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

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Abstract: Research shows that voters often use gender stereotypes to evaluate candidates, which should help women in some electoral contexts and hurt them in others. Yet most research examines a single context at a time—usually U.S. national elections, where partisanship is strong—and employs surveys and experiments, raising concerns that citizens' responses may not reflect how they actually vote. By analyzing returns from thousands of nonpartisan local elections, we test whether patterns of women's win rates relative to men's match expectations for how the electoral effects of gender stereotyping should vary by context. We find women have greater advantages over men in city council than mayoral races, still greater advantages in school board races, and decreasing advantages in more conservative constituencies. Thus, women fare better in stereotype-congruent contexts and worse in incongruent contexts. These effects are largest during general elections, when voters know less about local candidates.

Keywords: gender stereotyping, women, local elections, election timing

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 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; Huddy and Terkildsen, 1993a; Kahn, 1996), although the prevalence of such stereotyping may be lower today than in the past (Hayes and Lawless, 2016). On the second question, the literature is not conclusive (e.g., Fox and Oxley, 2003; Bos, Schneider, and Utz, 2018), nor is related research assessing whether differences between men's and women's vote shares reveal gender discrimination (e.g., Burrell, 1994; Fulton, 2012; Barnes, Branton, and Cassese, 2017; Bauer, 2020). Thus, although concern about women's underrepresentation in elective office motivates much of this scholarship, it remains unclear how voters' use of gender stereotypes affects women's ability to win elective office (see Teele, Kalla, and Rosenbluth, 2018; Bauer, 2015).

One reason the literature hasn't yet reached firm conclusions on this question is that the electoral effects of gender stereotyping likely vary across contexts (Bos et al., 2018; Ono and Burden, 2018). While there is a vast literature on how candidate gender affects vote choice and election outcomes, most studies focus on a single context at a time (e.g., U.S. House elections)—and thus don't directly test whether women candidates' chances of winning are better or worse under different conditions. Moreover, the studies that do evaluate whether voter support for women candidates varies by context almost all rely on surveys and experiments in which respondents report which candidates they would or did vote for. Such studies enable the researcher to measure individuals' gender stereotyping directly, but what respondents say they would do when faced with a (frequently fictional) candidate may not reflect what they actually do in elections (Dolan, 2014, 128)—and the latter is the outcome of interest when the question is about the electoral effects of

gender stereotyping. Critically, nearly all of this research also focuses on national and state general elections, where forces of partisanship are strong, likely muting any effects of gender (Hayes and Lawless, 2016). For all of these reasons, there is need for more research evaluating the conditions under which gender stereotypes might help or harm women's electoral chances.

In this paper, we draw on the existing literature to put forward three hypotheses about how women's win rates should vary by context if stereotyping is at work, and we use data on thousands of U.S. local elections to test 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 the effects of gender stereotyping are expected to vary. It also includes candidates' ballot designations, from which we create measures of candidate experience, and features only nonpartisan races, which are common throughout the United States and reduce the likelihood that party cues will overwhelm gender cues.

In addition to our novel approach to testing these hypotheses, we theorize that variation in local election timing helps us to assess whether the patterns we uncover are consistent with an account based on gender stereotyping. Research shows that individuals are more likely to rely on stereotypes when they have less information about candidates (e.g., Matson and Fine, 2006; McDermott, 1997, 1998; Berinsky et al., 2020), and also that the average voter in on-cycle local elections—those held concurrently with national elections—has less information about local candidates and issues than the average voter in off-cycle local elections (Oliver and Ha, 2007; de Benedictis-Kessner, 2018). 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.

Local elections are therefore analytically useful in a variety of ways, but studying women's success in local elections is also important in its own right (Holman, 2014). Local governments spend a quarter of all public money in the United States and are major policymakers in areas such as

policing, public education, and housing, yet we still know little about whether voters affect women's descriptive representation at the local level. Also, many politicians start their careers in local politics, including Vice President Kamala Harris, U.S. Senator Dianne Feinstein, and U.S. Senator Joni Ernst, and so local elections shape the pipeline of women available to run for higher office. For all these reasons, there should be more research on women in local elections.

This paper is a step in that direction. Our empirical analysis compares city council, mayoral, and school board races to assess whether women's electoral success varies in ways consistent with the three hypotheses we draw from the literature. We find that on average, women candidates have an advantage over men in city council elections (city legislatures), but that advantage is reduced—and becomes a disadvantage—for women running for mayor (city executives). Comparing legislatures, we find that the women's advantage is greater in school board races (local legislatures where education is the issue at stake) than city council races (local legislatures 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. By studying real elections and local elections in particular, we make progress toward understanding how voters affect the success of women running for public office.

Literature and Expectations: The Electoral Effects of Gender Stereotyping

There is little scholarly dispute over the content of voters' gender stereotypes, even if there are signs that the use of such stereotypes may be declining over time. First, voters often view women candidates as more compassionate and communitarian than men (Brooks, 2013; Dolan, 2004; Hayes, 2011). Second, voters assume women candidates are more competent than men on so-called women's issues such as education and healthcare and weaker on issues like the economy,

policing, and the military (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, 2009).

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).[1] Most examine a single context at a time, and most rely on surveys and experiments—exploring outcomes such as candidate evaluations and vote choices, often in hypothetical races—to study voter attitudes and beliefs. Some survey experiments show that respondents do not rate men and women candidates differently on favorability or likely effectiveness (Brooks, 2013). Others show that respondents favor women over men (Fridkin, Kenney, and Woodall, 2009). Still others find that when gender stereotypes are activated, respondents rate women candidates as less qualified (Bauer, 2020). And some use surveys to assess whether individuals' use of gender stereotypes predicts their vote choices and attitudes about women in elective office (Dolan, 2010, 2014). While this is a large literature—which we describe more thoroughly in the online appendix—two key features are that 1) most of its studies focus on a single context, not how the electoral effects of stereotyping might vary across contexts, and 2) the focus is on individual voters, their use of stereotypes, and their reports of how they would or did vote—not directly on how women candidates fared in elections.

A related body of research does examine women candidates' electoral success, analyzing election returns to determine whether voters discriminate against women candidates, but it too, has

[1] Due to space constraints, we can only summarize the literature's general contours here; in the online appendix, we present a more detailed and comprehensive survey of the relevant literature and how our study relates to existing research.

produced mixed conclusions. Most of these studies find that the average vote share of women candidates does not differ from that of men (e.g., Seltzer, Newman, and Leighton, 1997). This has led some scholars to conclude that voters are not discriminating against women (e.g., Darcy, Welch, and Clark, 1994). Others challenge that, 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; Fulton, 2012; Fulton and Dhima, 2020; Pearson and McGhee, 2013). Women also receive fewer votes than men when they face high-quality challengers (Barnes et al., 2017), and women incumbents are more likely to face high-quality challengers (Milyo and Schosberg, 2000). Thus, research analyzing election returns to test for voter discrimination has generated mixed conclusions as well.

These literatures are distinct in important ways. One distinction is methodological: research on stereotyping mostly relies on surveys and experiments, whereas research on discrimination mostly analyzes election returns data. But they are also distinct in the phenomena they seek to explain and hypotheses they test. In assessing whether voters discriminate against women, researchers typically test whether women receive *fewer* votes than men—a net negative effect. Moreover, the mechanism by which any such women's penalty occurs is often ambiguous: 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 (Teele et al., 2018). In contrast, research on stereotyping suggests a specific mechanism, but also one whose electoral effects could vary—because those stereotypes could work in favor of women in some contexts and against them in others.

Some studies suggest that the electoral effects of gender stereotyping should depend on the context or type of election (Bos et al., 2018; Lawless, 2004), but a limited number have empirically tested for those varying effects. Those that have almost exclusively use surveys and experiments to

assess how vote choice depends on the context. One example is Ono and Burden's (2018) conjoint survey experiment, which finds that voters are less likely to vote for women than men in U.S. presidential races but not in U.S. congressional races.[2] Another is Kahn (1996), who finds that survey respondents are more likely to report voting for women U.S. Senate candidates when their campaign coverage features more "feminine" issues and themes. Partisanship and ideology are some of the more common conditioning variables explored: some scholars find that Democratic and liberal respondents are more supportive of women candidates than Republicans and conservatives (Dolan, 1998; McDermott, 1998; King and Matland, 2003; Ono and Burden, 2018), and related research notes that U.S. congressional districts that lean Democratic have been more likely to have women representatives than those that lean Republican (Palmer and Simon 2008; Pyeatt and Yanus 2017).[3]

Of the small number of studies that use data on election returns to test for varying electoral effects of gender stereotyping, Fox and Oxley (2003) stands out as one that compares the win rates of women and men candidates in different contexts. Specifically, they compare the rates at which women and men run for and win state executive offices that are stereotypically "masculine" (e.g., comptroller or auditor) versus stereotypically "feminine" (e.g., superintendent of education) and find that women are no less likely to win those races when they run—a null result they attribute to the strength of party forces in shaping state general election outcomes. Fulton and Dhima (2020) analyze U.S. House elections and find that women Democratic candidates fare worse in districts

[2] Huddy and Terkildsen (1993b) also find in a lab experiment that subjects are more likely to vote for a man than a woman in mayoral races but not in city council races.

[3] On political party differences in support for women more generally, see also Thomsen (2015, 2020), Kitchens and Swers (2016), and Och and Shames (2018).

with larger shares of Republican and Independent men constituents. And there is other work that finds patterns suggestive of varying electoral effects of gender stereotyping: analyzing the proportion of city elected officials who are women, Smith et al. (2012) find the proportion is larger in more Democratic cities, and Crowder-Meyer et al. (2015) find it is larger for city clerks than for mayors or city councilmembers.

In sum, there is still relatively little work that empirically examines how the effects of candidate gender on election outcomes will vary by context. Studies that do test for such variation mostly use survey and experimental data on individuals, and they also mostly focus on national or state elections where partisanship and ideology play a large role in shaping vote choice. With all of this in view, it becomes clear that there is still need for more research on how the electoral effects of gender stereotyping might vary by context—particularly empirical research that focuses on how women and men candidates fare in real elections, and particularly research that looks at the many U.S. electoral contexts where partisanship and ideology play a smaller role.

We start in this direction by weaving together what we know about the content of gender stereotypes from the existing literature to set out three general hypotheses. First, we draw on the stereotype that women, as collaborators, are less well suited for executive office than the legislature (e.g., Huddy and Terkildsen, 1993b; Ono and Burden, 2018). If voters use this stereotype, women should fare less well than men in executive races than they do in legislative races, *ceteris paribus*. Other factors may of course contribute to differences in men and women's actual win rates, such as differences in qualifications (e.g., Anzia and Berry, 2011; Fulton, 2012; Barnes et al., 2017), so we do not have theoretical expectations about any baseline difference between women's and men's win rates in a single context. Our hypothesis is simply that any women's advantage should decrease (or a disadvantage, increase) when moving from a stereotype-congruent context to a stereotype-incongruent context. Thus, if stereotyping is at work:

H1: Women will have a larger advantage (or smaller disadvantage) over men in legislative than in executive races.

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 and the economy (Kahn, 1996). Holding constant the 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: Women will have a larger advantage (or smaller disadvantage) over men in offices where the policy domains correspond to areas of perceived women's competence than in offices where the policy domains do not.

Our third hypothesis is rooted in the stereotype that women candidates are more liberal than men (e.g., Sanbonmatsu, 2002; Koch, 2000). We propose that the effect of gender stereotypes on women's electoral success should depend on whether a given electorate views liberal candidates favorably. This stereotype might therefore present a barrier to Republican women or women running in conservative constituencies (e.g., Och and Shames, 2018; Ono and Burden, 2018). Thus, holding the office constant:

H3: Women will have a larger advantage (or smaller disadvantage) over men with constituencies that are more liberal than with constituencies that are more conservative.

These are just three hypotheses, and more are possible. But these three flow naturally from the literature, creating a useful structure to study their implications for election outcomes. In what follows, we test these hypotheses in an important yet understudied environment—and one which shapes the pipeline from which most national candidates emerge.

Empirical Strategy

To test these hypotheses, we analyze data on local election returns, which feature a large sample of governments and candidates as well as rich, measurable variation on all of the dimensions

relevant to our hypotheses. For instance, while relatively few women have run for president or governor, the United States has over 19,000 municipal governments, roughly a third of which have independently elected mayors, so the local context features much larger 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 (Kahn, 1996); whereas at the local level, it is simpler to capture variation in policy salience because different types of local governments undertake 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, Ha, and Callen, 2012).[4] Finally, considerable variation in constituency conservatism allows for tests of whether the gap between women's and men's win rates varies accordingly.

Local government is important to study for other reasons as well. Even beyond the important policy decisions local officials make, many women who run for national office get their start in local politics, so it is worth examining gender dynamics in local elections to better understand the processes that shape the pipeline of women candidates qualified to run for higher office. What is more, local elections tend to be low-information affairs (Oliver, Ha, and Callen, 2012), which could make voters more reliant on stereotypes. And because over 75% of municipal elections and roughly 90% of school board elections in the United States are formally nonpartisan (Hess, 2002; Wood, 2002)—meaning candidates' party affiliations do not appear on the ballot—it is harder for voters to use candidate party as a heuristic. This could mean that voters are especially reliant on gender stereotypes in local elections—and that the hypothesized differences in the electoral effects of gender stereotyping will be especially visible there. Finally, while many scholars

[4] Other common local government types could also be used to test expectations about policy salience, such as library districts or fire protection districts.

have observed that women candidates seem to be more disadvantaged in the Republican Party than in the Democratic Party, it is hard to sort out in the national context whether that is because of differences in the conservatism of their constituencies or something else about the parties, such as recruitment, nomination, or funding strategies. By examining nonpartisan local races, we can better isolate the relationship between the conservatism of the constituency and women's electoral fates.

Even with all of these advantages of studying the local context, U.S. local election data are notoriously difficult to collect, which may explain why studies at the local level usually analyze the gender composition of officeholders rather than candidates (e.g., Smith et al., 2012; Trounstine and Valdini, 2008).[5] For these reasons, we turn to the California Elections Data Archive (CEDA), which records most local elections in 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. We focus on municipal and school board elections from 1995 to 2016: municipalities because they hold elections for both executive (mayor) and legislative (council) offices, and school board elections because—when compared with city council elections—they provide variation in policy salience across legislative races. As is typical in the United States, municipal and school board elections in California are nonpartisan. And as a large, diverse state—the largest by population in the United States, and the fifth largest economy in the world—California has many local governments varying in size and the partisan leanings of their residents, making it an excellent state for these local government comparisons.

[5] Crowder-Meyer et al. (2015) and Crowder-Meyer and Smith (2015) also examine the share of all candidates who are women, but they do not compare the success of men relative to women candidates in local elections, so we still know little about how women fare compared to men in U.S. local governments (Holman, 2017).

Because the CEDA data do not include an indicator for candidate gender, we use a two-step process to code it (details in the online appendix): first with automated prediction in R, which categorized 96% of the candidates, then employing research assistants to categorize an additional 3%. In total, the dataset features 27,137 city council candidates in 6,017 unique city council races, 3,148 mayoral candidates in 1,188 mayoral races, and 29,284 school board candidates in 7,352 school board races.

Finally, our data enable us to construct measures of candidate quality—the commonly-omitted variable that has proven to be a flashpoint in the empirical literature on discrimination. Studies suggest that the average quality of women congressional candidates is higher than that of men—and that failing to account for this masks real differences in men and women's vote shares (e.g., 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. We also limit our main analysis to non-incumbents: local incumbents have already been in office and are more recognizable to voters, so voters probably rely less heavily on gender stereotypes in evaluating them.[6] Thus, while we cannot account for every characteristic of the thousands of candidates in our data, we do control for the factor identified as the main culprit behind omitted variable bias in similar analyses.[7]

[6] The results hold when we include incumbents. See appendix.

[7] In the appendix, we also present sensitivity analyses for our main findings that estimate how large an omitted variable would have to be to change the results.

Methods

Our main dependent variable is a binary indicator, *Win*, which equals 1 if the candidate won the election and 0 if the candidate lost.[8] We begin our analysis by describing the simple bivariate relationships between this win indicator and our main independent variables of interest. To test H1, we compare the difference between women and men's win rates in mayoral elections to that of city council elections; if women have a smaller advantage (or larger disadvantage) in mayoral races than in city council races, that would be consistent with the expectation that stereotypes benefit women more when they are running for legislative positions than when they are running for executive positions. For H2, we compare the difference between women and men's win rates in school board elections to that of city council elections, expecting a greater advantage (or smaller disadvantage) for women in school board elections because of the salience of education. And to test H3, we evaluate whether women's advantage decreases (or disadvantage increases) as one moves from more liberal to more conservative constituencies. We measure constituency conservatism using the two-party vote for the Republican candidate (*Republican presidential vote*) in the most temporally proximate presidential election (e.g., the 1996 election for 1995 to 1998), centered around its mean, looking at its relationship to women's and men's win rates separately for each office.

We then proceed to multiple regression models that attempt to account for various factors that prior literature has shown to be related to candidate gender and election outcomes. We use OLS rather than logistic regression to estimate the models because it is easier to interpret the interaction

[8] 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.

effects central to our hypotheses with OLS coefficients; however, our appendix shows that the results hold using logit models. We cluster standard errors by city (for municipal offices) or by county (for school board) to account for possible heteroskedasticity due to nonindependence of observations from the same geographic area. To rule out the possibility that some years are more favorable to non-incumbents or women, we include year fixed effects in all models. We estimate models with and without fixed effects for jurisdiction, which, when included, partial out the effects of time-constant jurisdiction characteristics correlated with the types of candidates who run and the probability of winning. In our visuals, all estimates are shown with 95% confidence intervals, and all p-values reported are two-tailed.

Following earlier literature that finds race competitiveness (Barnes et al., 2017), candidate experience (Fulton and Dhima, 2020), and district characteristics (Palmer and Simon, 2008) to be important, we include measures of these in our models. For competitiveness, we include 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 of experience indicators that we include in the models:[9] 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 (Lawless and Fox, 2005). Because elections in small municipalities are different than elections in larger cities

[9] See online appendix for a description of the coding scheme. We also interact the qualifications measures with candidate gender (to account for the possibility that women are differentially helped or hurt by their qualifications).

(Oliver et al., 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.

Alternative Explanations and Election Timing

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. 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 try to address this, in our analysis, we consider two plausible alternative explanations, and propose a new means by which to assess whether stereotyping plays a role.

First, we consider whether any differences in women's and men's win rates 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 descriptive analysis of how the prevalence of women candidates varies by office type and constituency conservatism—thus assessing patterns of candidate entry. The findings suggest that strategic candidate entry is likely to work against our ability to detect effects of stereotyping.

Finally, we theorize that variation in the timing of local elections allows us to test whether the patterns are most pronounced in elections where gender stereotyping by voters is likely to be most widespread. Turnout in local elections varies dramatically by when the election is held: in city elections held concurrently with presidential elections, turnout averages 35 percentage points higher than in local elections held off-cycle, and in city elections held concurrently with midterm and

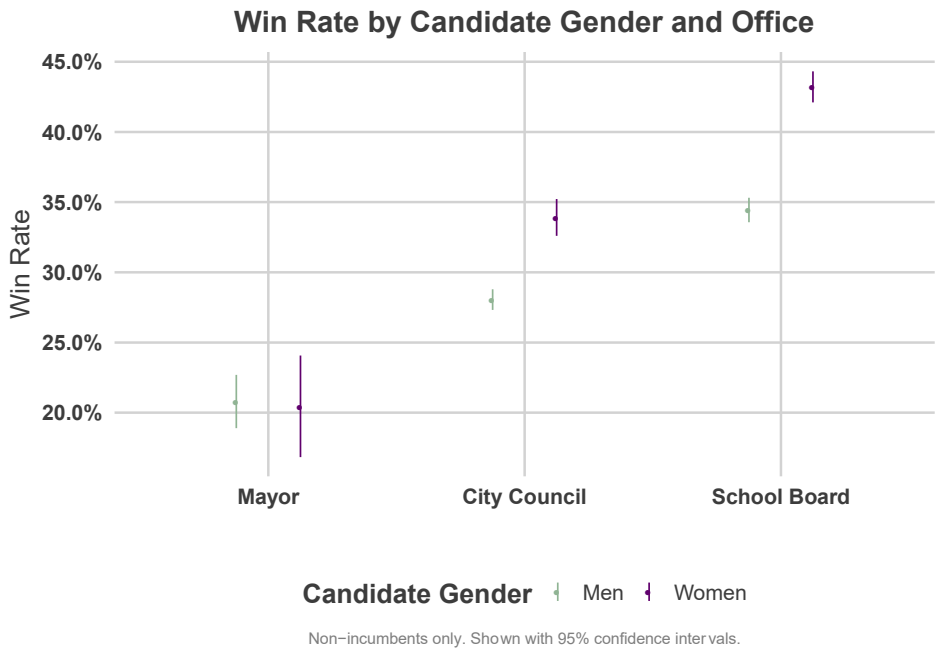
gubernatorial elections, it averages 18 points higher (Anzia, 2014; Hajnal, Lewis, and Louch, 2002). Oliver and Ha (2007) show that the average voter knows more about local candidates and issues in off-cycle elections than in on-cycle elections. Unsurprisingly, when local elections are held on the same 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 on-cycle voter has less information about local candidates and issues than the highly-interested voters in off-cycle elections (de Benedictis-Kessner, 2018).

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, 1998; 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, a lower proportion in local elections held concurrently with midterms, and a still-lower proportion 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. We test for this by examining whether the gaps we find between women's and men's win rates vary with the timing of the election.

Results

As a descriptive starting point, in Figure 1, we calculate averages of *Win* by gender 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, there is no difference in the win rates of men and women: both win 20-21% of the time. School

Figure 1. Mean win rates by office

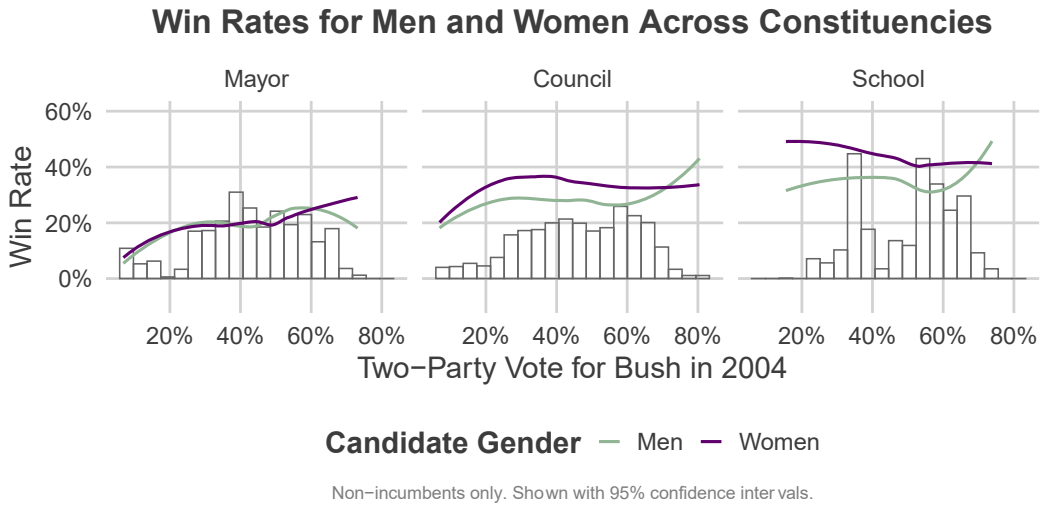


board races have a large difference in win rates, with women winning 43% of the time and men only 34% (a difference of 9 points). The averages, then, support H1 and H2.

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 jurisdictions these candidates ran in. 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% voteshare 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.

These bivariate relationships only tell us so much, however, because many characteristics of races and candidates that affect win rates are correlated with candidate gender, such as candidate

Figure 2. Win rates by constituency conservatism



experience. Notably, in some mayoral races, there were women candidates who had more experience than men candidates—which we'd expect to be associated with higher win rates—but the women lost. For example, in Antioch, California, in 2016, the top three mayoral candidates varied considerably in their city government experience: Wade Harper, a man, was the incumbent mayor; Lori Orgocheck, a woman, was serving as mayor protem; and Sean Wright, a man, was a local business owner and local chamber of commerce CEO with no experience in city elective office. Yet Wright won the election and Orgocheck came in third place—in spite of the experience differential.[10] In Milpitas that same year, two women city councilmembers ran for mayor—Debbie Indihar Giordano and Vice Mayor Carmen Montano—and both were defeated by Richard Tran, a

[10] "Sean Wright Elected as Antioch's New Mayor." *The Press*. November 10, 2016. https://www.thepress.net/general_election_2016/sean-wright-elected-as-antioch-s-new-mayor/article_3b13d18a-a793-11e6-94c5-9713bda59047.html.

man who had not held prior elected office.[11] As a next step, then, we evaluate the hypotheses with linear probability models including variables that capture these dynamics.

To test H1, we regress the dependent variable *Win* for all non-incumbent city council and mayoral candidates on our indicator for whether the candidate is a woman (*Woman*),[12] 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* × *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.

Column 1 of Table 1 presents the estimates of the model without city fixed effects. 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. Consistent with H1, the coefficient on *Woman* × *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* × *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 *dis*advantage in mayoral races: women's win rates are 8 percentage points lower than men's. As we show in the online appendix, women running for mayor are more

[11] Mohammed, Aliyah, "Milpitas: First-Time Candidates Elected to Mayor, Council," *Mercury News*, November 10, 2016. https://www.mercurynews.com/2016/11/10/milpitas-first-time-candidates-elected-to-mayor-council/

[12] In the online appendix, we show our results hold when we use the continuous measure of gender (*Proportion Female*) generated by the R package, and when we binarize "clearly" gendered names (e.g. "Jessica") and ambiguous names (e.g., "Pat").

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 focus on within-city variation in how women fare compared to men in mayoral versus city council races, the estimates are nearly identical. 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.[13]

In column 3, we estimate the same model as in column 1 but limit the sample to mixed-gender races that have more candidates running than seats. This allows us to focus on races in which voters can plausibly use candidate gender as a cue but reduces the sample size. 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. To provide some context for the size of these estimates, we note that in making a similar comparison with a conjoint survey experiment focused on national politics, Ono and Burden (2018) find that respondents were no less likely to vote for a woman than a man in congressional elections but were 2.4 percentage points less likely to vote for women in presidential elections (a statistically significant difference of 2.3 points).

[13] These results hold when we include fixed effects for city-election date, individual races, and—for a subset of the data—individual candidates. See appendix.

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

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

Note: Standard errors clustered by city in columns 1-3 and county in columns 4-6 in parentheses. All p-values two-tailed. * p<0.10, ** p<0.05, *** p<0.01.

Next we turn to H2. We examine non-incumbent city council and school board candidates, replacing *Mayor* with an indicator for *School board* and clustering standard errors by county. In column 4 of Table 1, we again estimate a positive, significant coefficient on *Woman*, and the test of H2, the coefficient on *Woman* × *School board*, is also positive as expected. 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), and they are different than those of Fox and Oxley (2003) who found no such differences when looking at partisan state executive elections.

Table 2: Win rates by constituency conservatism

	City council (1)	*Mayor* (2)	*School board* (3)
Woman	0.033***	-0.059**	0.063***
	(0.008)	(0.023)	(0.009)
Republican presidential vote	-0.015	0.048	0.003
	(0.026)	(0.067)	(0.051)
Woman × Republican pres. vote	-0.074	-0.038	-0.178**
	(0.050)	(0.148)	(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. All p-values two-tailed. * p<0.10, ** p<0.05, *** p<0.01. Models include year fixed effects and all controls from Table 1; the full regression with coefficients presented for the covariates can be found in the online appendix.

Comparing men and women within the same jurisdiction is more complicated for H2 because most California school districts are not coterminous with cities. In column 5, we add fixed effects for cities' and school districts' shared parent counties, and the main estimates are nearly identical to those of column 4. Moreover, when we limit the estimation to a small set of school districts that *are* coterminous with cities and include fixed effects for those jurisdictions, the coefficient on the interaction of *Woman* and *School board* remains positive and statistically significant (see appendix). This same holds in column 6, examining competitive, mixed-gender 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 city council races.

For H3, we interact *Woman* with the mean-centered two-party vote for the Republican candidate in the most temporally proximate presidential election. Column 1 of Table 2 presents the estimates for city council. (To conserve space, we show only the main coefficient estimates in Table 2, but these models include all of the controls from Table 1.) The coefficient on *Woman* indicates that 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* × *Republican presidential vote*—is in the expected

direction: women's advantage shrinks as one moves to more conservative cities. However, that coefficient is shy of statistical significance (p=0.138 in a two-tailed test). 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. In column 3, we find evidence that the women's school board advantage is smaller in more conservative counties. In a county of average Republicanism, women school board candidates have a 6.3-point advantage over men, but that advantage shrinks 1.8 points for every 10-point increase in Republican presidential vote share. Thus, evidence for H3 is mixed: for school board and city council, women's advantage appears to be smaller in more conservative places, but not so for mayor. While survey-based studies have shown some evidence that Republican respondents are less likely to vote for women than Democratic respondents (e.g., Dolan, 1998; King and Matland, 2003), these findings suggest that women candidates fare less well in more conservative jurisdictions even in nonpartisan elections.

Evaluating Explanations

The weight of our evidence is thus consistent with the hypotheses about the effects of gender stereotyping. Still, as we discussed earlier, one might wonder whether gender stereotyping is the mechanism. 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 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, but the existing literature points to candidate quality as the most

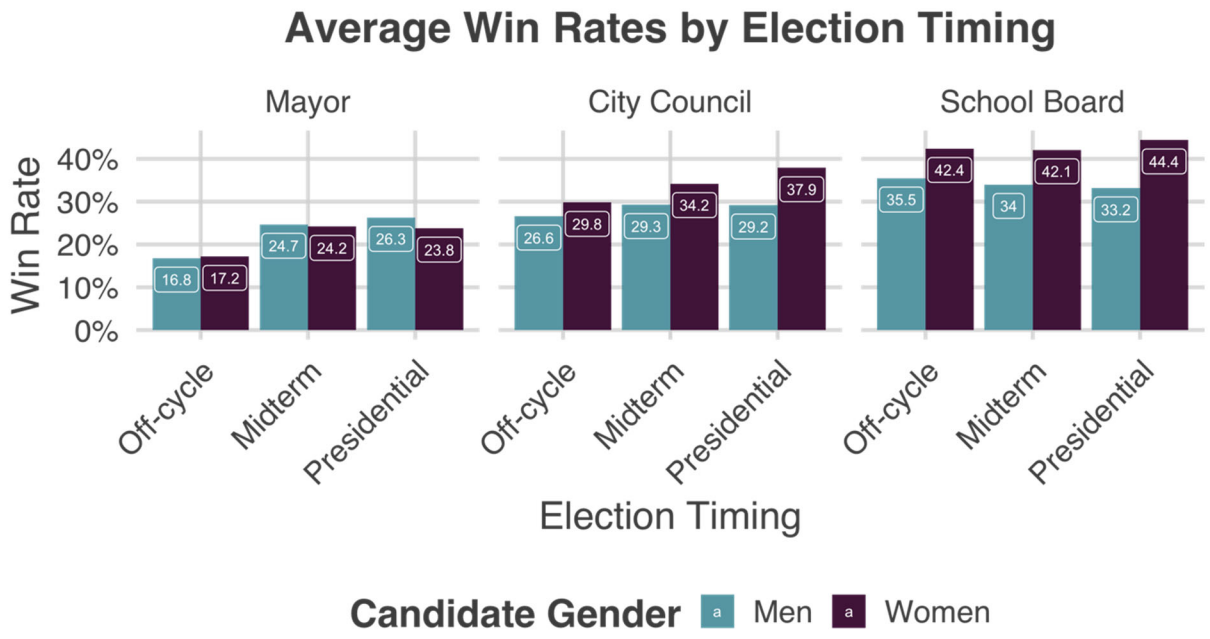
important variable to consider, and in our analysis, we have developed and incorporated multiple measures of candidate experience. Even with these controls, the patterns of women's and men's win rates are consistent with the empirical implications of existing arguments about stereotyping.

Is there other evidence suggesting stereotyping is the mechanism? To answer this, we investigate one final empirical implication of our theory: if the results so far reflect gender stereotyping, they should be most pronounced in on-cycle elections, where gender stereotyping 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, midterm elections, and off-cycle (see Figure 4).[14] The patterns are consistent with our expectations. For mayoral elections, women's *dis*advantage becomes slightly 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. 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 school board, 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.

In Table 3 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 concurrent with a midterm, and 0 if off-cycle. The estimates for city council candidates are shown in column 1. The coefficient on *Woman* is statistically indistinguishable from zero: 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* × *On-cycle*, which represents the difference in women and men's win rates in city council elections concurrent with presidential

[14] Elections held concurrently with statewide primaries or special elections are excluded.

Figure 4. Average win rates by gender and election timing



elections. That combined coefficient is 0.057 and statistically significant: 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* × *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). Moreover, the results suggest that the advantage may grow in elections concurrent with presidential races. The coefficient on the interaction of *Woman* and *On-cycle* is not statistically significant, but it is positive; the combined coefficient at the bottom of the table suggests a 7.9-point advantage for women in on-

Table 3: Win rates by gender and election timing

	City council (1)	*Mayor* (2)	*School board* (3)	*City council* (4)	*School board* (5)
Woman	0.009	-0.051	0.048***	0.002	0.038***
	(0.014)	(0.040)	(0.013)	(0.014)	(0.009)
On-cycle	-0.004	-0.012	-0.005	-0.005	-0.01
	(0.021)	(0.039)	(0.036)	(0.021)	(0.032)
Woman × On-cycle	0.048**	-0.013	0.031	0.058***	0.049***
	(0.020)	(0.055)	(0.022)	(0.020)	(0.018)
Republican presidential vote				-0.02	0.09
				(0.048)	(0.055)
Woman × Republican presidential vote				-0.076	-0.279***
				(0.091)	(0.070)
On-cycle × Republican presidential vote				0.02	-0.147*
				(0.063)	(0.082)
Woman × On-cycle × Rep. pres. vote				-0.085	0.121
				(0.134)	(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 × On-cycle)	0.057***	-0.065*	0.079***	0.061***	0.086***
	(0.012)	(0.033)	(0.018)	(0.012)	(0.016)
(Woman × Rep. pres. vote) +				-0.161**	-0.158
(Woman × On-cycle × Rep. pres. vote)				(0.076)	(0.132)

Notes: Standard errors clustered by city in columns 1, 2, and 4 and by county in columns 3 and 5. All p-values two-tailed. * p<0.10, ** p<0.05, *** p<0.01. All models include year fixed effects and the controls shown in Table 1; the full results are in the online appendix.

cycle school board races.

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 1 and 3 of Table 2, the coefficient on *Woman × Republican presidential vote* was negative.) To test whether that negative relationship is more pronounced in on-cycle elections than in off-cycle elections, we interact *Woman × Republican presidential vote* with *On-cycle*—a triple interaction—and include all component interactions. Continuing with the same theoretical logic presented earlier, if the decrease in women's advantage in more Republican constituencies is due to stereotyping, then the slope of *Woman × Republican presidential vote* should be steeper—more negative—in on-cycle elections.

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, as shown by the coefficient on *Woman*, but no gap between men and women's win rates in more liberal compared to more conservative cities (the coefficient on *Women* × *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* × *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* × *Republican presidential vote* and the triple interaction term; 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: women's advantage decreases significantly with Republicanism in on-cycle elections but not in off-cycle elections.[15] This is important because it suggests that even in elections where voters do not possess party cues, voters might infer that women are liberal, and this works against women candidates in conservative places.

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, even in off-cycle elections: the coefficient on *Woman* × *Republican presidential vote* is negative and statistically significant. However, we do not find that the negative relationship is

[15] The Republicanism of the electorate may be measured with less error for on-cycle elections than off-cycle elections. While measuring electorate Republicanism in off-cycle elections within every jurisdiction is beyond the scope of this paper, it would be a promising future project.

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 stereotyping. While this last result does not align with 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 literature on women in politics shows that many voters use gender stereotypes when evaluating candidates, but in studying how gender stereotyping affects elections, research has focused almost exclusively on national and state elections where partisanship provides powerful cues about the candidates. Moreover, there are relatively few studies that have tested for gender stereotyping's varying effects, and most of those have done so with data on individuals from surveys and experiments.

Studying local elections in the United States advances this literature because it allows for evaluation of how gender stereotyping effects vary along important contextual dimensions, including the three we have focused on here. These elections afford us rich variation in the contextual factors expected to matter as well as information on candidates' experience. Moreover, most local elections in the United States are nonpartisan, as are all of the elections we examine; this allows us to assess the effects of gender stereotyping when party cues are weak. Finally, local elections vary in election timing, giving rise to variation in the amount of voter information about local candidates and issues, which is useful given that stereotyping is more common in lower-information environments.

Even beyond these analytical advantages, local governments are important to study as important centers of policymaking. And because they are mostly nonpartisan, lower-information affairs, they may well be an environment in which gender stereotyping by voters continues to

flourish. Moreover, because they serve as a launching pad for many women and men who later run for higher office, this means that gender stereotypes may shape state and national elections—through selection effects, influencing the pipeline of candidates available to run.

We drew from the existing literature to formulate three hypotheses about how the effects of gender stereotyping should vary depending on whether the office is executive or legislative, the salient issues, and the Republicanism of the constituency. And rather than rely on surveys or experiments, which raise questions about whether respondents' answers reflect how they actually vote, we use data on the outcomes of local elections, which are better at capturing the outcome of interest in this case: the electoral fates of men and women candidates. To do this, we theorized a new way of evaluating whether stereotypes might be at work in elections by studying variation in election timing; if we saw these patterns most clearly in on-cycle elections, and least in off-cycle elections, this might show us that the average voter's low information about candidates—and subsequent stereotyping—was responsible.

Our analysis shows the promise of our approach and suggests how gender stereotyping by voters might affect women's descriptive representation in local government. Relative to men, women fare better in stereotype-congruent contexts than they do in stereotype-incongruent contexts: women win more than men in local legislative races but not in local executive races, and within legislative races, win more often when the salient policy issue is education rather than economic development or crime. Consistent with an account based on stereotyping, these effects are largest in elections when 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. Finally, we saw that the penalties for women mayoral candidates, and rewards for women council candidates, were largest in on-cycle elections.

Importantly, some of our findings align with those of a recent experimental study examining U.S. national politics: Ono and Burden (2018) find that voters are less supportive of hypothetical presidential candidates when they are women but are equally supportive of either gender for Congress. Moreover, they find that in the absence of party cues—similar to the nonpartisan races we examine—Republican respondents are less supportive of women candidates than men, but the same is not true of Democratic respondents. We study real election outcomes in the very different local context but find similar patterns. On the other hand, our findings differ from Fox and Oxley's (2003) study of election outcomes in state partisan races: while they find no difference in men and women's win rates for stereotypically "masculine" and "feminine" state executive offices, we find—in nonpartisan local races—that women's advantage is greater when the salient issues for the office are perceived areas of women's competence. While our study cannot speak to such issues directly, it could be that the patterns we have uncovered here are similar to some of the electoral dynamics women face when running for state and national office, particularly in environments where party cues are weak or absent, such as in primaries. Finally, we hope future research might employ election timing as a way of studying stereotyping on other characteristics like race and ethnicity.

Most simply, however, our study underscores the importance of research that evaluates how the effects of gender stereotyping on election outcomes vary by context. We began with a simple question—whether gender stereotyping by voters affects women's chances of getting elected. Our analysis provides 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 continue exploring that variation, including in local governments. The result will be a better understanding of how voters contribute to women's representation in elective office throughout American politics.

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