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Why women don't run: Experimental evidence on gender differences in political competition aversion

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Why women don't run: Experimental evidence on gender differences in political competition aversion

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A B S T R A C T

Women's underrepresentation in leadership positions has been well documented, but the reasons behind it are not well understood. We carry out a field experiment to test a prominent theory about the source of the gender gap in leadership ambition: women's higher aversion to competitive environments. Using politics as a context for our study, we employ two distinct subject pools – highly politically active individuals and workers from an online labor market. We find that priming individuals to consider the competitive nature of politics has a strong negative effect on women's interest in political office, but not on men's interest, hence significantly increasing the gender gap in leadership ambition.

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1. Introduction

Women's underrepresentation in leadership positions has been well documented in recent years. Despite earning about 57 percent of the undergraduate and 60 percent of the master's degrees in the United States,[1] women hold only about 14 percent of executive officer positions and 17 percent of board seats in corporate America. Only twenty-four of the Fortune 500 CEO's are women. In law, women comprise about 45 percent of associates, but only 20 percent of partners in law firms. Politics is yet another clear example of this leadership gender gap. Women hold about 20 percent of elected congressional offices, about 24 percent of state legislative seats, and 10 percent of governorships.[2] In addition to the commonly expressed inequity concerns, these significant gender imbalances in leadership have important implications for economic and policy outcomes (see Bertrand, 2011 for a review).

One explanation for the gender gap that is suggested in the literature is that women, on average, exhibit much lower levels of leadership ambition than men. Studies examining the career aspirations of business students consistently report that women are significantly less likely than men to aspire to top-level management positions (Powell and Butterfield, 2003; Schweitzer, 2011), and in surveys of professional employees at leading companies, fewer women than men report hoping to join the ranks of senior management (Barsh and Yee, 2012; Litzsky and Greenhaus, 2007). Similarly, research on gender

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 [1] National Center for Education Statistics, http://nces.ed.gov/programs/digest/d13/tables/dt13_318.30.asp.
 [2] Center for American Women and Politics, 2014 Fact Sheet, http://www.cawp.rutgers.edu/fast_facts/levels_of_office/documents/elective.pdf.

differences in leadership ambition in the context of politics reports significantly lower levels of aspiration to political office for women, relative to men (Fox and Lawless, 2004; Sanbonmatsu, 2006b; Fulton et al., 2006; Fox and Lawless, 2010, 2011; Lawless and Fox, 2010).

In this paper, we examine a prominent theory about the source of the leadership ambition gender gap: women's higher aversion to competitive environments. Gender differences in competitiveness have been well documented in laboratory settings (Croson and Gneezy, 2009; Niederle and Vesterlund, 2007; Niederle and Vesterlund, 2011; Flory et al., 2014) and have been linked to gender differences in education and labor market outcomes (Buser et al., 2014). To test whether men and women respond to competition in different ways, we carry out a field experiment using two distinct subject pools: highly politically active individuals and workers in an online labor market. After reading either (1) a neutral control statement or (2) a description of the highly competitive nature of politics, respondents are given a series of opportunities to request more information about running for office. We compare the rates at which respondents in each treatment group choose to read/watch this optional information as evidence of increased leadership ambition.

We find that priming participants to consider the competitive nature of politics has a significant negative effect on women's interest in political office, but not on men's interest. This differential response by men and women significantly increases the gender gap in the competition treatment, relative to the control. These findings suggest that among politically active individuals, women are differentially turned off by the competitive nature of politics. We confirm our main results in a separate online experiment, conducted with a diverse sample of workers on Amazon's Mechanical Turk.

This is the first experiment to measure the effect of competition aversion on real-world behavioral outcomes in the context of gender and political leadership ambition. Our design allows us to measure actions that impose time and financial opportunity costs on participants. Though these costs are small, they are arguably a better indicator of the willingness to incur the much more significant costs of running for political office than self-reported survey responses. Moreover, we use a unique subject pool of highly politically active individuals making this study as close as possible to a policy-relevant manipulation (Grose, 2014). Not only are individuals in our sample uniquely engaged and active in politics, they are also highly qualified to hold a political office. Finally, our replication of the main results with a diverse sample of workers in an online labor market adds an important layer of external validity to our findings.

In the remainder of the paper, we discuss the existing literature on women's political ambition, describe our experimental design and subject pool, report the results, and discuss potential implications of our findings on the gender gap in labor market and other economic outcomes.

2. Prior literature and theoretical framework

While the reasons for women's lower levels of leadership ambition are undoubtedly complex, in this paper we focus on one prominent explanation suggested in the literature – women's aversion to competitive environments. The empirical basis for this insight arises from a recently emerging literature that has consistently documented women's aversion to high levels of competition in laboratory settings (see for example, Gneezy et al., 2003; Gneezy and Rustichini, 2004; Croson and Gneezy, 2009; Niederle and Vesterlund, 2011). Niederle and Vesterlund (2007) famously show that women are half as likely as men to choose to compete, even when their performance is equal. Women appear to be reluctant to enter tournaments competing in a variety of tasks, including shooting baskets, solving anagrams, forecasting stock prices, computing sums, and solving mazes.

As these tasks and their associated rates of compensation are relatively removed from substantive, real-life scenarios, it is likely that women's aversion to competition would be even greater in more competitive, higher-stakes "tournaments" such as labor markets and political elections. Though experimental evidence from the field on this subject is lacking, Kanthak and Woon (2015) lab experiment shows that while men and women are equally likely to volunteer to represent a group when the representative is chosen at random, women are significantly less likely than men to become candidates when the representative is selected through a competitive election process. Their findings suggest that something about the competitive nature of elections is to blame for women's greater election aversion. Similarly, in a series of survey experiments, Schneider et al. (2015) find that conflict avoidance and distaste for the agentic aspects of politics play a role in women's lower levels of political ambition. Flory et al. (2014) find similar results in a natural field experiment on job-entry decisions. By randomizing almost 9000 job seekers into different compensation regimes, they show that women disproportionately shy away from competitive work settings. Similarly, in a recent study of secondary school students in the Netherlands, Buser et al. (2014) show that gender differences in competitiveness can explain a substantial portion of the gender differences in school track choice, even after controlling for academic ability.

Extensive prior research on gender differences in leadership ambition in the context of politics has produced important findings using observational data. Although a small number of studies has found no differences in ambition between men and women in samples of politicians and politically active individuals (Carroll, 1985; Fox et al., 2001), most find persistently lower levels of leadership ambition among women. Several potential explanations have been proposed in the literature, including women's familial obligations (Sapiro, 1982; Bledsoe and Herring, 1990; Fox and Lawless, 2003; Fulton et al., 2006), gender role socialization (Clark et al., 1989; Fox et al., 2001; Moore, 2005), differences in perceptions of qualifications (Bledsoe and Herring, 1990; Fox and Lawless, 2004; Fox and Lawless, 2005; Lawless and Fox, 2010), and differences in party support (Fox and Lawless, 2004; Sanbonmatsu, 2006a; Sanbonmatsu, 2006b; Fulton et al., 2006; Fox and Lawless, 2010; Lawless and Fox, 2010; Fox and Lawless, 2011; Sanbonmatsu, 2013). More recently, an experimental literature has emerged that reports

another potential source of the observed gender imbalance: women shy away from politics due to its competitive nature (Preece and Stoddard, 2015; Kanthak and Woon, 2015).

In this paper, we test the competitiveness theory in the context of political leadership ambition and contribute to the literature in three main ways. First, we harness the power of randomization to study gender differences in leadership ambition. Whereas prior studies using observational and survey data have shown significant gender gaps in political ambition, we isolate the role of one specific causal mechanism – competition aversion – on women's leadership ambition. Second, we track behavioral outcomes. Instead of measuring attitudes or self-reported interest, we are able to measure actions that impose some time and financial opportunity costs on participants. Though these costs are small, they are arguably a better indicator of the willingness to incur the much more significant costs of running for office than survey responses. Finally, we conduct this experiment on a sample of highly politically active individuals who are well prepared to enter into leadership positions in politics. It is rare to have a subject pool of this quality in social science experiments, and particularly rare in the study of political ambition (Grose, 2014). We then replicate our main findings on a diverse sample of workers in an online labor market.

3. Experiment 1

3.1. Experimental design and subject pool

To conduct this experiment, we partnered with a county-level Republican Party in a primarily suburban area in Western United States. Our sample consisted of Party members who attended their local 2010 Republican caucus and for whom the county Party had email addresses.[3] Caucus-goers tend to be politically active individuals who have revealed a willingness to invest time into political causes. In other words, caucus attendees represent exactly the sample of individuals that we would expect to have leadership ambition and who we would want to encourage to run for office. Such a sample that casts a targeted-but-broad net around the active party supporters is ideal for studying gender and leadership ambition. Narrower nets tend to leave out many politically active women who may not have the characteristics of traditional candidates, while broader nets tend to include those who are not particularly politically active or interested in being involved in the political process. Importantly, approximately half of the caucus attendees were women.

We worked with the Party to send an email to 6155 caucus-goers with a request to complete an "important survey" of Party members. Respondents were directed to an external survey link housed on Qualtrics. In the survey, participants first answered a set of basic demographic questions, and then were randomized by gender to receive one of two messages[4] about running for office. The control message used neutral language in inviting participants to consider running for office and included a two-paragraph description of the first steps in this process. The treatment message (Competitive) asked subjects whether they like debating about politics and thrive in competitive environments. It then included a discussion of the competitive nature of the political process before inviting subjects to consider running for office. The full text of the control and treatment messages is included in Appendix 1.

Following the prime, participants were asked if they would like to learn more about running for office. If they clicked no, they proceeded to the end of the survey, which asked some final questions about their level of interest in politics and some additional demographic questions. If they clicked yes, they were shown four bullet points with text about campaign logistics. They were then again asked if they would like to learn more and had an option to click yes or no. If they clicked no, they proceeded to the end of the survey. If they clicked yes, they saw four more bullet points with new information on campaign logistics. Finally, subjects were asked if they would like to watch a 3-min video clip that answered frequently asked questions about running for office. If yes, an imbedded YouTube video appeared that discussed three commonly asked questions, such as "How do I get started?" Participants then proceeded to the end of the survey. Fig. 1 in Appendix 2 includes a flowchart of the protocol.

The experiment was conducted in March 2014. The email was sent out to 6155 individuals and generated 317 survey responses. In addition to collecting respondents' demographic information and data on their political engagement, we observe how they respond to each opportunity for additional information about running for office. We use these responses as proxies for political leadership ambition in our analysis.

3.2. Research hypotheses

Based on the theoretical discussion motivated by the prior literature, we developed two testable hypotheses:

H_1: Competitiveness hypothesis: *The competitiveness treatment will depress women's leadership ambition relative to the control.*

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[3] In this state, caucus attendees elect delegates to a state convention, and the delegates at the state convention choose the Party's slate of candidates for the general election. Thus, these caucus meetings are politically significant gatherings and caucus attendance is a reasonable proxy for one's political engagement and interest.

[4] Our design included an additional treatment message, which emphasized the relatively modest qualifications required to hold political office, but in this paper we focus on the competition treatment. The full texts of the treatment messages are in Appendix 1.

Table 1
Summary statistics by treatment.

	Control	Treatment	Difference
Age	54.14	52.65	1.49
	[14.98]	[13.49]	(1.60)
Female	.382	.388	−.005
	[.49]	[.49]	(.05)
Caucasian	.904	.906	−.002
	[.29]	[.29]	(.03)
Married/partnered	.847	.850	−.003
	[.36]	[.36]	(.04)
Listen to the news at	.975	.963	.012
least weekly	[.16]	[.19]	(.02)
College degree or	.803	.744	.059
higher	[.40]	[.44]	(.05)
Employed full time	.510	.469	.041
	[.50]	[.50]	(.06)
Income (in U.S. dollars)			
<$40,000	.089	.094	−.005
	[.29]	[.29]	(.03)
$40,000–$80,000	.331	.363	−.031
	[.47]	[.48]	(.05)
>$80,000	.471	.406	.065
	[.50]	[.49]	(.06)
Observations	157	160	–

Notes: Standard deviations are in square brackets. Standard errors are in parentheses.
* Statistical significance at the 10 percent level.
** Statistical significance at the 5 percent level.

Emphasizing the competitive nature of politics should decrease women's leadership ambition as they respond adversely to the negative perception of competitive environments.

H_2: Competitiveness gender gap hypothesis: *The competitiveness treatment will depress all outcome variables for women more than for men, hence increasing the gender gap in leadership ambition, relative to the control.*

Since women on average are reported to be more averse to competitive environments than men, emphasizing the competitive nature of politics should decrease women's leadership ambition disproportionately more than men's. Consequently, this will lead to an increase in the gender gap in leadership ambition, relative to the control.

Our experimental design allows us to test our hypotheses using several measures of leadership ambition. These measures range from the relatively low-cost first indication of interest to watching a video clip, which requires a considerably higher time commitment. We describe our empirical methodology and the results in the following section.

3.3. Results

Our sample consists of 317 survey respondents. 38% of the respondents are female and 91% are Caucasian. The average subject is 53.4 years old,[5] and has a college degree or higher. 35% of our subjects have an annual income between $40,000 and $80,000, with 9% of the subjects having incomes below $40,000. Notably, one unique feature of our subject pool is a relatively high level of political involvement among our subjects. Besides regularly attending caucus meetings and voting in elections, 97% of the subjects watch, read, or listen to the news at least weekly. Overall, differences in the preexisting characteristics between the subjects in the two treatments are statistically insignificant. Table 1 reports summary statistics for the demographic variables for each of the two treatment groups. The table suggests that the randomization of treatments was effective.

We report the breakdown of summary statistics by treatment and gender in Table 2. The table shows that there are no statistically significant differences in control and treatment groups within each gender. 3 Table 3 reports average response rates by treatment and gender. It shows that 33% of all men in the control treatment continued reading on the first click, 22% continued reading on the second click, and 9% chose to watch the video clip. The corresponding response rates for women in the control treatment were lower in all outcome measures. Fig. 1 illustrates the average response rates graphically.

First, we analyze the differences in response rates across treatments for men and women separately using two-tailed *t*-tests. We find a significant negative effect of the competitive treatment on women's leadership ambition, at least in the initial stages of the survey. As shown in Fig. 1, only 5 percent of the women in our sample continued reading on the first click in the competitive treatment, compared to 20 percent in the control ($p = 0.01$, two-sided). We do not observe this effect for men. Men's leadership ambition did not decline significantly in the competitive treatment, relative to the control. Women were also less likely to continue reading on the second click: only 3 percent in the competitive treatment compared with

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[5] This is not far from the average age of first-time running for office in the U.S., which is 50.1 years for women and 46.7 for men.

Table 2
Summary statistics by treatment and gender.

	Male			Female		
	Control	Treatment	Difference	Control	Treatment	Difference
Age	53.29	52.42	.870	55.52	53.02	2.50
	[15.63]	[13.64]	(2.10)	[13.89]	[13.37]	(2.47)
Caucasian	.876	.888	−.011	.950	.935	.015
	[.33]	[.32]	(.05)	[.22]	[.25]	(.04)
Married/partnered	.866	.898	−.032	.817	.774	.042
	[.34]	[.30]	(.05)	[.39]	[.42]	(.07)
Listen to the news at	.990	.969	.020	.950	.952	−.002
least weekly	[.10]	[.17]	(.02)	[.22]	[.22]	(.04)
College degree or	.835	.786	.049	.750	.677	.073
higher	[.37]	[.41]	(.06)	[.44]	[.47]	(.08)
Employed full time	.680	.643	.038	.233	.194	.040
	[.47]	[.48]	(.07)	[.43]	[.40]	(.07)
Income (in U.S. dollars)						
<$40,000	.072	.082	−.009	.117	.113	.004
	[.26]	[.28]	(.04)	[.32]	[.32]	(.06)
$40,000–$800,000	.309	.337	−.027	.367	.403	.037
	[.46]	[.48]	(.07)	[.49]	[.49]	(.09)
>$80,000	.495	.490	.005	.433	.274	.159
	[.50]	[.50]	(.07)	[.50]	[.45]	(.09)
Observations	97	98	–	60	62	–

Notes: Standard deviations are in square brackets. Standard errors are in parentheses.
* Statistical significance at the 10 percent level.
** Statistical significance at the 5 percent level.

8 percent in the control, although this difference is not statistically significant. Both men and women were statistically as likely to watch the video in the competitive treatment as they were in the control.

Table 4 reports the differences in average response rates between men and women across treatments. We observe that women are significantly less likely than men to continue reading on the first click in both the control and the treatment condition. We define this difference in average response rates for men and women as the gender gap and illustrate it graphically in Fig. 2. As shown in the figure and Table 4, even in the control group, there exists a substantial gender gap in leadership ambition. 33% of all men in our sample continued reading on the first click, compared to only 20% of women ($p = 0.08$, two-sided). This gap, however, is considerably larger in the competitive treatment, which depressed women's leadership ambition significantly more than the men's ($p = 0.00$, two-sided). This is consistent with our competitiveness gender gap hypothesis (H_2). Women's aversion to competitive environments leads them to be less interested in learning about running for office when they are primed to consider the competitive nature of politics.

This negative effect of the competitive treatment persisted through all measures of leadership ambition, with women being less likely than men to continue reading on the second click and to watch the video. The resulting gender gap in the

Table 3
Average response rates by treatment for men and women.

	Percentage who continued reading (*Interest 1*)	Percentage who continued reading (*Interest 2*)	Percentage who watched video (*Video*)
Control (men):	.330	.216	.093
N	[.47]	[.41]	[.29]
	97	97	97
Treatment (men):	.306	.255	.153
Competitive	[.46]	[.44]	[.36]
N	98	98	98
Difference (men):	−.024	.039	.060
	(.07)	(.06)	(.05)
Control (women):	.200	.083	.050
N	[.40]	[.28]	[.22]
	60	60	60
Treatment (women):	.048	.032	.016
Competitive	[.22]	[.18]	[.13]
N	62	62	62
Difference (women):	−.152**	−.051	−.034
	(.06)	(.04)	(.03)

Notes: Standard deviations are in square brackets. Standard errors are in parentheses.
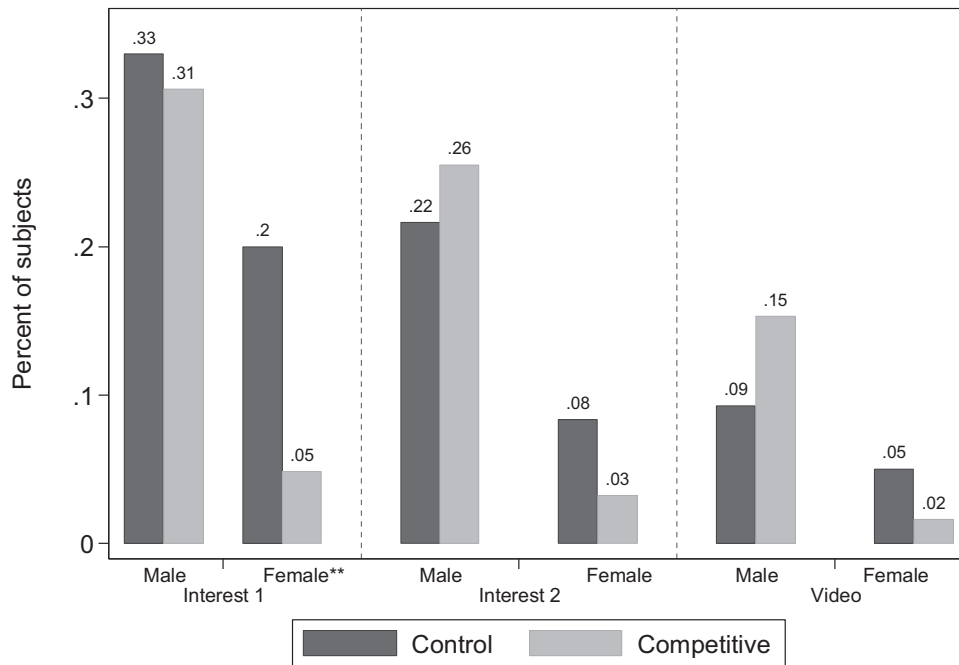** Statistical significance at the 5 percent level.

Fig. 1. Average response rates by gender and treatment.

competitive treatment is hence significantly larger, relative to the control. Fig. 2 illustrates that the magnitude of the gender gap by treatment.

Next, we test whether our treatment effect is robust to the inclusion of additional covariates. To test our hypotheses, we performed the following regressions analysis:

$$LA_i = \beta_0 + \beta_1 \times Treatment_i + \beta_2 \times Male_i + \beta_3 \times Treatment_i \times Male_i + \beta_4 X_i + \varepsilon_i \qquad (1)$$

In this equation, LA_i represents one of our four measures of leadership ambition for individual i: a binary variable indicating whether the subject expressed interest in continuing to read at the first prompt ("*Interest 1*"), whether the subject expressed interest at the second prompt ("*Interest 2*"), or whether they chose to watch the video ("*video*"). *Treatment* is a dummy variable for a competitiveness treatment, *Male* is a dummy variable for male gender, and X_i is a vector of demographic characteristics and other covariates for each individual i. We collected the following demographic information on the subjects: age; gender; political party affiliation and frequency of news exposure. Other covariates include an index and binary variables to control for preconceptions regarding the competitive nature of national and state politics.

Since our model includes an interaction term, our competitiveness hypothesis (H_1) then predicts that $\beta_1 < 0$. Our model also allows us to test the competitiveness gender gap hypothesis (H_2). We define the gender gap as the difference in the average levels of leadership ambition of men and women. Hypothesis H_2 therefore predicts that the gender gap in the competitive treatment will be larger than the gender gap in the control. Since the gender gap in the treatment is given by ($\beta_2 + \beta_3$) and the gender gap in the control is given by β_2, H_2 predicts that $\beta_3 > 0$.

Table 4
Gender differences in political ambition by treatment.

	Percentage who continued reading (*Interest 1*)			Percentage who continued reading (*Interest 2*)			Percentage who watched video (*Video*)		
	Men	Women	Difference	Men	Women	Difference	Men	Women	Difference
Control	.330	.200	−.130[*]	.216	.083	−.133[**]	.093	.050	−.043
N	[.47]	[.40]	(.07)	[.41]	[.28]	(.06)	[.29]	[.22]	(.04)
	97	60	–	97	60	–	97	60	–
Treatment	.306	.048	−.258[**]	.255	.032	−.222[**]	.153	.016	−.137[**]
N	[.46]	[.22]	(.06)	[.44]	[.18]	(.06)	[.36]	[.13]	(.05)
	98	62	–	98	62	–	98	62	–

Notes: Standard errors are in parentheses.
[*] Statistical significance at the 10 percent level.
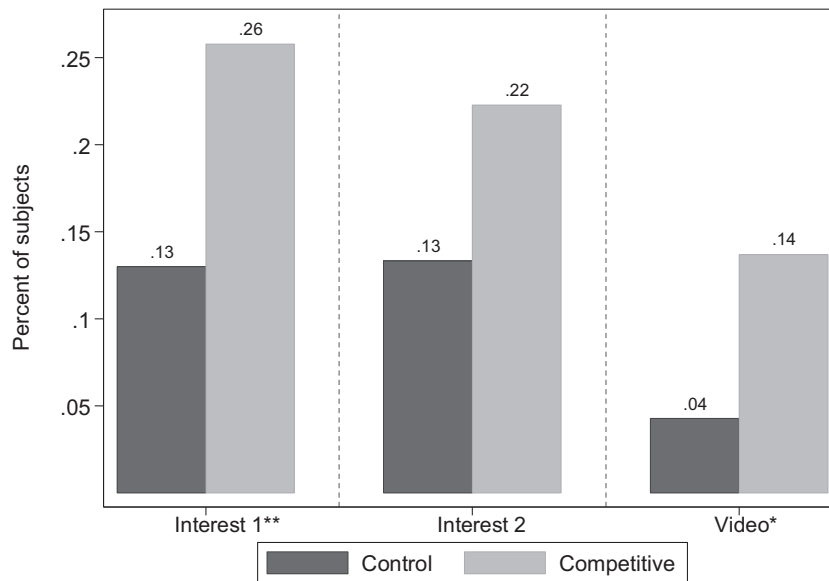[**] Statistical significance at the 5 percent level.

Fig. 2. Gender gap in leadership ambition by treatment.

We report the results of our regression analysis for each of our dependent variables in Table 5. Since the *Interest 1*, *Interest 2*, and *video* are binary variables, we estimate Eq. (1) using a probit regression and report corresponding marginal effects for each of the variables in columns 1–3. The marginal effects are reported to ease the interpretation of the coefficients in probit regressions.

First, we find strong evidence in support of our competitiveness (H_1) hypothesis. Table 5 confirms that women exhibit significantly lower levels of leadership ambition in our experiment, consistent with prior literature. The coefficient on *treatment* is negative and statistically significant for *Interest 1*. As seen in the table, even when controlling for other demographic characteristics, women were 27.5 percentage points less likely to continue reading on past the first prompt. Consistent with our theoretical predictions, women responded to the competitive priming by significantly decreasing their leadership ambition.

Second, we find that the treatment has no significant effect on men's levels of leadership ambition. This finding is consistent with the results of Flory et al. (2014), who also report no change in men's propensity to choose a competitive work environment over a non-competitive one.

Next, we examine the effects of the treatment on the gender gap in leadership ambition. Table 5 reports the coefficients for β_3. We find strong support for the competitive gender gap hypothesis (H_2). The coefficient on the interaction term $T \times Male$ is negative and statistically significant for all measures of leadership ambition, except for the second click. Even when controlling for other demographics, the gender gap in the treatment is 26.9 percentage points larger than the control

Table 5
Marginal effects at means of treatment and gender.

	Interest 1		Interest 2		Video	
	(1)	(2)	(3)	(4)	(5)	(6)
Treatment	−.239**	−.275**	−.108	−.107	−.075	−.063
	(.09)	(.10)	(.09)	(.09)	(.07)	(.05)
Male	.117*	.076	.139**	.115**	.049	.025
	(.07)	(.07)	(.06)	(.06)	(.05)	(.04)
Treatment × Male	.220**	.269**	.137	.148	.121	.103*
	(.11)	(.11)	(.10)	(.10)	(.08)	(.06)
Demographics[b]	No	Yes	No	Yes	No	Yes
Other covariates[a]	No	Yes	No	Yes	No	Yes
Pseudo R^2 from probit model	.0674	.1831	.0749	.1978	.0606	.1666
Observations	317	304	317	304	317	303

Notes: Standard errors are in parentheses.

[a] Other covariates include an index and binary variable to control for preconceptions regarding the competitive nature of national and state politics.

[b] Demographic variables include age; political party; and frequency of news exposure.

[*] Statistical significance at the 10 percent level.

[**] Statistical significance at the 5 percent level.

Table 6
Summary statistics by treatment for MTurk subjects.

	Control	Treatment	Difference
Age	31.89[10.56]	31.89[10.85]	−.0004(.61)
Female	.467 [.50]	.461 [.50]	.006 (.03)
Caucasian	.762 [.43]	.786 [.41]	−.024 (.02)
Married/partnered	.458 [.50]	.442 [.50]	.016 (.03)
Listen to the news at least weekly	.909 [.29]	.896 [.31]	.013 (.02)
College degree or higher	.612 [.49]	.614 [.49]	−.002 (.03)
Employed full time	.463 [.50]	.496 [.50]	−.033 (.03)
Income (in U.S. dollars)			
<$40,000	.450 [.50]	.468 [.50]	−.018 (.03)
$40,000–$80,000	.360 [.48]	.338 [.47]	.022 (.03)
>$80,000	.191 [.39]	.194 [.40]	−.004 (.02)
Observations	614	607	–

Notes: Standard deviations are in square brackets. Standard errors are in parentheses.
* Statistical significance at the 10 percent level.
** Statistical significance at the 5 percent level.

on the first click, 14.8 percentage points larger on the second click, and 10.3 percentage points larger on the video. As we have seen from the previous results, this increase in the gender gap in the treatment is driven primarily by the decrease in women's leadership ambition, since there was no significant change in men's behavior.

4. Experiment 2

4.1. Experimental design and subject pool

Given that our main experimental results are obtained using a subject pool from a single county in a primarily suburban area in Western United States, there may be concerns about the generalizability of our findings. To examine whether our results can be replicated in a broader, nation-wide sample, we conducted a separate experiment using a diverse subject pool of men and women in the United States. We drew our sample from Amazon's Mechanical Turk (MTurk). MTurk is an online labor market and has become an important platform for conducting social science research, including experiments (see Paolacci et al., 2010; Horton et al., 2011; Crump et al., 2013).

We recruited 1195 MTurk workers to participate in a survey about civic engagement. Respondents followed a hyperlink to our survey, which was housed on Qualtrics. In return for completing the survey, participants were paid $0.70.[6] They were free to drop out at any time during the survey but were only paid upon completion.

To ensure the validity of our results, we implemented several important procedures. First, we restricted the survey only to workers who resided in the U.S. and asked the respondents to confirm their residency.[7] Second, we implemented a prescreening measure in order to prevent MTurkers from taking the survey twice.[8] Finally, to ensure that the subjects paid attention to the information provided to them, we included two warning messages that popped up in the beginning of the survey to remind the subjects that they needed to read the information carefully.

Our experimental design was identical to the design of our first experiment. Subjects responded to our posted task on MTurk to answer survey questions about civic engagement. They were then redirected to the survey on Qualtrics and randomized into either a control or a competitive priming treatment condition. Following the prime, participants were asked if they would like to learn a little more about running for office. As with our previous experiment, we collected subjects' responses to the three invitations to learn more about running for office and record the amount of time they spent on the online survey, as well as their demographic information.

4.2. Results

As reported in Table 6, our MTurk sample was significantly younger and more demographically diverse, relative to the sample in our first experiment. An average MTurk worker in our sample was 32 years old and has a college degree or higher. MTurk sample is also substantially more liberal than the sample in our first experiment. Previous research has found than MTurkers tend to be more liberal than the average U.S. population (Kuziemko et al., 2014).

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[6] This translates to about $5–$6 hourly wages. According to Amazon, the average effective wage on MTurk is around $4.80 per hour.

[7] To discourage foreign workers even further, our survey was launched during the normal business hours of US EST.

[8] We used the JavaScript code that checked each MTurker's ID against a database to see if they had already taken a similar survey sent from the Gender and Civic Engagement Lab (GCEL), our affiliate. Additionally, we imported MTurk IDs for use by a screening survey in Qualtrics that checked the MTurkers' ID against a database of MTurk IDs that were associated with previous surveys distributed by GCEL. We believe that these methods allowed us to be successful in properly screening out repeat participants.

Table 7
Summary statistics by treatment and gender for MTurk subjects.

	Male			Female		
	Control	Treatment	Difference	Control	Treatment	Difference
Age	31.16	30.81	.346	32.73	33.15	−.425
	[10.27]	[10.23]	(.80)	[10.83]	[11.42]	(.93)
Caucasian	.771	.792	−.021	.753	.779	−.026
	[.42]	[.41]	(.03)	[.43]	[.42]	(.04)
Married/Partnered	.398	.391	.006	.526	.500	.026
	[.49]	[.49]	(.04)	[.50]	[.50]	(.04)
Listen to the news at	.914	.899	.015	.902	.893	.010
least weekly	[.28]	[.30]	(.02)	[.30]	[.31]	(.03)
College degree or	.590	.612	−.021	.638	.618	.020
higher	[.49]	[.49]	(.04)	[.48]	[.49]	(.04)
Employed full time	.529	.569	−.040	.387	.411	−.024
	[.50]	[.50]	(.04)	[.49]	[.49]	(.04)
Income (in U.S. Dollars)						
< $40,000	.434	.434	0.00	.467	.507	−.040
	[.50]	[.50]	(.04)	[.50]	[.50]	(.04)
$ 40,000–$80,000	.388	.361	.028	.328	.311	.017
	[.49]	[.48]	(.04)	[.47]	[.46]	(.04)
> $80,000	.177	.205	−.028	.206	.182	.023
	[.38]	[.40]	(.03)	[.40]	[.39]	(.03)
Observations	327	327	–	287	280	–

Notes: Standard deviations are in square brackets. Standard errors are in parentheses.
* Statistical significance at the 10 percent level.
** Statistical significance at the 5 percent level.

Of the respondents, 46 percent were female, 77 percent were Caucasian, and 45 percent were married/partnered. The average income of our MTurk respondents is significantly lower than in our first experiment, with 46 percent of the subjects having incomes below $40,000 and only 19% with incomes above $80,000. Notably, our MTurk sample appears to be relatively well informed about the news and current events with 90 percent of the subjects reporting they watch or listen to the news at least weekly. Overall, differences in the preexisting characteristics between the subjects in the two treatments are statistically insignificant, suggesting that the randomization of treatments was effective.

We report our summary statistics by treatment and gender in Table 7. The table shows that there are no statistically significant within-gender differences in respondents' characteristics, suggesting that the randomization of treatments across gender was effective.

Table 8 reports average response rates by treatment and gender. It shows that 26% of all men in the control treatment expressed interest in reading more information on the first prompt, 19% chose to continue reading at the second prompt, and 10% chose to watch the video clip. The corresponding response rates for women in the control treatment were similar to the men's in all three categories. Fig. 3 illustrates the average response rates graphically.

Table 8
Average response rates by treatment for men and women for MTurk subjects.

	Percentage who continued reading (*Interest 1*)	Percentage who continued reading (*Interest 2*)	Percentage who watched video (*Video*)
Control (men): *N*	.260	.190	.098
	[.44]	[.39]	[.30]
	327	327	327
Treatment (men):	.294	.214	.119
Competitive	[.46]	[.41]	[.32]
N	327	327	327
Difference (men):	.034	.024	.021
	(.04)	(.03)	(.02)
Control (women):	.254	.153	.087
N	[.44]	[.36]	[.28]
	287	287	287
Treatment (women):	.143	.082	.054
Competitive	[.35]	[.28]	[.23]
N	280	280	280
Difference (women):	−.111**	−.071**	−.034
	(.03)	(.03)	(.02)

Notes: Standard deviations are in square brackets. Standard errors are in parentheses.
* Statistical significance at the 10 percent level.
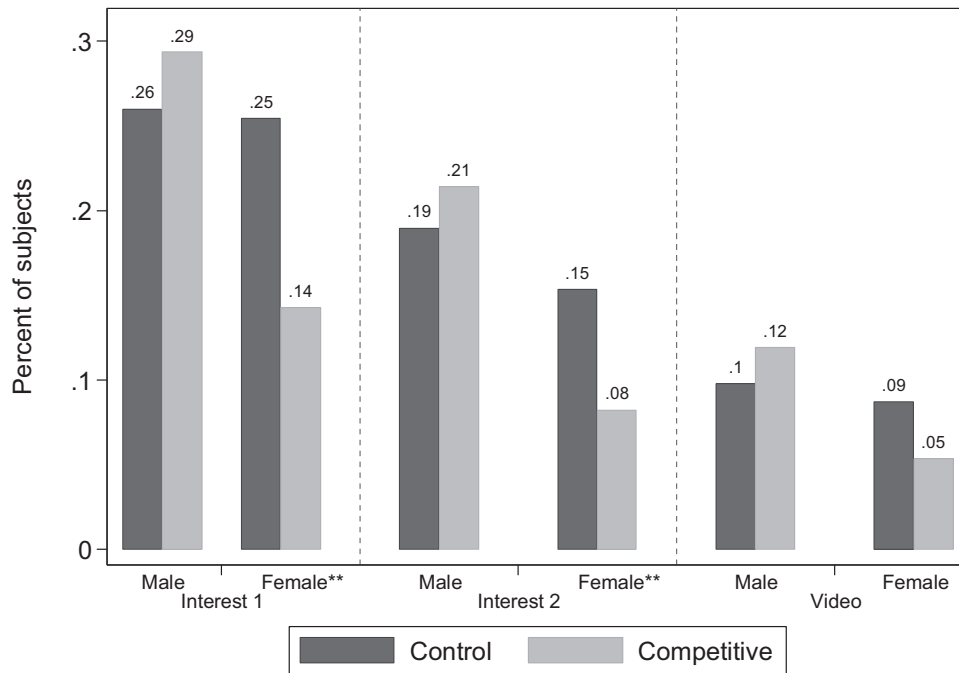** Statistical significance at the 5 percent level.

Fig. 3. Average response rates by gender and treatment for MTurk subjects.

First, we analyze the differences in response rates across treatments for men and women separately. As in the first experiment, we find a significant negative effect of the competitive treatment on women's leadership ambition for all stages of the survey. We do not observe this effect for men. As shown in Fig. 3, only 14 percent of the women in our sample expressed interest in continuing after the first prompt in the competitive treatment, compared to 26 percent in the control ($p = 0.00$, two-sided). Additionally, women were significantly less likely to express interest after the second prompt ($p = 0.01$, two sided).

Table 9 reports the differences in average response rates between men and women across treatments. First, we observe that men and women express very similar levels of leadership ambition in the control in all three of our outcome measures. Hence, the gender gap that we observed in the control treatment in our first experiment is absent in the MTurk sample. This result appears to be driven by both lower baseline level of leadership ambition of the male MTurkers and higher leadership ambition of the female MTurk participants. Given that the women in our MTurk sample are younger, more educated, and more likely to be employed full-time than the women in our first experiment, these results are not surprising.

While we do not observe a gender gap in the control treatment in our MTurk sample, this gap is very pronounced in the competitive treatment, which depressed women's leadership ambition significantly more than the men's ($p = 0.00$, two-sided). This is consistent with our competitiveness gender gap hypothesis (H_2). Women's aversion to competitive environments leads them to be less interested in learning about running for office when they are primed to consider the competitive nature of politics.

This negative effect of the competitive treatment persisted through all measures of leadership ambition, with women being less likely than men to express interest after the second prompt and to watch the video ($p = 0.00$, two-sided and

Table 9
Gender differences in political ambition by treatment for MTurk subjects.

	Percentage who continued reading (*Interest 1*)			Percentage who continued reading (*Interest 2*)			Percentage who watched video (*Video*)		
	Men	Women	Difference	Men	Women	Difference	Men	Women	Difference
Control	.260	.254	−.006	.190	.153	−.036	.098	.087	−.011
N	[.44]	[.44]	(.04)	[.39]	[.36]	(.03)	[.30]	[.28]	(.02)
	327	287	–	327	287	–	327	287	–
Treatment	.294	.143	−.151[**]	.214	.082	−.132[**]	.119	.054	−.066[**]
N	[.46]	[.35]	(.03)	[.41]	[.28]	(.03)	[.32]	[.23]	(.02)
	327	280	–	327	280	–	327	280	–

Notes: Standard errors are in parentheses.
[*]Statistical significance at the 10 percent level.
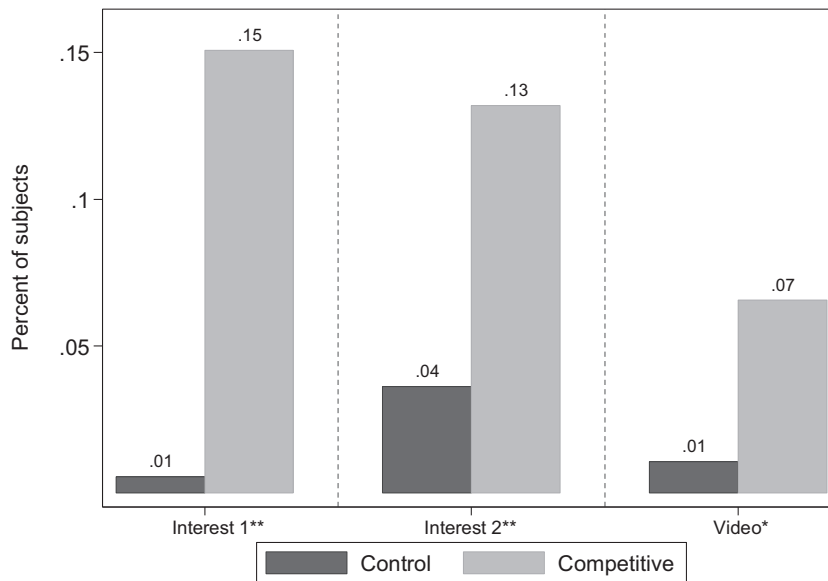[**] Statistical significance at the 5 percent level.

Fig. 4. Gender gap in leadership ambition by treatment for Mturk subjects.

Table 10
Marginal effects at means of treatment and gender for MTurk subjects.

	Interest 1		Interest 2		Video	
	(1)	(2)	(3)	(4)	(5)	(6)
Treatment (competitive)	−.125[**]	−.133[**]	−.089[**]	−.078[**]	−.041	−.022
	(.04)	(.04)	(.03)	(.03)	(.03)	(.02)
Male	.005	−.019	.034	.029	.011	.015
	(.03)	(.04)	(.03)	(.03)	(.02)	(.02)
Treatment × Male	.155[**]	.177[**]	.110[**]	.112[**]	.059[*]	.037[*]
	(.05)	(.05)	(.04)	(.04)	(.03)	(.02)
Demographics[b]	No	Yes	No	Yes	No	Yes
Other covariates[a]	No	Yes	No	Yes	No	Yes
Pseudo R^2 from probit model	.0164	.1330	.0216	.1381	.0116	.1538
Observations	1221	1219	1221	1215	1221	1215

Notes: Standard errors are in parentheses.

[a] Other covariates include an index and binary variable to control for preconceptions regarding the competitive nature of national and state politics.

[b] Demographic variables include age; political party; frequency of news exposure; voting frequency in local, primary, and general elections; vote status for the 2012 election; marital status; educational attainment; income level; employment status; ethnicity; and religion.

[*] Statistical significance at the 10 percent level.

[**] Statistical significance at the 5 percent level.

$p = 0.01$, respectively). The resulting gender gap in the competitive treatment is hence significantly larger, relative to the control. Fig. 4 illustrates the magnitude of the gender gap by treatment.

Next, to test whether our treatment effect is robust to the inclusion of additional covariates, we estimate Eq. (1) as before. We report the results of our regression analysis for each of our dependent variables in Table 10.

First, in contrast with the results in our first experiment, we do not find strong evidence in support of our competitiveness hypothesis (H_1). The coefficient on *male* is positive, but statistically insignificant of our four measures. However, consistent with our theoretical predictions, we find strong support for the competitive gender gap hypothesis (H_2). The coefficient on the interaction term $T \times Male$ is positive and statistically significant for all measures of leadership ambition. As we have seen from the previous results, this increase in the gender gap in the competitive treatment is driven primarily by the decrease in women's leadership ambition, since we observe no significant change in men's behavior.

5. Discussion and conclusions

This paper describes a field experiment designed to test the scope of competition aversion as the source of the gender gap in leadership ambition. We choose the context of politics for our study not only because it is perceived as a highly competitive field and is characterized by substantial gender imbalances, but also because leadership in a political office

is within reasonable reach for the majority of college-educated, professional adults in the U.S. Unlike other fields, such as business and law, leadership positions in politics do not require investment in specialized training and professional track.

We conduct our experiment in two distinct subject pools. The first is a sample of highly politically active men and women within a Republican Party in a primarily suburban area in Western United States. Such a sample is ideal for studying gender and leadership ambition. Narrower nets tend to leave out many politically active women who may not have the characteristics of traditional candidates, while broader nets tend to include those who are not particularly politically active or interested in being involved in the political process. Our second subject pool of workers in an online labor market is significantly more liberal and diverse. In both subject pools, we find that priming participants about the competitive nature of politics has a significant negative effect on women's interest in political office, but not on men's interest.

The significant negative effect of the competitive treatment on women's leadership ambition is consistent with prior laboratory studies, which document that women generally shy away from competitive environments. Priming women to consider the competitive nature of politics significantly decreases their interest in learning about running for office. This result is also consistent with the previous experimental literature that has found that the competitive nature of elections and electoral process in general seems to dissuade female candidates from running for office (Kanthak and Woon, 2015). In our experiment, women are similarly significantly more deterred from considering political office when they are primed to consider the competitive nature of politics.

Given the limitations of a priming experiment, more research is necessary to understand the mechanisms through which competition aversion affects women's leadership ambition and the extent to which this shapes important decisions affecting persistent gender differences in education and labor market outcomes. However, our research provides an important step in this direction.

Acknowledgements

Appendix A. Supplementary data

Supplementary data associated with this article can be found, in the online version, at http://dx.doi.org/10.1016/j.jebo.2015.04.019.

References

Barsh, J., Yee, L., 2012. Unlocking the Full Potential of Women at Work. McKinsey and Company, New York, NY.
Bertrand, M., 2011. New perspectives on gender. In: Orley, A., Card, D. (Eds.), Handbook of Labor Economics, vol. 4B. Elsevier North Holland, Amsterdam, pp. 1543–1590.
Bledsoe, T., Herring, M., 1990. Victims of circumstances: women in pursuit of political office. Am. Polit. Sci. Rev. 84 (1), 213–223.
Buser, T., Niederle, M., Oosterbeek, H., 2014. Gender, competitiveness, and career choices. Q. J. Econ., 1409–1447.
Carroll, S.J., 1985. Political elites and sex differences in political ambition: a reconsideration. J. Polit. 47 (4), 1231–1243.
Clark, J., Hadley, C.D., Robert, D., 1989. Political ambition among men and women state party leaders testing the countersocialization perspective. Am. Polit. Res. 17 (2), 194–207.
Croson, R., Gneezy, U., 2009. Gender differences in preferences. J. Econ. Lit. 47 (2), 1–27.
Crump, M.J., McDonnell, J.V., Gureckis, T.M., 2013. Evaluating Amazon's Mechanical Turk as a tool for experimental behavioral research. PLoS ONE 8 (3), e57410.
Flory, J.A., Leibbrandt, A., List, J.A., 2014. Do competitive workplaces deter female workers? A large-scale natural field experiment on job entry decisions. Rev. Econ. Stud. (forthcoming).
Fox, R.L., Lawless, J.L., 2003. Family structure, sex-role socialization, and the decision to run for office. Women Polit. 24 (4), 19–48.
Fox, R.L., Lawless, J.L., 2004. Entering the arena? Gender and the decision to run for office. Am. J. Polit. Sci. 48 (2), 264–280.
Fox, R.L., Lawless, J.L., 2005. To run or not to run for office: explaining nascent political ambition. Am. J. Polit. Sci. 49 (3), 642–659.
Fox, R.L., Lawless, J.L., 2010. If Only They'd Ask: Gender, Recruitment, and Political Ambition. J. Polit. 72 (2), 310–326.
Fox, R.L., Lawless, J.L., 2011. Gendered Perceptions and Political Candidacies: A Central Barrier to Women's Equality in Electoral Politics. Am. J. Polit. Sci. 55 (1), 59–73.
Fox, R.L., Lawless, J.L., Feeley, C., 2001. Gender and the decision to run for office. Legis. Stud. Q., 411–435.
Fulton, S.A., Maestas, C.D., Sandy, M.L., Stone, W.J., 2006. The sense of a woman: gender ambition, and the decision to run for congress. Polit. Res. Q. 59 (2), 235–248.
Gneezy, U., Rustichini, A., 2004. Gender and competition at a young age. Am. Econ. Rev., 377–381.
Gneezy, U., Niederle, M., Rustichini, A., 2003. Performance in competitive environments: gender differences. Q. J. Econ. 118 (3), 1049–1074.
Grose, C.R., 2014. Field experimental work on political institutions. Annu. Rev. Polit. Sci. 17, 355–370.
Horton, J.J., Rand, D.G., Zeckhauser, R.J., 2011. The online laboratory: conducting experiments in a real labor market. Exp. Econ. 14 (3), 399–425.
Kanthak, K., Woon, J., 2015. Women Don't Run? Election Aversion and Candidate Entry. Am. J. Polit. Sci. 59 (3), 595–612.
Kuziemko, I., Norton, M., Saez, E., Stantcheva, S., 2014. How elastic are preferences for redistribution? Evidence from randomized survey experiments. NBER working paper, pp. 18865.
Lawless, J.L., Fox, R.L., 2010. It Still Takes A Candidate: Why Women Don't Run for Office. Cambridge University Press, Cambridge.
Litzsky, Barrie, Greenhaus, Jeffrey, 2007. The relationship between gender and aspirations to senior management. Career Dev. Int. 12 (7), 637–659.
Moore, R.G., 2005. Religion, race, and gender differences in political ambition. Polit. Gender 1 (04), 577–596.
Niederle, M., Vesterlund, L., 2007. Do women shy away from competition? Do men compete too much? Q. J. Econ. 122 (3), 1067–1101.

Niederle, M., Vesterlund, L., 2011. Gender and competition. Annu. Rev. Econ. 3, 601–630.

Paolacci, G., Chandler, J., Ipeirotis, P.G., 2010. Running experiments on Amazon Mechanical Murk. Judgm. Decis. Mak. 5 (5), 411–419.

Powell, G., Butterfield, A., 2003. Gender, gender identity, and aspirations to top management. Women Manag. Rev. 18 (1), 88–96.

Preece, J.R., Stoddard, O.B., 2015. Does the Message Matter? A Field Experiment on Political Party Recruitment. J. Exp. Polit. Sci. 2 (1), 26–35.

Sanbonmatsu, K., 2006a. Do parties know that women win? Party leader beliefs about women's electoral chances. Polit. Gender 2 (04), 431–450.

Sanbonmatsu, K., 2006b. Where Women Run: Gender and Party in the American States. University of Michigan Press, Ann Arbor, Michigan.

Sapiro, V., 1982. Private costs of public commitments or public costs of private commitments? Family roles versus political ambition. Am. J. Polit. Sci., 265–279.

Schneider, M.C., Holman, M.R., Diekman, A.B., McAndrew, T., 2015. Power, Conflict, and Community: How Gendered Views of Political Power Influence Women's Political Ambition. Polit. Psychol., http://dx.doi.org/10.1111/pops.12268.

Schweitzer, L., 2011. Exploring the career pipeline: gender differences in pre-career expectations. Relat. Ind. 66 (3), 422–444.