

Gender Stereotyping and the Electoral Success of Women Candidates:
New Evidence from Local Elections in California

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Abstract: Research shows that voters often use gender stereotypes to evaluate candidates, but studying how stereotyping affects women's electoral chances raises a methodological problem: one can either measure stereotyping using surveys and experiments, or one can study outcomes of real elections—but not both. Most existing research does the former. We instead test whether patterns of women's and men's win rates in local elections match expectations for how the effects of gender stereotyping should vary: women should fare better in stereotype-congruent contexts and worse in incongruent contexts. Consistent with this, we find that women have a greater advantage in city council than mayoral races, a still greater advantage in school board races, and a decreasing advantage in more conservative constituencies. We also find the effects are largest where voters know less about local candidates. Thus, by studying real elections, we make progress toward understanding how voters affect women's electoral success.

The literature on women in American politics has devoted considerable attention to two questions: Do voters use gender stereotypes in evaluating candidates? And does gender stereotyping affect women's chances of being elected? The clear answer to the first is "yes": some voters infer that women candidates are more liberal than men, more compassionate and collaborative, and more competent on certain issues like education (e.g., Alexander and Andersen, 1993; Eagly and Karau, 2002; Huddy and Terkildsen, 1993a; Kahn, 1996). On the second question, however, the literature is less developed and inconclusive (e.g., Bauer, 2014; Fox and Oxley, 2003), as is related research assessing whether differences between men's and women's vote shares reveal gender discrimination (e.g., Burrell, 1994; Duerst-Lahti, 1998; Fulton, 2012). Thus, although concern about women's underrepresentation in elective office motivates much of the scholarship on women in politics, we still lack a clear understanding of how women are affected by voters' use of gender stereotypes (see Teele, Kalla, and Rosenbluth, 2018; Bauer, 2015).

One reason scholars have had difficulties studying the electoral effects of gender stereotyping is a methodological problem that is built in to the endeavor: one can either measure individual voters' gender stereotyping directly through surveys and experiments, or one can study women candidates' success in real elections—but not both. Up to this point, most scholars have opted for the survey and experimental approach, prioritizing the direct measurement of stereotyping and identification of the proposed mechanism at work. However, what respondents say they would do when faced with a (frequently fictional) candidate may not reflect what they actually do when faced with real candidate match-ups in secret-ballot elections—yet the latter is the outcome of interest. Data on election returns, by contrast, allow for comparisons of how women and men candidates fare in elections, but they cannot be used to measure individual-level stereotyping.

To advance understanding of the electoral effects of gender stereotyping, this paper charts a new course both theoretically and empirically. First, we argue that there are theoretical reasons to

expect the effect of gender stereotyping to *vary* across contexts (Bos, Schneider, and Utz, 2018; Ono and Burden, 2018; Schneider and Bos 2014). While past analyses of women’s win rates in real elections have looked for a one-size-fits-all answer to the question of whether voter attitudes hurt (or help) women candidates, we argue that scholars should also *study* that variation—and try to understand the conditions under which gender stereotypes are more harmful or more helpful to women’s electoral chances. Drawing on the rich literature on gender stereotypes, we develop three hypotheses about how women’s win rates should vary by context if stereotyping is at work.

Second, we analyze data on thousands of local elections to evaluate whether the difference between women’s and men’s win rates varies in ways consistent with those hypotheses. Our dataset features variation in whether the office sought is executive or legislative, the policy domains salient in the elections, and the relative conservatism of the electorate—all dimensions on which we hypothesize the effects of gender stereotyping should vary. In addition, the dataset includes candidates’ ballot designations, which we use to create measures of candidate experience, and features only nonpartisan races, which are not only very common throughout the United States but also minimize the risk that party cues will overwhelm gender cues.

We also exploit variation in local election timing to assess whether the patterns we uncover are consistent with an account based on gender stereotyping. This novel empirical strategy relies on two key findings from the literature: First, individuals are more likely to rely on stereotypes when they have less information about the issues and candidates (e.g., Lupia, 1994; Matson and Fine, 2006; McDermott, 1997, 1998). Second, the average voter in on-cycle local elections—those held concurrently with state and national elections—has less information about local candidates and issues than the average voter in off-cycle local elections (Oliver and Ha, 2007). This implies that if any differences we find in men’s and women’s win rates are attributable to stereotyping, they should be most pronounced in on-cycle elections.

Studying women's success in local elections is also important in its own right (Holman, 2017). The United States has over 500,000 elected officials and almost 90,000 governments, almost all of which are local and the majority of which have nonpartisan elections. Collectively, American local governments spend roughly a quarter of all of the country's public money, and they make policy on issues ranging from education to health to policing. While a small literature examines how institutions affect the gender composition of city hall (e.g., Crowder-Meyer, Gadarian, and Trounstein, 2015; Smith, Reingold, and Owens, 2012; Trounstein and Valdin, 2008), and how electing female officials influences local policy (Holman, 2014), we still know little about whether voters affect women's descriptive representation at the local level. Furthermore, many politicians start their careers in local politics, which means that local elections shape the pipeline of women available to run for higher office. For all of these reasons, there should be more research on women in local elections.

This paper is a step in that direction. Drawing on existing theories of how some voters use gender stereotypes to evaluate candidates, we compare city council, mayoral, and school board races to assess whether women's electoral success varies in ways consistent with stereotyping. We find that on average, women candidates have an advantage over men in city council elections, but that advantage is reduced—and becomes a disadvantage—for women running for mayor. Comparing legislatures, we find that the women's advantage is significantly greater in school board races (where education is the issue at stake) than city council races (where issues like crime and economic development are most salient). We find evidence that the size of women's advantage in local legislative races decreases with the Republicanism of the constituency. Finally, we find that these patterns are most pronounced in local elections held concurrently with national races—when average voter knowledge of local candidates and issues is lower. All four patterns are consistent with the expectations of gender stereotyping theory, and inconsistent with explanations that predict a

uniform net-negative effect (e.g., voter prejudice). Therefore, by studying real elections, we make progress toward understanding how voters affect the success of women running for public office.

Literature and Hypotheses

There is little scholarly dispute over the content of voters' gender stereotypes.¹ First, voters often view women candidates as more compassionate and communitarian (Dolan, 2004; Eagly and Karau, 2002; Hayes, 2011) and more honest (Brooks, 2013; Fridkin and Kenney, 2009) than men. Second, voters assume women candidates are more competent than men on so-called women's issues such as education and healthcare and weaker than men on issues like foreign affairs (Huddy and Terkildsen, 1993a; Kahn, 1996; Lawless, 2004; McDermott, 1998; Sanbonmatsu, 2002; Swers, 2007). Third, voters perceive women candidates as more liberal than men (Alexander and Andersen, 1993; Koch, 2000; McDermott, 1998; Sanbonmatsu, 2002; Sanbonmatsu and Dolan, 2008).

While the literature is clear about the *content* of gender stereotypes, studies of the electoral *effects* of those stereotypes have produced an array of conclusions (Bos et al., 2018). Most work on the effects relies on surveys and experiments—exploring outcomes such as respondents' evaluations of candidates and vote choices in hypothetical races—thereby looking at voter attitudes and beliefs rather than real-world behaviors. For example, Dolan (2010) uses a survey to measure individuals' adherence to trait and issue competency stereotypes and finds that both sets of stereotypes predict respondent vote choice in a hypothetical woman-versus-man election match-up (see also Sanbonmatsu, 2002). This suggests that gender stereotypes affect support for women, but the countervailing effects found do not lead to clear predictions about whether, on net, the effects harm

¹ We use the term “gender” when referring to existing theory and non-dichotomous concepts (e.g., “feminine traits”), and “sex” to refer to our coding and findings. Gender is now understood to be non-dichotomous; for review, see Bittner and Goodyear-Grant (2017).

or help women. Using survey experiments, Brooks (2013) finds that respondents do use descriptive gender stereotypes, but she also finds they do not give different ratings to men and women candidates on favorability or likely effectiveness, leading her to conclude that stereotyping does *not* affect women's electoral prospects. Meanwhile, in another survey experiment, Bauer (2014) finds that when feminine stereotypes are activated, respondents rate women candidates as less qualified to be a senator or a future presidential candidate. Viewed together, it is not clear from this body of survey and experimental research whether voter gender stereotyping produces advantages or disadvantages for women candidates.

In related research, scholars have analyzed election returns to determine whether voters discriminate against women candidates. This, too, has led to mixed conclusions. Most of these studies find that the average vote share of women candidates is no different from that of men (e.g., Duerst-Lahti, 1998; Seltzer, Newman, and Leighton, 1997). This leads some scholars to conclude that voters are not discriminating against women (e.g., Burrell, 1994; Darcy, Welch, and Clark, 1994; Fox, 2006). Others challenge that conclusion, noting that if the average woman candidate is of higher quality than the average man candidate and receives the same vote share, that suggests the presence of discrimination, not its absence (Anzia and Berry, 2011; Pearson and McGhee, 2013). Fulton (2012) finds that once variation in candidate quality is accounted for, women receive lower vote shares than men (see also Milyo and Schosberg, 2000). And so just like survey and experimental work on the effects of gender stereotyping, research that analyzes election returns to test for voter discrimination has led to mixed conclusions.

These literatures are distinct in important ways. The first distinction is the methodological one just noted (surveys and experiments versus observational election data). But they are also distinct in the phenomena they seek to explain and the hypotheses they test. In assessing whether voters discriminate against women, the hypothesis being tested is that women receive *fewer* votes

than comparable men—a net negative effect. Moreover, the mechanism by which any such women’s penalty occurs is usually ambiguous (see Broockman and Soltas, 2018): it could be negative effects from gender stereotyping, or it could be other forms of bias, such as double standards, taste-based discrimination, or outright misogyny (see Teele et al., 2018). In contrast, research on stereotyping suggests a specific mechanism: one that potentially leads to variation in net effect because women could fare better in stereotype-congruent contexts than in incongruent contexts.

Because these distinctions about the mechanism are often blurred by having two related but separate bodies of scholarship, it is worth stepping back to clarify what our theoretical expectations should be. Looking at research on the content of voters’ gender stereotypes, there are strong reasons to expect the direction and magnitude of the electoral effects of gender stereotyping to *vary* depending on the context of the election (Bos et al., 2018). While there has been some empirical research exploring how gender stereotyping effects vary by context, it has not been a central theme of the women in politics literature, and the findings—as with the literature on gender discrimination—are mixed. In a lab experiment, Huddy and Terkildsen (1993b) find that gender stereotypes hurt women running for national office but do not differentially affect women running for executive versus legislative office. Ono and Burden (2018), however, use a conjoint survey experiment and find that voters are only biased against women in presidential (executive) races—not congressional (legislative) races. Analyzing local races in California, Crowder-Meyer et al. (2015) find that women make up a smaller proportion of the candidates and a smaller proportion of the winners in mayoral races than city council or city clerk races—perhaps suggestive of different effects of stereotyping by office. In contrast, Fox and Oxley (2003) find that while women are less likely than men to run for stereotypically masculine state executive offices, women are no less likely to win those races when they do run. And while a growing line of research finds that Democrats (voters and elites) are more supportive of women than Republicans (King and Matland, 2003; Thomsen,

2015; Kitchens and Swers, 2016; Och and Shames, 2018; Teele et al., 2018), there is almost no empirical work exploring how the effects of gender stereotypes vary by constituency conservatism.² Therefore, throughout the literature there are seeds of hypotheses about the conditions that shape the electoral effects of gender stereotypes, but no one has tested them in a comprehensive way.

Our first step, then, is to weave together what we know about the content of gender stereotypes to set out three hypotheses. First, we draw on research about the stereotype that women, as collaborators, are less well suited for executive office than the legislature (e.g., Huddy and Terkildsen, 1993b). If some voters use this stereotype, women should fare less well than men in executive races than they do in legislative races, *ceteris paribus*. We of course acknowledge there are other factors that might contribute to differences in men and women's win rates, such as differences in candidate qualifications (e.g., Anzia and Berry, 2011; Fulton 2012). Our hypothesis is simply that any women's advantage (disadvantage) should decrease (increase) when moving from a stereotype-congruent context to a stereotype-incongruent context.³ Thus, if stereotyping is at work:

H1: The difference between women's and men's win rates will be more negative (lower) in races for executive office relative to races for legislative office.

Our second hypothesis is based on the stereotype that women are more competent than men in policy areas like education and health and less competent in areas such as crime, the

² Thomsen (2018) analyzes the effect of sex in Republican and Democratic congressional primaries, in which the former constituencies are more conservative. However, the study does not evaluate how within-party results vary with the conservatism of the electorate.

³ This is why, in stating our hypotheses, we use relative language (i.e., "more negative," "more positive") rather than stating an expectation about any baseline difference between women's and men's win rates in a single context.

economy, and foreign affairs. Holding constant type of office (executive vs. legislative), if some voters apply these issue competency stereotypes, then we should expect the effect of gender stereotypes to vary with the policy domains relevant for each office (e.g., Fox and Oxley, 2003):

H2: The difference between women's and men's win rates will be more positive (higher) when the policy domains of the office correspond to areas of perceived women's competence (e.g., education).

Our third hypothesis is rooted in the stereotype that women candidates are more liberal than men (e.g., Sanbonmatsu, 2002). We propose that the effect of gender stereotypes on women's electoral success should depend on whether a given electorate views liberal candidates favorably. In particular, this stereotype might be more of a barrier to Republican women or women running in conservative constituencies (Shames, 2018). Thus, holding the office constant:

H3: The difference between women's and men's win rates will be more negative (lower) in more conservative constituencies.

These are just three hypotheses, and more are possible. But these three flow naturally from the survey and experimental literature and are a productive starting point for studying their implications in real elections. More generally, we argue that instead of expecting voter gender bias to have a single, unconditional effect on women's representation, we should instead recognize that those effects could be positive, negative, or neutral depending on the context—and we should study them accordingly.

Empirical Strategy and Data

As we discussed above, scholars hoping to assess the electoral effects of gender stereotyping confront a built-in methodological challenge: that one can either measure the extent of individual-level stereotyping directly through surveys and experiments, or one can study voters' decisions in real elections—but not both. Almost all existing research on the effects of gender stereotyping uses

surveys and experiments, even though what subjects say they will do in elections may not reflect what they actually do.

We contribute to the existing literature by adopting a different approach and analyzing data on election returns. While this rules out the possibility of measuring gender stereotyping directly, our hypotheses are not about how women should fare compared to men in a single context; rather, they predict how the difference between women's and men's win rates should vary by the type of race, the policies salient, and the constituency's conservatism if stereotyping were indeed at work. Thus, if election data feature men and women running for different kinds of offices (H1), with different salient policy domains (H2), and in constituencies of varying conservatism (H3), we can evaluate whether any difference between women's and men's win rates varies across those dimensions in the ways hypothesized.

U.S. local election data provide an excellent opportunity to carry out such an analysis because they feature rich, measurable variation on all of these dimensions and a large sample of governments and candidates. For example, evaluating how any gap between women's and men's win rates differs for executive offices than for legislative offices would be difficult to do with national or state data, because so few women have run for president or governor. But the nation has over 19,000 municipal governments, roughly a third of which have independently elected mayors, so the local context features relatively large numbers of women running for executive office. Also, while the issues salient in congressional and state legislative elections vary widely across districts and election cycles, measuring such variation is difficult, and isolating the effects of issue salience on the relative success of men and women candidates is challenging. At the local level, it is simpler to capture variation in policy salience, because different types of local governments tend to be responsible for different functions. For example, boards of school districts make policy on education, whereas the salient issues in cities tend to be economic development, crime, and land use

(Oliver, 2012). Finally, variation in constituency conservatism across local governments allows for tests of whether the gap between women's and men's win rates varies accordingly.

There are also challenges associated with this approach that we considered in designing our study. First, political party cues might confound or overwhelm effects of gender stereotyping (Hayes, 2011; Hayes, Lawless, and Baitinger, 2014). Second, U.S. local election data are notoriously difficult to collect, which is perhaps why studies usually analyze the gender composition of local officeholders rather than data on the candidates (e.g., Smith et al., 2012; Trounstine and Valdin, 2008). Studies by Crowder-Meyer et al. (2015) and Crowder-Meyer and Smith (2015) are exceptions in that they go beyond assessments of the share of *winning* candidates who are women to assessments of the share of *all* candidates who are women. But these studies do not directly compare the success of men and women candidates in local elections, and so we still know little about how women fare compared to men in the nation's local governments (Holman, 2017).

For these reasons, we turn to the California Elections Data Archive (CEDA), which records information on most local elections throughout the state of California from 1995 onward, including the number of seats up for election; candidate names; the number of votes each candidate received; whether the candidate won, lost, or advanced to a run-off; and incumbency. All local elections in California are nonpartisan, lessening the likelihood that party cues will overwhelm effects of gender stereotyping. We focus on municipal and school board elections from 1995 to 2016: municipalities because they can have elections for both executive and legislative offices, and school board elections because—when compared with city council elections—they provide variation in policy salience across legislative races. As the CEDA data do not include an indicator for candidate sex, we use a two-step process to code it (details in online appendix A1.1): first with automated prediction in R, which categorized 96% of the candidates, and then with research assistants, who categorized an

additional 3%. In total, the dataset features 27,133 city council candidates, 3,147 mayoral candidates, and 29,776 school board candidates.

Though our dataset provides a large sample and addresses the challenge of party cues, there remains the problem that we cannot measure gender stereotyping directly using this approach.

Therefore, even if the patterns we find are consistent with our hypotheses, we cannot definitively rule out the possibility that any patterns we find are explained by something other than gender stereotyping. To address this, in our analysis, we consider four plausible alternative explanations. First, we consider whether any sex differences in electoral performance might be driven by affective bias against women. If they are, then we would expect to find a relatively consistent penalty for women candidates across office types and jurisdictions, not the varying effects we hypothesize.

Second, candidates might strategically enter races depending on how they expect to perform (including because of bias they expect to encounter), and that could produce pools of men and women candidates that differ in key respects—and that differ in varying ways depending on office type or constituency conservatism. In the online appendix, we explore this through a descriptive analysis that examines how the prevalence of women candidates varies by office type and constituency conservatism—thus assessing patterns of candidate entry. Our findings there strongly suggest that strategic candidate entry is likely to work against our ability to detect varying effects of stereotyping by looking at patterns of win rates.

Third, we incorporate into our analysis measures of candidate quality—the commonly-omitted variable that has proven to be a stumbling block and a flashpoint in the empirical literature on discrimination. As we’ve discussed, some studies suggest that the average quality of women congressional candidates is higher than that of men—and that failing to account for this difference masks differences in men and women’s vote shares (Milys and Schosberg, 2000; Fulton, 2012). We therefore take advantage of California election rules that allow candidates to provide a ballot

designation indicating their current elective office or occupation; we use that information to create multiple measures of their experience. Thus, while we cannot account for every characteristic of the thousands of candidates in our dataset, we do control for the factor identified in the literature as the main culprit behind omitted variable bias in similar analyses.

Finally, we exploit variation in the timing of local elections to test whether the patterns are most pronounced in the elections where gender stereotyping by voters is likely to be most widespread. Voter turnout in local elections varies dramatically depending on when the election is held: turnout in city elections held concurrently with presidential elections averages 35 percentage points higher than in local elections held off-cycle, and in city elections held concurrently with midterm and gubernatorial elections, it averages 18 points higher (Anzia, 2014; Hajnal, Lewis, and Louch, 2002). Oliver and Ha (2007) also show that the average voter knows more about local candidates and issues in off-cycle elections than in on-cycle elections. Unsurprisingly, when local elections are held on the same day as national elections, many people only vote in local races because they are already at the polling place to vote in national races. In off-cycle local elections, by contrast, most of the people who participate do so *because* local races interest them. It makes sense, then, that the typical voter in on-cycle elections has less information about local candidates and issues than voters in off-cycle elections.

Research also shows that when voters know a great deal about the candidates, they are less likely to rely on heuristics generally (Popkin, 1991) and gender stereotypes in particular (McDermott, 1997, 2005; Bauer, 2015). Combining these two sets of empirical findings—about stereotype use and about election timing—we expect that local elections held concurrently with presidential elections feature the highest proportion of voters reliant on stereotypes, that the proportion is lower in local elections held concurrently with midterms, and that the smallest proportion of voters relies on stereotypes in off-cycle elections. If any relationships we find reflect gender stereotyping, they

should be most pronounced in elections concurrent with presidential elections and smallest during off-cycle elections. This, then, serves as a final assessment of whether any relationships we uncover are consistent with gender stereotyping.

Empirical Analysis

In the tests of our hypotheses, our main dependent variable is a binary indicator, *Win*, which equals 1 if the candidate won the election and 0 if the candidate lost.⁴ To test H1, we compare the difference between women and men's win rates in mayoral elections to that of city council elections; if the difference is smaller (more negative) in mayoral races than in city council races, that would be evidence in support of H1. For H2, we compare the difference between women and men's win rates in school board elections to that of city council elections, expecting it to be larger (more positive) in school board elections because of the salience of education. And to test H3, we evaluate whether any gap between women and men's win rates decreases as one moves from more liberal to more conservative constituencies. Because our focus is on stereotyping, we limit our main analysis to non-incumbents; local incumbents have already been in office and are relatively more recognizable to voters, so voters probably rely less heavily on gender stereotypes in evaluating them.⁵

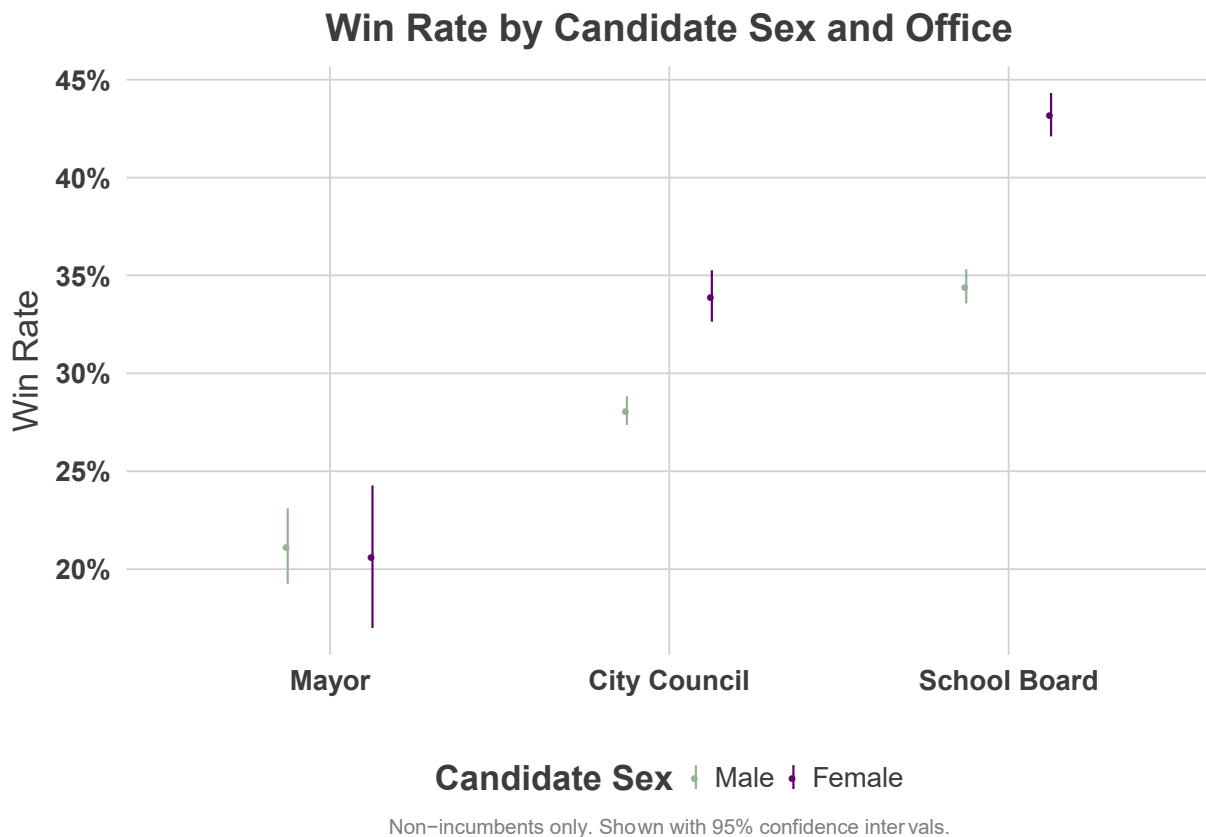
As a descriptive starting point, in Figure 1, we calculate raw averages of *Win* by sex and compare them across office types. In city council races, 34% of the non-incumbent women win their races, whereas only 28% of the men do—a gap of 6 points in favor of women. In mayoral contests,

⁴ We exclude observations where candidates advanced to runoffs. The win/loss indicator is preferable to vote share because many city council and school board races are multi-seat races in which candidates often win with a small vote share. However, we include models using vote share in the online appendix, which give substantively similar results.

⁵ The results are similar when we include incumbents. See the online appendix.

there is no difference in the win rates of men and women: both win 20-21% of the time. School board races have a large difference in win rates, with women winning 43% of the time and men only 34% (a difference of 9 points). The simple averages, then, are supportive of H1 and H2.

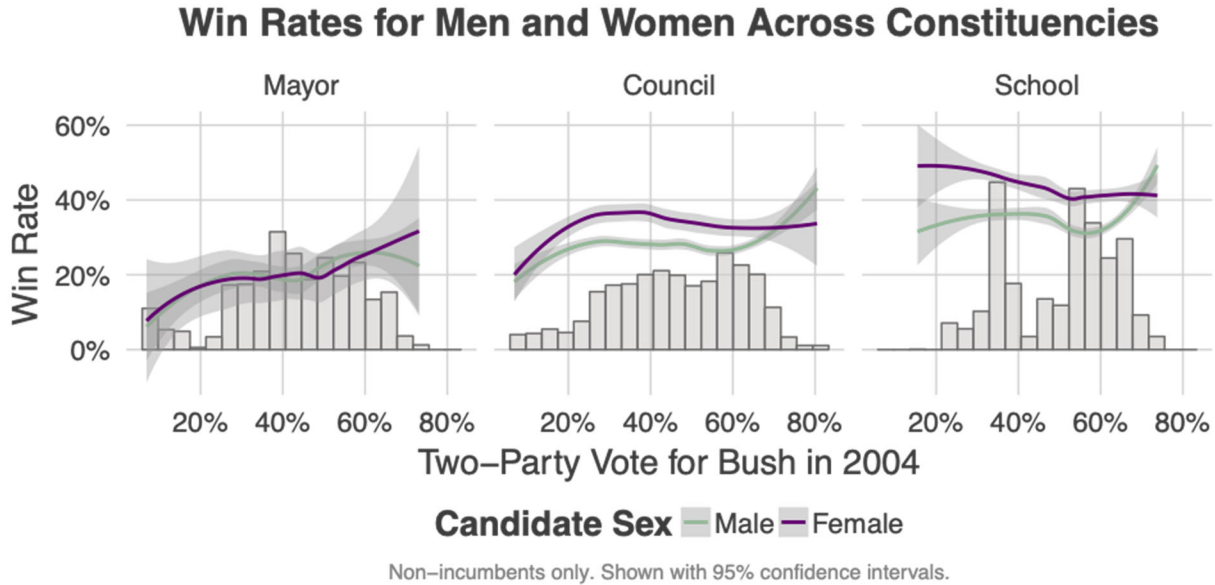
Figure 1. Mean win rates by office



As an initial assessment of H3, in Figure 2 we present LOWESS plots of Win against the 2004 two-party vote for George W. Bush, separately for men and women and for each of the three office types. In each plot, histograms show the distribution of presidential vote for the candidates in the subset. For city council candidates, the pattern is supportive of H3 except for the most liberal cities. Most city council candidates are from cities with between 25% and 70% vote share for Bush in 2004, and for cities in that range, the gap between the lines narrows—and thus the women’s advantage decreases as cities become more Republican. There is no such pattern for mayoral

candidates. For school board candidates, counties with the lowest Bush vote share have the highest women’s advantage, and the gap narrows for more Republican counties.

Figure 2. Win rates by constituency conservatism



We next evaluate the hypotheses with linear probability models.⁶ To test H1, we model the dependent variable *Win* for all non-incumbent city council and mayoral candidates with our indicator for whether the candidate is a woman (*Woman*), an indicator for whether the race is a mayoral race (*Mayor*), and the interaction between the two. The coefficient on *Woman* represents the average difference between women and men’s win rates in city council races, and the test of H1 is whether the coefficient on $Woman \times Mayor$ is negative—which would imply that the gap between women and men’s win rates is smaller in mayoral races than in city council races.

We also include two measures of competitiveness: the number of candidates in the race divided by the number of seats up for election (*Candidates per seat*) and the number of incumbents per seat (*Incumbents per seat*). We use information in the candidates’ ballot designations to create a series

⁶ In the online appendix, we show the analysis is robust to the use of logit models.

of experience indicators that we include in the models:⁷ whether the candidate lists experience as mayor or vice-mayor; city council member; school board member, or some other government leadership position like planning commissioner. We also include indicators for whether the candidate lists a background in business, law, education, or activism (see Lawless and Fox, 2005). Because elections in small municipalities are different than elections in larger cities (Oliver, 2012), we include log city population, drawing place-level data from the 1990, 2000, and 2010 U.S. Censuses and interpolating within cities over time. To account for the possibility that some years are more favorable to non-incumbents or women, we include year fixed effects. We estimate models with and without city fixed effects, which (when included) partial out the effects of time-constant city characteristics correlated with the types of candidates who run and the probability of winning. We cluster standard errors by city.

Column 1 of Table 1 presents the estimates of the model without city fixed effects. Even with these race, candidate, and city characteristics taken into account, the coefficient on *Woman* is positive, indicating that women non-incumbents running for city council are 3.7 percentage points more likely to win than men. The test of H1 is whether this gap is smaller for women candidates running for mayor, and we find that it is. The coefficient on *Woman* \times *Mayor* is negative, indicating that the women’s advantage is significantly lower in mayoral races than city council races. When we combine the coefficients on *Woman* and *Woman* \times *Mayor* to estimate the gap between women’s and men’s win rates in mayoral elections, as we do in Figure 3, we see that the average woman is at a significant *disadvantage* in mayoral races: women’s win rates are 8 percentage points lower than

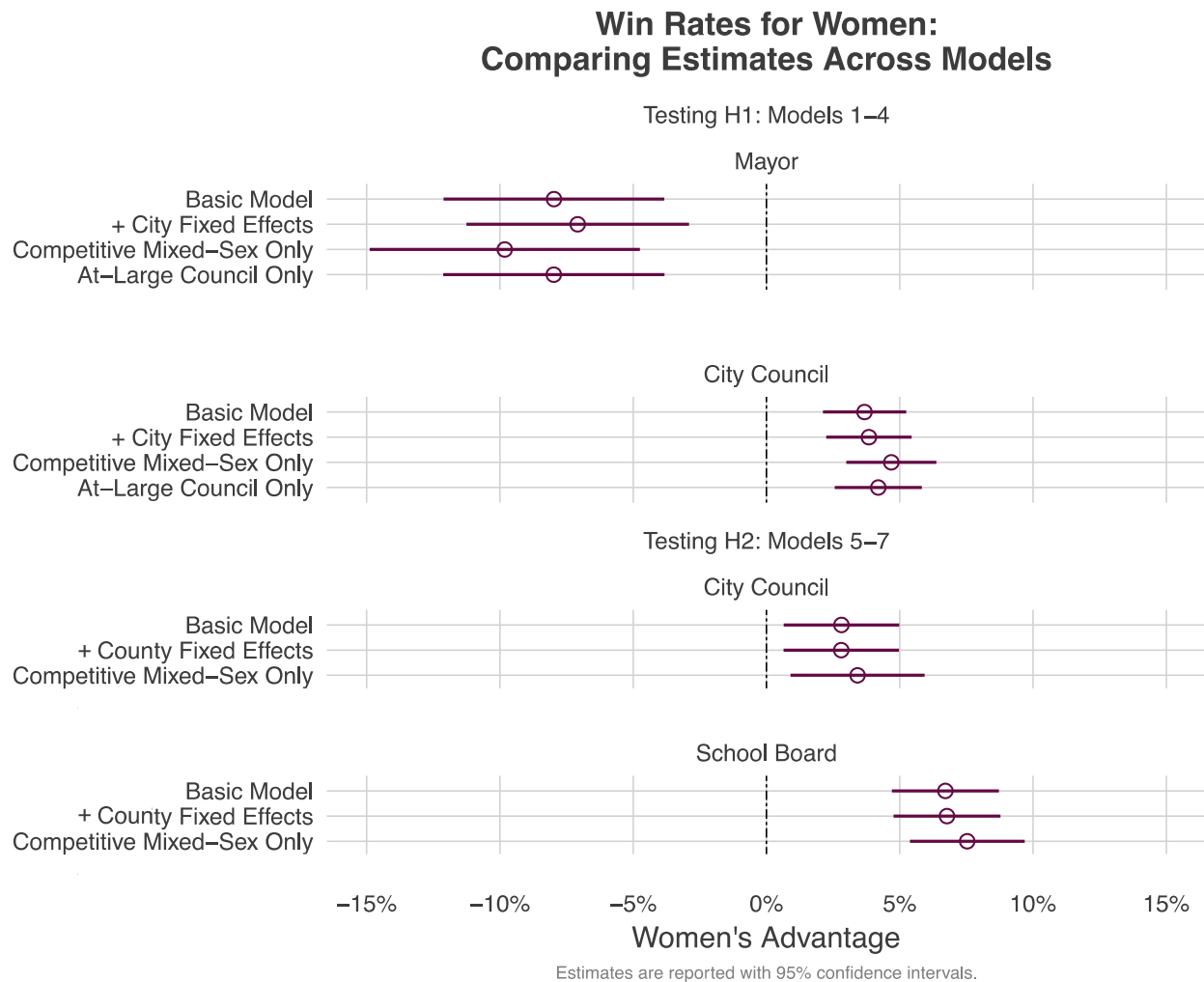
⁷ See online appendix for a description of the coding. In supplemental analysis, we interact the qualifications measures with *Woman* (to account for the possibility that women are differentially helped or hurt by their qualifications); the main results hold. See the online appendix.

Table 1: Win rates by sex, office, and policy domain

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Woman	0.037 (0.008)	0.038 (0.008)	0.047 (0.009)	0.042 (0.008)	0.028 (0.011)	0.028 (0.011)	0.034 (0.013)
Mayor	-0.03 (0.011)	-0.041 (0.011)	-0.017 (0.016)	-0.024 (0.012)			
Woman \times Mayor	-0.117 (0.022)	-0.109 (0.022)	-0.145 (0.027)	-0.122 (0.023)			
District				0.032 (0.012)			
Woman \times District				-0.033 (0.025)			
School board					0.01 (0.006)	0.008 (0.007)	0.019 (0.005)
Woman \times School board					0.039 (0.014)	0.04 (0.014)	0.041 (0.015)
Candidates per seat	-0.043 (0.006)	-0.045 (0.006)	-0.035 (0.005)	-0.043 (0.006)	-0.075 (0.006)	-0.075 (0.006)	-0.066 (0.006)
Incumbents per seat	-0.193 (0.006)	-0.188 (0.007)	-0.164 (0.007)	-0.19 (0.006)	-0.207 (0.009)	-0.204 (0.010)	-0.189 (0.010)
Ln(population)	-0.044 (0.004)	-0.012 (0.022)	-0.042 (0.004)	-0.047 (0.004)	-0.034 (0.002)	-0.027 (0.002)	-0.033 (0.003)
Mayoral experience	0.463 (0.032)	0.495 (0.035)	0.476 (0.040)	0.464 (0.032)	0.483 (0.044)	0.49 (0.045)	0.501 (0.048)
City council experience	0.247 (0.018)	0.262 (0.019)	0.257 (0.023)	0.247 (0.018)	0.315 (0.031)	0.317 (0.031)	0.322 (0.041)
School board experience	0.229 (0.030)	0.25 (0.032)	0.188 (0.036)	0.23 (0.031)	0.252 (0.024)	0.253 (0.024)	0.24 (0.026)
Other govt. experience	0.162 (0.013)	0.177 (0.013)	0.173 (0.014)	0.163 (0.013)	0.172 (0.013)	0.177 (0.014)	0.183 (0.012)
Business experience	0.049 (0.007)	0.059 (0.007)	0.051 (0.007)	0.049 (0.007)	0.052 (0.007)	0.056 (0.007)	0.051 (0.006)
Law experience	0.068 (0.014)	0.076 (0.014)	0.063 (0.015)	0.068 (0.014)	0.048 (0.012)	0.052 (0.011)	0.045 (0.016)
Education experience	0.093 (0.012)	0.096 (0.012)	0.095 (0.013)	0.093 (0.012)	0.165 (0.011)	0.166 (0.010)	0.168 (0.010)
Activism experience	0.022 (0.015)	0.021 (0.015)	0.028 (0.017)	0.021 (0.015)	0.05 (0.012)	0.051 (0.012)	0.054 (0.012)
Model		City fixed effects	Competitive mixed-sex	Districted v. At-large		County fixed effects	Competitive mixed-sex
R-squared	0.14	0.17	0.12	0.14	0.14	0.14	0.13
Observations	21,783	21,783	16,700	21,783	38,390	38,390	31,184

Notes: Standard errors clustered by city in columns 1-4 and county in columns 5-7 in parentheses. Columns 1-4 include non-incumbent candidates running for city council or mayor. Columns 5-7 include non-incumbent candidates running for city council or school board. All models include year fixed effects.

men's. As we show in the online appendix, women running for mayor are more likely than men to have city council experience. Thus, while the raw averages (Figure 1) show little difference between men's and women's win rates in mayoral races, comparing men and women with similar experience points to a women's disadvantage.



One concern is that these estimates could simply reflect differences between cities with and without independently elected mayors; perhaps the former just happen to be places where women candidates fare less well. But in column 2, where we add city fixed effects to the model and focus on within-city variation in how women fare (compared to men) in mayoral versus city council races, the estimates are nearly the same as those in column 1. Women have an average advantage of 3.8 percentage points in city council races, but that advantage declines by 11 percentage points in mayoral elections—turning into an overall women’s disadvantage, as we show in Figure 3. Thus, there is a clear difference in how women fare within the same city when running for executive rather than legislative office.

In column 3, we estimate the same model as in column 1 but limit the sample to mixed-sex races that have more candidates running than seats. This allows us to focus on races in which voters can plausibly use candidate sex as a cue, but it could further reduce our ability to detect a difference between the two contexts if women decline to run for mayor at higher rates because of anticipated negative effects of stereotyping.⁸ Nonetheless, our main estimates change little. We estimate a significant women’s advantage in city council races of 4.7 points, and that advantage decreases by 14.5 points in mayoral races. This suggests an overall 10-point disadvantage for women running for mayor, as depicted in Figure 3.

Finally, in column 4, we include an interaction of *Woman* and *District*, where *District* equals one for city council elections held by district or area and zero for at-large city council and mayoral races.⁹ The literature suggests that districted city elections may be friendlier to women than at-large

⁸ Women are a smaller share of candidates in mayoral races than council or school board races.

⁹ Most city council and school board races are held at-large, but some are by district, and others are by area (in which candidates run for specific seats but all voters vote on all seats).

elections (e.g., Crowder-Meyer et al., 2015), so this model investigates whether the mayor-council gap is primarily driven by the districted cities. We find that it is not. Actually, the women’s advantage in districted elections appears smaller than that of at-large elections (see the coefficient on *Woman* \times *District*), although that difference is not significant. Regardless, the gap between women’s and men’s win rates is significantly smaller in mayoral elections than in both districted and at-large city council elections.

Next we turn to H2. We use the sample of non-incumbent city council and school board candidates and replace *Mayor* with an indicator for *School Board* (and cluster the standard errors by county). In column 5 of Table 1, we again estimate a positive, significant coefficient on *Woman*, but the test of H2 is the coefficient on *Woman* \times *School Board*, and that coefficient is also positive as predicted. Women get an additional boost of 3.9 points in school board races compared to city council races. In Figure 3, we show that women are 6.7 points more likely to win school board races than men. These results are consistent with our expectation that women’s advantage in legislative races is larger when the salient issue is stereotype-congruent (education).

We cannot add city or school district fixed effects to this model because the boundaries of school districts and cities are rarely coterminous, but in column 6 we add fixed effects for the cities’ and school districts’ parent counties. The main estimates are nearly identical to those of column 5. The same is true in column 7, where we limit the estimation to competitive, mixed-sex races. In all models, we find that the gap in average win rates between women and men is significantly higher in school board races than in city council races.

To test H3, we interact *Woman* with the two-party vote for the Republican candidate in the most temporally proximate presidential election (e.g., the 1996 election for 1995 to 1998), centered around its mean, estimating separate models for city council, mayor, and school board candidates. Column 1 of Table 2 presents the estimates for city council. The coefficient on *Woman* indicates that

Table 2: Win rates by constituency conservatism

	<i>City council</i>	<i>Mayor</i>	<i>School board</i>
	(1)	(2)	(3)
Woman	0.033 (0.008)	-0.059 (0.023)	0.063 (0.009)
Republican presidential vote	-0.015 (0.026)	0.048 (0.067)	0.003 (0.051)
Woman \times Republican pres. vote	-0.074 (0.050)	-0.038 (0.148)	-0.178 (0.080)
R-squared	0.14	0.21	0.13
Observations	19,341	2,244	18,851

Notes: Standard errors clustered by city in columns 1-2 and county in column 3 in parentheses. Models include year fixed effects and all controls from Table 1 (race competitiveness, log population, and candidate experience variables).

in cities of average Republicanism, women are 3.3 percentage points more likely to win than men. The test of H3—the coefficient on *Woman \times Republican presidential vote*—is negative, suggesting that women’s advantage does shrink as one moves to more conservative cities. However, that negative coefficient is barely statistically significant ($p=0.07$ in a one-tailed test),¹⁰ and when we turn to mayoral races in column 2, we do not find support for H3: the disadvantage for women in mayoral races does not vary with the conservatism of the city.¹¹ In column 3, however, we find strong evidence that the women’s advantage in school board elections is lower in more conservative counties. In a county of average Republican vote share, women school board candidates have a 6.3-

¹⁰ When we add the square of *Republican presidential vote* and its interaction with *Woman*, we find that in the most liberal cities, the boost for women in city council elections is actually smaller than in slightly more moderate cities; see online appendix.

¹¹ It could be that we have too few observations of mayoral candidates to see the predicted effect. It could also be that the disadvantage for female mayoral candidates is already so large (several percentage points) that there is no additional disadvantage in more conservative constituencies.

point advantage over men, but that advantage shrinks by 1.8 points for every 10-point increase in Republican presidential vote share. Thus, the evidence for H3 is mixed: for school board and city council candidates, the women's advantage is smaller in more conservative places, but not so for mayoral candidates.

The weight of the evidence is thus consistent with our hypotheses about the effects of gender stereotyping. Still, as we discussed earlier, one might wonder whether gender stereotyping is really the mechanism underlying these results—or whether something else explains these patterns of women's advantage and disadvantage in local elections.

Could it be, for example, that some form of gender bias other than stereotyping—such as affective bias—is at work? If true, we would expect to find a similar effect of *Woman* for all of the offices; we know of no other theoretical account that would predict voters to have positive affect toward women running for city council but negative affect for women running for mayor within the same city. Yet we do not find evidence of a consistent penalty for women, either by office or by jurisdiction. Alternatively, one could argue that there might be some unobserved difference between women and men candidates that happens to make the women much more successful than the men in school board races, somewhat more successful in city council races, and less successful in mayoral races. We cannot rule this out entirely, but the existing literature points to candidate quality as the most important variable to consider, and in our analysis, we have developed and incorporated multiple measures of candidate experience—something that most observational studies in the empirical discrimination literature have not done. But in both the raw data and in taking these differences between candidates into account, the patterns of women's and men's win rates are consistent with the empirical implications of our argument about stereotyping.

Is there other evidence suggesting stereotyping is the mechanism at work? To answer this question, we investigate one final empirical implication of our theoretical argument: that if the

results so far reflect gender stereotyping, they should be most pronounced in on-cycle elections, where gender stereotyping by voters is likely to be most widespread. We begin by calculating average win rates for women and men and the difference between the two for each of the three office types during presidential elections, during midterm elections, and off-cycle (see Table 3).¹² The patterns are in line with our expectations. The women’s advantage in city council elections is 3.2 percentage points in off-cycle elections, 4.9 points in midterms, and 8.7 points in presidential elections. For mayoral elections, the women’s *dis*advantage becomes larger in higher-turnout contexts: it is close to zero in off-cycle elections and drops nearly 3 percentage points in elections concurrent with presidential races. In school board races, the women’s advantage starts at 7 percentage points in off-cycle elections, increases to 8.1 points in midterms, and grows to 11.2 points during presidential elections.

Table 3: Average win rates by sex and election timing

City council			
	<i>Men</i>	<i>Women</i>	<i>Women’s Advantage / (Disadvantage)</i>
Off-cycle	0.266	0.298	0.032
Midterm	0.293	0.342	0.049
Presidential	0.292	0.379	0.087
Mayor			
	<i>Men</i>	<i>Women</i>	<i>Women’s Advantage / (Disadvantage)</i>
Off-cycle	0.168	0.172	0.005
Midterm	0.247	0.242	-0.005
Presidential	0.263	0.238	-0.024
School board			
	<i>Men</i>	<i>Women</i>	<i>Women’s Advantage / (Disadvantage)</i>
Off-cycle	0.355	0.424	0.070
Midterm	0.340	0.421	0.081
Presidential	0.332	0.444	0.112

¹² Elections held concurrently with statewide primaries or special elections are excluded.

In Table 4 we return to the linear probability models and interact *Woman* with *On-cycle*—a variable that equals 1 if the local election is concurrent with a presidential election, 0.5 if it is concurrent with a midterm, and 0 if it is off-cycle. The estimates for city council candidates are shown in column 1. The coefficient on *Woman* is statistically indistinguishable from zero, indicating that in off-cycle elections, there is no clear difference between men and women’s probability of winning. At the bottom of column 1, we show the combination of the coefficients on *Woman* and $Woman \times On-cycle$, which represents the difference in women and men’s win rates in city council elections concurrent with presidential elections. That combined coefficient is 0.057 and statistically significant, showing that women’s advantage in city council elections is only present in the lower-information context.

If we were to find that women also fare relatively better in on-cycle mayoral races, we might worry that on-cycle elections are just friendlier to women candidates generally. But in column 2, where we estimate the model for mayoral candidates, we find the opposite. While the coefficient on *Woman* is statistically insignificant, the combined coefficient on *Woman* and $Woman \times On-cycle$ at the bottom of column 2 is negative and significant, showing that women mayoral candidates in on-cycle elections are 6.5 points less likely to win than men.

In school board races, shown in column 3, we find that women have a significantly higher chance of winning than men even in off-cycle races (4.8 percentage points). But that advantage grows to 7.9 points in elections concurrent with presidential races. Again, the effects presented earlier are more pronounced in the elections where we expect more stereotyping.

We also found earlier that women’s advantages in city council and school board races decrease with the Republicanism of the local constituency. In columns 4 and 5, we test whether that negative relationship is more pronounced in on-cycle elections than in off-cycle elections. To do this, we interact $Woman \times Republican\ presidential\ vote$ with *On-cycle* (and include all component

interactions) to see whether the negative slope of *Woman* \times *Republican presidential vote* is steepest in on-cycle elections.

Table 4: Win rates by sex and election timing

	<i>City council</i>	<i>Mayor</i>	<i>School board</i>	<i>City council</i>	<i>School board</i>
	(1)	(2)	(3)	(4)	(5)
Woman	0.009 (0.014)	-0.051 (0.040)	0.048 (0.013)	0.002 (0.014)	0.038 (0.009)
On-cycle	-0.004 (0.021)	-0.012 (0.039)	-0.005 (0.036)	-0.005 (0.021)	-0.01 (0.032)
Woman \times On-cycle	0.048 (0.020)	-0.013 (0.055)	0.031 (0.022)	0.058 (0.020)	0.049 (0.018)
Republican presidential vote				-0.02 (0.048)	0.09 (0.055)
Woman \times Republican presidential vote				-0.076 (0.091)	-0.279 (0.070)
On-cycle \times Republican presidential vote				0.02 (0.063)	-0.147 (0.082)
Woman \times On-cycle \times Rep. pres. vote				-0.085 (0.134)	0.121 (0.142)
R-squared	0.14	0.21	0.13	0.14	0.13
Observations	17,745	1,935	17,942	17,604	17,942
Woman + (Woman \times On-cycle)	0.057 (0.012)	-0.065 (0.033)	0.079 (0.018)	0.061 (0.012)	0.086 (0.016)
(Woman \times Rep. pres. vote) + (Woman \times On-cycle \times Rep. pres. vote)				-0.161 (0.076)	-0.158 (0.132)

Notes: Standard errors clustered by city in columns 1, 2, and 4 and by county in columns 3 and 5. All models include year fixed effects and the controls shown in Table 1.

For city council candidates, presented in column 4, our estimates show that the negative relationship between Republicanism and the size of the women's advantage is only significant in on-cycle races. In off-cycle races, not only is there no women's advantage in cities of average Republicanism, but no gap between men and women's win rates emerges when one moves to more liberal or more conservative cities (the coefficient on *Women* \times *Republican presidential vote* is insignificant). The pattern is different in on-cycle elections. First, there is a significant women's advantage in cities of average Republicanism, shown by the combination of coefficients on *Woman*

and *Woman* \times *On-cycle* at the bottom of column 4. Second, that advantage decreases significantly in more conservative cities: at the bottom of column 4, we combine the coefficients on *Woman* \times *Republican presidential vote* and the triple interaction term, and the result is negative and statistically significant. For city council races, then, the results are consistent with the account that gender stereotyping underlies the relationship.

We do not see the same pattern in school board races. In school districts in counties with average Republican presidential vote, women do have a significantly larger advantage in on-cycle races than off-cycle races. We also continue to find that the women's advantage decreases in more conservative counties: the coefficient on *Woman* \times *Republican presidential vote* is negative and statistically significant. However, we do not find that the negative relationship is most pronounced in on-cycle elections. We cannot say why this is so, but this could suggest that the decreasing advantage for women school board candidates in more conservative counties is caused by something other than a changing effect of gender stereotypes. While this last result does not align with our expectations, the more general finding for school board candidates is worth underscoring for its implications for descriptive representation: women have an overall advantage in school board races that shrinks as counties become more Republican.

Conclusion

The vast literature on women in politics shows that many voters use gender stereotypes when evaluating candidates but does not provide a clear answer to the question of how gender stereotyping affects real elections. If there is a dominant view, it is that women candidates are not hurt by gender stereotypes, though more recent scholarship questions this account. Yet at the heart of this literature is a thorny methodological problem: that surveys and experiments are the only way to directly measure the extent of gender stereotyping—the proposed *mechanism*—while the *outcome* of interest—the electoral fates of men and women candidates—is best studied through analysis of data

on real elections. To date, nearly all of the existing research on gender stereotyping has prioritized the measurement of the mechanism and relied on surveys and experiments, but one can question whether respondents' answers in surveys and experiments reflect what they actually do in elections. We instead use real election data to evaluate our hypotheses about the varying effects of gender stereotyping. Focusing on local elections affords us rich variation in the contextual factors we expect to matter, plus an environment with nonpartisan elections, ballot designation data that provide some information about candidate experience, and variation in election timing—which is associated with voter information about local candidates and issues.

Our analysis of these data shows the promise of our approach and suggests how gender stereotyping by voters, not just gender bias, might affect women's descriptive representation. In comparison to men, women fare better in stereotype-congruent contexts than they do in stereotype-incongruent contexts: they win more than men in local legislative races but not in executive races, and within legislative races, women win more often than men when the salient policy issue is education rather than economic development or crime. Consistent with stereotyping theory, these effects are largest in elections where voters tend to know less about local candidates. We also find that the advantages for women in legislative elections are smaller in more conservative constituencies, but more work needs to be done to assess whether gender stereotypes are the main driver of this effect.

Our empirical findings are also important because they begin to shed light on the roles of sex and gender in local elections, a topic that has barely been studied. The fact that many candidates for higher office start out in local office is one of many reasons to study local elections: what happens locally affects the pipeline of women available to run for state and national office. Yet it is important to emphasize that while we tested our hypotheses using local data, the hypotheses themselves are not hypotheses about local politics—they are drawn from a large body of work that

mostly focuses on women's representation in U.S. Congress. We therefore expect that the patterns uncovered in the local environment can also tell us about the electoral dynamics women face when running for president, governor, or state or national legislative office. There, too, constituencies vary in their conservatism, and the salient policy issues fluctuate.

Most simply, however, our study underscores the need for research on women in politics to move beyond questions about whether voters are or are not biased against women and on to questions that embrace the potential for nuance. We began this paper with a simple question—whether gender stereotyping by voters affects women's chances of getting elected. Our analysis provides suggestive evidence that in some contexts, gender stereotyping by voters will benefit women; in others, it will work against them; and the magnitude of those effects will vary. Going forward, scholars should focus on exploring that variation. The result will be a better understanding of how voters contribute to women's representation in elective office.

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