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# **Do Voters Prefer Gender Stereotypic Candidates? Evidence from a conjoint survey experiment in Japan**

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Do Voters Prefer Gender Stereotypic Candidates?  
Evidence from a conjoint survey experiment in Japan<sup>1</sup>

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Abstract

The striking under-representation of women in Japan has been partly attributed to gender stereotypes and prejudice toward female leadership among voters. We examine whether and to what extent candidates get rewarded or punished when they deviate from the behavioral expectations associated with their gender roles and images. Our conjoint experiment results in Japan demonstrate that not only are female candidates disadvantaged compared to their male counterparts, but also that they could lose support when they diverge from gender-based behavioral expectations. Our findings suggest that female candidates face a difficult dilemma in that they must weigh the cost of losing support for failing to conform to gender-based expectations, against the general loss of support they would incur for conforming to these expectations.

*Keywords:* Female candidates, Gender stereotypes, Voting behavior, Conjoint analysis, Japan

*JEL classification:* D72, J16

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## INTRODUCTION

There is a large gender disparity in representation among elected officials in Japan. As of 2017, the share of seats held by women in the Diet—the national parliament of Japan—is only 13.7% despite the fact that a majority of the population are women. The number of women running for office is increasing rapidly after the introduction of a mixed electoral system in 1994, in response to changes in electoral incentives and party strategies (Gauder 2009; Gauder 2012).<sup>1</sup> In the 2017 lower house election, the share of female candidates hit a record high number (17.71%) since 1945. Yet, the share of seats held by female parliamentary members is still the lowest among the countries of the Organization for Economic Co-operation and Development (OECD), whose average is 28.8%.<sup>2</sup> The gender imbalance among elected officials is an important issue because the under-representation of women in politics may exert a great influence on legislation and policy outcomes (Dollar, Fisman, and Gatti 2001).

To explain such an immense disparity in representation between men and women in Japan, a number of studies have focused on the short supply of female candidates.<sup>3</sup> However,

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<sup>1</sup> Japan uses a mixed electoral system for lower house elections, which allows some candidates who lost the popular vote in the single-seat constituencies to win a seat in the proportional representation constituencies. The hurdle to run for election might be lower for women and minorities in such an electoral system than for those in a pure first-past-the-post system.

<sup>2</sup> OECD, Women in politics (indicator). doi: 10.1787/edc3ff4f-en (Accessed on 15 April 2018).

<sup>3</sup> These studies point out the lack of political role models and local-level female politicians to recruit, as well as the electoral system that gives a competitive advantage to incumbents, as the major sources of barriers to women entering into national politics (Darcy and Nixon 1996; Eto 2010; Ogai 2001). Some studies also suggest that the labor market and family structure in Japan

women's underrepresentation can be also attributed to the weak demand of voters for female candidates (Kawato 2007; Krook 2010). A prominent explanation for this is that Japanese voters have strong norms about the gender roles of men and women in society, which leads them to exhibit strong negative biases against female candidates. Indeed, there exist sharp gender discrepancies in wages, employment status, and occupational roles in Japan (Brinton 1993). While these differences may not be simply the product of a strong gender-role ideology, prevailing gender roles in any given society has a potential to affect voter decisions in elections (see Eagly and Karau 2002). For instance, men are frequently seen as having more leadership skills than women, and almost 30% of the people in Japan believe that men make better political leaders than women do.<sup>4</sup> These voters are likely to make inferences based on a candidate's sex when they evaluate candidates running in elections.

Among scholars of gender and politics, there is a considerable debate about the extent to which gender stereotypes affect voter decision-making. While scholars generally agree that voters view candidates through the perspective of gender stereotypes (Lynch and Dolan 2014), it remains an open question whether candidates stand to benefit from behavior or posturing that follows or deviates from their gender stereotypic image. Some scholars argue that gender stereotypes have no effect on voters (Brooks 2013) and that voters are influenced by party and issues cues more than gender stereotypes and candidate sex (Anderson, Lewis, and Baird 2011; \_\_\_\_\_ makes it difficult for many women to run for office in the first place (Iversen and Rosenbluth 2010; Martin 2011; Oyama 2016). The election aversion tendency of women may also inhibit them from actively seeking office (Kanthak and Woon 2015; Masuyama 2007).

<sup>4</sup> This result was drawn from the World Values Survey Wave 6, conducted in Japan in 2010 (<http://www.worldvaluessurvey.org/WVSDocumentationWV6.jsp>).

Dolan 2014a, 2014b; Hayes 2011; Matland and King 2002; Thompson and Steckenrider 1997).<sup>5</sup>

In contrast, others claim that gender stereotypes frequently matter in the evaluation of female candidates among voters, but in two opposite directions. The first line of research argues that feminine traits can be an asset for female candidates because voters punish those who do not play socially expected gender roles (Eagly and Karau 2002; Herrnson, Lay, and Stokes 2003; Iyengar et al. 1996). The second line of research, on the other hand, argues that female candidates who conform to feminine traits suffer in elections because voters value masculine traits more than feminine traits in elections (Ditonto, Hamilton, and Redlawsk 2013; Dolan, Deckman, and Swers 2015; Lawless 2004). Some even find that female candidates sometimes gain with masculine traits (Holman, Merolla, and Zechmeister 2011, 2016; Bauer 2017), though they can also face a backlash from voters for breaking with masculine stereotypes (Krupnikov and Bauer 2014).

Our study contributes to this debate about whether candidates are rewarded or punished when they deviate from their gender-based behavioral expectations by conducting a conjoint survey experiment in Japan. Few studies have examined the effect of gender stereotypes on voter decisions outside the context of Western institutions and social norms. Moreover, the research methods employed in this study enables us not only to jointly vary many more candidate attributes than have previous experimental studies on gender stereotypes but also to observe the effect of candidate gender interacting with various other candidate attributes, including those with gender-based expectations and stereotypes—personality traits, issue specialization, and ideology.

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<sup>5</sup> Brooks (2013) shows that candidates' emotional behaviors such as crying and anger do not disproportionately penalize female candidates, suggesting that the effect of deviations from gender-based expectations about personal traits can be neutral between men and women.

The rest of the paper is organized as follows. In the next section, we provide an overview of how gender-based behavioral expectations and stereotypes have been discussed in the literature on women and elective office. Following this, we explain the details of our research methods and treatment components, prior to presenting the results of our conjoint experiment in Japan. Finally, we conclude this paper with discussions for further research.

## **GENDER STEREOTYPES AND ELECTIVE OFFICE**

Existing research has shown that voters typically view candidates from a gendered perspective (McDermott 1997). Although voters do not necessarily assign feminine attributes to female candidates (Bauer 2015; Brooks 2013; Dolan 2014; Schneider and Bos 2014), scholars have identified the existence of several gender-based stereotypes among voters in areas such as personality traits, issue positions, and ideology (Lynch and Dolan 2014). First, voters tend to presume that candidates have different **personality traits** as conditioned by their gender (Fridkin and Kenney 2011). Female candidates are not only viewed as being more compassionate and honest than are male candidates, but they are also perceived to lack masculine personality traits, such as legislative competence and strong leadership, which are viewed as keys to success in politics (Alexander and Andersen 1993; Huddy and Terkildsen 1993; Lawless 2004).

Second, voters are considered to view male and female candidates as having different areas of **issue specialization**. The literature on gender stereotypes has demonstrated that the public views male candidates as having better abilities to deal with issues such as national defense, foreign policy, crime, and the economy; in contrast, female candidates are thought to be more effective in such policy areas as education, social welfare, and environmental issues (Alexander and Andersen 1993; Dolan 2010; Huddy and Terkildsen 1993; Koch 1999;

Sanbonmatsu and Dolan 2009).

Third, gender-based expectations among voters also exist in the **ideological placement** of political candidates. Not only are female candidates thought to be interested in different policy areas than male candidates, they are also considered to have different attitudes toward policy issues than their male counterparts (Koch 2002; Sapiro 1981). Female candidates, in particular, tend to be viewed as more liberal and progressive than their male counterparts (Koch 2000, 2002; McDermott 1997). Furthermore, the distinct ideological positions of candidates between men and women are typically observed in their attitudes toward social, economic, and military issues (Jost, Federico, and Napier 2009; Verhulst, Eaves, and Hatemi 2012).

The findings of these studies are drawn from the context of American politics. Some might be concerned that gendered perceptions among voters in the United States may not be applicable to other countries, or to Japan in particular. However, similar gendered perceptions to those found in the United States have been identified in Japan. For instance, according to the results of the 2005 national survey on gender roles in the society, Japanese voters are inclined to respond that female politicians are interested in issues such as women's rights, social welfare, education, and the environment, and that they are more ethically disciplined than male politicians (Aiuchi 2007).<sup>6</sup> These similarities are partly attributed to the political environment shared

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<sup>6</sup> Female candidates running in lower house elections also have been found to harbor views consistent with these voter perceptions. The results of empirical analyses using data drawn from a survey of more than a thousand candidates running for the 2009 lower house election in the Diet show that female candidates tend to place more emphasis on "women's issues" such as education rather than the issues of foreign affairs and the economy, which are seen more as being within a male domain (the data is available at <http://www.masaki.j.u-tokyo.ac.jp/utas/utasp.html>).

between the two countries. The cross-national studies on gender stereotypes in non-American contexts demonstrate that prevailing gender stereotypes varies depending on political factors such as the use of gender quotas, the level of women's legislative representation, and the level of economic development (O'Brien and Rickne 2016; Smith, Warming, and Hennings 2017). Since Japan shares these important features with the United States, the extent to which Japanese exhibit similar gender stereotypes as Americans can be relatively high.<sup>7</sup> Thus, the research conducted on gender in politics in the United States is relevant to the context of Japanese politics as well.

## RESEARCH DESIGN

We employ experimental methods in order to assess the effect of candidates' deviations from gender-based expectations along multiple dimensions on voter evaluation. This is mainly because it is difficult to empirically examine the independent effect of gender stereotypes by using actual election outcomes due to multiple confounding factors that play into election outcomes. For instance, gender stereotypes among voters may affect how candidates formulate their electoral campaign strategies (Kahn 1996; Schaffner 2007). Similarly, selection bias may also exist to the extent that the quality of emerging female candidates differs from their male counterparts (Anzia and Berry 2011; Fox and Lawless 2010; Lawless and Pearson 2008). These

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Moreover, they are also prone to taking more liberal and progressive positions on those issues relative to their male counterparts (see Ono 2015).

<sup>7</sup> According to the women in politics indicator created by the OECD, as of 2017, the share of seats held by women in the U.S. Congress (19.1%) is also below the OECD average (28.8%). The labor force participation rate among women is also similar between Japan and the United States—68.1% and 67.3% in 2016, respectively.



potential issues make it difficult to construct causal inferences from election outcomes.<sup>8</sup>

In this study, we specifically conduct a conjoint survey experiment that asks respondents to review the profiles of two hypothetical candidates that are randomly generated from the set of attributes and then to choose between them. Multiple attributes of those candidate profiles are jointly varied in the experiment. This design has numerous advantages (see Hainmueller, Hopkins, and Yamamoto 2014), and there are at least two desirable properties for making causal inferences about the effects of candidate sex on voter evaluation. First, the conjoint analysis enables us to compare the relative explanatory power of each attribute value on the resulting choice on the same scale. In real world elections, the sex of the candidate is frequently correlated

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<sup>8</sup> Some of the existing studies on gender stereotypes have employed experimental methods to address these concerns about making causal inferences from election outcomes. These studies manipulate campaign advertisements (Fridkin, Kenney, and Woodall 2009; Iyengar et al. 1996) or newspaper articles (Brooks 2013; Kahn 1994) to understand the effect of gender stereotypes on voters' evaluation of candidates. Their findings suggest that female candidates may perform better at the polls when they engage in rhetoric and behavior that is associated with their gender-based expectations during election campaigns. These studies contribute much to our understanding by maintaining a high degree of verisimilitude and using close-to-real campaign advertisements or newspaper articles in a controlled experimental setting, but they still have some important limitations. They rely on a small number of treatment components and manipulate only a few candidate attributes at a time, even though multiple dimensions exist in the gender-stereotyped assessments of electoral candidates among voters (Lynch and Dolan 2014). As a result, we cannot fully compare the effects of multiple treatment components as well as the interactive effects of these components under their experiment framework.

with other factors, which makes it difficult to distinguish in observational data about how much candidate sex on its own is affecting voters. By randomizing these characteristics at a time, our experiment makes them independent and enables us to observe the effects of sex itself or in combination with other traits. For this study, it is particularly important that conjoint experiments allow us to estimate the interaction effects of multiple treatment components in candidate evaluation, because we are interested in whether the same traits could have different effects on voter choice depending on candidate sex.

Second, the conjoint analysis also enables us to minimize the effect of social desirability bias. It is difficult to assess public acceptance of a female candidate by asking people directly due to the potential for social desirability effects in surveys (Burden, Ono, and Yamada 2017; Krupnikov et al. 2016; Streb et al. 2008). Respondents opposed to seeing a woman in the parliament are likely to bow to prevailing social norms and falsely report that they are willing to endorse a female candidate. In our conjoint experiment, we embedded candidate sex as one of the multiple attributes that describe a candidate. This makes it very difficult for our respondents to know the genuine intention of our experiment. Moreover, by using the conjoint experiment, we are able to elicit true attitudes on sensitive questions such as the effect of candidate sex on voting behavior because this research design allows respondents to justify any particular choice of candidates with a number of reasons.

In our conjoint experiment, we focus on seven attributes of candidates for the House of Representatives in the Diet. These attributes used to describe their profiles include a candidate's *sex, education level, personality traits, issue specialization, ideological placement on social issues, ideological placement on economic issues, and ideological placement on military issues*. We, however, did not include a candidate's party label in our candidate profiles in order to

minimize the possibility of creating implausible combinations, even though partisan cues may also interact with other attributes related to gender stereotypes (Sanbonmatsu and Dolan 2009; Schreiber 2014). In Japan, more than four major parties field their candidates to compete for seats at the national level. If we employ a candidate's party label as well as policy positions, many profiles become implausible. For instance, in the context of Japanese politics, it is very unrealistic for a communist party's candidate to hold a very conservative position on military issues. To avoid such cases while, at the same time, controlling for the effect of partisan cues, we instead asked our respondents to assume that each pair of hypothetical candidates is running with the nomination of the same party (without specifying any party's name) in the upcoming election.

There are multiple values in each candidate attribute, and candidate profiles are created by taking one of these values respectively. **Table 1** summarizes the values of these seven varying attributes. Among these seven attributes of candidates, the first two describe a candidate's backgrounds: sex (male or female) and education level (high school, undergraduate, or post graduate). The latter five attributes—personality traits, issue specialization, and three dimensions of ideological placements—are created in line with the existing literature on gender stereotypes and the findings from the Japanese case. In the following, we explain the values for each of these gender-stereotyped attributes in candidate profiles.

First, to examine the interaction effects between candidate sex and **personality traits**, we use the following four types of personality traits about leadership styles that reflect gender role stereotypes in the decision-making process: visionary, persuasive, mediator, and listener. The first two represent masculine traits, and the latter two represent feminine traits. According to psychological studies, people are inclined to think of male leaders as having a task-oriented style

TABLE 1 Attributes for Candidate Profiles in Conjoint Experiment

Attributes	Values
Sex	Male Female
Education Level	High school degree University degree Graduate degree
Personality Traits	[Persuasive] Is able to explain and persuade others of his/her point of view [Visionary] Has a clear vision of the future and foresight [Mediator] Mediates differences in opinions to solve conflicts [Listener] Diligently listens to the various opinions and perspectives of others
Issue Specialization	Environmental Issues Consumer Issues Economic Policy Foreign Affairs National Defense Social Welfare
Ideological Placement (Social issues)	[Conservative] Housework and raising children are within a women's domain [Liberal] Men should engage in housework and raising children equally to women
Ideological Placement (Economic issues)	[Conservative] Poverty is an individual's responsibility and is not the responsibility of society [Liberal] Poverty is the problem of society and is not an individual's responsibility
Ideological Placement (Military issues)	[Conservative] International conflicts should be resolved through military means (hawkish) [Liberal] International conflicts should be resolved through peaceful measures (dovish)

Note: This table shows the attributes and attribute values that are used to generate the candidate profiles for our conjoint experiment.

that focuses on the achievement of their own goals, while female leaders hold a relationship-oriented style that emphasizes the importance of participatory decision-making processes (Eagly and Johnson 1990; Konrad, Kramer, and Erkut 2008). The results of a survey of nearly a thousand local politicians in Japan shows that male politicians indeed tend to rank the first two task-oriented traits—visionary and persuasive—more highly as being important for being successful politicians than do female politicians; in contrast, female politicians are prone to value the latter two relationship-oriented traits—mediator and listener—more highly than do their male counterparts (see Ono and Yamada 2015).<sup>9</sup>

Second, to examine the effects of gender-stereotyped issue specializations among candidates on vote choice, we employ the following six policy areas as varying values in a candidate attribute that describes his or her **issue specialization**: national defense, foreign policy, economic policy, social welfare, environmental issues, and consumer issues. For each candidate, we randomly select one of the six areas and present it as the candidate’s area of expertise in the profile without mentioning his or her specific position on that issue. In the context of Japanese politics, the first three are so called “traditionally male” issues, and the latter three represent “traditionally female” issues. The choice of these six policy areas is based on a pre-election survey of candidates running for the Japanese national election in 2009 (UTokyo-Asahi Survey). According to the results of this survey, female candidates, in contrast to their male counterparts, are found to be less likely to consider foreign affairs and economic issues as important; they instead value education and environmental issues more than their male counterparts (Ono 2015). Furthermore, one of the most politically successful women’s groups in Japan is indeed the Seikatsusha Network, which evolved from a consumer-oriented social movement (Gelb and

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<sup>9</sup> There is a possibility that such a difference was driven by the difference in party affiliation.

Estevez-Abe 1998).

Third, we vary a candidate's **ideological placement** on social, economic, and military issues. On each issue, we present either one of the two sides to describe the ideological position of a candidate in our conjoint experiment. The descriptions were prepared by modifying the statements used in some survey questions that asked Japanese voters and candidates to reveal their attitudes on these issues. Two distinct positions on gender roles is employed to describe the political spectrum on social issues—(1) men should engage in housework and raising children equally to women and (2) housework and raising children are part of a women's domain. We include this issue because a traditional norm about the gender-based division of labor is persistent in Japanese society (Yamamoto and Ran 2014). As the political spectrum on economic issues, we use two positions on social welfare—(1) poverty alleviation should be treated as a societal responsibility rather than an individual's personal responsibility and (2) poverty alleviation should be treated as an individual's personal responsibility and not the responsibility of society. The political spectrum on military issues is described by two opposite positions on the use of military—(1) international conflicts should be resolved through peaceful means and (2) international conflicts should be resolved through military force. The latter side of each issue indicates a traditional or conservative position (associated with a masculine image) on the ideological dimension. Indeed, some evidence suggests that systematic and consistent differences exist in Japan between male and female candidates in their attitudes on these issues; and the differences remain significant even when controlling for partisanship, personal attributes, and district-level characteristics (Ono 2015).

**Figure 1** presents one pair of candidate profiles that was shown to a respondent in our experiment (the original design written in Japanese is presented in the appendix). This research

FIGURE 1 Experimental Design

Let's suppose the following two potential candidates in the same party are considering to run in the national election. Which of the two candidates would you like to vote for? Even if you are not entirely sure, please indicate which of the two you would prefer if you had to choose either one of them.

	<b>Candidate 1</b>	<b>Candidate 2</b>
<b>Personality traits</b>	Has a clear vision of the future and foresight	Diligently listens to the various opinions and perspectives of others
<b>Education level</b>	Graduate degree	University degree
<b>Ideological placement (social issue)</b>	Men should engage in housework and raising children equally to women	Men should engage in housework and raising children equally to women
<b>Ideological placement (military issue)</b>	International conflicts should be resolved through peaceful measures (dovish)	International conflicts should be resolved through peaceful measures (dovish)
<b>Ideological placement (economic issue)</b>	Poverty alleviation should be treated as a societal responsibility rather than an individual's personal responsibility	Poverty alleviation should be treated as an individual's personal responsibility and not the responsibility of society
<b>Issue specialization</b>	Consumer Issues	Foreign Affairs
<b>Sex</b>	Male	Female

Candidate 1

○

Candidate 2

○

Note: This figure shows an example of one set of candidate profiles that was presented to a respondent in our conjoint experiment. The content has been translated from Japanese to English for the reader's convenience. The original one written in Japanese can be found in the appendix.

design yields 1,152 possible combinations of candidate profiles.<sup>10</sup> The categories of candidate attributes are presented in randomized order across respondents, but the order is fixed across the four pairings for each respondent to minimize his or her cognitive burden. This evaluation task is also repeated four times (each pair is displayed on a new screen) so that we are able to obtain a large number of observations to test our hypotheses. Because so many attributes are varied at a time, it is highly unlikely for subjects to observe the same combination of attributes in a series of candidate profiles more than once.

## **DATA AND RESULTS**

We conducted our survey experiment in November 2015. The survey was carried out online with the sample of Japanese adults in the center of the second largest metropolitan area of Japan (Osaka Prefecture), where we could draw samples from people with diverse backgrounds

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<sup>10</sup> We carefully chose varying attributes to avoid implausible combinations of candidate profiles in the context of Japanese politics. For instance, it is not necessarily unrealistic for Japanese voters to encounter a male listener-type candidate with a high school degree who specializes in foreign affairs but takes a liberal position on the social policy dimension. Yet, it may still “make less sense” for some subjects to observe candidates who do not share an identical issue position on all of the three policy dimensions. Such combinations may introduce some biases to the results by leading our subjects to make less careful judgments (Auspurg, Hinz, and Liebig 2009). However, we found no clear evidence to suggest that our respondents make artificial judgments to save cognitive effort when they are exposed to candidate pairs with ideologically inconsistent combinations of profiles. We presented this evidence in the appendix.



and political views.<sup>11</sup> The sample was drawn by one of the major survey research companies in Japan – Rakuten Research Inc. In collecting the data, we randomly selected our samples from this survey company’s subject pool after adjusting their demographics to be matched with the population census on age and sex.<sup>12</sup> A total of 3,022 people were invited to our survey, and 2,686 people among them completed our conjoint experiment tasks (a completion rate of 88.9%). Among those respondents, the number of females is 1,346 (50.1%). The age of our respondents ranges from 20 to 79 years old, and their average is 48.31 years old. A more detailed description of the demographics of the sample is provided in the appendix. Because each of our respondents evaluated four pairs of candidates, our data have 21,488 evaluated profiles, or 10,744 pairings.

The outcome variables of interest are the choices made by our survey respondents. We

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<sup>11</sup> Osaka Prefecture has a population of approximately 8.8 million people, and its population density is the second largest behind Tokyo. Hence, our sample drawn from Osaka Prefecture may represent the views of the urban population more than the views of the rural population. Yet, they do not necessarily have different views and gender stereotypes from the entire population in Japan. In the appendix, we provided evidence that supports this claim that Osaka Prefecture can be representative of Japan as a whole.

<sup>12</sup> We excluded residents of Osaka City, where a mayoral election was held during the survey period, to avoid any unintended differing effects from other areas in Osaka Prefecture. The distribution of demographic characteristics is extremely close between our sample and the census population in Osaka Prefecture (other than Osaka City). As we show in the appendix, the deviations are very small and always within the margin of error. We also checked to see if the response rate (the ratio of missing data) for our conjoint experiment question varied across groups, and found no variation that could introduce significant bias into our results.

coded their responses to our candidate preference question as a binary variable, where a value of one indicates that a respondent supported the candidate and zero otherwise. We also collected personal information from our respondents, including their sex, age, education, annual household income, and partisanship.<sup>13</sup> The collected data were analyzed following the statistical approach developed in Hainmueller, Hopkins, and Yamamoto (2014) to estimate the average marginal component effect (AMCE) of each attribute on the probability that the candidate will be chosen, where the average is taken over all possible combinations of the other candidate attributes.<sup>14</sup>

### **Effects of candidate attributes on electoral support**

Before presenting the effects of deviations from gender based expectations on vote choice, we show the relative importance of candidate attributes on electoral support to ascertain whether respondents exhibit any bias against female candidates. **Figure 2** presents the results for all respondents. The dots denote point estimates for the AMCE of each attribute value, and the horizontal bars indicate 95% confidence intervals. The figure illustrates which attributes of candidates are more (or less) influential when respondents evaluate candidates.

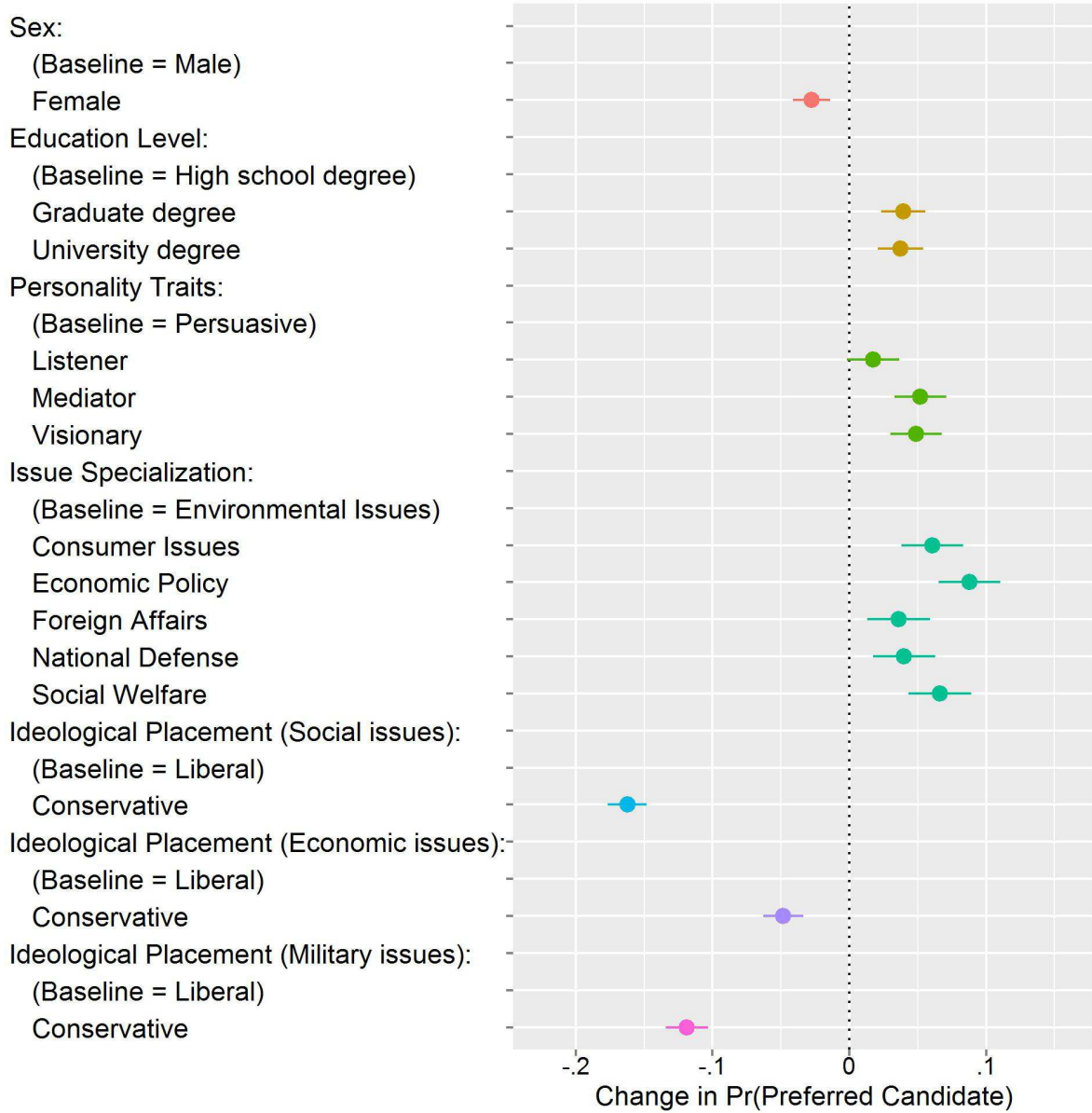
The results of our conjoint experiment demonstrate that a candidate's personality traits, issue competence, and ideological positions have greater effects on voter decisions than do candidate sex. Among those three factors, the ideological positions have the greatest effect.

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<sup>13</sup> Educational attainment is reported and measured along the following five levels—junior high school, high school, two-year junior college, university, and graduate school. Annual household incomes are reported and measured on a six-point scale ranging from less than two-million yen (1) to more than ten-million yen (6). We also asked individual respondents to reveal their long-term partisanship rather than fluctuating party support.

<sup>14</sup> We used the “cjoint” package (ver.2.0.4) developed by Strezhnev et al. (2016).

FIGURE 2 Effects of Candidate Attributes on Voting Decisions



Note: Plots show the estimated average effects of the randomly assigned candidate attributes on the probability of being supported by voters. Bars represent 95% confidence intervals.

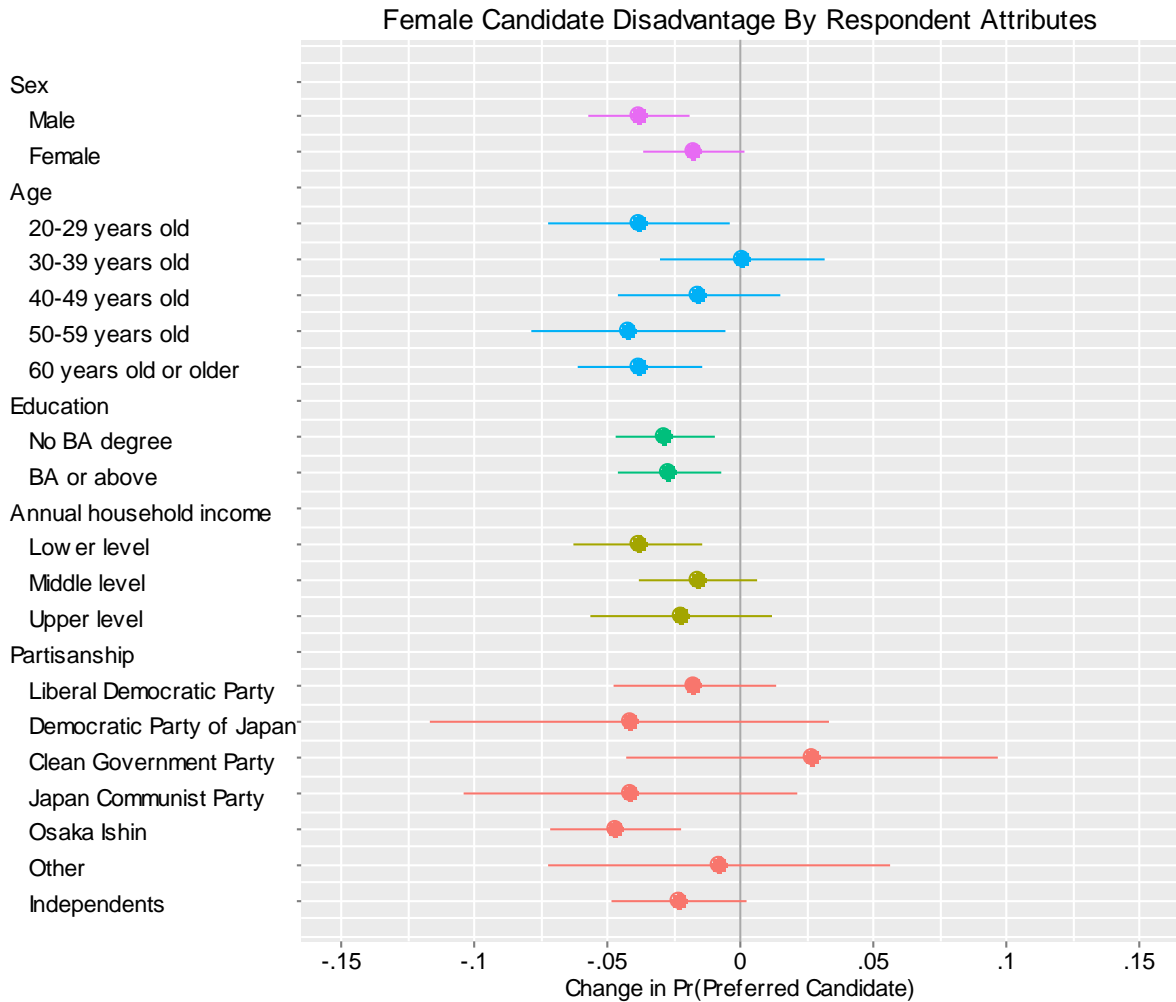
Candidates with conservative views on social, economic, and military issues are significantly penalized by respondents, compared to candidates with liberal views (their effects are -16.2, -4.8, -11.9 percentage points, respectively). However, such a great negative bias toward conservative views among our respondents is not necessarily a surprising finding, because we purposefully employed extreme conservative positions in our experiment to investigate the effect on voter evaluation when candidates deviate from their gender-based ideological position, which is our main interest in this study. In terms of issue competence, our results show that candidates who specialize in environmental issues have the least electoral advantage compared to those with expertise in other policy areas presented in our experiment. Importantly, however, other “traditional women’s issues” such as social welfare and consumer affairs are almost as equally valued as “traditional men’s issues” such as economic policy, foreign affairs, and national defense. The results also show that respondents value candidates with visionary and mediator traits greater than those with other personality traits, such as persuasive and listener traits. Thus, our respondents do not necessarily value feminine attributes themselves unequally with masculine attributes when evaluating candidates beyond sex.

Our main concern here is the relative importance of a candidate’s sex on voter decisions. The results in Figure 2 show that, while candidate sex does not appear to have much influence on the consideration of respondents in comparison with other candidate attributes, female candidates are clearly disadvantaged compared to the identical male candidates. That is, holding all else constant, our respondents are less likely to vote for female candidates than for male candidates. Compared to male candidates, female candidates have a lower probability that they win support from respondents by 2.7 percentage points (S.E. = 0.69) simply because they are women. This effect of candidate sex appears very small, but is not negligible in electoral competition, where

candidates often win or lose by a narrow margin. Moreover, the bias against female candidates shown in Figure 2 may have been underestimated, because some randomly generated pairs of candidates have the same sex attribute between them (e.g., some electoral competitions evaluated in our experiment are assumed to be held between two male candidates or two female candidates). Among 12,244 evaluated candidate pairings in our data, 5,303 pairings (43.3%) have such a same-sex attribute. When we exclude those same-sex pairings and focus only on competitions between different-sex candidates, we find that the bias against female candidates becomes greater than the average one including all the candidate pairings and that respondents are 5.47 percentage points (S.E. = 1.35) less likely to choose a female candidate (this outcome is shown more closely in the appendix).

To figure out who exhibits a greater bias against female candidates among voters, we further examine the interactions between candidates' attributes and respondents' characteristics, such as sex, age, education, income level, and partisanship. **Figure 3** compares the estimated marginal effects of candidate sex on voter decision for these subgroups of respondents. The results show that the negative bias against female candidates is greater among male respondents (-3.87, S.E. = 0.98) than female respondents (-1.75, S.E. = 0.98). This finding appears consistent with the existing studies which suggest that women vote for women more than men do (Dolan 1997, 1998; Plutzer and Zipp 1996; Rosenthal 1995; Seltzer, Newman, and Leighton 1997). Yet, the coefficient estimate is not positive for female respondents, suggesting that women are not more likely to vote for female candidates than for male candidates. In other words, voters do not necessarily support candidates who are similar to themselves in terms of sex. Figure 3 further shows that, while middle-aged (30-49 years old) respondents do not exhibit any bias against female candidates, both young (20-29 years old) and elderly (above 50 years old) respondents

FIGURE 3 Effects of Candidate Sex on Voting Decisions by Respondent Attributes



Note: Plots show the estimated average effects of the randomly assigned candidate sex (female) on the probability of being supported by respondents. Bars represent 95% confidence intervals.

tend to punish female candidates. The effects of candidate sex also vary across respondents by their household income and partisanship.<sup>15</sup> However, the education levels of respondents do not make any difference in the extent to which they have a negative bias against female candidates.

### **Effects of deviations from gender-based expectations on electoral support**

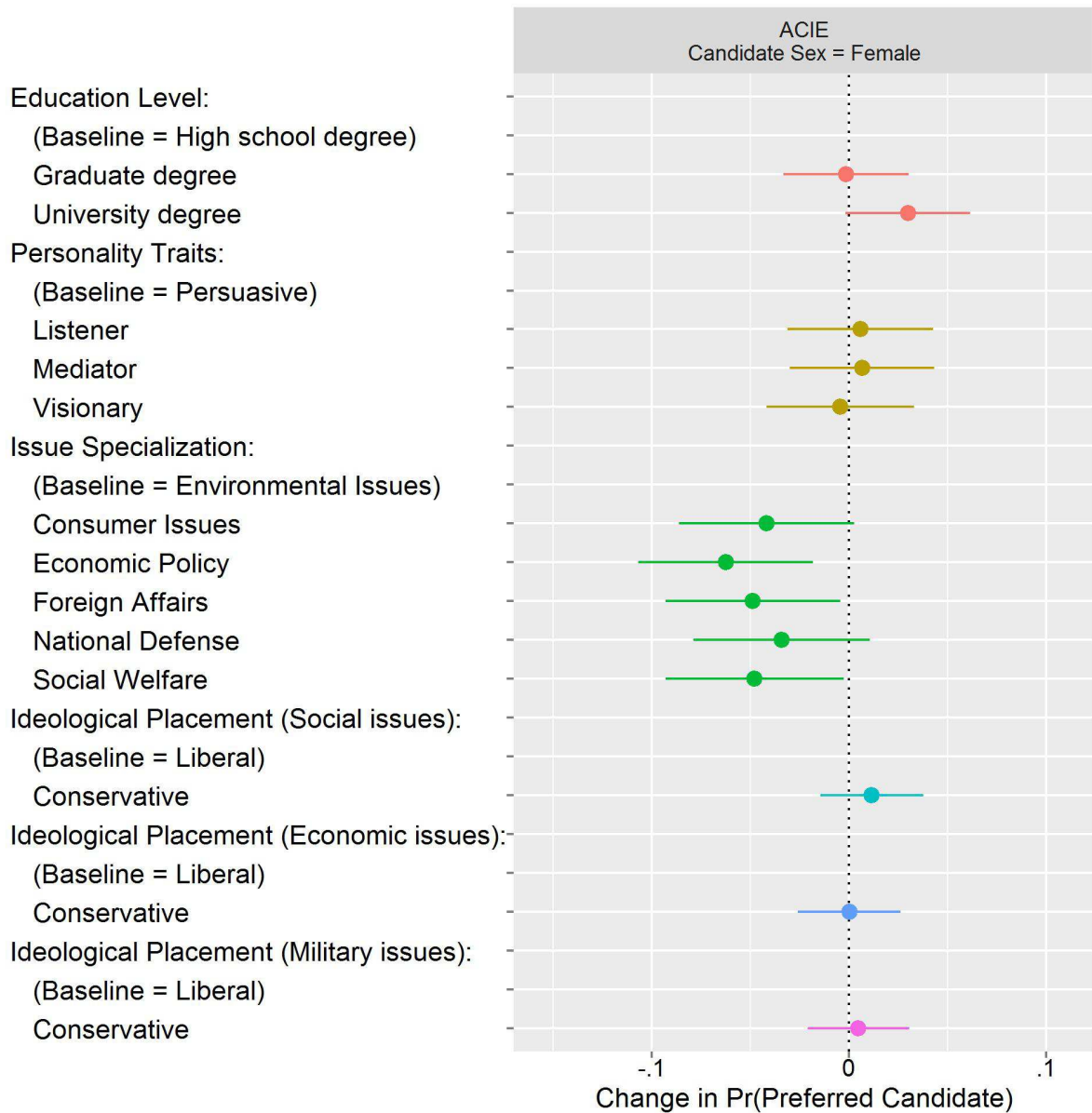
In the above section, we illustrated the relative importance of candidate attributes on electoral support, showing that respondents exhibit a negative bias against female candidates. What if female candidates downplay their feminine traits? Do voters still punish them at the polls? Respondents might evaluate candidate attributes differently depending on candidate sex; and the same attributes could have different effects between male and female candidates. In order to examine the effects of a candidate's deviations from his or her gender-based expectations on electoral support, we next analyze the results of interactions between a candidate's sex and other attributes.

**Figure 4** presents the plots of average component interaction effect (ACIE) estimators (with 95% confidence intervals) when the candidate is female. The ACIE estimates here represent the percentage point differences in the AMCEs of attributes between a male candidate

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<sup>15</sup> While we do not think that the “Osaka Ishin” party had a “good” or “bad” reputation in particular for recruiting and promoting women as candidates, this party's supporters exhibit the largest negative bias against female candidates. The share of female candidates running from this party (10.7%) was below the national average (16.6%) in the 2014 lower house election, but this is very similar to other conservative parties, including the Liberal Democratic Party (11.9%). Interestingly, our results also show that supporters of “left-leaning” liberal parties—such as the Democratic Party of Japan and the Japan Communist Party—do not necessarily positively endorse female candidates.

FIGURE 4 Effects of Candidate Attributes on Voting Decisions Conditional on Candidate Sex



Note: Plots show the difference between male and female candidates in their estimated average effects of the randomly assigned candidate attributes on the probability of being supported by voters. Bars represent 95% confidence intervals.



and a female candidate. Each value indicates the extent to which our respondents reward or punish female candidates with a certain attribute. In the appendix, we show the ACIE estimates for male candidates, which are all symmetric (or identical mirror images) to those estimates for female candidates shown in this figure.

Our results demonstrate that female candidates are neither rewarded nor punished for deviating from gender-based expectations in terms of personality traits and ideological positions. Regardless of whether female candidates show masculine personality traits or take conservative positions on policy issues, our respondents evaluate them as equal to male candidates holding identical personality traits and ideological positions. Interestingly, however, female candidates are rewarded when they show expertise in policy areas that are congruent with a feminine image. Conversely, they are punished when they fail to do so. For instance, environmental concerns have been seen in Japan and elsewhere as being more of a female issue domain (Aiuchi 2007; Alexander and Andersen 1993). Our results show that, for female candidates, specializing in foreign affairs or economic policy is less advantageous than focusing on environmental issues in gaining electoral support; and that they actually reduce votes by 4.84 and 6.22 percentage points, respectively. In other words, female candidates who specialize in foreign affairs or economic policies do not perform well at the polls, compared to those who emphasize competence in environmental issues. The opposite is true for male candidates. Having feminine traits on policy expertise could negatively affect their vote prospects; and those who show competence in “traditional male issues” (foreign affairs and economic policy) perform better at the polls than those who demonstrate competence in “traditional female issues” (environmental issues).

These results appear to suggest, consistent with the findings by Iyengar et al. (1996), that female candidates (male candidates) should play on their “own turf” in their electoral

campaigns rather than downplaying their “feminine” traits (“masculine” traits) in terms of policy specialization. That said, we need to be cautious in interpreting the results shown in Figure 4, because other outcomes are contradictory to our hypotheses. First, although national security is considered as men’s territory, we find no statistically significant difference between being national security experts and environmental issue experts. That is, female candidates who prioritize national security may not fare less well at the polls than those who emphasize environmental issues. Second, we also find that respondents do not necessarily punish female candidates whose policy expertise deviates from other women’s issues, such as social welfare and consumer issues. For female candidates, specializing in foreign affairs or economic policy is equally rewarded as focusing on social welfare and consumer issues in electoral competition. In summary, a female candidate’s policy expertise changes how respondents evaluate the candidate, but only in some limited cases. While female candidates get punished by voters when their issue expertise deviates from environmental issues to foreign affairs or economic policies, they do not necessarily get punished when their expertise deviates from either consumer issues or welfare policies towards foreign affairs or economic policies.<sup>16</sup>

## **DISCUSSION AND CONCLUSION**

The number of female representatives is gradually increasing in Japan, but there remains a significant disparity in the share of seats in the Diet between men and women. The striking under-representation of women in politics has been partly attributed to gender stereotypes and prejudice toward female leadership among voters. Since the requirements and qualities of

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<sup>16</sup> We discussed the effects of deviations from gender stereotypes for male candidates in the appendix.

effective leadership are often incompatible with the traditional female gender-role expectations prevailing in the Japanese society, there is concern that voters, who perceive such incongruences, may evaluate female candidates unfavorably in elections. Furthermore, this, in turn, may impose a serious dilemma in terms of election strategy for office-seeking women. While female candidates can avoid general biases by embracing more “masculine” traits and policy commitments, they could lose more in doing so by invoking the ire of more traditionally minded voters who shun deviations from gender role expectations. Thus far the literature has not provided a resolution but here we begin to tease out some nuances in the answer to this question.

In order to make precise causal inferences about the effect of gender stereotypes on candidate evaluation among voters, our study employed a conjoint experiment that varied seven attributes of hypothetical candidates, including the ones that have been discussed in the literature on gender stereotypes. Our findings demonstrate that candidate sex has an independent effect on candidate evaluation. Japanese voters overall lean away from female candidates simply because the candidate is a woman. Furthermore, male voters are particularly prone to harbor greater negative biases against female candidates than women voters. Because men actually tend to be more likely to vote than women in recent elections in Japan, female candidates have the potential to face even greater negative bias in real elections than the outcomes shown in this study.<sup>17</sup>

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<sup>17</sup> Between 1969 and 2005, women turned out at slightly higher rates than men in lower house elections (Martin 2011). The average gender gap in turnout rates was 1.38 percentage points. This pattern, however, has been reversed since the 2009 lower house election (for the last four elections consecutively). For instance, the turnout rate for the 2014 lower house election was 53.7 percent among male voters, while it was only about 51.7 percent among female voters ([http://www.soumu.go.jp/main\\_content/000328867.pdf](http://www.soumu.go.jp/main_content/000328867.pdf), last accessed on April 13, 2018).

The results of our conjoint experiment also show that deviations from gender-based behavioral expectations never reward female candidates and in some cases even harm their electoral prospects. Although Japanese voters exhibit certain preferences over the personality traits of candidates, they seem to judge female and male candidates equally on these dimensions. Similarly, while Japanese voters tend to associate female candidates with liberal and progressive ideologies, they are tolerant of female candidates who take policy positions that are inconsistent with these ideologies. However, such a tolerance for deviation from gender-based expectations does not extend to the area of issue specialization. Female candidates sometimes perform better when they emphasize their expertise on women's issues than they do from ignoring such issues. In other words, gender-based behavioral expectations among voters bias their assessment of candidates only in some limited areas, yet it is always better for female candidates not to break with gender stereotypes in maximizing their vote share.

This study has some limitations that are common to experimental settings. For instance, our findings of voters' behavior are limited to what our respondents do in the experiment; and actual voting behavior could deviate in some ways from that found in the experimental environment. The so-called "Bradley or Wilder effect" suggests that people were actually less likely to vote for black candidates than was reported in surveys. This effect for black candidates has disappeared in the United States and never existed for female candidates (Hopkins 2009). In addition, the concerns of such a social desirability bias have been minimized in our conjoint experiment by providing respondents with multiple reasons to justify their choices. Yet there still exists a possibility that the gender bias found in our experiment may have been overstated (or understated) due to the lack of verisimilitude. While realism has been enhanced to some extent in our conjoint experiment by presenting respondents with multiple pieces of information at a time,

our experiment does not comprehensively cover all the pieces of information and political conditions that might influence voters' candidate evaluation. Candidates who take counter-stereotypical positions may be more frequently covered by mass media and journalist than those who take stereotypical positions. The campaign context may also affect how voters evaluate female candidates who deviated from their gender-based expectations (see Krupnikov and Bauer 2014). More research needs to be conducted to further clarify the nuances and impact of gender bias among voters.

Future research can build upon this work and deepen our understanding of this topic in several ways. First, issues such as education, childcare, crime, and taxes have not been included in our experiment. Because the association between candidate sex and issue specialization varies across policy areas, researchers need to further examine the effects of other issues in order to complete our understanding of how gender-linked issue specialization exerts influence on candidate evaluation. Second, partisan cues have been excluded from our candidate profiles so as to control for the effect of candidate partisanship. This is especially important when considering gender stereotypes in the context of Japanese politics, where candidates of numerous parties compete in elections. Since policy positions of candidates are closely correlated with their party affiliation under multiparty systems like the one in Japan, many candidate profiles become very implausible when we include a partisan cue. However, withholding a partisanship cue may have inflated the effect of candidate sex in our results (see Kirkland and Coppock 2017). It would be useful to further examine how the information of candidate partisanship interacts with voters' gender-based candidate assessments. Third, one of the possible reasons why female candidates are disadvantaged compared to male candidates is that women are frequently thought to be less capable of playing a leadership role in the political office. While our experiment does not include

any direct capability cues of the candidate other than their education level, voters may soften their bias against female candidates with some previous experience in electoral office, because such candidates are not considered to be any less capable compared to their male counterparts (Brooks 2013, 81).<sup>18</sup> Varying the level of previous experience in elected office might be one useful way to examine the effect of public perceptions about candidate capability on vote choice. Finally, assuming the electoral competition for the national level office may have inflated the negative effect of candidate sex in our results. The gender-office congruency theory suggests that female candidates are likely to face a greater challenge as they run for a higher level of office due to gendered leadership stereotypes (Huddy and Terkildsen 1993; Larence and Rose 2014; Rose 2013). Further research is needed to understand how gender bias might be shifted by the level of office which candidates are seeking.

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<sup>18</sup> Several studies in the United States have pointed out that, when incumbency is taken into account, female candidates win as often as male candidates (Burrell 1990; Darcy and Schramm 1977; Seltzer, Newman, and Leighton 1997; Welch et al. 1985).

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