

# **Grabbing Congress by the Votes--A New Wave of Feminism in United States Congress**

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## **Abstract**

Throughout the 2016 election, Donald Trump proved to be a controversial candidate, especially in regards to his rhetoric toward and stances on women. As a result of his election, there has been a new wave of female activism and a record number of women ran for Congress and won seats in 2018. What explains the success of these candidates? This paper argues that female candidates running against members of Congress who endorsed Trump, and thus associated themselves with his controversial stances, were more likely to fare better in their congressional races. Through a series of various tests using 2018 election data, partial support is found. Additionally, the findings provide implications for understanding the role of women in future elections.

## **1. Introduction**

In 2016, the world watched arguably one of the most shocking Presidential races to date in United States history. Donald Trump, the Republican GOP candidate, has proven to be one of the most controversial candidates in modern United States history. In particular, Trump ran his political campaign with explosive rhetoric in describing his traditionally far right views on popular women's issues such as abortion, child care, maternity leave, and sexual assault. As result, many women across the country became both infuriated and alarmed by the potential policies proposed by Trump that would have the ability to set women's rights back to before *Roe v. Wade*.

When the results of the Presidential election were finalized, thousands of women met around the country to mourn the loss of progressivism that the nation would potentially face within the next four years. As one of Trump's first acts of president, Trump reinstated a "global gag rule" policy that restricted United States federal funding from providing resources to international family-planning organizations that offer abortion-related services. Trump later expanded the gag rule, cutting nearly nine-billion dollars in funding to combat global health issues such as HIV/Aids, Zika and malaria. In addition, Trump has also backed proposals to defund Planned Parenthood and signed Republican-passed legislation that has paved the way for state and local governments to block abortion clinics from receiving federal funds.

In response to these measures, a record number of female Democratic candidates challenged Republican incumbents in the 2018 election, causing it to be referred to as the "Year of the Woman". But, did these challengers fare well? In particular, what explained the success of female challengers in the 2018 election?

This paper argues that the success of female challengers can be explained not only by their own qualities, but by those of their opponents. Specifically, that female Democratic challengers running against Republicans who endorsed Trump in 2016, and thus associated with Trump's controversial policies, were more likely to win or fare better in the 2018 elections. This is because female candidates are strategic and only enter races where such endorsements made incumbents vulnerable.

Data was collected on all of the female Democratic challengers in the 2018 race to examine the relationship between their vote share/victory and their opponents' relationship to Trump. In the results section, there is found to be partial support for the hypothesis that women running against Trump allies fared better in 2018.

In what follows, literature on female's electoral fortunes and then introduce a new theory about female electoral success. A new theory is then introduced and presented about female electoral success and present the findings using a series of statistical tests to evaluate my arguments. Finally, the paper concludes with a discussion of the results and of the implications of the study.

## **2. Literature Review**

Women are only going to run for office when they have confidence they have a chance they are going to win. For the purposes of this observational study, we assume that these female candidates are rational actors. Therefore, we assume that the female challengers running in the 2018 midterm elections seek office as their primary goal. If the potential candidate believes the cost of running is too high, they are not going to run. Simply, if they do not believe they are going to win, they are not going to run.

The consensus of the research points towards a major issue challengers face when running for office: the incumbency advantage. Incumbents have an incredible advantage over their opponents-- especially those who have served in office for greater periods of time. Not only do they have a team of staff on hand, as well as pre-established donors, but they have a consistent following of voter support. A challenger is not going to run in a district she feels like she has no chance of winning. If a challenger runs against an incumbent where they have been in office for a significant amount of time as well as a significant margin of victory (MOV), the challenger is ultimately less likely to win because they have to steal more votes.

One of the most consistent phenomena encountered throughout the research pointed directly towards gender roles. Throughout United States history, Americans have witnessed traditional gender roles: a man is expected to be the breadwinner for his family, while a woman is expected to be the homemaker and raise the children. Although female employment has skyrocketed within the past 100 years, women are still faced with traditional gender expectations. Because women are still pressured by society to take care of the home and their children, it would offer explanation as to why not as many women run for office.

When traditional gender roles don't deflect a female candidate to run for office, there are still many forms of oppression that can take place. Research suggests that society is much more harsh on females in power compared to their male counterparts. For example, female candidates historically have been subject to a higher level of scrutiny through the media, and they become vulnerable as every aspect of their lives are brought to light. Studies of newspaper coverage of political campaigns have found gender-based patterns that disadvantage women<sup>6</sup>. Although this phenomenon has decreased over time, the pattern of bias is still observable. For example, in the 2016 presidential election, candidate Hillary Clinton ran for office against Donald Trump. As seen throughout her campaign, Clinton was often the subject of scrutiny through the media<sup>2</sup>. Clinton would not have put herself through emotional torture if she did not think she had a chance of winning. However, there is a way to minimize the amount of negative publicity a woman receives when running for office. According to research, women who have generally less negative publicity tend to promote policies and take stances traditional to their gender roles. For example, women who have stronger stances on "compassion views" such as public health, education, and poverty typically perform better.

Finally, it takes a significant amount of money to run a successful campaign. Over time, the amount of money it takes to run a successful campaign has increased significantly. In order for a female challenger to be successful, an important part is fundraising. Typically, challengers who take on incumbents for seats in Congress tend to do better when the spending difference is at a minimum, or when the challenger outspends their opponent<sup>1</sup>. If the challenger has a strong stream of funds from donors, she not only has public support, but the ability to finance her campaign in order to reach voters and persuade citizens to vote for her.

## **3. Theory**

Within the Democratic party alone, there are a record number of women running as challengers. While having this many women running for office is an extraordinary step, it is not about actually running, it is about the ability to win seats. While there is a strong incumbency advantage in Congress, this observational study will argue that the electoral fates of these challengers is not only a function of their own qualities, but the qualities of the incumbents they are

running against. In particular, this paper argues that these female Democratic challengers will fare better in races against Republican incumbents who have embraced Trump in the past.

It is assumed that candidates in Congressional races are rational actors motivated by a desire to win office. Further, it is also assumed that candidates, especially quality candidates, will be strategic in entering electoral races- that is, they will only enter races for which they have a chance of winning.

Additionally, it is assumed that the strategic calculus is particularly pronounced among female candidates running for office, as they face other barriers to entry. For example, women in previous elections have been observed to be portrayed differently than their male opponents in the media; specifically, women who don't conform to stereotypical gender roles while campaigning typically receive harsher media coverage than their male counterparts. This makes it difficult for female challengers to raise funds to take on male incumbents who have sat in office for years and have a wide range of resources, staff, and funds behind them. Therefore, this paper argues that the female candidates will only risk the time, resources, and possible reputation effects in running for office when they believe they have a viable chance to win the seat.

In assessing the probability of victory, this paper additionally argues that female candidates will rely on an evaluation of their own qualities but also an evaluation of the context surrounding the race and the qualities of their opponents- the incumbents. For female Democratic challengers, relevant information in the 2018 race is whether the incumbent associates with Donald Trump. Trump has had a polarizing effect of the electorate, especially women.

President Donald Trump has been one of the most talked about political actors of our time. During his 2016 Presidential campaign, Trump ran his political platform by taking traditionally conservative stances on policies regarding women's issues such as abortion, maternity leave, and equal pay. For example, when Trump was asked about paid child care, he brushed it off saying, "You need one person or two people, and you need some blocks and you need some swings and some toys. You know, surely, it's not expensive. It's not an expensive thing."

On top of having conservative stances on policies regarding women, Trump has been seen as extremely controversial when addressing sexual assault both professionally and personally. For example, when United States Senator, Elizabeth Warren's heritage came into question, Trump offered her an ancestry test and said, "We will take that little kit and say -- but we have to do it gently. It's the 'Me Too' generation, so we have to be very gentle. And we will gently take the kit and slowly toss it, hoping it didn't hit her and injure her arm. Even though it weighs only 2 ounces." Trump also has a alleged history of sexual assault, with twenty-two women openly claiming Trump tried to engage in sexually deviant behavior without consent ranging all the way back to the 1980s. Finally, arguably the most famous scandal of Donald Trump-- October 17th, 2016, a private recording of Donald Trump was leaked to the American public from 2005 of him talking about fame and his ability to seduce women. "You can do anything" he remarked, "They will let you do anything. I did try and fuck her, she was married." He went on to state that when he meets beautiful women he feels able to "grab them by the pussy."

When the news broke that Donald Trump had won the Presidential Election, many individuals were moved to create change. Shortly after President Trump was inaugurated, hundreds of thousands of women joined from across the world to participate in the Women's March on Washington in peaceful protest. The co-founder of the event, Tamika Mallory, stated "This effort is not anti-Trump," Mallory said. "This is pro-women. This is a continuation of a struggle women have been dealing with for a very long time. In this moment, we are connecting and being as loud as possible." Trump making it into the White House awoke the spirit of Democratic women across the United States, and has resulted in arguably one of the largest waves of female activism since the early 1900s.

Since some women strategically enter electoral races, this paper argues that female challengers will fare better in races in which the incumbent has endorsed Donald Trump in the past. In endorsing Trump, these incumbents associate themselves with his controversial stances and female candidates can capitalize on this to their advantage. Because it is costly both fiscally and emotionally to run for office, women are only going to run where they have an actual chance of winning. Campaigns cost millions of dollars to run. Incumbents who have been reelected time and time again are backed by donors, have support from other mainstream political actors, as well as a fully financed staff. On top of financial strain, emotional strain is brought on through media coverage. Because female candidates are generally subject to harsher media coverage, candidates become vulnerable as every single aspect of their individual lives are brought to life through the media. If it is assumed that the goal of these female challengers are to win office, females are only going to run when they think they can win. Women will only run in districts where a female politician is viable. If they do not believe they are going to win a district, the cost of running is too high and the strategic calculus fails. This would explain why there is a lack of female challengers in primarily red districts compared to blue or swing districts.

As such, the following hypothesis is created:

H1: Female challengers should fare better in elections in which they are running against Trump supporters.

## 4. Research Design

### 4.1 Measurement and Data

In order to properly test my theoretical argument, my research design is an observational study--meaning that this study will take a quantitative approach in order to observe Democratic female challengers within the midterm Congressional elections, as well as the Republican male incumbents, and try to identify common patterns that explain the success of the Democratic party's female challengers..

For this observational study, the unit of analysis is the 2018 congressional race. For purposes of this research, races where there is a female challenger running against a Republican incumbent will be the sole source of focus. Individual races were identified through news coverage. In total, the analysis consists of 80 races. In order to test the hypothesis, the independent variable will be whether the Republican male incumbents that are being challenged by Democratic female challengers for their seat have endorsed Donald Trump. For research purposes, endorsement shall be defined as general outspoken support for Donald Trump's candidacy during his 2016 election campaign. There will be two dependent variables used in this study. The first dependent variable will be vote share female challengers receive on election day. Data will be captured through a website that has all Congressman who endorsed Donald Trump's campaign in 2016. Those who failed to endorse Trump are coded as a 0, while coding those who did as a 1. Additionally, the second dependent variable is female challenger vote share. The coded challengers who received the majority of votes, the winner, was coded as 1. The challengers who didn't receive the majority of votes, the loser, was coded for 0.

For this observational study, it is important to note different control variables that are likely to affect my dependent variables. These include how long incumbents have been in office, the margin of victory incumbent received in the previous election, the percent of the district that is female, the "quality" of female candidate, and the difference of campaign funding between the incumbent and challenger.

Incumbents who have been in office for longer periods of time are assumed to have a strong voter following behind them. As we know, in order to win elections, you must receive a majority of the vote share. Because incumbents have systematic advantages, it is assumed that they have specific strategies in place that they know have been successful in the past and will likely use them again. Incumbents will likely appeal to their same voter audience in order to get them to get out and vote. Additionally, it is important to include the margin of victory success in the previous Congressional election. If a candidate had a high margin of victory (MOV) in the previous election, it is assumed to be less likely that a female challenger will fair well against such a popular candidate. MOV data will be collected using the candidates previous election statistics provided by Rutgers University.

It is important to account for the percentage of female voters in a given district, the "quality" of the individual female candidates, as well as to account for the amount of money a female challenger raises. The percentage of female voters in a specific district is crucial to the importance of this study. While not all women are going to vote Democrat or for female candidates, female voters are more likely to support female candidates than are other voters.

Regarding the "quality" of the individual female candidates, for the purpose of this study, "quality" shall be defined as candidates who have previous political experience (i.e. local government official). This specific control is important to account for because if an "unqualified" female candidate is running for the seat, it has the ability to affect vote share. Information about past political experience is obtainable through researching individual candidate biographies. For challengers who are considered to be "quality", they will be coded with a 1. Challengers who are not considered by definition to be "quality" will be coded with a 0.

Finally, finance is one of the most important control variables. Incumbents have staff on hand that is willing and able to help him get elected, as well as previously established connections to wealthy private donors and interest groups. The more money an incumbent is able to raise has the potential to significantly affect their individual vote share percentages. In order to measure my control variables regarding incumbents, data will be measured directly from the previous election via the US Census Bureau. As most of us know, money plays a substantial role in politics and has the ability to be a deciding factor of a candidate getting elected. Additionally, as previously mentioned, incumbents have a team of staff already on payroll, as well as previously established donors for their candidacy. Because of this, incumbents generally have more money for advertising their campaigns, and potentially reaching

voters. Therefore, it is important to account for how much a female challenger raises for their campaign because that amount of money can affect how well that specific candidate is able to advertise and reach their voters. When coding, challenger funds will be subtracted from the adjacent incumbents total funds raised to account for the difference of funds.

## 4.2. Description Statistics

As seen in Figure 1, most challengers received between 30% and 53%. The minimum was 8.1% and the maximum was 53.3%. Regarding challenger vote share, the average vote share for Democratic female challengers on election day averaged 39.86%. Although this number seems relatively low, the different controls might offer explanation as to why female challengers did relatively poorly at the polls. Out of the eleven female challengers that won the election, eight stole seats from Republican male incumbents that were endorsed by Trump.

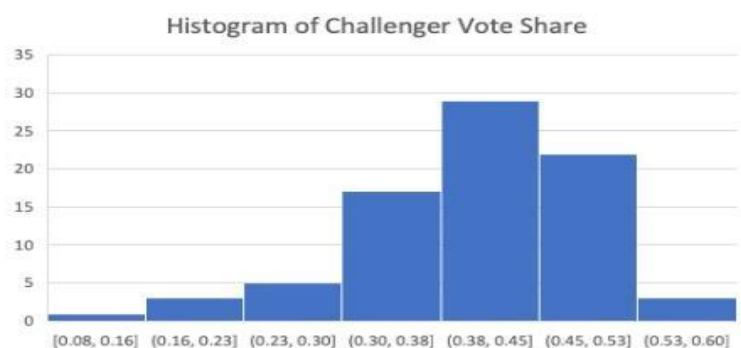


Figure 1. Histogram of Challenger Vote Share

Figure 1. Shows the dispersion of vote share by female candidates. The y-axis shows the number of challengers and the x-axis, the vote share. Most challengers got between 30% and 53% of the vote share.

In Figure 2, the difference of funding has on a campaign is observed. As we know, money has a significant influence on campaign success. On average, women who raised more money for their campaigns in comparison to their male opponents ultimately fared better in elections. However, more often than not, female candidates failed to raise as much as their opponents. For example, on average, incumbents outspent female challengers in their campaigns by \$337,453. In addition, maximum vote share on election day for a female challenger was 53.3%. This was Sharice Davis, who took on incumbent Kevin Yoder and outraised him by over two million dollars. The minimum vote share for a female challenger on election day was Andie Saizan with a vote share of 8%; however, her opponent, Garret Graves, outraised her by over two million dollars. Therefore, it is safe to assume that female challengers who raise the most money ultimately fare better in elections.

For purposes of the observational study, a “quality” candidate is defined as a candidate who had past political experience. Out of the eighty-one female challengers observed, only twenty-one of them were considered by definition to be “quality” candidates. However, five out of the eleven successful female candidates were considered to be a “quality” candidate.

The average percent of females within a candidates district averaged at 50.65%. In addition, all of the winning female candidates districts contained a female majority. While female challengers certainly did not receive all of the female votes, female voters are statistically more likely to vote Democrat. By appealing to the female vote in areas where females have the majority voter population, female candidates theoretically might have a stronger chance of winning. However, in states that are traditionally red states, this might not apply. For example, with the candidate with the highest percentage of females within a district, 55%, was located in TX-24. As we know, Texas is traditionally one of the most conservative states in the United States. Therefore, although the amount of female voters within a district matters, the geographical location of these districts also matter as well.

The average margin of victory (MOV) for Republican male incumbents in their previous election was 30.59%. Male incumbents that lost their seats to the female challengers had lower margins of victory, compared to male incumbents who managed to keep their seats. For example, my minimum for margin of victory was Republican incumbent Stephen

Knight who had won his previous election by a mere 6%. Because his MOV for the previous election was much lower than most incumbents, it was easier for his opponent to sway that 6% following, compared to an incumbent with a MOV of 30%.

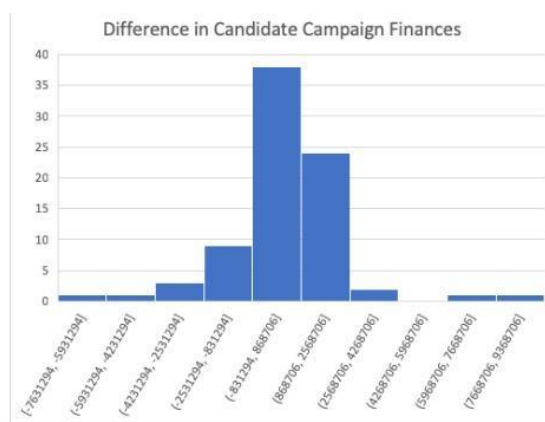


Figure 2: Difference in Candidate Campaign Finance

Figure 2. Displays the difference in funding between incumbents and female challengers. The y-axis shows the number of candidates and the x-axis shows the fundraising gap. Negative numbers indicate that the challenger outraised the incumbent, while positive numbers indicate the incumbent outspent the challenger.

## 5. Analysis

With regards to the observational study, there are two dependent variables that will be tested. For the first empirical test, female challenger vote share percentage is used as the dependent variable, while Trump endorsement serves as the independent variable. Again, for incumbents that support Trump, it is coded as a 1, and those who do not support Trump, it is coded as 0's. The results are shown in Table 1 below.

Table 1. Bivariate Regression for Trump Endorsement and its Effect on Vote Share

Variable	Coefficient	Standard Error	P-value
Intercept	0.3988	0.0150	<0.05
Trump Endorsement	-0.0002	0.0213	0.9923

Table 1 illustrates how a Trump endorsement affects vote share percentages of female challengers. Based on the table, the results are contrary to the original hypothesis that male incumbents that have endorsed Trump in the past. While small, when a incumbent endorses Trump, the vote share of the female challenger in their district is decreased.

The y-intercept (0.3988) is the predicted vote share when all independent variables equal zero. In other words, when there is no Trump endorsement, it is expected for women to get 39.88% of the vote. On the contrary, when there is a Trump endorsement, the coefficient is -0.02%. This means when there is a Trump endorsement by the incumbent, female vote share goes down by 0.02%

The fact that a Trump endorsement made the female vote share percentage go down was surprising because it was contrary to the original hypothesis. With Trump's controversial policies and personal stances towards women, it was expected that vote share for women to go up when the male incumbent had endorsed Trump. However, -0.02% is an extremely small difference, so there is essentially no change. Regarding the statistical significance, the 95% intervals for Trump endorsement ranged between -4.2% and 4.2%. Because the confidence interval contains zero, there is no

statistical significance. In addition, for something to be considered to have statistical significance, it must have a P-value of less than 0.05. As shown in Table 1, the P-value is 0.99, again making it not statistically significant.

For the second empirical test, a dichotomous indicator is used for whether the female challenger won (rather than vote share) as the dependent variable, and Trump endorsement serves as the independent variable. If individual a female challenger received a majority of the votes within her district, it was coded as “successful” with a 1. In turn, if a female did not receive the majority of the votes within her district, she therefore lost the election and was coded as 0. The results are depicted in Table 2.

Table 2. Bivariate Regression for Trump Endorsement and its Effect on Female Victory

Variable	Coefficient	Standard Error	P-value
Intercept	0.1000	0.0634	0.1191
Trump Endorsement	0.0600	0.0802	0.4569

Table 2. Illustrates Trump endorsement and how it affects female challenger success. Based on the table, the hypothesis is supported because when there is a Trump endorsement, the chances of a female challenger winning the election goes up 6%.

In Table 2, the y-intercept (0.10) predicts vote female challenger success when all independent variables equal zero. Therefore, when there is no Trump endorsement, it is expected for women to have a 10% probability of winning the election. When there is a Trump endorsement, the coefficient is 0.06. This means when there is a Trump endorsement by the incumbent, the probability of a female challenger winning goes up by 6%.

The results inevitably support the hypothesis: female challengers are more likely to defeat an incumbent that endorsed Trump. While 6% is a small increase, it is still considerable, while statistically insignificant. Additionally, the 95% interval ranges between -0.9% and 21.98 percent, which means it’s not statistically significant. Finally, the P-value for the data set is 0.46, further proving that it’s not statistically significant.

In addition to the bivariate tests, the hypothesis is further examined when accounting for control variables. In the first multiple regression, Trump endorsement is used, along with various controls as the independent variables and vote share as the dependent variable.

Table 3. Multiple Regression On Women’s Vote Share

Variable	Coefficient	Standard Error	P-value
Intercept	-0.0173	0.4331	0.9682
Trump Endorsement	0.0155	0.0164	0.3467
% of District that is Female	0.9355	0.8482	0.2737
Incumbent Time in Office for District (Years)	0.0007	0.0013	0.5685
Difference in Funding (Incum-Challenger)	-0.00000001	-0.000000004	0.0019
MOV Previous Election	-0.2324	0.0390	<0.05
Quality of Female Candidate	0.0112	0.0180	0.5383

Table 3 shows how Trump endorsement and controls affect female challenger vote share. Based on the data, challengers are more successful when there is a Trump endorsement, there is a higher percentage of females in a given district, when an incumbent has more time in office, and when a challenger is considered to be “quality”.

As seen in Table 3, when there is a Trump endorsement, the coefficient is 0.0155. This means when there is a Trump endorsement by the incumbent, female vote share percentages rise by 1.5%. While it has the same positive direction that was hypothesized, the size of the change is very small. In addition, there is no statistical significance because the P-value is 0.34. Also, the 95% lies between -1.7% and 4.8% which also points to zero statistical significance.

Regarding the percentage of districts that are females, the coefficient is 0.9354. When the percent of females increases by 1 percent, then the female challenger's vote share increases by 93.54 percent. However, a 1 percent increase would actually be an extremely large increase which is unrealistic.

In addition, there is no statistical significance because the P-value is 0.2737. Also, the 95% lies between -75.51% and 262.60%. The range is abnormally large and contains zero which points to a lack of statistical significance.

For the next control variable being tested, incumbent's time in office in the given district (years), the coefficient is 0.0007. When an incumbent spends another year in office, the vote share percentage rises by 0.07%. It was originally expected that the coefficient to be negative instead of positive. For example, it was expected that a higher amount of time in office for an incumbent would negatively hinder female vote share rates. Alas, it did the opposite and went in the opposite direction than originally anticipated. In addition, the P-value is 0.5685 and the 95% range lies between -0.19 and 0.3% which means that it is not statistically significant.

The coefficient for the difference in funding (incumbent funds-challenger funds) is less than -0.01. The correct interpretation is that when the funding difference increases by \$1 (the incumbent out-raises the challenger by each additional dollar), the challenger's vote share decreases by -0.01 percent. While on the surface this might seem small, for every dollar difference in funding, vote share decreases by this percentage. On average, an incumbent outspent challengers by \$337,453.38. Therefore, it is not surprising that the difference in funding has a significant impact on vote share. In addition, the P-value is less than 0.05 which means that it is in fact statistically significant.

For margin of victory, the coefficient is -0.2325. When there is a one unit change margin of victory percentages, the vote share percent decreased by 23.25%. This was expected because incumbents with a higher MOV generally has stronger rates of support compared to incumbents with lower MOV's. Therefore, challengers who go against incumbents with higher MOV's, they are ultimately less likely to get elected. The P-value is less than 0.05 and the 95% range is -31.01% to -15.48%. Because the P-value is smaller than 0.05 and the range doesn't contain zero, the effect is statistically significant.

Finally, the coefficient for the quality of a female candidate is 0.011. When there is a one unit change in the quality of a female candidate, vote share percentage increases 1.1%. It was originally expected to be a positive increase because one would generally assume that candidates with previous political experience would receive a higher percentage of votes compared to inexperienced candidates. While it is a small increase, it is still observable. However, because the P-value is 0.5384 and the range lies between -0.0248 and 0.0471, it is not statistically significant.

Table 4. Multiple Regression On Female Success

Variable	Coefficient	Standard Error	P-value
Intercept	0.0531	2.0397	0.9793
Trump Endorsement	0.1164	0.0771	0.1354
% of District that is Female	0.2959	3.9944	0.9412
Incumbent Time in Office for District (Years)	-0.0062	0.0063	0.3319
Difference in Funding (Incum-Challenger)	-0.00000005	0.00000002	0.0068
MOV Previous Election	-0.3295	0.1835	0.0766
Quality of Female Candidate	0.0746	0.0850	0.3831



Table 4 illustrates how Trump endorsements and control variables affect if a female challenger wins or not. Based on the data, female challengers have a higher chance of winning when there is a Trump endorsement, a higher percentage of females within a district, as well as when females are considered “quality”.

This study additionally estimated a multiple regression with the dependent variable as whether a female candidate wins or not. For Trump endorsement, the coefficient is 0.1163. A one unit change in Trump endorsement of the incumbent in a race increases female challenger probability of winning by 11.6%. This is consistent with the original hypothesis because I assumed that a incumbent who has endorsed Trump would bring out females to vote against them and lead to female success. While the P-value is 0.1353 and a wide 95% range of -3.7%-27 the effect is not statistically significant. However, with an effect of 11.6%, this proves to actually have a large effect.

Regarding the percentage of districts that are females, the coefficient is 0.2958. This means when there is a one percent increase of females within a district, the chance of female success rises by 29.58%. Like in table 3, for some reason, this percentage seems relatively high. This is because most districts are probably pretty close in gender parity and a 1 percent change is actually quite large. In addition, there is no statistical significance because the P-value is 0.9412. In addition, the 95% lies between -76.65% and 82.5%. The range is quite large and contains zero which points to zero statistical significance.

For the incumbent’s time in office in the given district (years), the coefficient is -0.0062. When an incumbent spends another year in office, the chances of female success decreases by 0.62%. While it was originally expected that the incumbents time in office to negatively affect challenger vote share, the effect was hypothesized to be more substantial. Regarding statistical significance, the P-value is 0.5685 and the 95% range lies between -1.9 and 0.3% which means that it is not statistically significant.

The coefficient for the difference in funding (incumbent funds-challenger funds) is -0.00000005. When there is a one unit change in incumbent time in office (years), the chances of female success decreases by 0.00000005. This is extremely important because for every dollar a incumbent outspends their opponent, vote share decreases. Because incumbents significantly outspend their opponents, difference in funding yet again has a significant effect on vote share. In addition, the P-value is 0.0068 which means that it is statistically significant.

For margin of victory, the coefficient is -0.3295. When there is a one unit change margin of victory percentages, female victory decreases by 32.95%. Like in Table 3, this was expected because incumbents with a higher MOV generally has stronger rates of support compared to incumbents with lower MOV’s. Because of this, female challengers who go against incumbents with higher MOV’s are overall less likely to get elected. However, because the P-value is 0.0766 and the 95% range is between -69.5% and 3.6%, it is not statistically significant.

Finally, the coefficient for the quality of a female candidate is 0.0746. When there is a one unit change in the quality of a female candidate, female success increases 7.4%. Like in table 3, it was expected for there to be a positive increase because one would generally assume that candidates who are considered to be “quality” candidates due to previous political experience. While a 7.4% change is smaller than originally anticipated, it is still a pretty large effect. Again, because the P-value is 0.3831 and the range lies between -9.4% and 24.39%, it is not statistically significant.

As such, there’s overall partial support for the argument. While the effect was generally in the anticipated direction, the data failed to achieve statistical significance on the variable of interest.

## 6. Conclusion

Although it was expected that Trump endorsement to have a greater impact on female vote share, there was still observable change. When there is a Trump endorsement by the incumbent, the probability of a female challenger being successful goes up. While the variable of interest failed to achieve statistical significance in any of the models, it was still generally in the intended direction. This may be due to the relatively small data set.

In addition, one of the largest controls that impacted female vote share was the difference in funds raised between opposing candidates. This was expected because as we know from previous research, the more money a candidate raises, the more money they can put towards advertising and advocating to the public as to why they should be elected. Incumbents already have political experience, as well as an arsenal of resources and donors backing their success. Therefore, when an incumbent out-raises its challenger by a significant amount of money, it is not surprising they lose. Challengers that either outspent their opponent or had the smallest difference of funding tended to perform significantly better at the polls.

Finally, the other control that had a significant impact on female vote share was margin of victory (MOV) in the incumbents previous election. The MOV of the incumbents previous election should generally tell the challenger what percentage voters she needs to sway in order to receive majority of the votes. When incumbents have a higher MOV, it is significantly more difficult for challengers to win against their opponents because they have to win over more voters. Therefore, women who went up against incumbents who had a smaller MOV were more successful.

In future observational studies, it is further recommended to continue looking deeper into the effects of finance on vote share. Finding out where exactly this money is coming from, the small interest groups involved, as well as researching PAC groups would provide important insight to the political science community. Also, it would be interesting for this same observational study to be conducted in 2022 during the next midterm election to see how the Republican party challenges these Democratic women who got voted into office in 2018, and see what patterns of success are observed in that case. Overall, it is hoped that this research paves the way for politicians for years to come by helping provide patterns of success in a Congressional challenger and inspiring individuals to run for office if they have the means to do so.

## 7. Works Cited

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