effective N	699	693	337	297
N Left	379	381	194	161
N Right	320	312	143	136

Notes: RDD estimates with triangular weighting kernel and data-driven optimal bandwidth selection (Calonico et al., 2014). The running variable is the margin of victory of the most voted female candidate, computed as the difference between her vote share and the one of the most voted male candidate. The mean and standard deviation of the dependent variable are measured within the left half of the optimal bandwidth selected by the algorithm for each model. Controls: See footnote 4. Robust bias-corrected standard errors clustered at the municipality level in parentheses. *** p<.01, ** p<.05, * p<.1.

Table A9: Mayor's Gender and Corruption Charges, 2006-2014, RDD Estimates

	(1)	(2)	(3)	(4)
	Charges per 1,000 Inhabitants		*Charges per 1Mil EUR Spent*	
Female Mayor	-.010	-.003	-.002	-.001
	(.019)	(.018)	(.004)	(.004)
Polynomial Order	1st	1st	1st	1st
Region FEs	Yes	Yes	Yes	Yes
Election-Year FEs	Yes	Yes	Yes	Yes
Controls	No	Yes	No	Yes
Mean Depvar	.050	.052	.009	.009
SD Depvar	.129	.139	.024	.026
Bandwidth	20.57	16.22	25.31	19.36
Effective N	391	314	476	367
N Left	236	179	285	217
N Right	155	135	191	150

Notes: RDD estimates with triangular weighting kernel and data-driven optimal bandwidth selection (Calonico et al., 2014). The running variable is the margin of victory of the most voted female candidate, computed as the difference between her vote share and the one of the most voted male candidate. The mean and standard deviation of the dependent variable are measured within the left half of the optimal bandwidth selected by the algorithm for each model. Controls: See footnote 4. Robust bias-corrected standard errors clustered at the municipality level in parentheses. *** p<.01, ** p<.05, * p<.1.

Table A10: Gender Differential in Procurement Outcomes, 2007-2022

	(1)	(2)	(3)	(4)	(5)	(6)
	Bunching of Contract Values		*Log N. of Firms Invited*		*Probability of Subcontracting*	
Female Mayor	.042	.041	-.121	-.119	-.039	-.037
	(.027)	(.027)	(.139)	(.137)	(.046)	(.044)
Mean Depvar	-.010	-.010	1.85	1.84	.602	.608
SD Depvar	.148	.149	.772	.772	.307	.306
Region FEs	Yes	Yes	Yes	Yes	Yes	Yes
Election-Year FEs	Yes	Yes	Yes	Yes	Yes	Yes
Controls	No	Yes	No	Yes	No	Yes
Bandwidth	16.35	16.40	15.60	15.28	15.93	16.80
Effective N	890	865	682	648	823	839
N Left	507	491	385	358	462	474
N Right	383	374	297	290	361	365

Notes: RDD estimates with triangular weighting kernel and data-driven optimal bandwidth selection (Calonico et al., 2014). The running variable is the margin of victory of the most voted female candidate, computed as the difference between her vote share and the one of the most voted male candidate. The mean and standard deviation of the dependent variable are measured within the left half of the optimal bandwidth selected by the algorithm for each model. Controls: See footnote 4. Robust bias-corrected standard errors clustered at the municipality level in parentheses. *** p<.01, ** p<.05, * p<.1.

Table A11: Gender Differential in Attacks on Mayor, RDD Estimates by Party

	(1)	(2)	(3)	(4)
	Left-Wing	*Left-Wing*	*Right-Wing*	*Right-Wing*
Female Mayor	.525***	.484***	.147	.057
	(.104)	(.091)	(.091)	(.075)
Mean Depvar	.200	.209	.066	.071
SD Depvar	.406	.412	.250	.259
Region FEs	Yes	Yes	Yes	Yes
Election-Year FEs	Yes	Yes	Yes	Yes
Controls	No	Yes	No	Yes
Bandwidth	13.24	16.17	16.21	12.58
Effective N	88	102	159	121
N Left	35	43	106	83
N Right	53	59	53	38

Notes: RDD estimates with triangular weighting kernel and data-driven optimal bandwidth selection (Calonico et al., 2014). RDD estimates with triangular weighting kernel and data-driven optimal bandwidth selection (Calonico et al., 2014). In all models, the dependent variable is an indicator for the mayor of municipality i being attacked at least once during term t. The running variable is the margin of victory of the most voted female candidate, computed as the difference between her vote share and the one of the most voted male candidate. The dependent variable is an indicator for the mayor of municipality i being attacked during term t. The mean and standard deviation of the dependent variable are measured within the left half of the optimal bandwidth selected by the algorithm for each model. In all columns, the sample is restricted to mayors running with a partisan affiliation. In columns 1 and 2, the sample is restricted to partisan mayors running in left-wing coalitions. In columns 3 and 4, the sample is restricted to partisan mayors running in right-wing coalitions. Controls: See footnote 4. Robust bias-corrected standard errors clustered at the municipality level in parentheses. *** p<.01, ** p<.05, * p<.1.

Table A12: Gender Differential in Attacks on Mayor, Excluding Policy-Motivated Attacks

	(1)	(2)	(3)	(4)
Female Mayor	.106**	.130***	.109**	.132**
	(.045)	(.044)	(.050)	(.053)
Polynomial Order	1st	1st	2nd	2nd
Region FEs	Yes	Yes	Yes	Yes
Election-Year FEs	Yes	Yes	Yes	Yes
Controls	No	Yes	No	Yes
Mean Depvar	.071	.070	.077	.076
SD Depvar	.258	.256	.267	.265
Bandwidth	16.88	15.85	27.81	23.45
Effective N	926	848	1,422	1,209
N Left	533	480	879	731
N Right	393	368	543	478

Notes: RDD estimates with triangular weighting kernel and data-driven optimal bandwidth selection (Calonico et al., 2014). In all models, the dependent variable is an indicator for the mayor of municipality i being attacked at least once during term t, excluding attacks that − according to Avviso Pubblico − were explicitly linked by the perpetrator to a particular policy or policy promise. The running variable is the margin of victory of the most voted female candidate, computed as the difference between her vote share and the one of the most voted male candidate. The mean and standard deviation of the dependent variable are measured within the left half of the optimal bandwidth selected by the algorithm for each model. Controls: See footnote 4. Robust bias-corrected standard errors clustered at the municipality level in parentheses. *** p<.01, ** p<.05, * p<.1.

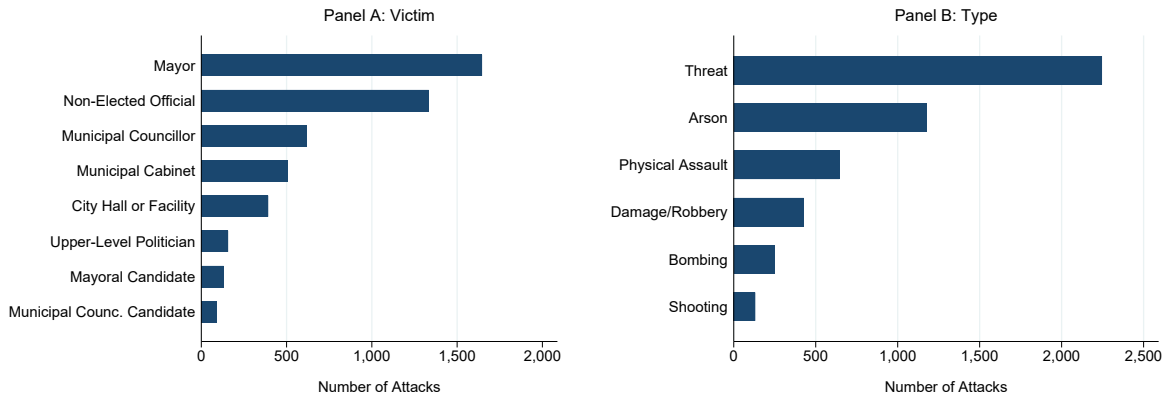
Table A13: Attacks on Mayors and Change in Behavior By Gender, Difference-in-Discontinuity Estimates

	(1)	(2)	(3)	(4)
	Log Total Expenditures PC		*Probability of Resigning*	
Female Mayor	.272	.260	-.023	-.022
	(.340)	(.317)	(.028)	(.028)
Polynomial Order	1st	1st	1st	1st
Region FEs	Yes	Yes	Yes	Yes
Election-Year FEs	Yes	Yes	Yes	Yes
Controls	No	Yes	No	Yes
Mean Depvar	7.308	7.304	.008	.008
SD Depvar	.891	.905	.091	.091
Bandwidth	13.96	15.20	19.83	19.82

Notes: Difference-in-discontinuity estimates (Grembi et al., 2016) with triangular weighting kernel and data-driven optimal bandwidth selection (Calonico et al., 2014). The running variable is the margin of victory of the most voted female candidate, computed as the difference between her vote share and the one of the most voted male candidate. The time cutoff is the first calendar year after the one in which a mayor was attacked. The mean and standard deviation of the dependent variable are measured within the left half of the optimal bandwidth selected by the algorithm for each model. Controls: See footnote 4. Robust bias-corrected standard errors clustered at the municipality level in parentheses. *** p<.01, ** p<.05, * p<.1.

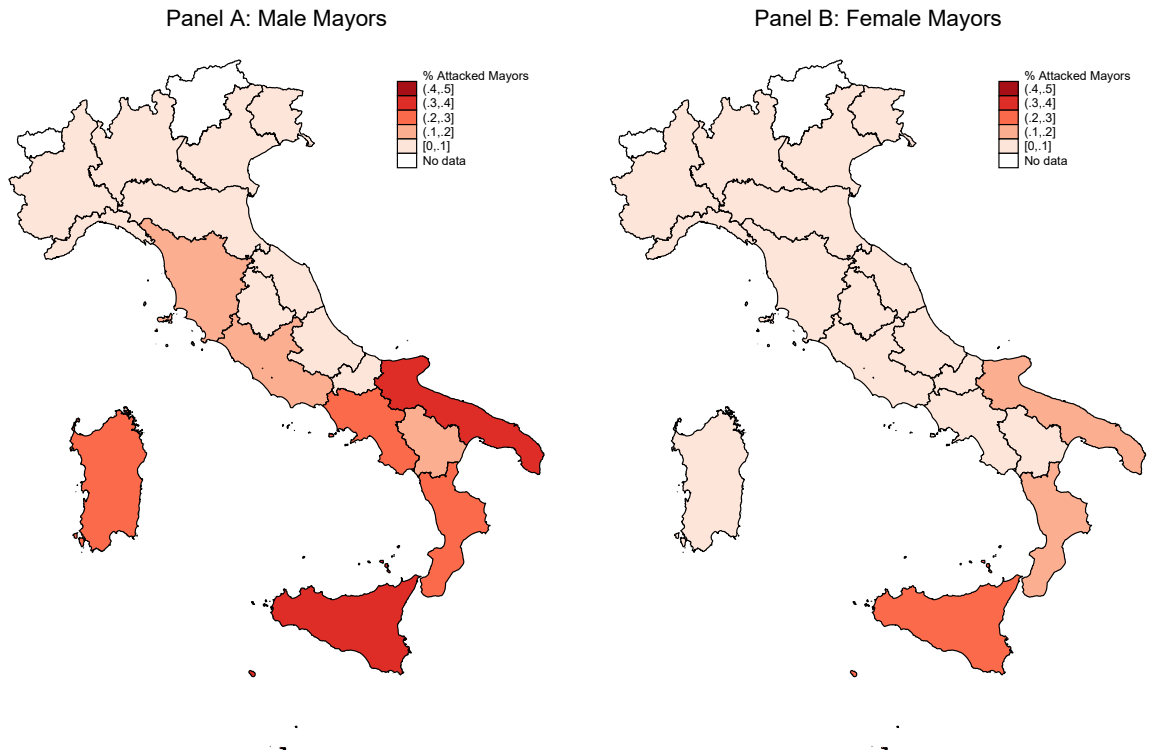
Additional Figures

Figure A1: Number of Attacks, by Target and Type



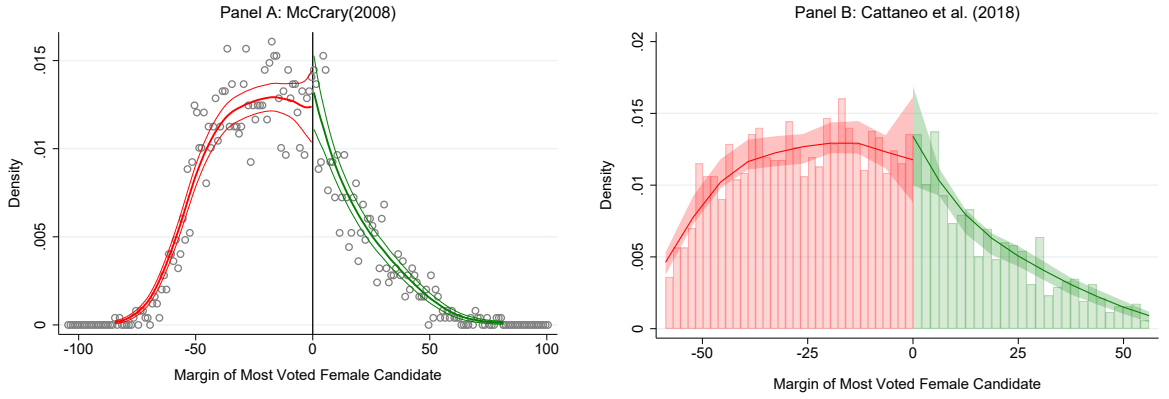
Notes: In Panel A, *Municipal Cabinet* includes attacks on members of the executive committee and vice mayors. Non-elected officials are mostly police officers and clerks of the municipal bureaucracy. All categories in Panel A also include attacks on family members of each type of public official.

Figure A2: Geographic Distribution of Attacks on Mayors, by Gender



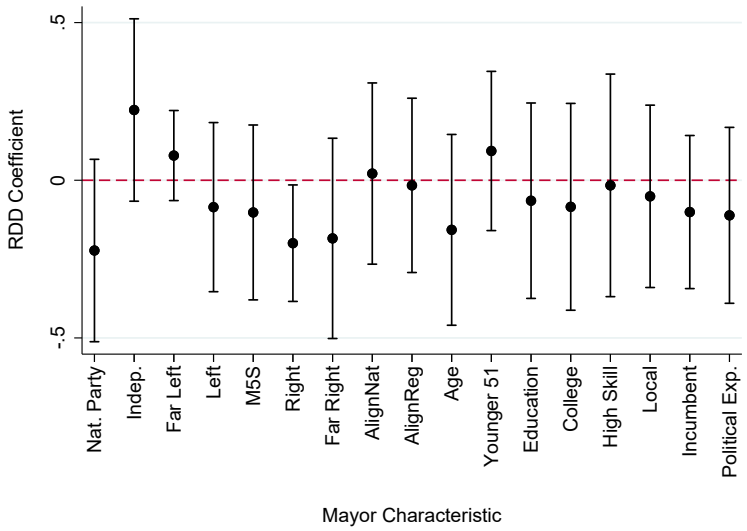
Notes: Each panel plots the share of mayors incurring at least one attack in each region.

Figure A3: Tests of No-Sorting Assumption



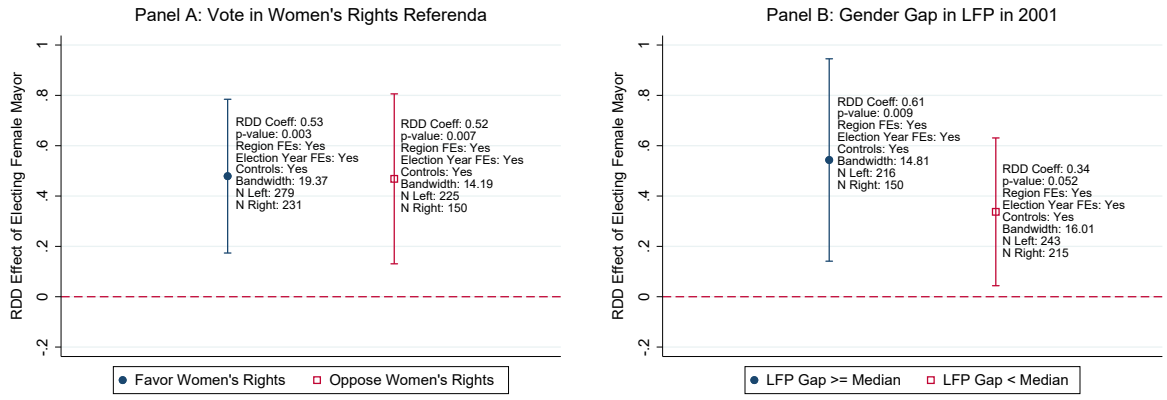
Notes: Left: McCrary (2008). Right: Cattaneo et al. (2018).

Figure A4: Threats to Identification - Other Characteristics of Female Mayors



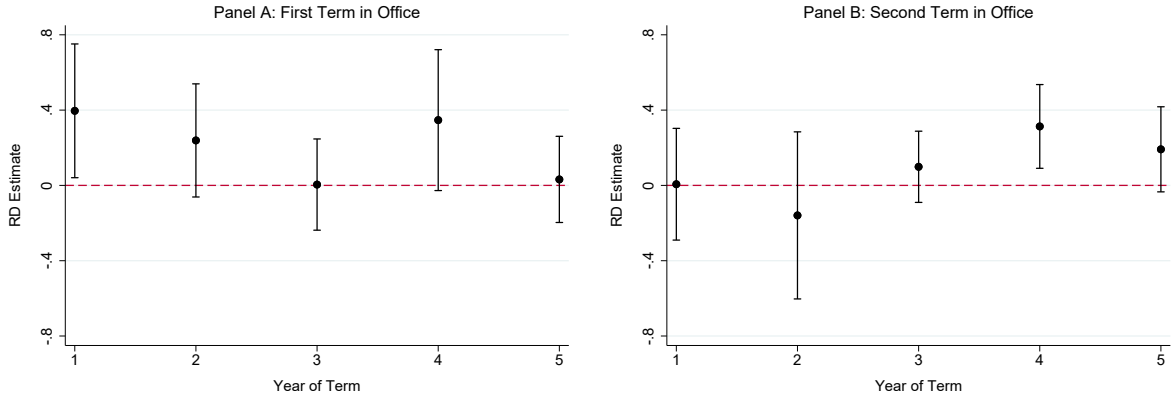
Notes: RDD estimates with triangular weighting kernel and data-driven optimal bandwidth selection (Calonico et al., 2014). The dependent variables are standardized to enhance the comparability of coefficients' magnitudes. *Education* is the number of years of schooling of the mayor. *Local* is an indicator for the mayor being born in the municipality. *AlignNat* and *AlignReg* are indicators for the mayor sharing partisanship with the Prime Minister and the Regional President, respectively. Vertical bars are 95% confidence intervals, based on robust, bias-corrected standard errors clustered at the municipality level.

Figure A5: Gender Differential in Attacks, Heterogeneity by Municipal Gender Norms



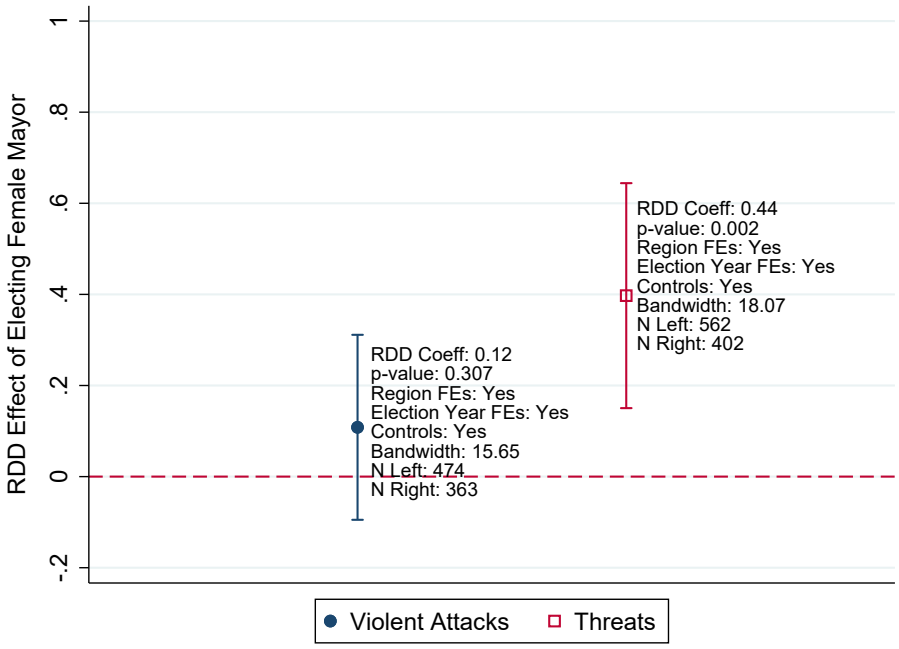
Notes: Heterogeneous RDD regressions using as moderators two complementary measures of municipal gender norms: how municipalities voted in two referenda on women's rights (the 1974 vote on whether to abolish the right to divorce, and the 1981 referendum on abortion) and female labor force participation as of 2001. We use RDD estimates with triangular weighting kernel and data-driven optimal bandwidth selection (Calonico et al., 2014). In all models, the dependent variable is an indicator for the mayor of municipality i being attacked at least once during term t. All the dependent variables are standardized, to enhance the comparability of effects' magnitudes. Vertical bars are 95% confidence intervals, based on robust, bias-corrected standard errors clustered at the municipality level.

Figure A6: Gender Differential in Probability of Being Attacked, by Year of Term



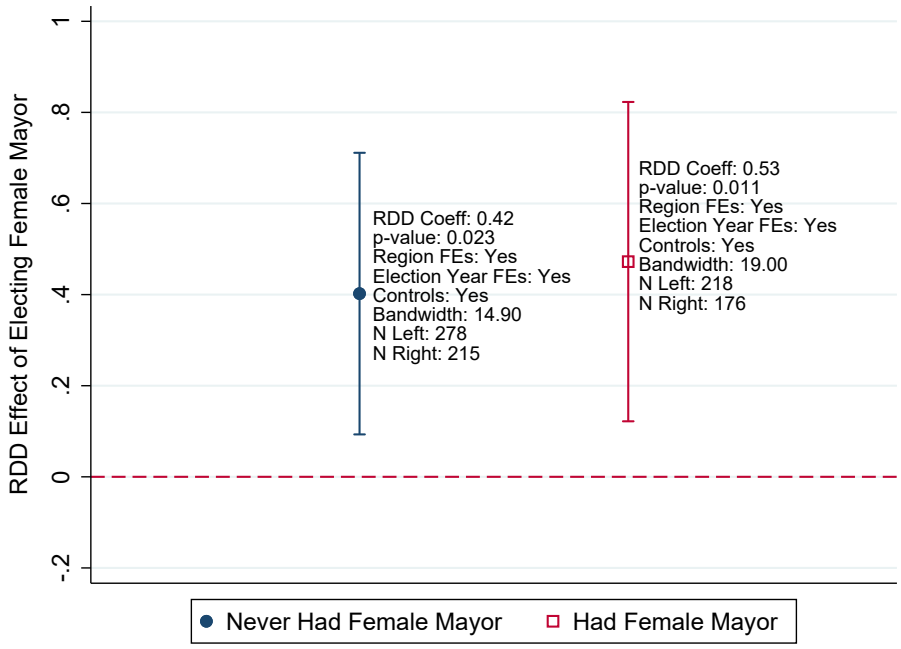
Notes: Each dot represents one RDD estimate from Equation (1). In both panels, the dependent variable is an indicator for the mayor of municipality i being attacked during term t. All the dependent variables are standardized, to enhance the comparability of effects' magnitudes. Vertical bars are 95% confidence intervals, based on bias-corrected standard errors clustered at the municipality level.

Figure A7: Gender Differential in Attacks, Heterogeneity by Type of Attack



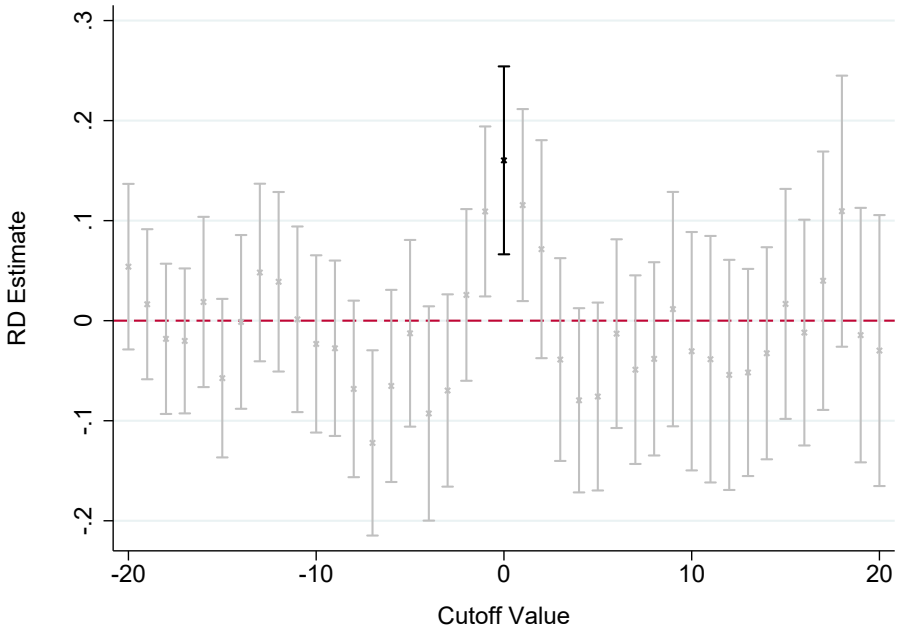
Notes: Heterogeneity by whether the differential in attacks is driven by violent episodes – e.g., assaults, physical damage to property – or by threats, which mostly come in the form of written messages and phone calls. We use RDD estimates with triangular weighting kernel and data-driven optimal bandwidth selection (Calonico et al., 2014). In all models, the dependent variable is an indicator for the mayor of municipality i being attacked at least once during term t. All the dependent variables are standardized, to enhance the comparability of effects' magnitudes. Vertical bars are 95% confidence intervals, based on bias-corrected standard errors clustered at the municipality level.

Figure A8: Gender Differential in Attacks, by Previous Election of Female Mayors



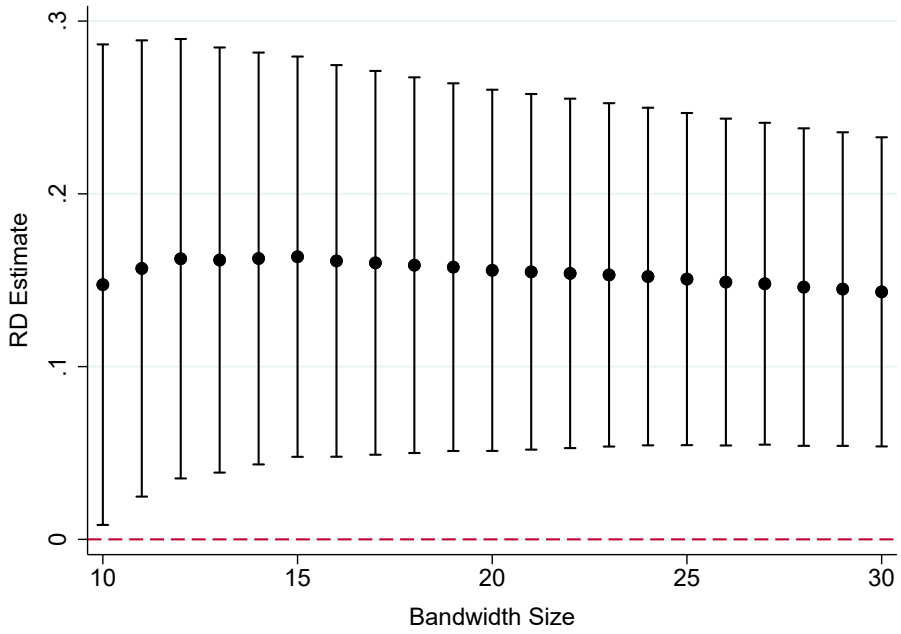
Notes: RDD estimates with triangular weighting kernel and data-driven optimal bandwidth selection (Calonico et al., 2014). In all models, the dependent variable is an indicator for the mayor of municipality i being attacked at least once during term t. All the dependent variables are standardized, to enhance the comparability of effects' magnitudes. Vertical bars are 95% confidence intervals, based on robust, bias-corrected standard errors clustered at the municipality level.

Figure A9: Placebo Test, Alternative Cutoffs of Running Variable



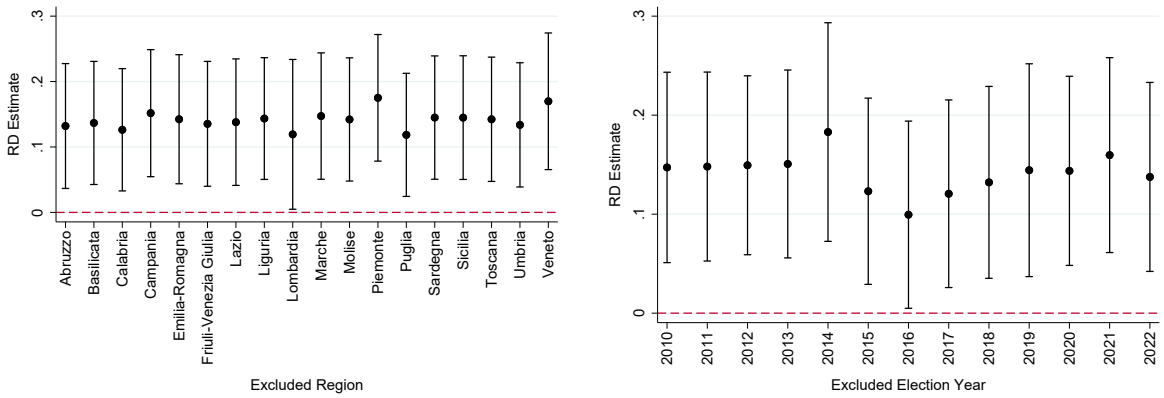
Notes: RDD estimates with triangular weighting kernel and data-driven optimal bandwidth selection (Calonico et al., 2014). In all models, the dependent variable is an indicator for the mayor of municipality i being attacked at least once during term t. Each cross represents one RDD estimate from Equation (1), using the cutoffs for $(WomanMargin)_{i,t}$ indicated on the horizontal axis. Vertical bars are 95% confidence intervals, based on robust, bias-corrected standard errors clustered at the municipality level. The black estimate in the middle refers to the real cutoff of 0 margin of victory.

Figure A10: Robustness Test, Choice of Bandwidth Value



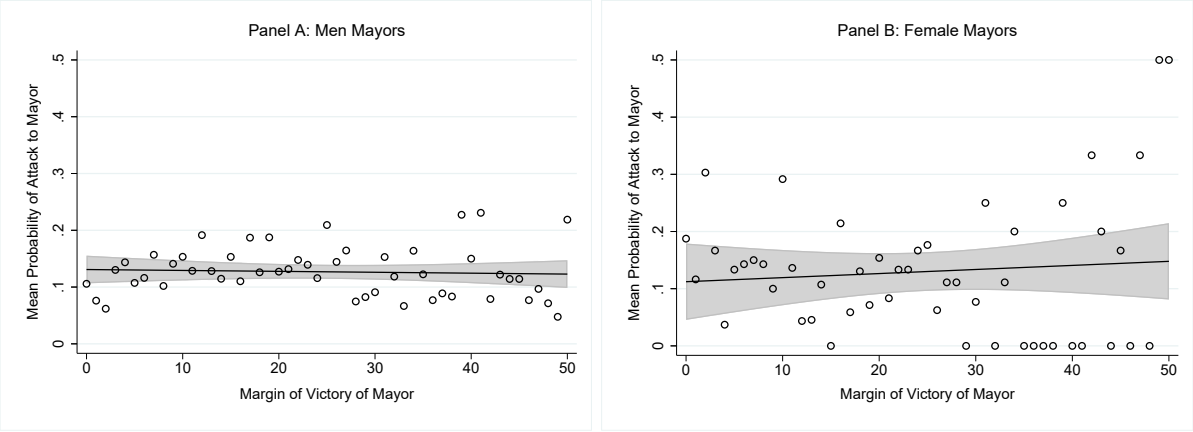
Notes: RDD estimates with triangular weighting kernel, using the bandwidth of the size indicated on the horizontal axis on each side of the cutoff. In all models, the dependent variable is an indicator for the mayor of municipality i being attacked at least once during term t. Vertical bars are 95% confidence intervals, based on robust, bias-corrected standard errors clustered at the municipal level.

Figure A11: Jackknife Tests, by Region and Election Year



Notes: RDD estimates with triangular weighting kernel and data-driven optimal bandwidth selection (Calonico et al., 2014). In all models, the dependent variable is an indicator for the mayor of municipality i being attacked at least once during term t. In Panel A, each dot represents one RDD estimate from Equation (1), excluding all municipalities within the region indicated on the horizontal axis. In Panel B, each dot represents one RDD estimate from Equation (1), excluding all municipalities holding elections during the year indicated on the horizontal axis. Vertical bars are 95% confidence intervals, based on robust, bias-corrected standard errors clustered at the municipality level.

Figure A12: Election Competitiveness and Probability of Attacks, by Mayor's Gender



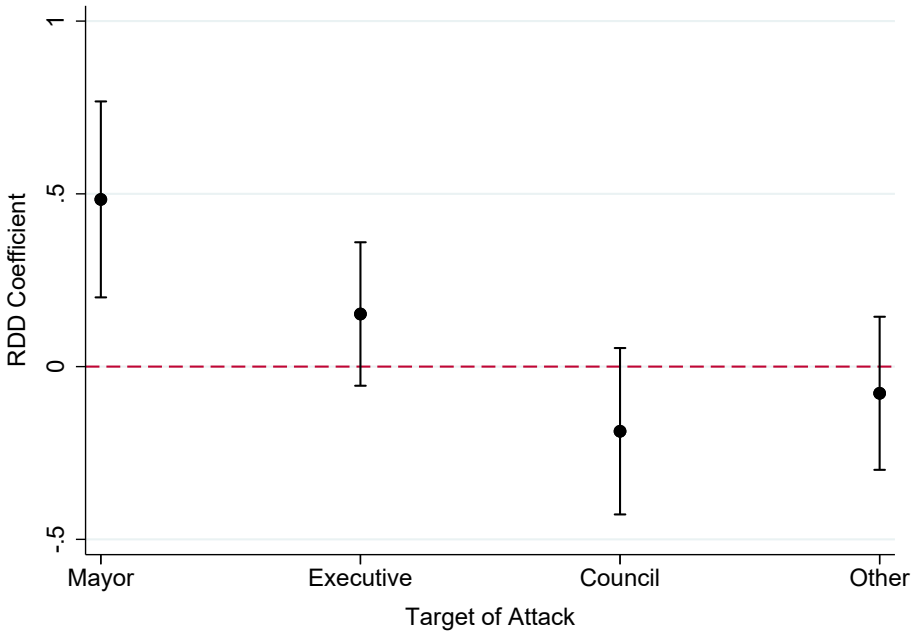
Notes: The shaded area marks a 95% confidence interval.

Figure A13: Gender Differential in Attacks in Public and Private Places



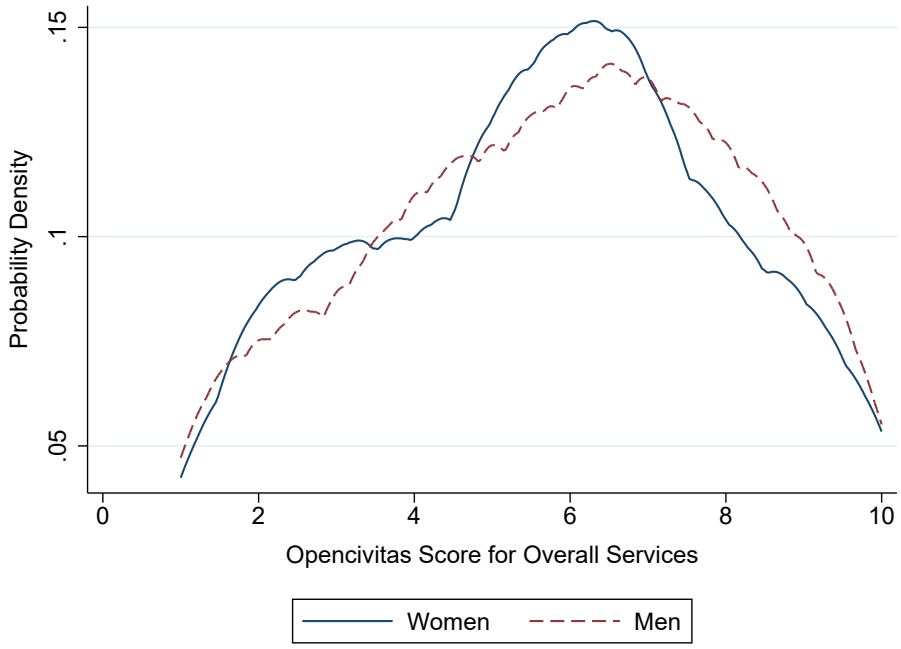
Notes: RDD estimates with triangular weighting kernel and data-driven optimal bandwidth selection (Calonico et al., 2014). In the model on the left, the dependent variable is an indicator for the mayor of municipality i being attacked in a public place at least once during term t. In the model on the right, the dependent variable is an indicator for the mayor of municipality i being attacked in a private place at least once during term t. All the dependent variables are standardized, to enhance the comparability of effects' magnitudes. Vertical bars are 95% confidence intervals, based on robust, bias-corrected standard errors clustered at the municipality level.

Figure A14: Placebo Test, Attacks on Other Municipal Officials



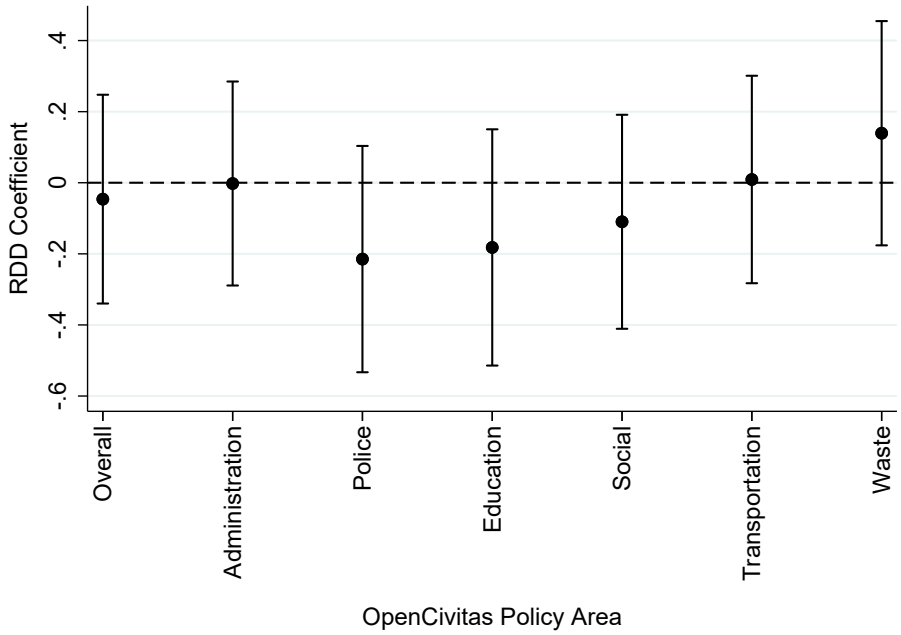
Notes: RDD estimates with triangular weighting kernel and data-driven optimal bandwidth selection (Calonico et al., 2014). Each dot represents one RDD estimate from Equation (1), using as outcome the attacks on the type of municipal official indicated on the horizontal axis. All the dependent variables are standardized, to enhance the comparability of effects' magnitudes. Vertical bars are 95% confidence intervals, based on robust, bias-corrected standard errors clustered at the municipality level.

Figure A15: Distribution of Overall OpenCivitas Scores, by Mayor's Gender



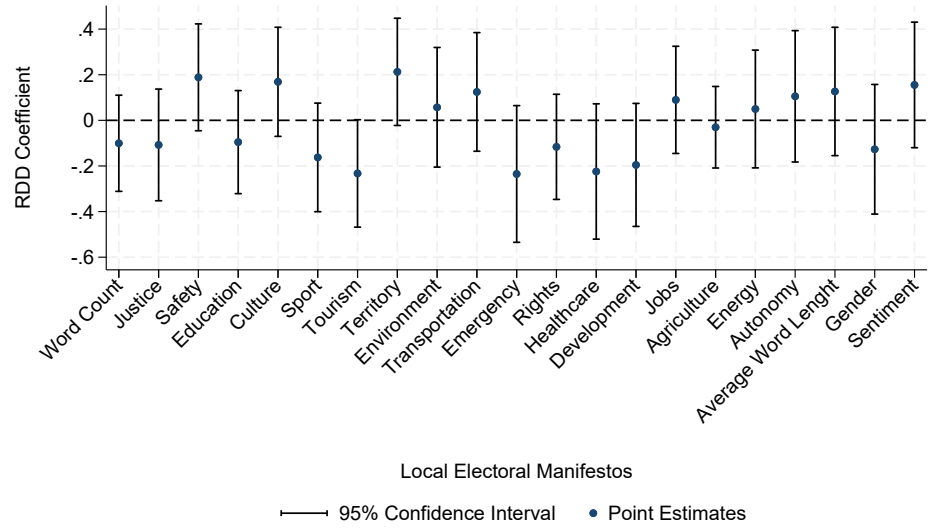
Notes: Kernel density estimates. The sample is restricted to mayors running in elections included in the optimal bandwidth selected by the algorithm for the regression of Table 1, column 1.

Figure A16: Deviation from Average Performance and Gender Gap in Attacks



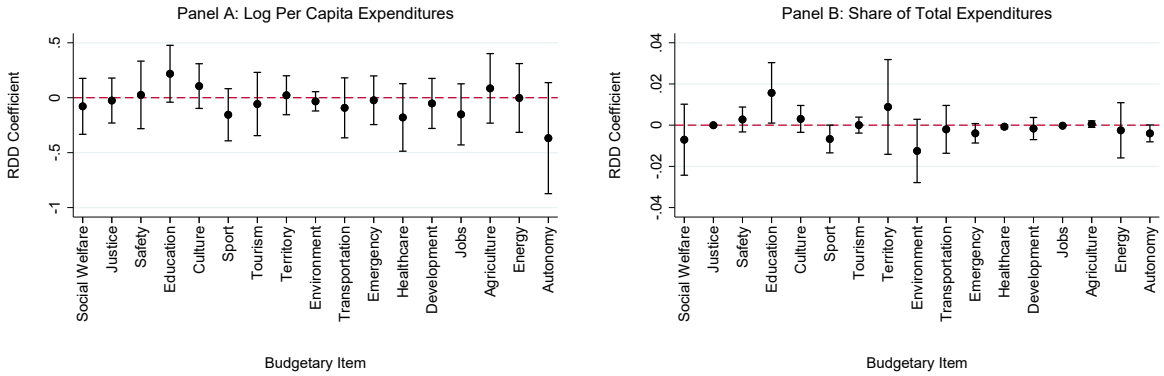
Notes: RDD estimates from Equation (1), with triangular weighting kernel and data-driven optimal bandwidth selection (Calonico et al., 2014). In all models, the dependent variable is an indicator for the mayor of municipality i being attacked at least once during term t. Vertical bars are 95% confidence intervals, based on robust, bias-corrected standard errors clustered at the municipal level.

Figure A17: Local Electoral Manifestos



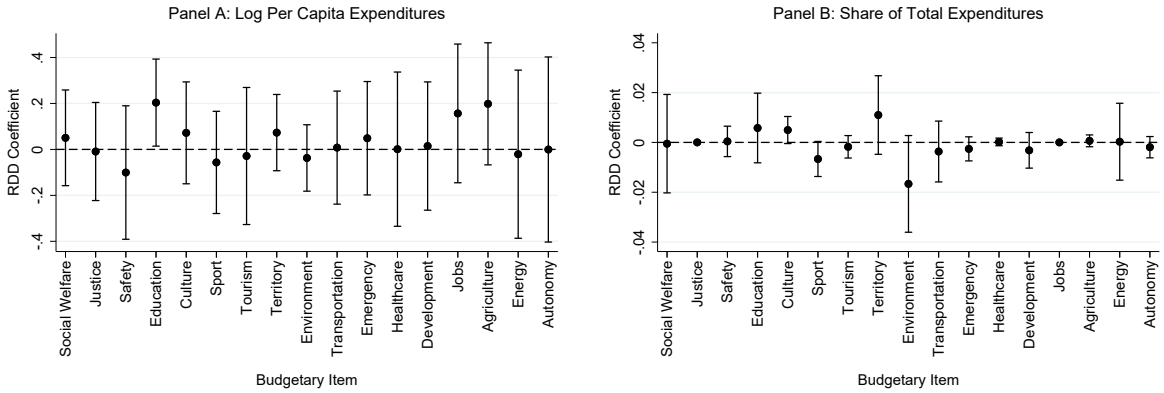
Notes: RDD estimates from Equation (1), with triangular weighting kernel and data-driven optimal bandwidth selection (Calonico et al., 2014) and the complete set of controls. In all models, the dependent variable is a binary indicator for whether the mayor electoral manifesto is above or below the median value for each topic or indicator within its distribution. Vertical bars are 95% confidence intervals, based on robust, bias-corrected standard errors clustered at the municipal level. The estimates are based on 308 electoral manifestos. To ensure a sufficient sample size, we include observations from towns with fewer than 5,000 inhabitants in this test.

Figure A18: Mayor's Gender and Municipal Expenditures
in First Year of Term, by Item



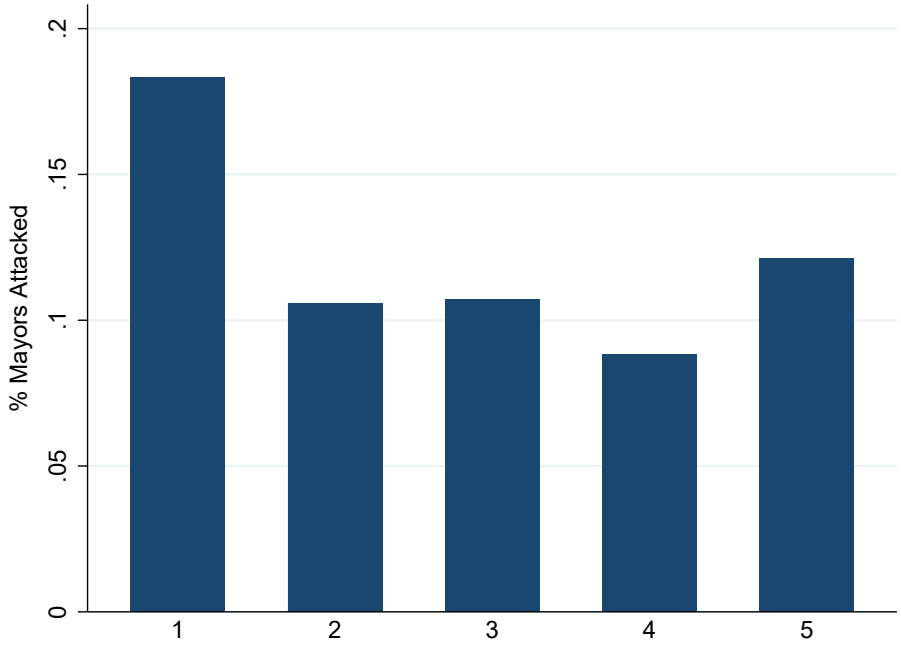
Notes: RDD estimates with triangular weighting kernel and data-driven optimal bandwidth selection (Calonico et al., 2014). All the dependent variables are standardized, to enhance the comparability of effects' magnitudes. Vertical bars are 95% confidence intervals, based on bias-corrected standard errors clustered at the municipality level.

Figure A19: Mayor's Gender and Municipal Expenditures
by Item, Excluding Attacked Mayors



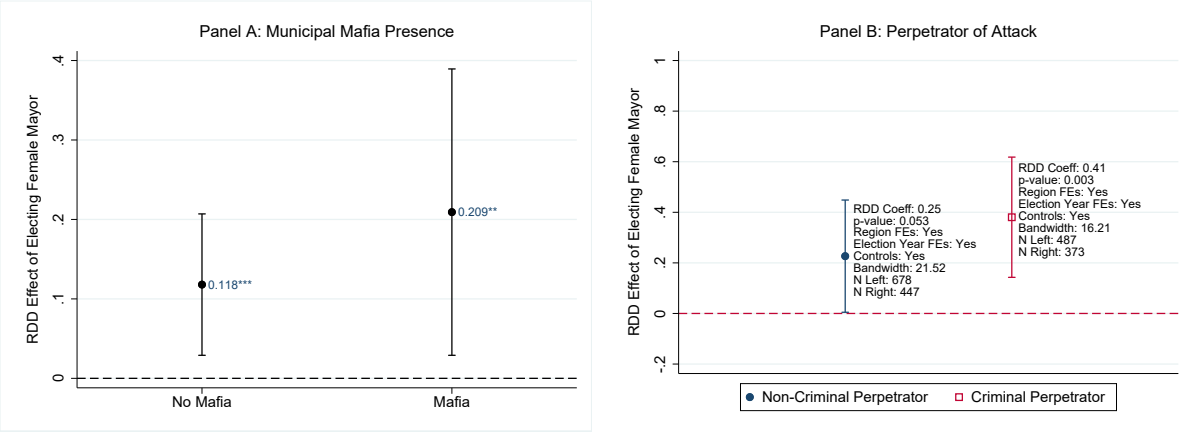
Notes: RDD estimates with triangular weighting kernel and data-driven optimal bandwidth selection (Calonico et al., 2014). All the dependent variables are standardized, to enhance the comparability of effects' magnitudes. Vertical bars are 95% confidence intervals, based on bias-corrected standard errors clustered at the municipality level.

Figure A20: Percentage of Mayors Attacked,
by Quintile of OpenCivitas Overall Score



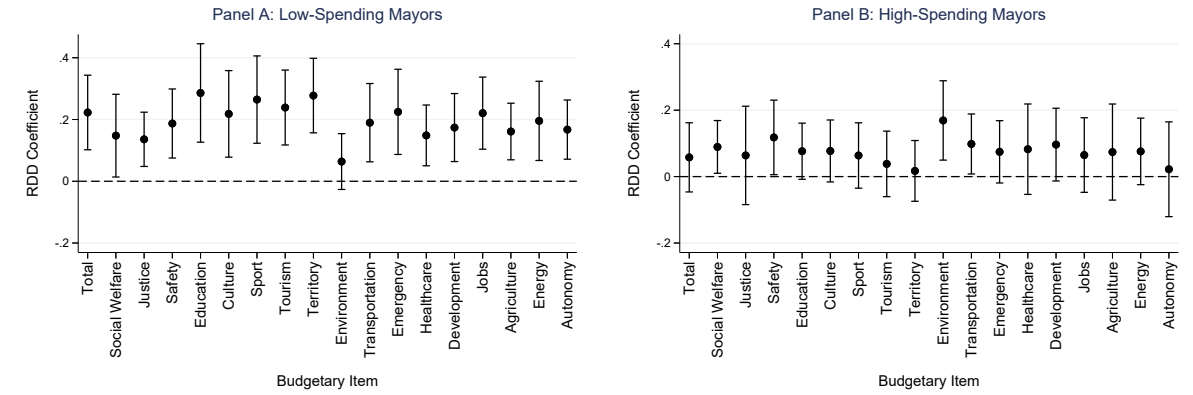
Notes: Each bar represents one quintile of the overall OpenCivitas score.

Figure A21: Gender Differential in Probability of Being Attacked and Criminal Groups



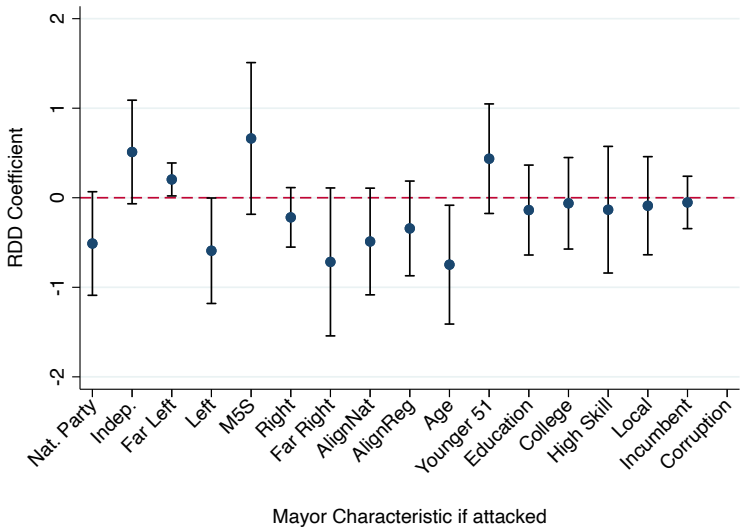
Notes: RDD estimates with triangular weighting kernel and data-driven optimal bandwidth selection (Calonico et al., 2014). All the dependent variables are standardized, to enhance the comparability of effects' magnitudes. Vertical bars are 95% confidence intervals, based on bias-corrected standard errors clustered at the municipality level.

Figure A22: Gender Differential in Attacks and Municipal Expenditures, by Item



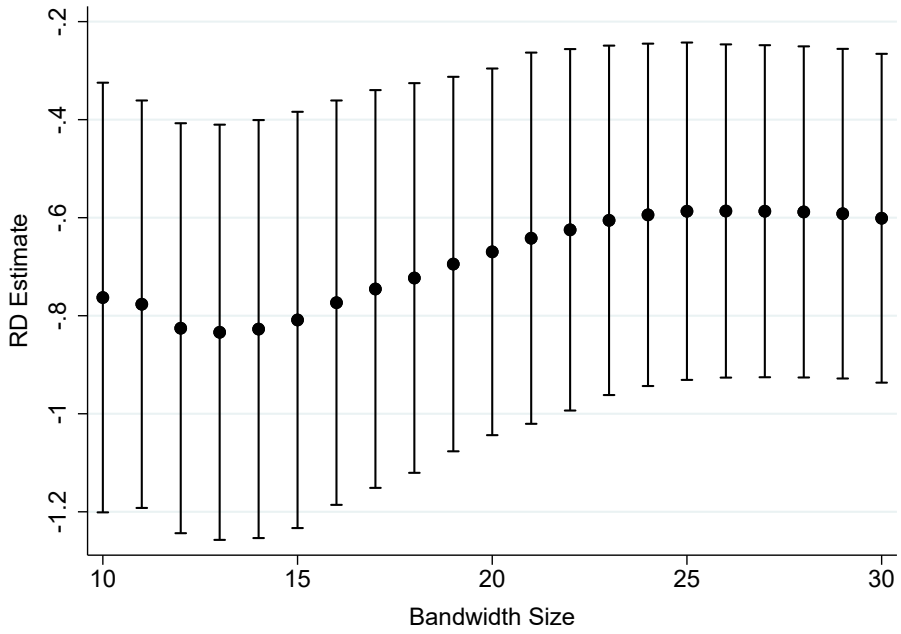
Notes: RDD estimates with triangular weighting kernel and data-driven optimal bandwidth selection (Calonico et al., 2014). Vertical bars are 95% confidence intervals, based on robust, bias-corrected standard errors clustered at the municipality level.

Figure A23: Minimal Differences in Characteristics of Female and Male Mayors Victims of Attacks



Notes: RDD estimates of the impact of marginal electing a female mayor, only for mayors victims of attacks. We use triangular weighting kernel and data-driven optimal bandwidth selection (Calonico et al., 2014). The dependent variables are standardized to enhance the comparability of coefficients' magnitudes. *Education* is the number of years of schooling of the mayor. *Local* is an indicator for the mayor being born in the municipality. *AlignNat* and *AlignReg* are indicators for the mayor sharing partisanship with the Prime Minister and the Regional President, respectively. Vertical bars are 95% confidence intervals, based on robust, bias-corrected standard errors clustered at the municipality level.

Figure A24: Attacks on Mayor and Persistence in Politics,
RDD Results for Different Bandwidths



Notes: RDD estimates with triangular weighting kernel, using the bandwidth of the size indicated on the horizontal axis on each side of the cutoff. The model is the one of Table 2, column (6), where the dependent variable is an indicator for the mayor of municipality i running for mayor again at the end of her mandate, and the sample is restricted to mayors attacked at least once during their first term in office. Vertical bars are 95% confidence intervals, based on robust, bias-corrected standard errors clustered at the municipal level.