Female candidates have long benefitted from their connections with PACs. However, many of the studies on women and PACs were published prior to the rise of ideologically-oriented Super PACs, 501c dark money groups, and 527s. To examine the impact of these newer groups on female candidates, this paper asks whether outside groups are less likely to take female opponents seriously during their television ad campaigns. We expect outside groups will run more ads for their preferred candidate when the opposing candidate is a male quality challenger because they believe those candidates present the biggest threat to achieving their partisan or ideological electoral goals. We test this expectation using data from Wesleyan Media Project, an original dataset containing biographical information on U.S. House candidates, the US Census, and the Cook Political Report. As expected, the number of ads that outside groups air is influenced by both the gender and the quality of the opposition to their preferred candidate.

Keywords. Super PACs, 527s, 501cs/dark money, PACs, female House candidates, campaign advertising.
In the three elections following the Supreme Court’s 2010 decision in *Citizens United v. FEC*, outside groups (i.e. Super PACs and 501c “dark money” groups, excluding party committees) spent $402 million on communications in U.S. House races (Center for Responsive Politics [CRP] 2020e). These large outside expenditures have raised normative concerns about money in American politics for much of the last decade. However, many critiques of outside spending focus on the destructive role of money and politics, rather than potential biases among outside groups for some types of candidates. From 2011 to 2018 only four of the twenty-three individuals who contributed more than $5 billion to Super PACs were women (FEC 2020). Because mega_donors often play an important agenda setting role for outside groups (Boatright 2007; Herrnson 2017; Sides et al. 2019), these gender differences raise questions about whether the rise of these new types of donors and organizations presents new obstacles to female candidates. Outside groups tend to be strongly ideological as 67.2% of outside spending during the last decade came from ideological or single-issue organizations (CRP 2020a; 2020f). The rise of these new ideologically-oriented groups, which primarily focus on winning elections, also raises questions about whether they are potentially biased against female candidates, like their gatekeeping forerunners in party organizations (Crowder-Meyer 2013; Niven 1998; Sanbonmatsu 2006).

In this paper, we answer the following questions: Has the rise of Super PACs, 527s, and 501c dark money groups created new disadvantages for female House candidates? More specifically, are these new outside groups more likely to run ads when their preferred candidates face male quality opponents than when they face female quality opponents because they are more likely to see male candidates as a viable threat? To answer these questions, we provide one of the first examinations of how outside groups’ television advertising campaigns vary as a function of the gender and quality of their preferred candidate’s opponent. We focus on opponents because the vast majority of
independent expenditures from outside groups are used to fund negative ads that attack the opposition (Dowling and Miller 2014; Dowling and Wichowsky 2015; Herrnson 2017).

Our analysis examines whether there are gender differences in ad campaigns in four situations. First, we analyze if there are differences in the number of ads Republican-leaning groups run when their preferred candidate runs against an opponent who is a quality female or male Democrat. Second, we repeat that analysis for Democratic-leaning groups, asking if their ad campaigns vary when their preferred candidate runs against a quality female or male Republican. Then we conduct the same analyses for non-quality opponents by asking how Republican-leaning groups’ campaigns vary when their preferred candidate runs against a non-quality male Democrat or a non-quality female Democrat. Finally, we consider how Democratic-leaning groups’ ad campaigns vary depending on whether their preferred candidate faces a male or female Republican non-quality opponent.

Building on the literatures on outside groups and women’s congressional campaigns, we expect outside groups will run more ads for their preferred candidate when their opponent is a male quality challenger because outside groups believe those candidates present the biggest threat to achieving the group’s partisan or ideological goals. We test this expectation using three types of data: U.S. House campaign advertising data from the 2010, 2012, and 2014 Wesleyan Media Project; an original dataset on U.S. House candidates; district-level demographic data from the US Census; and the 2010-2014 Cook Political Reports. As expected, we find the number of ads outside groups air is influenced by both the gender and the quality of the opposition candidate.

**OUTSIDE GROUPS AND FEMALE CANDIDATES**

**New Groups with a New Focus on Negative Campaign Communications**

Since *Citizens United*, the rise of Super PACs and dark money 501c organizations has changed American congressional elections. In the 1990s, party-produced issue advocacy ads played a central role in congressional elections while outside groups played a secondary one (Fowler and Ridout
This pattern began to shift in the 2010s. Between 2010 and 2014, outside groups sponsored, on average, 16.3% of the television ads that aired during House races (Fowler and Ridout 2014, 672). The number of outside groups running advertisements during congressional elections also nearly doubled between 2012 and 2014 (Fowler and Ridout 2014). Now, Super PACs and 501c organizations spend more money on ads than the political parties do (Fowler et al. 2016, 25).

Traditional PACs directly work to elect or defeat candidates or advance a political agenda, but the Federal Election Campaign Act of 1971 and the Bipartisan Campaign Reform Act of 2002 have long limited their political activities by capping contributions to them and requiring them to publicly disclose donors who have contributed at least $200 (Sides et al. 2019). For example, in 2019-2020, multi-candidate PACs could only contribute $5,000 to candidate committees (per election), other PACs (per year), and state, local, or district party committees (per year combined) (FEC 2019a). National party committee contributions were capped at $15,000 per year (FEC 2019a). These limits make traditional PACs unappealing for many donors. PAC contributions also have little to no effect on legislative votes (Baumgartner et al. 2014; Hall and Wayman 1990; Wright 1990). Instead, PAC contributions are used to secure access to influential members of Congress (e.g. party leaders, committee members, and incumbents) and subsidize legislative activity (Brunell 2005; Grier and Munger 1986, 1993; Hall and Deardorff 2006; Hojnacki and Kimball 1998; Skinner 2007; Wawro 2001; Wright 1990). Consequently, there are fewer incentives for donors who are interested in achieving partisan or ideological goals or changing the composition of Congress to contribute to traditional PACs. In comparison, newer outside groups allow donors to avoid contribution or disclosure limits and achieve their partisan/ideological goals by accepting unlimited contributions for election-related activities (Sides et al. 2019). For a detailed discussion of these new types of organizations see Appendix A.
During the last decade, there has been a dramatic increase in dark money spending and ad campaigns, as dark money groups directly spent $963 million during the five election cycles following the *Citizens United* decision (CRP 2020c). Since 2012, 501cs also spent a whopping $841.4 million on independent expenditures and electoral communications (CRP 2020d). In 2014, 40% of outside group ads were sponsored by dark money groups (Fowler and Ridout 2014). During the 2010 and 2012 cycles, most dark money groups were conservative organizations, and they often influenced elections simultaneously through their 501c and Super PAC arms (Chand 2015). This conservative spending often dwarfs both liberal and conservative organizations focused on women or women’s issues, such as abortion and reproductive rights. In 2010, 2012, and 2014, the top dark money spenders were the US Chamber of Commerce ($32.3 million), Crossroads GPS ($71 million), and the US Chamber of Commerce ($35 million), respectively (CRP 2020b). In each of those years, those top spenders spent between 6 and 8 times as much as ALL of the organizations focused on women or women’s issues in the top spenders list (CRP 2020b).\(^1\) Altogether, these data indicate the rise of 501cs could be fueling a rise in ideological advertising campaigns that have the potential to create new obstacles for female candidates.

Freed from the constraints of an access-based strategy, Super PACs, 501cs, and 527s also take sides and focus on defeating their partisan/ideological opponents during congressional elections (Boatright et al. 2016; Dwyre and Braz 2014). In 2012, 87% of Super PAC ads supported or opposed specific candidates (Dowling and Miller 2014). More often than not, those ads were negative. Since 2010, 70% of independent expenditures funded communications that opposed particular candidates (Dowling and Miller 2014; Herrnson 2017). In 2012, 85% of outside group ads were “purely negative,” attacking the opposition candidate, without even naming the group’s

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\(^1\) Liberal groups include Women’s Voices Women Vote, NARAL, Planned Parenthood, and the Feminist Majority. Conservative groups included Susan B. Anthony List, Independent Women’s Voice, and Concerned Women for American Legislative Action.
preferred candidate (Dowling and Wichowsky 2015). Outside groups may rely on negative ads because voters believe they are more credible than the candidates’ ads. Super PACs’ “objective sounding names” (which often use words like “citizens” or “American”) do not trigger people’s pre-existing political attitudes, and they allow candidates to avoid public backlash to negative ads (Brooks and Murov 2012; Dowling and Wichowsky 2015; Fowler et al. 2016; Herrnson 2017; Ridout et al. 2013).

Outside groups’ focus on ads attacking their opponents could also have unique consequences for female candidates. Prior to the rise of these new outside groups, many female candidates benefitted from their connections to PACs that explicitly focused on supporting women’s campaigns through endorsements, trainings, and/or bundled campaign contributions from female donors (Burrell 1994, 2006; Crespin and Deitz 2010; Day and Hadley 2002, 2005; Dittmar 2015; Francia 2001; Kitchens and Swers 2016; Thomsen and Swers 2017). Often those women’s PACs helped female candidates raise as much, or even more, PAC money than men, allowing them to overcome the conventional wisdom that women have more trouble raising money than men (Burrell 1994; Crespin and Deitz 2010; Francia 2001). Outside groups’ shift towards negative campaign ads may mean the efforts of those supportive women’s PACs are now being drowned out by negative outside group ad campaigns that target candidates for defeat rather than supporting them.

Outside groups’ preference for negative ads could also produce advertising campaigns that have the potential to activate voters’ persistent gender stereotypes about male and female candidates. Typically, voters believe female candidates are less suited for leadership roles because they are seen as more sensitive, emotional, kind, caring, and willing to compromise than their male counterparts who are seen as rational, assertive, aggressive, tough, and competent (Burrell 1994; Eagly and Karau 2002; Huddy and Terkildsen 1993; Kahn 1994). Relying on these gendered stereotypes, voters also often assume female candidates (particularly female Democrats) are better suited to addressing
“compassion” issues related to children, the family, healthcare, education, and social welfare (Alexander and Andersen 1993; Burrell 1994; Dolan 2005; Huddy and Terkildsen 1993; Kahn 1993; Sanbomastu 2002; Sanbonmatsu and Dolan 2009; Sapiro 1981). They see male candidates as better suited to handling crime, economic issues, defense, and foreign policy (Huddy and Terkildsen 1993; Koch 1999; Sanbomastu 2002).

As prior studies have noted, gender stereotypes mean ad sponsors need to be aware of how voters may respond differently to negative ads depending on the gender of the candidates in the race. On the one hand, voters respond to ads that attack candidates for violating gender stereotypes, and female candidates are especially vulnerable to attack ads that question their ability to handle stereotypically “feminine issues” such as education, welfare, health, or childcare (Cassese and Holman 2018). Voters may be more likely to punish female candidates than male candidates when they instigate negative campaigns that target the opposing party (Gordon et al. 2003; Krupnikov and Bauer 2014). On the other hand, voters tend to stereotype female candidates as caring and kind, so negative attack ads, particularly ones that focus on “irrelevant” issues such as their personal problems or outdated issue stances, do a poor job of changing voters’ evaluations of female candidates (Fridkin et al. 2009). These mixed findings suggest outside groups may hesitate to run negative ads during races with female candidates when the potential for a voter backlash to those ads is uncertain.

New Partisan and Ideological Mega-Donors and Gatekeepers

The rise of new types of outside groups has also facilitated the rise of a new political donor class. Since one of the benefits of Super PACs, 527s, and 501cs is they all allow individuals to make unlimited contributions, many of these groups are funded by individual mega-donors who are primarily interested in using their time, money, or other resources to achieve partisan or ideological goals (Boartright 2007; Dwyre and Braz 2014; Garrett 2013; Herrnson 2017). Most often those
donors are also men. Between 2011 and 2018, only 4 of the 23 individuals who contributed more than $5 billion to Super PACs were women (FEC 2020). Three of those women (Miriam Adelson, Diane Hendricks, and JoAnn Wilks) were married to prominent conservative, male mega-donors. Karla Jurvetson contributed $5.4 billion dollars to Women Vote! making her the only female mega-donor who prioritized supporting women’s campaigns (FEC 2020). Mega-donors’ partisan and ideological affiliations and gender are important because mega-donors play outsized roles in setting the agenda for many Super PACs and 527s (Boatright 2007; Herrnson 2017).

Ultimately, female candidates may be harmed by the rise of partisan/ideological (male) mega-donors for two reasons. First, women are less likely to be seen as viable, competitive candidates when partisan gatekeepers are primarily focused on winning elections (Crowder-Meyer 2013; Niven 1998; Sanbonmatsu 2006). Thus, we expect outside groups’ mega-donors will not see female opponents as threatening enough to warrant funding expensive television ads during their campaigns. Second, these donor networks are substantially different from the networks that supported female candidates in the past. In the 1990s, 94% of EMILY’s List donors and 89% of WISH List donors were women, and their donor networks were interested in increasing women’s representation (Baker 2006; Carroll and Sanbonmatsu 2013; Crespin and Deitz 2010; Dabelko and Herrnson 1997; Day and Hadley 2002; Herrick 1996; Jenkins 2007; Sanbonmatsu 2006). Today’s outside group mega-donors may not be as interested in supporting women’s campaigns and ensuring women are seen as viable candidates.

**HYPOTHESES: GENDER DIFFERENCES IN OUTSIDE GROUP AD CAMPAIGNS**

Given the rise of increasingly partisan and/or ideological outside groups that rely on negative ads, we examine whether the rise of outside groups has had negative consequences on women’s campaigns. Therefore, we test two hypotheses about outside groups’ advertising campaigns in the 2010, 2012, and 2014 election cycles. First, building on the findings that Super PACs, 527s, and
501cs are increasingly interested in attacking their opponents and helping their preferred candidates win competitive elections (Boatright 2007; Herrnson 2017; Issacharoff and Peterman 2013; Magelby 2013) and previous research that suggests partisan gatekeepers and donors see female candidates as less viable or threatening and harder to support with negative attack ads (Baker 2006; Carroll and Sanbonmatsu 2013; Crespin and Crowder-Meyer 2013; Deitz 2010; Dabelko and Herrnson 1997; Herrick 1996; Jenkins 2007; Niven 1998; Sanbonmatsu 2006), our first hypothesis states:

**H1. Preference for Male Candidates**: All else equal, outside groups run more ads when their preferred candidate is running against a male opponent than a female opponent.

We also expect outside groups’ ad campaigns will vary depending on the quality of the opposition of their preferred candidate. Running ads is a very expensive undertaking. In 2012, an estimated $428 million was spent on ads for U.S. House races, and outside groups pay more to run ads than candidates do because they are not allowed to take advantage of the lowest unit rate rules that state “candidates must be charged the least expensive rate that is normally offered by the broadcaster for airtime” (Fowler et al. 2016). Challengers also rarely overcome incumbency advantages to defeat incumbents, and quality candidates (e.g. those who have held prior office), are more likely to win than political amateurs or non-quality challengers (Carson et al. 2007; Cox and Katz 1996; Jacobson 2004; King and Gelman 1991; Schwindt-Bayer 2009). Therefore, outside groups may see the emergence of a quality challenger as a sign that their preferred candidate is vulnerable (Gordon et al. 2007, 2009). As a result, we expect outside groups will only run ads when their preferred candidate faces a real threat, such as a quality opponent.

Moreover, female candidates have long been dogged by challenges that may lead mega-donors and outside groups to take the electoral threat they pose less seriously. For example, women tend to face more difficult and competitive primary and general elections and more disadvantages in media coverage than men (Berch 2004; Carlin and Winfrey 2009; Kahn 1994; Lawless and Pearson 2008;
Lawrence and Rose 2010; Milyo and Schosberg 2000; Palmer and Simon 2005, 2006; Sanbonmatsu 2006). Voters also hold female candidates to higher standards, believing male MCs are more competent when they face female quality challengers than when they face quality male opponents (Branton et al. 2018). These findings about women’s perceived vulnerability and electability lead us to our second hypothesis:

**H₂ Prioritizing Male Quality Opponents:** All else equal, outside groups run more ads when their preferred candidate is running against a quality male opponent than a quality female opponent.

**DATA AND METHODS**

We evaluate outside group ad use in the U.S. House general election² as a function of the gender and quality of the opposition to each outside group’s preferred non-incumbent candidate.³ Specifically, as Table 1 shows, we are interested in determining if there are differences in the number of ads Republican-leaning outside groups run when their preferred candidate faces an opponent who is either a quality male or quality female Democrat. Likewise, we analyze whether there are differences in the number of ads that Democratic-leaning groups air when their preferred candidate faces a male versus a female Republican quality opponent. Then we repeat those analyses for non-quality opponents.

[Table 1]

We utilize three types of data to examine the presence and extent of gender differences in outside groups’ ad use in U.S. House general elections. First, U.S. House campaign advertising data

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² Each of the WMP data sets includes information regarding whether an ad was focused on the primary or general election. Thus, we were able to select only the ads run for the purpose of the general election.
³ We focus on non-incumbent candidates because MCs win re-election at a rate of over 95 percent (Jacobson 2004). Thus, we do not expect to find gender differences in ad use regarding MC candidates. To test that hypothesis, we estimated the same models for MC candidates and present them in Appendices B and C. The results indicate there is no significant difference among Democratic MCs. For Republican candidates, there are so few females in the models for favorable and attack ads that the models could not converge (there were only 3 female candidates out of 51 that actually had ads run by opposing outside groups). While the total number of ads run by Democratic-leaning outside groups suggests there are gender differences among Republican incumbents, this result is based on a small number of female candidates. Substantively, the results suggest outside groups run more ads against a male Republican incumbent; we caution this is based on a very small number of cases.
from the 2010, 2012, and 2014 Wesleyan Media Project (WMP) provides data on television ads purchased in all 210 American media markets. Second, we utilize original data on 2010-2014 House general election candidates, which contains information on the gender, partisanship, and prior office-holding experience of each candidate. We focus on the general election because outside group advertising is the most intense during the final eight weeks of the general election (Franz et al. 2016). In fact, we found the overwhelming majority (between 83-93%) of outside group ads aired in 2010, 2012, and 2014 during the general election period. Third, we utilize U.S. Census demographic data and the 2010-2014 Cook Political Report to control for district-level demographic and partisan factors that may influence outside groups’ ad campaigns.

The WMP data is useful for three reasons. First, it identifies whether each ad was sponsored by the candidate, the party, or an interest group. Because we are interested in outside groups, we excluded the ads the candidates themselves and party committees ran. As a result, our dataset includes only the ads that WMP identified as ads that were sponsored by interest groups, and the WMP’s “interest groups” category includes PAC, Super PAC, 527, and 501c ads. Second, the data identify the candidate each sponsor preferred, allowing us to identify the number of ads that outside groups ran in support of the Democratic and Republican candidates and categorize the outside groups based on whether they lean Democratic or Republican. Third, the WMP data contains information about whether each ad was favorable for the outside group’s preferred candidate or if the ad attacked the candidate each outside group opposed. We use this information to create three dependent variables: total number of ads, number of ads in support of each outside group’s preferred candidate, and number of attack ads against each outside group’s opposition.

4 Several sources were used to construct the candidate data set. The FEC’s U.S. House election reports were utilized to construct a list of candidates that ran in the general election. The FEC reports provide the name of all candidates, their partisan affiliation, and their vote share in the general election. Next, CQ Weekly Report, The Almanac of American Politics, Politics in America and online resources (candidate campaign and personal websites, Lexis-Nexis, and Newsbank) were used to compile demographic information on each candidate. Finally, in a limited number of cases, personal correspondence with the candidates served to complete the data set.
The first dependent variable\(^5\) counts the total number of ads outside groups sponsored. The number of Republican-leaning group ads ranges from 0 to 3,953 (mean= 87.86). The number of Democratic-leaning group ads ranges from 0 to 3,963 (mean=137.09). The second dependent variable is a count of the number of supportive ads for the group’s preferred candidate. The number of supportive Republican-leaning group ads for a Republican candidate ranges from 0 to 3,953 (mean= 79.00). The number of supportive Democratic-leaning group ads for a Democratic candidate ranges from 0 to 3,347 (mean=121.83). The third dependent variable is a count of the total number of negative ads attacking the opposing candidate. The number of Republican-leaning groups ads attacking a Democratic opponent ranges from 0 to 3,606 (mean=65.90). The number of Democratic-leaning group attack ads against a Republican opponent ranges from 0 to 3,055 (mean=108.73). For more detail see Appendix E, which presents a breakdown of the number of congressional districts in which outside groups aired ads and the average number of ads run within these congressional districts.

Eighty-four percent of non-incumbent candidates did not receive a single television ad sponsored by an outside group. As such, there are an excessive number of zeros on the dependent variables. Thus, we employ zero-inflated negative binomial regression to estimate the models. The method allows for a zero outcome (no political ads) to be generated by two processes (Long 1997; Zorn 1998). The first process—the “inflate” stage—estimates the probability that the event count is always zero—an outside group never runs an ad during a race. The “inflate” stage is modeled with logistic regression. In the inflate stage, the dependent variable is 1 if an outside group did not run a single ad in the race and 0 if an outside group ran one or more ads in a race. The second process—the “count” stage—models the number of ads run by an outside group using negative binomial regression. The zero-inflated negative binomial distinguishes between the type of race in which an

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\(^5\) The descriptive statistics on each dependent and independent variable are presented in Appendix D.
outside group runs ads from the type of race in which an outside group never airs an ad. Fit tests indicate the negative binomial is preferred to the standard Poisson. Further, a comparison of the BIC for the standard negative binomial and the zero inflated negative binomial indicates the preferred model is the zero-inflated negative binomial regression.

The key independent variable is candidate type, which accounts for the quality and gender of the non-incumbent candidate. A non-quality candidate has never held elected office; whereas a quality candidate is a non-incumbent candidate that has prior elected office-holding experience (Cox and Katz 1996; Jacobson 1989; Jacobson and Kernell 1983). The congressional elections literature has utilized several different quality candidate measures. The most commonly used measure of candidate quality is previous experience in elective office (Carson et al. 2007; Jacobson 2004). We employ this approach by using the dichotomous approach such that a non-incumbent candidate that has held an elected position is referred to as a quality candidate. For our purposes, there are four candidate types: a male non-quality challenger (NQC), a female non-quality challenger (NQC), a male quality challenger (QC), and a female quality challenger (QC). The model includes three dummy variables (Female NQC, Male QC, and Female QC), and the baseline category is a male NQC.

The models also include several district-level controls. The inflate model includes: Ad Cost, Solid District, Open Seat, and year dummy variables. The count model includes: Ad Cost, Solid District, Female Incumbent, Open Seat, Incumbent Party Leader, Incumbent Majority Party Member, Percent Urban, and year dummy variables.

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6 For examples, see Bond et al. 1985; Jacobson and Kernell 1983; Krasno and Green 1988.
7 Jacobson (2004) demonstrates the dichotomous measure of quality candidate (prior office-holding experience versus no experience) performs as well as more nuanced measures of candidate quality.
8 We estimated the inflate model including all the variables in the count model. We limited the variables included in the inflate model to those factors most likely to impede sponsoring ads: the cost of the ad, the impact of the ad, and the type of election. That said, the results in the inflate and count models are statistically and substantively consistent with the inclusion of all the variables and a subset of the models. The results including all independent variables in the inflate model are available upon request.
*Ad Cost* is measured by the estimated ad costs to the media market level used in the 2010-2014 Wesleyan Media Project data sets based on data provided by Kantar/Campaign Media Analysis Group (CMAG). Because ad costs vary not only across markets, but also depending on the timing and sponsor of the ad, we do not have access to information regarding the exact cost for each ad aired. Thus, the WMP measure serves as a proxy for the actual price outside groups paid for each ad. Our expectation is as ad cost increases outside groups’ use of ads will decrease.

To account for the competitiveness of a race, we utilize the Cook Political Report, which provides a rating for each congressional district in each election year. It indicates if a district is solid Republican, likely Republican, leans Republican, toss-up Republican, toss-up Democrat, leans Democrat, likely Democrat, and solid Democrat. Based on the last Cook Report assessment before Labor Day in a given election year\(^9\) we constructed a dichotomous variable, *Solid District*, which is coded “1” if a district is solid Republican or Democrat and “0” if a district is leaning or toss-up. Our expectation is competition will increase outside groups’ use of ads. Indeed, the electability of a candidate and competitiveness of the seat may influence an outside group’s willingness to spend scarce resources on campaign ads.

The third control variable included in the models is an indicator of whether the incumbent is running or if the race is an open seat race. *Open Seat* is coded “1” if an incumbent is not running in a district and “0” if an incumbent is running (Jacobson 2004). We include this variable because open seat races gain attention from candidates, political parties, and interest groups (Barnes et al. 2017; Francia 2001; Gaddie and Bullock 2000; Krasno and Green 1988; Herrick 1996; Hoffman et al. 2001; Hogan 2007; Jacobson and Kernell 1983; Kitchens and Swers 2016; Palmer and Simon 2006).

Our expectation is outside groups may attempt to capitalize on the opportunity to win without facing an incumbent by running more ads during open seat races.

The count model includes three additional controls: *Female Incumbent, incumbent party leader, incumbent majority party member, and district-level urbanicity*. Female incumbent is a dichotomous variable coded 1 if the incumbent is a female and 0 if the incumbent is a male. In the “Rep Opponent” model this measure reflects if the Democratic incumbent is a female. In the “Dem Opponent” model this measure reflects if the Republican incumbent is a female. Party leader and majority party member are included because interest groups often prioritize making contributions to incumbent MCs with seniority and/or leadership roles (Brunell 2005; Grier and Munger 1986; 1993; Hall and Deardorff 2006; Skinner 2007; Wawro 2001; Wright 1990). The party leader (*Inc Party Leader*) and member of the majority (*Inc Majority Party*) are both binary variables coded “1” if the incumbent is a party leader and/or majority party member. Urbanicity (*% Urban*) is a continuous measure of the proportion of the district population that resides in an urban area and it controls for differences in advertising in rural versus urban areas. To account for difference in outside group ad use in presidential (2012) and midterm elections (2010 and 2014), the inflate and count models include two binary dummy variables *2010* and *2012*.

**PREDICTING THE USE OF CAMPAIGN ADVERTISEMENT(S)**

Table 2 presents the zero-inflated negative binomial results of the total number of ads, the number of supportive ads, and the number of attack ads sponsored by an outside group in a given campaign. The left panel presents the results for Republican-leaning groups facing Democratic opponents and the right panel presents the results for Democratic-leaning groups facing Republican opponents. The results for the “count” stage are presented in the top portion of the table, while the results for the “inflate” stage are presented in the bottom.

[Table 2]
Given the categorical nature of the candidate variables, it is not easy to discern the impact of gender and candidate type simply by examining the zero-inflated negative binomial coefficients. To help facilitate the discussion of the substantive impact of candidate type and outside group ad use, we present the probability of an outside group running an ad (inflate stage) in the left panel and the number of outside group ads run (count stage) in the right panel in Table 3.

[Table 3]

The predicted counts in the top panel of Table 3 indicate there is no significant difference in the number of outside group ads targeting male and female non-quality challengers. These findings suggest that outside groups are not motivated to sponsor ads based on the gender of the opposing non-quality challenger.

However, there is a consistently significant difference in outside group ad use when the opposing candidate is male versus female quality challenger. Consistent with our expectations, the results indicate opposing party outside groups sponsor significantly more ads for male quality challengers compared to female quality challengers.

First, we consider the Democratic-leaning outside group ads. The results indicate Democratic-leaning groups run on average a total of 133.50 ads in races with a Republican male quality challenger compared to 31.82 ads against a Republican female quality challenger (Δ Pr. Count=101.69* ads). Further, Democratic-leaning groups on average run 87.98 more favorable ads for a Democratic candidate facing a male Republican quality challenger (122.52 ads) compared to a female Republican quality challenger (34.53 ads). Finally, the results indicate Democratic-leaning groups run on average a total of 94.44 ads attacking a Republican male quality challenger compared to 29.03 ads against a Republican female quality challenger (Δ Pr. Count=64.41* ads).

Second, we consider the Republican-leaning outside group ads. The results indicate Republican-leaning groups run on average a total of 102.75 ads during races with a Democratic male quality
challenger compared to 39.65 ads against a Democratic female quality challenger (Δ Pr. Count=63.10* ads). Further, Republican-leaning groups on average run 52.57 more favorable ads when their preferred candidate is facing a male Democratic quality challenger (83.19 ads) compared to a female Democratic quality challenger (30.62 ads). Finally, the results indicate Republican-leaning groups run on average a total of 69.28 ads attacking a Democratic male quality challenger compared to 22.21 ads against a Democratic female quality challenger (Δ Pr. Count=47.07* ads).

Finally, the predicted probabilities in the bottom panel of Table 3 indicate there is only one significant difference in outside groups never sponsoring an ad as a function of the gender and type of candidates. In other words, there is no difference in outside groups’ decisions to never to run an ad if the opposing candidate is a male or female, non-quality or quality challenger.

Taken together, these findings provide evidence that supports our expectations. The gender and quality of the opposing party candidate influence outside group ad sponsorship. While the gender of non-quality opposing party candidates generally does not influence outside group ad use, the gender of quality opposing party candidates does influence outside group sponsorship of ads. Democratic and Republican-leaning groups sponsor more ads in races against male quality challengers than they do in races against female quality challengers. Further, both Democratic and Republican-leaning outside groups run more supportive ads for their preferred candidates when the opposition is a male quality challenger than compared to a female quality challenger. Finally, both Democratic and Republican-leaning groups run more attack ads when their preferred candidate is facing male quality challenger than compared to a female quality challenger. Implicitly (or explicitly) these finding suggests that outside groups view opposing male quality challengers as a greater threat to their preferred candidate when compared to opposing female quality challengers.

CONCLUSION
Though female candidates have long benefitted from their connections to traditional PACs, this research suggests the rise of new types of outside groups in the 2010s, such as Super PACs, 527s, and 501cs is creating new challenges for female House candidates. Consistent with our expectations, we found the number of ads that outside groups air is shaped by the gender and the quality of the candidate the group opposes. Outside groups that support Democratic and Republican candidates both sponsor more total ads and more attack ads when their preferred candidate is facing a quality male challenger, than when s/he is facing a quality female challenger.

These findings are consistent with prior research which suggests female candidates participate in more challenging and demanding campaigns than men do (Barnes et al. 2017; Lawless and Pearson 2008; Milyo and Schosberg 2000; Palmer and Simon 2006; Sanbonmatsu 2006). They once again highlight the challenges female candidates face when groups (such as outside groups and/or party committees) play an important gatekeeping and agenda setting role in congressional campaigns (Crowder-Meyer 2013; Niven 1998; Sanbonmatsu 2006). However, our results add to these findings by providing some of the first evidence that the rise of new types of outside groups on American airwaves, such as Super PACs, 527s, and 501cs, may have negative consequences for female candidates. Specifically, our results indicate outside groups are less likely to perceive female quality candidates as a viable threat.

Our findings also lay the groundwork for future research on how outside group advertising affects female candidates in other types of races. Our results are only generalizable to women running in general elections for the U.S. House, but we would expect to find similar patterns in outside group campaigns for U.S. Senate races and for women running in primary elections. In fact, the effects might be stronger in those cases as Senate races tend to attract more outside spending than House races and the Senate tends focus more on “masculine,” foreign policy, defense, and economic issues than the House (Kahn 1993; Lawrence and Rose 2010; Swers 2011). Likewise,
primary elections often raise concerns about ideological positions, viability, and electability, which could disadvantage female candidates who tend to be stereotyped as more liberal and vulnerable than their male counterparts (Huddy and Terkildsen 1993; Kitchens and Swers 2016; Koch 2002; Lawless and Pearson 2008; King and Matland 2003; Palmer and Simon 2005; Sanbonmatsu 2002). They also tend to attract attention from outside groups, particularly because parties tend to hesitate to endorse primary candidates, and ideologically-oriented groups see the primaries as a prime opportunity to push their party further to the left or the right (Boatright et al. 2016; Magleby 2013).

Future studies should also examine if these results are generalizable to congressional elections that occurred in the latter half of the 2010s. Following *Citizens United*, conservatives were initially more likely to take advantage of the changes in election law, as conservative Super PACs and 501cs consistently outspent their liberal counterparts in the 2010, 2012, 2014, and 2016 cycles (CRP 2020b). It is possible those conservative groups were particularly unwilling to take the threats posed by female candidates seriously. However, our hypotheses suggest it is the rise of gatekeeping and negative campaigning associated with the rise of outside groups in general, not the rise of conservative outside groups in particular, that is driving outside groups to downplay the threats posed by (quality) women’s campaigns. When data are available, future research, particularly on the 2018 election cycle when a record number of women ran for congressional seats and won and liberal outside groups outspent conservatives, could further test these hypotheses (Center for American Women and Politics 2018; CRP 2020b; Dittmar 2018). Though additional research is needed, our results provide preliminary, conservative evidence the rise of outside group advertising poses a new challenge for (quality) female candidates.
REFERENCES


*Political Behavior* 49: 785-807.


Table 1: Ad Campaign Analyses

<table>
<thead>
<tr>
<th>Predicted Number of Ads Run By</th>
<th>When Their Preferred Candidate Faces a:</th>
</tr>
</thead>
</table>
| A Republican-Leaning Outside Group (An Outside Group that Prefers the Republican Candidate) | ▪ Male quality Democrat  
▪ Female quality Democrat  
▪ Male non-quality Democrat  
▪ Female non-quality Democrat |
| Democratic-Leaning Outside Group (An Outside Group that Prefers the Democratic Candidate) | ▪ Male quality Republican  
▪ Female quality Republican  
▪ Male non-quality Republican  
▪ Female non-quality Republican |