An Empirical Study of Gender Differences in Competitive High School Debate

Alyssa Nie
Angela Yi
*

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Abstract

Gender differences in competitive environments have been studied extensively; however, the majority of literature concerns activities with an objective winner. In this paper, we examine gender differences in high school Public Forum debate, a two vs. two activity where judges subjectively decide the winner. We constructed a dataset with 44 variables and 125,087 unique debate rounds during the 2014-2015 to 2019-2020 school years. Using logistic modeling, we document a large difference in win rates between teams of different gender compositions, with female-female teams 17.1% less likely and male-female teams 10.0% less likely to win a debate round against male-male teams. However, there is no gender gap in win rates for novice debaters, suggesting that the disparity does not occur from innate entry ability differences but rather appears alongside experience in debate. We also find a large difference in participation rates between female and male students, which begins at the 9th grade level and is exacerbated over time due to female debaters being 30.34% more likely to quit than male debaters. Finally, we find that a higher ratio of female to male debaters from the same school reduces attrition rates of female debaters.

1 Introduction

Throughout the late 20th century, large strides have been made towards gender equality in the workforce. Female participation in the workforce has skyrocketed, and women have also seen higher earnings than before. However, despite all efforts, a large gender gap still persists in society today for women in positions of power. Women are consistently underrepresented in high level leadership positions; only 7.4 percent of fortune 500 companies are led by female CEOs in 2020 (Ebrahimji 2020). Not only are women disadvantaged in the workforce, but there are also disproportionately fewer women in high-level political positions. In January of 2019, women only represented 24 percent of members in Congress, and there has yet to be a female voted into the presidency (Judith 2018). Numerous explanations have emerged to explain this phenomenon, one of which is the difference in competitive behavior between females and males. Because competitive settings are often mirrored in the real world, the aptitude to survive and perform better in such settings may create large advantages in society. For example, the workplace may produce competition for "tangible rewards, nontangible rewards, recognition, status, and competition influenced by coworkers." (Fletcher Nusbaum 2009) In politics, elections largely revolve among the competitive process to win over votes in critical regions. In a wide range of scenarios, competition plays a seemingly large role for positions of power within society. In fact, gender differences in competitiveness have been found to explain around 10% of the overall gender wage gap (Reuben 2015).

In recent years, there has been an influx of research exploring various proxies of gender differences in competitive behavior, including activities such as chess, game shows, academic performance, and puzzles (Gneezy 2003, Backus 2016, Jetter 2017). These studies provide valuable backing for different explanations of such differences, exploring variables such as the presence of other female participants, the gender of the opponents, the psychological effects of losing, etc. However, most of these studies focus on competition in a context where wins and losses are determined by clear, objective measurements. For example, competitions in math or Jeopardy are determined by whether or not the answer is correct, creating a clear definition of the winner. Instead, we argue that there are oftentimes no clear winners in the professional world. Favoritism and bias largely guide promotions in the workplace, and elections are dictated by the likeability of the candidate to a voter base. In an age where competitive advances to power do not rest on objective merit and are inseparable to networking and human partiality, we hypothesize that the subjective element of deciding a winner may play a significant role for the study of the gender gap in competition.

To examine such competitive environments, we study high school debate, an activity in which a judge subjectively determines the winner of each round. We focus on Public Forum Debate, a competitive debate format between two teams of two debaters who engage in back-and-forth speeches containing structured argumentation, typically on a resolution based on a governmental policy. As one of the most popular formats of high school debate, Public Forum Debate is particularly relevant to high-level professions and leadership positions. Created in 2002 as a response to older formats of debate becoming increasingly specialized, Public Forum Debate is designed to appeal to any set of audiences, using evidence, rhetorical skills,

and logic to persuade a judge to vote for one side. Judges range from experienced coaches and ex-debaters familiar with the technical aspects of debate to parents of competitors that have little understanding of the activity. Likewise, high level leadership positions require the ability to communicate important information and persuade different sets of audiences. Public Forum debate also necessitates large amounts of preparation consisting of research and knowledge, including analyzing evidence and evidence. This intense workload and need of logical reasoning is reflected in the professional domain. Grit, analytical thinking, creativity, and dedication are all integral to success in both Public Forum Debate and the real world.

We hypothesize that a significant gender gap exists in both performance success and attrition rates in Public Forum Debate. We constructed our dataset of 125,087 Public Forum Debate rounds from major national tournaments across the United States during the 2014-2015 to 2019-2020 school years. Using U.S. Census Bureau data, we assigned genders to every debater in the dataset based on their first name, with male denoted as 0 and female denoted as 1. Because both performance (winning a round) and attrition (quitting the activity) have binary outcomes, we utilize a logistic probability model in order to estimate the gender gap in each field. For competitive success, we duplicate the dataset so that each team in a round is observed as the subject once, and set the dependent variable as 1 if the team wins and 0 if they lose. For attrition, individual debaters who graduated before the final year of our observation period were tracked over the course of their high school debate career; debaters who stopped attending tournaments before their senior year of high school were defined as quit, and the dependent variable was set to 1. We found that female-female teams are 17.1% less likely and male-female teams are 10.0% less likely to win a debate round against male-male teams than vice versa. This gender gap is not present at the novice level but appears at the varsity level; additionally, this gender gap varies significantly across regions of the United States. We also found a large gender gap in attrition rates, with female debaters 30.4% more likely to quit than male debaters. A higher ratio of female to male debaters on a female debater's school team significantly lowers the probability of attrition, but this effect did not survive the inclusion of school fixed-effects.

Next, we explore the relevant literature pertaining to gender, competition, and debate in Section 2. We document our methodology and summary statistics in Section 3, and we discuss results and findings in Section 4, which we first explore the gender gap and then attrition. Finally, we discuss our findings in Section 6.

2 Literature Review

2.1 Overall Competitive Differences

There have been numerous studies of how females and males behave differently in competitive environments. In a controlled laboratory experiment, Niederle and Vesterlund 2007 found men were twice as likely as females to enter a tournament, despite findings that there were no gender differences in initial performance. Hogarth, Karelaia, and Trujillo 2011 examine voluntary withdrawals from the game show The Player, where players earn more money when they compete in more rounds, but lose all earnings if they are ranked last in out of all competitors in the round. At the end of each round but before results are announced, they

are given the opportunity to withdraw and retain their earnings up to that point. Women voluntarily withdrew at higher rates than equally skilled men; furthermore, women, but not men, made more "incorrect" withdrawals (where the player would not have ranked last, had they remained) as the proportion of their respective gender's competitors decreased. Both studies suggest gender differences in the willingness or confidence to compete.

After selecting into participation, female competitors tend to perform differently depending on the gender of their opponent, a phenomenon that persists across controlled experiments and naturally occurring competitions alike (although whether they perform better or worse is contested). Gneezy, Niederle, and Rustichini 2003 ran controlled experiments at Technion, an engineering university in Israel, in which men and women were placed in co-ed competitive and noncompetitive environments to solve mazes on the Internet. Women did not perform worse than men in noncompetitive environments; however, increasing the competitiveness of the environment significantly improved men's performance and had no effect on women. When participants were placed into single sex competitive environments, the performance gap between men and women disappeared again, and both genders performed better than they did in the noncompetitive environment. In a field study observing Israeli children running races, Gneezy and Rustichini 2004 found that both single-gender and mixed-gender competitive environments improved the performance of boys but not girls; in fact, girls in competitive environments performed worse when racing against other girls. On the other hand, Jetter 2016 examined gender differences in 4,279 episodes of the game show Jeopardy and found that females were more likely to respond and responded correctly at higher rates when competing against two males as opposed to against at least one female. Additionally, while females were usually more risk-averse than men, they took substantially more risks when competing against other men, eliminating the gender gap entirely. In another naturally occurring, mixed-gender competitive environment, Backus 2016 analyzed gender differences in expert level competitive chess. Women performed worse overall when competing against male opponents than against female opponents, even when controlling for opponent skill level. This difference was found to be driven by women making greater degrees of errors when playing against men than against other women. Men did not make less errors when playing against women; however, they resigned sooner against other men and persisted longer when competing against women. Each of these studies point towards the observed gender of an opponent playing an important role in the competitive behavior of individuals.

Another possible explanation for gender differences in competition is known as the "stereotype threat", where in a task stereotypically associated with a certain group, the minority or negatively stereotyped group may perform worse. Keller 2007 analyzed the stereotype threat through the performance of female students on math tests. Prior to taking the test, half of the students were told that the average achievement of male test takers was different from females and half were told male and female test-takers had the same average achievement. Females who identified themselves with a maths domain performed worse when aware of a stereotype threat, but those who did not identify with a maths domain performed better under threat conditions; furthermore, the effect of the stereotype threat only appeared on difficult test questions. Gunther, Schwieren, Strobel (2010) replicated the paradigm of Gneezy et. al. 2003 using different tasks with either a male, female, or gender-neutral stereotype. In a male stereotyped activity, a competitive structure increases

the performance of men but not women. Competitive pressures increased performance for both men and women in the gender neutral task, and in the female stereotyped task, women but not men increased their performance when subject to competitive pressure.

Gender differences in competitiveness may also be affected by cultural factors and perceived gender roles in an individual's environment. Gneezy, Leonard, and List 2009 conduct experiments in two societies: the Maasai in Tanzania, a patriarchal society, and the Khasi in India, a matrilineal society. They find that men are twice as likely to choose to compete than women in the patriarchal society, but the opposite is true in the matriarchal society, with Khasi women much more likely than Khasi men and even slightly more likely than Maasai men to choose the competitive environment. In a similar study, Anderson 2013 conducted an experiment with 7 to 15 year old children in matrilineal and patriarchal villages in northeast India. There were no gender differences in competitiveness in either society at the age of 7; however, by age 15 women in the patriarchal society were less competitive than men. On the other hand, there were no gender differences in competitiveness in the matrilineal society at age 15 or any other age present in the study. Cardenas, Dreber, Essen, Ranehill 2011 explore differences in preference for competition between children aged 9-12 in Colombia and Sweden, which have different gender equality indexes. Boys and girls are equally competitive in Colombia whereas the results in Sweden are mixed. However, boys were more likely to take risks than girls in both countries, with a smaller gender gap in Sweden, the country with greater gender equality. Dreber, Essen, Ranehill 2010 replicated the earlier field study by Gneezy and Rustichini 2004 observing boys and girls in Sweden, a country with a higher gender equality index than Israel. Aside from race running, they included two other competitions with female stereotyped tasks. Both girls and boys improved their performance in each competitive environment, and there were no gender differences across any of the three tasks, supporting the notion that gender equality in a society may decrease gender gaps in responses to competition.

There are two overarching issues with prior literature that hinder the application of their results to the real world. First, the overwhelming majority of prior literature analyzes controlled competitive experiments. While these experiments allow for researches to carefully control for confounding variables, they often use simplified activities, i.e. solving mazes or basic math problems, that do not mimic real-world competitive conditions such as in the corporate world. Furthermore, because experiments often have time and resource constraints, data is usually collected over a short period of time. This makes analysis on long term gender differences within one competitive environment virtually nonexistent. Finally, because experiments are isolated from the real world, participants have no personal attachment to their competitive success nor incentive to compete beyond monetary gain from the experiment itself. In contrast, participants in naturally occurring competitive environments often have a great deal of time and resources invested into their performance and have long term incentives to succeed (i.e. higher wages). As a results, participants often stay within the same competitive environment for many years, and subtle differences between genders often manifests slowly over time. Second, every prior study focuses on competitions with an objectively decided winner. However, the "winners" in real world competition are often crowned subjectively. Decisions on which employee ought to get a promotion or manage a project, favoritism by superiors, and intrinsic biases within every industry all influence the gender gap in both success and attrition. Thus, instead of focusing on an objective competition

such as maze-solving, chess competitions, or game shows, analysis on a competition where merit plays an important factor but the winner is ultimately decided subjectively would provide much more insightful results applicable to the real world. As the following section will explain, Public Forum Debate is an ideal activity satisfying such conditions.

2.2 Overview of Public Forum Debate

Public Forum Debate is a competitive debate format between two teams of two debaters. Each debate round lasts for approximately 45 minutes and revolves around a single predetermined topic, also known as a "resolution". These resolutions usually ask debaters to judge the harms and merits of an existing or proposed policy or institution. They are worded as single sentence statements, and one team defends the statement while the other team opposes it. The resolutions universally used across the United States are created by the National Speech and Debate Association and change every two months for the first half of each debate season and every month thereafter.

A debate round consists of eight speeches alternating between the affirmative side, which defends the resolution, and the negative side, which opposes it. At the beginning of a debate round, debaters will flip a coin to determine speaking order and the sides of the debate. The winning team of the coin flip may either decide whether to speak first or second or whether to affirm or negate the resolution, and the loser may choose between whichever option is left. The first speech from each side is written ahead of time, but the speeches afterwards are given spontaneously and address the prior arguments made by both sides. At the end of the round, the judge determines the winner of the debate and assigns speaker points ranging from 20-30 to all of the debaters based on their individual performance.

2.2.1 Tournament Structure

Debaters are entered into a tournament prior to the tournament mostly as an affiliate with their school or occasionally as an independent entry. On the day of the tournament, debaters are able to view complete lists of tournament attendees and potential judges online, as well as the judges' paradigms (a brief description of the judge's preferences) if one was written. Tournaments are split into preliminary rounds and elimination rounds. In preliminary rounds, a team can potentially be paired against any other team at the tournament except against other teams of the same school. Usually, all pairings will be randomly assigned for the first two rounds, after which the subsequent rounds may be powered or lag-powered. Powered rounds are debates where two teams of debaters with the same record, or the number of debates they have won prior to that round, are paired against each other. Lag-powered works on a similar concept: teams who have the same record for a partial amount of prior rounds are paired against each other. [1] The specific way the rounds are paired are predetermined by each tournament's directors. Overall, all preliminary debates have one judge assigned per round.

[1] These "powered" pairs may be assigned randomly with the pool of debaters that have won the same number of rounds, or teams may be paired high/high or high/low according to the total speaker points that they have been assigned the previous rounds.

After a set number of preliminary rounds, debate teams are seeded by their preliminary record. If two debate teams have the same record, the team with the higher cumulative speaker points (sometimes ignoring the highest and lowest value for each team) is seeded higher. These seeds are then used to advance a certain number of teams to elimination rounds. Based on the total number of participants at a tournament, tournaments may begin the elimination bracket with triple-octofinals (round of 64), double-octofinals (round of 32), octofinals (round of 16), quarterfinals, semifinals, or even finals. In the standard bracket, the highest seeded teams debate the lowest seeds and so on for each round. Teams are no longer barred from debating against other teams from the same school, and in the instance where the seeds of two teams from the same school pair them up with each other, a winner is chosen based on the school's coach's preference. Unlike preliminary rounds, elimination rounds have panels of three, five, or occasionally seven judges, and the majority vote determines the winner of each round.[2]

2.2.2 Types of Tournaments

High school competitive debate consists of largely four categories of tournaments. First, there are local tournaments, which are tournaments hosted by various high schools where debaters from nearby regions are able to attend. These tournaments are relatively small and only attended by debaters in nearby schools. Second, there are regional and state tournaments, which vary largely in competitiveness, size, and requirements based on the state that each debate is located in. Third, there are national championship tournaments, each of which are held once a year with often times stringent qualification requirements. These include the Tournament of Champions, the NSDA (National Speech and Debate Association) National Tournament, and the NCFL (National Catholic Forensic League) National Tournament. Finally, there are qualification tournaments for the aforementioned national championship tournaments. For the NSDA and NCFL National Tournaments, qualification tournaments are small and occur at the local level. However, for the Tournament of Champions, also known as the TOC, the qualification process requires debaters to perform well at multiple prestigious tournaments throughout the season. This process is explained in detail below.

2.2.3 The Tournament of Champions Qualifying Process

The Tournament of Champions is a national championship tournament held annually by the University of Kentucky. It is considered one of the most prestigious tournaments to attend due to its difficult qualification process. Before the start of each debate season, a group of debate directors known as the TOC Bid Committee designates around 40 tournaments in the United States as "TOC Qualifying Tournaments". Tournaments are chosen and designated as a finals, semifinals, quarterfinals, or octofinals level bid tournament based on factors such as competitor pool size, regional diversity, how well the tournament was hosted in previous years, and other factors.[3]

[2]Speaker points are no longer assigned in elimination rounds

[3]The level bid determines the number of total bids that may be awarded in that tournament, i.e a finals bid would grant a total of two bids

The round immediately preceding the level of the bid tournament is known as the "bid round". For example, at a quarterfinals level bid tournament, the "bid round" would be the octofinals round. The team that wins the bid round receives a Gold bid, and the team that loses receives a Silver bid. In the event that two teams from the same school are paired up against each other in the bid round, the team that advances receives a Gold bid, and the team that does not advance receives a "Ghost" Gold bid. There are two divisions of Public Forum Debate at the Tournament of Champions: Gold and Silver. To qualify for the Gold division, a debate team must obtain at least two Gold bids or one Gold bid and one Ghost Gold bid. There are numerous ways to qualify for the Silver division, but in order to qualify through competitive success at bid tournaments, a debate team must obtain at least one Silver bid.

2.3 Gender Differences in Debate

While many studies focus on the portable benefits of competitive debate to the real world, the pool of literature concerning gender differences within the activity itself is much smaller. Existing literature almost unanimously finds a gender difference in competitive debate success, where male debaters win a higher proportion of rounds and make up a higher proportion of elimination round competitors than their female counterparts, even when controlling for individual and tournament characteristics (i.e. Abbott 16, Tartakovsky 16, Lynn et. al 18). Furthermore, this gender gap in win rate persists even amongst debaters who attend "powerhouse schools" with large amounts of resources and consistently strong team performances (Shin 16). One exception comes from Feinzig and Atyeo, who analyze Lincoln Douglas debate tournaments from 2010-2012 and find no statistically significant difference in the proportion of females who compete and the proportion of females advancing to elimination rounds at each tournament. However, this study analyzes only a small sample of tournaments that may not have complete regional or stylistic representation of debate across America. Additionally, even if the proportion of women in elimination rounds is similar to the proportion of women in the overall pool, there may still exist a gender gap at the lower levels of competition in the tournament, a factor that is not analyzed in the study. Overall, literature that examine drivers of the gender gap in Public Forum Debate fall into two categories: analysis of in-round bias, and documentation of participation and attrition rates out of round.

Unlike the other competitive formats commonly researched, debate is a subjective activity where the implicit or explicit biases of a judge may play a strong role in determining the winner of a round. Spinna 2019 analyzed judge ballots from New York's state debate tournament, finding that male debaters received significantly more feedback overall than female debaters. Lynn and Kawolics 2018 examine Public Forum debate judge ballots from 2017-2018 and find that female debaters receive criticism for being overly aggressive 50 percent more than their male counterparts, as well as criticism on speaking style and overuse of emotion at higher rates. Furthermore, females disproportionally lose the round in which they were subject to the aforementioned criticisms, compared to male debaters who won more frequently even when criticized. Additionally, they found a statistically significant difference in the proportion of wins assigned to female debaters between female and male judges, albeit only analyzing a single national tournament (Lynn et. al 18). In contrast,

Tartakovsky (2016) analyzes Lincoln Douglas debate bid tournaments from 2015-2016 and finds that female debaters do not perform better when assigned female judges. This does not necessarily imply that the gender gap in performance is not due to judge bias; rather, the majority of biases against female debaters may be implicitly held by judges of all genders.

While bias inside of rounds likely plays a role in driving the gender gap, there is plenty of anecdotal evidence of female debaters being excluded from debate spaces or discriminated against outside of rounds. Beyond Resolved, a student run organization aimed at empowering women in debate, runs an online blog containing a multitude of stories about sexism outside of rounds perpetuated by debate coaches, camps, and peers. While the effects of these factors cannot be quantified, they are likely a cause of the widely documented difference in participation rates between male and female debaters.[4] Although many papers touch on the issue of female participation in debate, only one prior study analyzes gender differences in attrition rates. Tartakovsky 2017 examines bid tournaments from 2012-2016 and finds around half of the gender difference in win rates can be attributed to female debaters having on average less experience and being on average younger than male debaters. Because of this, they construct an instrumental variable using the propensity for each judge in the dataset to vote for female debaters in order to determine the effect of losses on debater attrition. They find that increasing the win rate for sophomore debaters by one standard deviation reduces the probability that a female team quits debate by 50% but has no effect for male debaters, concluding that female debaters are more likely to give up when facing losses (Tartakovsky 2017).

Our analysis aims to provide insight in a few key areas. First, because data on debate tournaments has grown increasingly widespread over the past few years, our dataset is much larger and complete than any previous studies of bid tournaments (which is the type of tournament observed in every study above). This allows us to document the gender gap in competitive success at a higher degree of accuracy than before; additionally, the sample is large enough that we are able to observe changes across regions of America and across time, indicating whether the gap is narrowing and whether certain regions are inherently less or more hostile towards women in debate. We also aim to examine whether a higher stakes environment worsens the gender gap—while differences in the level of stakes in a competition have been studied in objective activities such as math exams or chess, there is no literature on how high stakes affect female performance when the activity is subjective. Second, we track a large number of debaters through the entire course of their participation in debate in order to document and provide deeper insight on gender differences in attrition. The gender gap in attrition rates itself has never been fully documented. While Tartakovsky 2017 provides important analysis on how different genders react to setbacks and losses, it is infeasible to artificially increase the win rates of female debaters to combat the gender gap, whereas analyzing other out of round factors that influence women's decisions to leave the activity can provide practical methods to reduce attrition. Unlike any previous study, we analyze how different school level variables affect debate performance by gender, as well as the difference between male and female debaters attending the same school. Debate schools often are required to divide a limited number of resources between a large number of students, whether it is tournament opportunities or coaching time, so there are a multitude

[4] see Abbott (2016).

of ways in which preferential treatment towards one gender may be implicitly or explicitly extended. This analysis also more closely mirrors real world competitive environments such as academia or the corporate world, where women do not directly "win" or "lose" against male coworkers but may still be driven away by environmental factors and microaggressions within the community.

3 Methodology

For this paper, we exclusively examine TOC Qualifying Tournaments (also known as bid tournaments) for a number of reasons. First, data concerning bid tournaments is easily accessible on online platforms. Local tournaments are not only extremely difficult to track down because of a lack of public data about the occurrences of these tournaments, but also often operate on paper postings that are inaccessible after the tournament. Second, bid tournaments are numerous and debaters must perform well at multiple in order to qualify for the TOC. Unlike national championship tournaments which are only held a few times at the end of the year, different bid tournaments are open to entry every month of the debate season. As a result, many debaters go to multiple bid tournaments each year, often over multiple years, allowing us to track their participation and competitive success over time. Third, bid tournaments are held all across the United States and are open to entry for all debaters affiliated with a school. Compared to national championship tournaments with strict qualification guidelines that take place in only a few locations every year and local tournaments that often require schools to be affiliated with specific regional associations, bid tournaments allow us to examine a much larger and diverse pool of debaters. Moreover, the allure of obtaining bids draws in debaters from all across the country, and as a result many bid tournaments are the largest tournaments in the year. They attract both the highest skill level debaters but also do not artificially exclude lower-skilled or less experienced debaters. Finally, because all bid tournaments function as qualifying tournaments to the TOC, their rules are standardized. They all follow the same guidelines about tournament procedures and have a similar format (a set number of preliminary rounds followed by a single elimination bracket). However, both local and national championship tournaments have considerably more leeway regarding tournament structure, ranging from different types of elimination brackets to judging procedures. Overall, our data set consisted of 344 tournaments from 2014 to 2020 that are regarded as TOC Qualifying Tournaments.[5]

Through building a scraper to obtain data from three online tabulation platforms that publish the results of every round of each tournament, we were able to gather round results from 344 out of 388 total bid tournaments from the 2014-2015 to 2019-2020 school years. From each tournament page, we were able to attain basic tournament information, which included the official tournament name, the date the tournament began, and the state in which the tournament was held. We also collected information about the number of bids each tournament offered.

There are up to three divisions of Public Forum debate at each tournament: Novice, Junior Varsity, and Varsity. Novice debaters are debaters who have less than one season of total experience, and while the definition varies from tournament to tournament, Junior

[5]see Appendix A for the full list of tournaments.

Varsity debaters usually have at most one to two seasons of experience. The Varsity division includes the debaters who debate in the highest level division, where all the experienced debaters mainly compete. While every tournament we analyzed hosted a Varsity division, only 153 tournaments hosted an additional non-Varsity division. For these tournaments, we collected the round data from the second division as well as the Varsity division, and grouped Novice and Junior Varsity rounds together with a Novice indicator.[6]

For each round, the data set provides a few key variables. First, the data provides tournament level information (tournament name, date, location by state, and whether the round was a Varsity or Novice round). Second, the data provides information about the observed debate team (team name and the first and last names of both debaters). Third, the data provides information about the opposing debate team (team name and the first and last names of both debaters). Fourth, the data provides information about the judge(s) for each round (first and last name). Fifth and lastly, the data provides information about the result (a win or loss for the observed team denoted as a 1 or 0, and the speaker points assigned to all four debaters). Because we wish to observe each round from the perspective of both teams, every debate round is represented twice in the data set. Once duplicated, our data set includes 250,174 individual rounds.

There is no indicator of a debater's gender in the online tournament database. In order to observe gender differences, we used the first names of each debater and judge to determine each individual's gender. To do this, we reference two data sets. The first is Derek Howard's data set of the gender for first names in the US Census Bureau from 1930-2015, where the probability of a name being a certain gender is equal to:

$$P(\text{gender}) = \frac{\text{number of appearances with that gender}}{\text{total number of appearances}}$$

The second is Aman Kaushal's data set of 8228 common Indian first names with genders assigned, retrieved from public records. Using these lists, we indicated the first name of every debater and judge in each round as 0 for male and 1 for female.[7]

3.1 Control Variables

We use data from the National Speech and Debate Association to control for a range of potentially confounding factors that affect the outcome of a debate round. To compete at debate tournaments, schools are required to register their "roster", or list of competing students for the year, into the NSDA's online database. This database contains information about each student registered with the NSDA from the 1990s to May 2020 (first and last name, a unique debater ID, and graduation year) as well as information about the student's school (school name and school NCES ID). Additionally NCES[8] data for schools in the United States displays a large amount of information for each school, including the location by zip code, the number of total students, the number of students qualifying for free or

[6]Because only a very select few tournaments included a Junior Varsity Division and both Junior Varsity and Novice Debaters are generally considered inexperienced, we grouped them into one indicator.

[7]see 4.3 Data Limitations

[8]National Center for Education Statistics is the primary federal entity that collects and analyzes educational data in the United States and other nations.

reduced lunch, and the number of male and female students). Finally, we use data from the US Census Bureau to find the average zip code income of each school.

We attempt to match up debaters in our data set to the NSDA database using the following methods. First, if both a debater and their partner's full names are located in the NSDA database under the same school ID, they are matched up accordingly. However, some students are not entered in the roster for their school on their NSDA account. Thus, using pairs of students that were already matched up to the school, we were able to match each school entered through Tabroom to a NCES school ID. For the remaining data, if one of the debater's full name was entered in the NSDA database and their team from Tabroom was matched up to the corresponding school, we assigned the entire team to that school. Because each debater is assigned a unique debater ID (and thus a school ID as well), we could track both their individual and their school debate team's overall performance over time. For each debater in a round, we controlled for grade level and the number of tournaments previously attended as of a given tournament. Previous research has alluded to a large driving force of the gender gap being simply a difference in experience levels across gender, so these control variables are crucial to determine whether the gender gap is simply a result of female debaters being less experienced on average. We also control for various school-level factors for each debate team. First, we incorporate variables to measure the resources a school dedicates to debate, measured by the number of tournaments attended that season, the total number of debaters from the school (defined as the number of unique debaters under the same school ID that have competed at least once in the season), and the number of gold and silver TOC bids acquired throughout the season. Because success in Public Forum debate is reliant on gaining experience and on large amounts of preparation and research prior to tournaments, schools with more resources to attend more tournaments and more successful debaters to share the burden of preparation have an inherent advantage. Second, we control for the overall amount of resources a school has using the average zip code income of the school. A wealthier student body results in school districts having more money to finance extracurricular activities such as debate as well as more individual resources for debaters to finance summer camps, private coaches, and tournament opportunities. Third, in order to determine whether the gender breakdown of a debater's environment affects performance or attrition rates, we control for the ratio of female to male debaters from the same school as the observed debater.

3.2 Models

Much of the existent literature on gender differences in debate is based on using a linear model. The major flaw with the linear probability model is that it does not restrict the dependent variable (probability of winning the round) to lie between 0 and 1. To resolve this issue, we use a nonlinear function with a binary dependent variable. We utilize a logit probability model rather than a probit probability model due to its easy translation into an odds ratio, therefore making it easier to interpret. However, even when a probit model was used for our regressions, the results were largely similar to that of the logit model.

The probability of winning any given round is as follows:

$$\ln\left(\frac{P}{1-P}\right) = \beta_0 + \beta_1 F_1 + \beta_2 F_2 + \beta_3 G_i + \beta_4 E_i + \beta_5 T_i + \beta_6 B_i + \beta_7 G_o + \beta_8 E_o + \beta_9 T_o + \beta_{10} B_o$$

$$P(win = 1) = \frac{e^{\beta_0+\beta_1 F_1+\beta_2 F_2+\beta_3 G_i+\beta_4 E_i+\beta_5 T_i+\beta_6 B_i+\beta_7 G_o+\beta_8 E_o+\beta_9 T_o+\beta_1 0 B_o}}{1+e^{\beta_0+\beta_1 F_1+\beta_2 F_2+\beta_3 G_i+\beta_4 E_i+\beta_5 T_i+\beta_6 B_i+\beta_7 G_o+\beta_8 E_o+\beta_9 T_o+\beta_1 0 B_o}}$$

F_1 indicates the presence of one female debater and F_2 indicates the presence of a second female debater on an observed team in a round where the opponent team is comprised of two male debaters. G_i, E_i, T_i, and B_i indicate the average grade level, experience (in terms of the number of tournaments attended prior to the observed round), number of school teammates, and number of bids attained by the team's school, respectively, for the observed team during the school year in which the round occurred in. G_o, E_o, T_o, and B_o indicate the average grade level, experience (in terms of the number of tournaments attended prior to the observed round), number of school teammates, and number of bids attained by the team's school, respectively, for the opponent team during the school year in which the round occurred in. β_0 is the baseline coefficient for probability of winning as a male-male team if all aforementioned variables are equal to 0, and β_1, β_2, β_3, β_4, β_5, β_6, β_7, β_8, β_9, β_{10} are the respective coefficients for each variable in the equation.

4 Results

4.1 Summary Statistics

We were able to identify both genders of the observed team for a total of 225,061 rounds. Out of all rounds observed, male-male teams comprised of 47.9%, male-female teams 26.5%, and female-female teams 25.6% of the population. This indicates female debaters are still largely underrepresented in Public Forum debate rounds. Table 1 presents summary statistics for the win rate broken down by team gender composition. Teams who are missing gender data on one of the debaters are dropped from the sample.

Column (1), Column (2), and Column(3) represent the three different team gender compositions: male-male teams (MM), male-female teams (MF), and female-female teams (FF). Column (4) indicates the difference between MM teams and MF teams, and Column (5) indicates the difference between MM teams and FF teams. Overall, male-male teams win 52.3% of all of the rounds they debate, while male-female and female-female teams win 49.9% and 47.0% of the rounds they debate, respectfully. These results are expected and consistent with results from numerous studies— women perform worse than men in competitive environments (Gneezy 2003, Niederle 2011). Next, we showcase the win rate of each team gender composition when debating against the other possible gender compositions; rows (2) - (5) display the results. When debating against male-male opponents, male-female teams win 47.3% of the time and female-female teams only win 45.0% of the time. When debating male-female opponents, female-female teams only win 46.5% of the time.[9] To document the difference of performance of the two genders, we take the difference in win-rates between opposite gender opponents.[10] By this calculation, the gender gap for female-male teams is 5.4%, and the gender gap for female-female teams is 10%.

[9]Naturally, the win-loss ratio is 0.5 when debating against a team of the same gender composition.

[10]For instance, the female-female gender gap is defined as the difference of the male-male win rate when debating female-female teams and the female-female win rate when debating male-male opponents. This method is used by Tartakovsky in their 2016 study on gender differences in debate. See their paper for more details.

Table 2 breaks down gender statistics by individual debater rather than by team. We split the data set of teams into two individual debaters, and include the win/loss of every single round debated.[11] Column (1) and column (2) indicate the gender of the debater, while Column (3) gives general statistics of all debaters combined. Column (4) calculates the difference between (1) and (2). Row 2 and 3 break down the win rate between preliminary rounds and elimination rounds. Notably, female debaters win a lower percent of their elimination rounds. When looking at differences in speaker points (Row 4), male debaters receive slightly higher speaker points than females. Row 5, 6, and 7 document the average wins, losses, and win-rates for individual debater data. [12] Overall, female debaters under perform male debaters in every single category.

Table 3 describes general participation of each gender. Similar to Table 2, columns (1) and (2) represent the gender of the debaters represented, and column (3) represents all debaters. Row 1 and 2 displays the average of the number of rounds a debater will debate in their career and the average number of tournaments that a debater will attend. In both of these categories, female debaters participate in less debates and tournaments. The general proportion of male debaters is 0.562 compared to 0.438, showing there are fewer females who participate in debate. Rows 5 through 9 break down the participation of male and female debaters by grade level. This is calculated through the presence of each grade level and gender within a round. There is a higher proportion of female than male freshman and sophomore debaters, whereas male debaters have a higher proportion in the junior and senior years than female debaters, suggesting that female debaters may choose to either go to fewer tournaments or quit debate for the latter two years of high school, or male debaters may be more likely to join debate in the later half of high school. Table 4 displays school-level summary statistics. On average, approximately 43.0% of debaters in a school are female.

4.2 Round Outcomes

We begin by examining whether or not female-female teams receive worse outcomes than male-male teams. To do this, we regress the result of the debate (zero for loss, one for win) on the gender breakdown of the team (zero for male-male teams, and one for female-female teams). We estimate the model using a logit regression and present the findings in Table 5.

In column (1), we conduct the regression using the full sample with only the gender of the team and the gender of the opponents. We find that female-female teams are 18.12% less likely to win the debate compared to their male-male counterparts. This is consistent with the summary statistics that female debaters receive worse results than male debaters and with previous literature stating that females perform worse in competitive environments than males. In the regression displayed in column (2), we add controls for the grade level of the debate team and team level controls, which include the total team size of the school and

[11] Every tournament round that occurred is represented a total of four times, once from the perspective of every debater.

[12] This data is summarized to represent each unique debater once instead of all instances they appeared in any debates, and calculates each unique debater's overall wins, losses, and win-rate. Wins and losses per tournament is the average number of debates they win or lose averaged over the total number of tournaments that an individual attends. The win rate is the average percent of rounds they win at the tournaments they have gone to.

the number of total Gold and Silver bids obtained by that school in a given year. The gender gap between female-female teams and male-male teams slightly reduces, with female-female teams becoming 17.1% less likely to win a round than male-male teams.[13] Additionally, we tested the effect of judge gender on the gender gap but found no statistical significance.

Next, we subset the data into Novice rounds and Varsity rounds, in order to test whether the gender gap enlarges with experience in the activity. Indeed, extreme differences materialize. Column (3) displays the results of the regression of gender and result for tournaments with Novice divisions, which typically only allow debaters with less than one year of experience to compete. When only including Novice data, the effect of gender on whether or not the debater wins dramatically decreases, becoming indistinguishable from zero. Column (4), on the other hand, displays the regression results for the Varsity division, which is the division that most experienced debaters mainly participate in. In the Varsity division, significant gender disparities emerge once again, where female debaters are 18.8% less likely to win a round, with statistical significance on the 1% level. The result is consistent with results from other fields, such as competitive math, where the gender gap widens over time. [14] Overall, this points to a wider trend of female and male debaters entering the competitive activity with similar levels of innate ability and success, with time and experience within the activity causing a gender gap to materialize. Some possible causes of this gap result from a female debater's environment: potential bias in the amount of resources allocated to competitors by coaches, the gender-hostile environment of a team, or the effect of the perceived stereotype of the activity, to name a few examples. Other explanations may stem from internal motivations, like the propensity for females to prioritize competitive debate in context of other extracurricular activities or gender differences in responding to losses.[15]

We also replicate the same logit regression and methods on male-female team compositions in competition with male-male teams and present the findings in Table 6. Male-female teams are also less likely to win the debate than male-male teams, but the gender gap shrinks a considerable amount compared to in Table 5. When accounting for differences in grade level, team size, and team ability through Gold and Silver bids, male-female teams are 10.0% less likely to win the round than male-male teams. Similar trends from Table 5 for Novice and Varsity rounds are also observed.

4.2.1 Round type

Because subsets of rounds are paired differently, we observe female-female against male-male teams for various types of rounds and display the findings in Table 7. While female debaters are disadvantaged in all round types, the extent to which this occurs differs. In Column (1) we look at randomly paired rounds, in which any team has equal opportunity to be paired

[13] We initially included the number of prior tournaments attended, number of tournaments attended for each school, the average household income for the zip code of the school, and the race of each debater predicted by last name as control variables. We removed these control variables from our final regression because they were statistically insignificant when tested in our regression, or contained another issues. For example, average income of school zips would not reflect private schools, which held a substantial number of schools in the data set.

[14] see Ellison and Swanson (2018).

[15] see Tartarovsky (2017).

against other other teams (excluding teams from their own school). In this case, female-female teams are 24.2% less likely to win a round against male-male teams than vice versa. Column (2) reports the results of all preliminary rounds. Because rounds after the first two pairings are power-matched (teams who perform similarly in the previous rounds are paired up against each other), female debaters initially negatively affected by their gender should be paired up against worse opponents, which would reduce the gender gap. This is reflected in the results, which indicate that female-female debaters are 16.8% less likely to win in all preliminary rounds. Column (3) looks at all elimination rounds. Elimination rounds are selected from the preliminary results of the debaters who received the best record, so there are a smaller, more selective few debaters who participate in them. In these rounds, female-female teams are 18.5% less likely to win a round compared to male-male debaters, a larger difference than in preliminary rounds. This may be further explained by the seeding system of elimination rounds: if female teams perform worse in preliminary rounds, they are also seeded lower in the elimination bracket, which results in them being paired up against higher performing teams. In Column (4), only bid rounds were included in the data set. The winner of a bid round will receive a bid to the Tournament of Champions, while the loser of the round will not. Theoretically, these rounds are more high stakes and stressful, because it determines whether or not the debater will obtain the bid that is often the main pull factor of attending a national tournament. Previous literature have suggested that females may perform worse under duress or high-stakes situations than males (Paserman 17). However, we do not find evidence of this. In the regression, the extent to which the female gender is disadvantaged is similar to overall elimination rounds.[16] Finally, Column (5) examines randomized, Varsity rounds rather than all rounds. The gender gap in these rounds is identical to that in all randomized rounds (including both Novice and Varsity divisions), with female-female teams are 24.2% less likely to win a round than male-male debaters. Because these rounds are randomized, we will use the statistical difference of the first two Varsity rounds for our results.

We also replicate this process for female-male teams, displayed in Table 8. The pattern that emerges is similar to the results of the regression of female-female teams, but on a reduced scale. When only observing varsity and random rounds, male-female teams are 14.2% less likely to win.

4.2.2 Regional Differences

As mentioned in Section 2, many past studies have analyzed the effect of cultural environments on the gender gap, particularly how gender roles and the degree of gender equality in a region affect gender differences in competition. In order to gain insight into whether or not geographical location may affect the gender gap for debate, we break down the data into different regions. Bid tournaments are geographically dispersed to create representation between all regions of the country, so we divide the tournament locations down into five regions: Northeast, Midwest, Southeast, Southwest, and West[17]. If different regions show-

[16]While the result is not statistically significant, this is likely to be explained by the fewer number of rounds that are analyzed and the even fewer number of female-female teams that debate the bid round.

[17]The Northeast region include ME, NH, VT, MA, RI, CT, NY, PA, NJ, and MD; the Midwest includes WI, MI, IL, IN, OH, ND, SD, NE, KS, MN, IA, and MO; the Southeast region is comprised of DE, DC, LA,

case large differences in the gender gap, it may suggest that various cultural behaviors and differences such as stereotyping within the activity or gender equality may explain parts of the gender gap.

In Table 9, we regress gender and win rate after subsetting all data for each of these five major regions and present the results. Most notably, female-female teams are 28.0% less likely to win a round in the Southwest. However, this gap shrinks considerably to 11.9% in the West. In order to test if the coefficient of gender on win rate is significantly different across the two regions, we employed a z-test[18] and found the gender coefficients between the Southwest and West were statistically different at the 1% level. We replicated the same process in Table 10 for male-female debaters against male-male debaters with similar results. Interestingly, the variable of gender lost significance for the Northeast, which only further suggests that there are differences in the magnitude of the gender gap between different regions.

4.3 Attrition Rates

In order to better understand the difference in participation rates between female and male debaters, we analyze various factors that affect debater attrition. We define a debater as having quit if they do not debate in their senior year of high school, restricting our sample to debaters who graduated during or before 2020. While this likely underestimates the number of debaters who quit, as some may do so in the middle of their senior year, measuring attrition on a yearly basis is ideal as many debaters attend the same one or two bid tournaments every year, but are still active throughout the entire year in their local circuits. We define the amount of time a debater remains in the activity as the difference between their first and last tournaments. The Cox Proportional Hazards Model indicating the survival curves for both male and female debaters are displayed in Appendix A. Descriptively, there is an obvious difference in the survival rates of male and female debaters, with 56.4% of all male debaters and 64.7% of female debaters quitting by their senior year.

We proceed to regress gender and debater attrition in a logistic model. The results are displayed in Table 11. From Column (1), a female debater is 46.96% more likely to quit the activity than a male debater, with no other controls added in. In column (2), we add in controls for the debater's partner's gender, the number of school teammates, the number of bids the school acquired, the percentage of school teammates that were female, and the percentage of rounds won by the debater over their entire career. With these controls, the gender gap decreases somewhat, with female debaters being 30.34% more likely to quit the activity than male debaters.

Next, we examine the differences in the effect of various control variables on the attrition rate of female and male debaters. We divide the data set into two subsets of female and male debaters, and display the logit regression results in columns (3) and (4), respectively.

VA, WV, NC, SC, GA, FL, KY, TN, MS, AL, and AR; the Southwest region includes TX, OK, AZ, and NM; finally, the West includes ID, MT, WY, NV, UT, CO, AK, WA, OR, and CA.

[18]This equation is provided by Clogg, C. C., Petkova, E., & Haritou, A. (1995). Statistical methods for comparing regression coefficients between models. American Journal of Sociology, 100(5), 1261-1293. and is cited by Paternoster, R., Brame, R., Mazerolle, P., & Piquero, A. (1998). Using the correct statistical test for equality of regression coefficients. Criminology, 36(4), 859-866.

Two out of three of the school specific variables have the same sign coefficient for female and male debaters: a one unit increase in the average number of school teammates increases the chance of female debaters quitting by 1.41% and male debaters quitting by 0.90%, and a one unit increase in the average number of bids acquired by the school decreases the chance of female debaters quitting by 3.25% and male debaters quitting by 2.76%. Interestingly, the percentage of female teammates, which was statistically insignificant when regressed against the full dataset, has a large negative effect on female attrition (34.01% less likely to quit) and an extremely large positive effect on male attrition (47.70% more likely to quit). We will discuss the dynamics of high female ratio teams in greater detail below, but these results support existing literature that the gender composition of an environment affects the success of females, particularly in male-dominated fields.[19] [20]

The two individual specific variables are the debater's partner's gender and the debater's win ratio over their career. Having a female partner makes female debaters 32.31% more likely to quit, but has no statistically significant effect on male attrition. This result suggests that the factors that drive out female debaters from the activity are magnified when both debaters in a partnership are female, but do not bleed over to affect drive male debaters in a MF partnership away. For example, male debaters may be accepted into social groups and prep circles even as their female partners are looked over. Interestingly, the coefficient becomes statistically significant when the win ratio control variable is removed (coefficient = 0.112503, z = 1.659). The debater's win ratio has an extremely large negative effect on both male and female attrition rate, with female debaters 92.51% and male debaters 96.42% less likely to quit if the win ratio is raised one unit. The difference in percentages between female and male debaters provides some support for the theory that female debaters are less influenced by success to continue debating, but we are unable to prove causality for this.

We then examine factors that influence attrition for debaters attending the same school. This differs from the above analysis by using a conditional logistic model that stratifies the dataset by school ID; essentially, the following results in Table 12 exploit variation between students in the same school or between the school's characteristics over the years. Many results are similar with slightly different magnitudes as the logistic regression analyzed above, but the signs for the effect of the percentage of female teammates on female and male attrition have reversed. While these values are not statistically significant, female debaters from the same school are 17.23% more likely to quit when the female teammate ratio increases one unit, and male debaters from the same school 22.28% less likely to quit. This stark contrast to the results of Table 11 suggest that the aforementioned school gender composition boost is likely due to differences in how schools with higher female debater percentages treat their female teammates in general, as opposed to a direct effect of having more teammates of the same gender. Another implication of the regression result is that when more female students join a school's team, all female debaters may be prioritized less compared to their

[19] Yang, Chawla, Uzzi (2019) observe graduate students who are recruited into leadership positions and find that "women with a network centrality in the top quartile and a female-dominated inner circle have an expected job placement level that is 2.5 times greater than women with low centrality and a male-dominated inner circle."

[20] Dasgupta, Scircle, Hunsinger (2015) observe engineering students, a male-dominated field, and find women participate more actively and feel less anxious in female-majority groups compared to female-minority groups, and the addition of female peers increase women's confidence and career aspirations.

male counterparts by school directors.

4.3.1 Round Attendance

Next, we examine differences in the number of rounds attended by male and female debaters, as round experience is an important factor affecting the success and likelihood of attrition of debaters. We regress the total number of rounds attended by a debater against their gender and the same control variables as above, and the results are displayed in column (1) and (2) of Table 13. Without controls added into the regression, being female results in a 4.74 decrease in the total number of rounds attended. With controls, the gender gap decreases to female debaters attending 1.70 fewer rounds.

We then use a fixed effects model to examine the difference in rounds attended between debaters at the same school. Because debaters are usually required to be affiliated with a school in order to attend a tournament, most schools go to a set number of tournaments each year, where they take a portion of their team with them. As a result, analyzing gender differences between round attendance at the same school can provide insight as to how debaters are prioritized when it comes to allocating resources (such as a spot at a bid tournament). Column (3) displays the fixed effects regression with all controls added, and column (4) and (5) display the results for female and male debaters only, respectively.

Unsurprisingly, the win ratio for a debater is correlated with an increase in the number of rounds attended, as debaters tend to become more successful with greater amounts of experience. The negative effect of being female is slightly greater in the fixed effects model than the non-fixed regression (-1.794 compared to -1.700). Furthermore, school specific characteristics like the number of teammates and the number of bids acquired by the team having a smaller magnitude or statistically insignificant impact in the fixed effects model compared to the regular model. As schools generally attend the same tournaments, or at least a similar number of tournaments, from year to year by nature of having similar budgets, it would be surprising if variation in these controls significantly affected the number of rounds attended by debaters. However, the third school specific variable, the percentage of female teammates, was statistically insignificant in the non-fixed effects regression, but has a statistically significant positive coefficient of 8.16 rounds in the fixed effect model. Additionally, when examining the difference between female and male rounds attended, we see that a higher female teammate ratio results in a decreased amount of rounds attended for female debaters (-4.334), but a large increase in the number of rounds attended for male debaters (14.562). This again supports the theory that when schools increase the proportion of female to male debaters on their team from year to year, various factors may implicitly cause them to prioritize male debaters on the team over female debaters.

4.4 Data Limitations

One main limitation comes from the lack of a gender indicator from the original data. While using the first name of individuals in order to identify gender is standard procedure used in many past studies, it leaves room for error. First, debaters with uncommon names in the United States may not have a gender assigned at all (as the U.S. Census Bureau does not report names with less than 5 occurrences per year for privacy reasons). Second, debaters

with more gender-neutral names or names commonly given to both men and women may be misgendered.[21]

Our analysis is unable to account for the experiences of transgender and nonbinary debaters. Tabroom.com provides an option for debaters to enter a preferred nickname alongside their original roster name, which we utilized to assign gender whenever provided. Additionally, many coaches enter the preferred name of debaters into all three online tabulation platforms instead of their legal names. However, we were unable to correctly identify transgender individuals whose preferred names or nicknames were not inputted into the tournament data. In the instance of nonbinary debaters, because there is no official database for common nonbinary first names and unisex names are often used by gender-binary individuals as well, we were unable to identify these debaters to either remove them from the data set or include a separate gender indicator for analysis.

5 Discussion

In this section, we review various explanations in existing literature for gender differences in objective competitive environments, and compare our results.

A common phenomenon found in controlled experiments and natural observations of objective competitions is that women are less likely to self-select into and more likely to leave competitive environments. Our findings largely corroborate these results within the sphere of Public Forum debate. From the 9th grade level, there is already a small difference in participation rates between male and female debaters. However, a significant disparity rises as time passes: female debaters are 46.96% more likely to quit the activity than male debaters without controls added in and 30.34% more likely to quit when controlling for individual, partner, and school level variables. Additionally, the difference that arises due to adding controls largely results from controlling for partner gender. The effect of gender on attrition in Public Forum is significantly higher than in those of objective games studied in prior literature: for example, female participants were only 6.5% more likely to withdraw from the competitive game show The Player (Hogarth, Karelia, and Trujillo 2011). Because students self-select into Public Forum debate as an extracurricular activity, we expect that both male and female debaters have a greater drive to compete than their same-gender peers who do not choose to participate in debate. While some may see this as a weakness of the study when compared to randomized experiments, high level professional occupations are also self-selecting: when individuals participate in a field, they choose to enter the field by choice. Therefore, our findings could be more easily generalized into the professional world than findings from a randomized experiment.

There are a number of theoretical reasons that subjective competitive environments may push out female participants at a higher rate than objective competitive environments. First, implicit and explicit bias can artificially increase the gender gap due to human judges having

[21]Tartarovsky (2017) calculates the error rate of the U.S. Census Bureau data to be roughly 2% for self-reported males and 3.8% for self-reported females, which they conclude should bias estimates for the gender gap slightly downwards. In other words, because the likelihood of a female debater accidentally being coded as male is higher than vice versa, instances of misgendering likely make the gender gap appear slightly smaller than in actuality.

final control over the winner of each round. We find that there is no effect of judge gender on the gender gap in performance; however, there are a number of ways that bias may occur against female debaters even when judges are female. Future research could analyze various factors that may affect judge bias such as prior debate experience and whether anti-bias training was conducted before a tournament; however, we were unable to conduct this analysis with our data set. Second, perceived bias often leads to increased disengagement and withdrawal. Hewlett, Rashid, and Sherben 2017 surveyed employees at large companies in the corporate world, discovering that over 20% of employees who reported perceiving bias against them were disengaged (as opposed to 7% of employees who did not report perceiving bias), and employees who perceived bias in multiple fronts were 3.1 times more likely to report intentions to leave their job.

Another common explanation for overall gender differences in competitive environments is that they are a product of cultural and environmental factors. Previous studies have found that the gender gap in performance decreases when conducting studies in matriarchal societies as opposed to patriarchal societies, as well as when comparing countries with higher gender equality indexes to those with lower gender equality indexes. In theory, this phenomenon should be exacerbated when analyzing subjective competitive environments, as bias likely plays a larger role in such activities. We find that after including individual and school variable controls, female-female teams are 17.1% less likely to win a debate against male-male opponents than vice versa, and male-female teams are 10.0% less likely to win against male-male opponents than vice versa. However, when examining debate rounds across various regions of the United States, we find that the gender gap is different at a statistically significant level across different regions, suggesting that the cultural environment created by each geographic location may play a factor in how well female debaters perform. In the most extreme example in our analysis, the gender gap becomes entirely statistically insignificant between male-male and male-female teams in the Northeast region.

When analyzing gender differences, it is important to discuss what changeable factors drive the gender gap, as doing so identifies specific issues to target to increase equity. One argument is that female participants in the workforce have on average less experience than male participants due to a variety of reasons (for example, maternity leave, or the aforementioned issue of bias). If attrition and inexperience are the primary drivers of the gender gap in subjective competition, then initiatives ought to be targeted towards increasing retention. We find that in Public Forum debate, almost 94% of the gender gap in win-rate for female-female teams compared to male-male teams is unexplained by controls such as age and school variables. On the other hand, when fixing effects by student, the negative effect of a gender difference between the observed team and the opponent team on the likelihood of winning is halved once adding in the difference in grade, experience, and school level variables between the two teams as controls. Overall, we conclude that reducing female attrition rates is an important step to reduce the gender gap, but a significant percentage of the gap will remain despite this.

Another factor that has often been the target of gender equity policies is whether increasing diversity in a competitive field can reduce the gap in performance. Our results support existing literature in objective competition studies: we find that higher female participant ratios generally embolden female competitors to perform better and continue for longer. Indeed, schools with higher female ratios have significantly lower female attrition rates, and

a higher proportion of female debaters attending a tournament increases the win rate for females at the tournament overall[22]. However, two nuances emerge from this finding. First, female debaters with female partners are significantly more likely to quit the activity (while male debaters with female partners are unaffected), even when controlling for performance success. This suggests the negative stigma associated with debating as two females overwhelms the positive effect of having a female peer. Second, when fixing effects by school, female students in years with a greater ratio of female to male teammates were more likely to quit and debated fewer rounds on average. However, their male teammates were less likely to quit and received a significant boost in the number of rounds attended. This may imply that various factors cause a deprioritization of individual female students in favor of male students when more females overall join a school team, an effect that should be studied more extensively in the future.

Overall, our results provide key insight into various factors that affect female success and retention within Public Forum Debate, a mixed-gender competitive activity with subjectively decided winners. Unlike most prior literature, which analyze gender differences in competitions with objective winners and track participants over short periods of time, our results are more applicable to real-world competitive environments such as the corporate world, where winners are judged based on merit but ultimately decided subjectively, participants have long-term interests in their success, and gender differences often manifest throughout periods of time rather than in a single victory or loss.

5.1 Conclusion

Work in progress :)

[22]see Appendix B, Figure 1.

6 Tables

Table 1: Gender Summary by Team

	MM (1)	MF (2)	FF (3)	Difference (1) - (2)	Difference (1) - (3)
Overall Win Rate	0.523	0.499	0.470	0.024*** (0.000)	0.053*** (0.000)
Win Rate Against					
MM Teams	0.500	0.473	0.450	0.027*** (0.000)	0.050*** (0.000)
MF Teams	0.527	0.500	0.465	0.027*** (0.000)	0.062*** (0.000)
FF Teams	0.550	0.535	0.500	0.015*** (0.000)	0.050*** (0.000)
Win Rate Gap (Gender Gap)	0.000	-0.054	-0.100		
Observations (n)	107,827	59,610	57,624		
Proportion of Total Rounds	0.479	0.265	0.256	0.214	0.223

Note: The p-values indicated in Column (4) and Column (5) are calculated using a t-test.

Table 2: Gender Summary by Individual Participant

	Male (1)	Female (2)	All (3)	Difference (1) - (2)
Overall Win Rate	0.517	0.479	0.502	0.038*** (0.000)
Preliminary Round Win Rate	0.517	0.480	0.502	0.037*** (0.000)
Elimination Rounds Win Rate	0.517	0.466	0.501	0.051*** (0.000)
Average Speaker Points	28.020	27.929	27.983	0.091*** (0.000)
Average Number of Wins per Tournament	2.512	2.334	2.434	0.178*** (0.000)
Average Number of Losses per Tournament	3.205	3.250	3.226	-0.045*** (0.000)

Note: Win rate is calculated by W/L of each individual in every round, such that every round is represented four times on each debater's perspective. Data is created such that each individual debater is represented once, averaging their general win rates at tournaments, number of wins, and number of losses. The mean of all individuals is presented in the data. All average win rates are lower than 0.5 because there are fewer individuals who perform consistently well at tournaments. The p-values indicated in column (4) are calculated using a t-test.

Table 3: Summary Participation by Individual Gender

	Male (1)	Female (2)	All (3)	Difference (1) - (2)
Average Total Number of Rounds Debated	18.282	15.099	16.889	3.183*** (0.000)
Average Total Number of Tournaments Attended	3.270	2.741	2.800	0.529 (0.000)
Number of Individual Participants	15,781	12,279	28,060	
Proportion of Total Participants	0.562	0.438	1.000	0.124
Representation by Grade				
9th Grade	0.137 (30,350)	0.180 (25,103)	0.154 (55,453)	-0.043
10th Grade	0.251 (55,628)	0.284 (39,725)	0.264 (95,353)	-0.013
11th Grade	0.315 (69,829)	0.298 (41,674)	0.309 (111,503)	0.154
12th Grade	0.297 (65,721)	0.237 (33,172)	0.274 (98,893)	0.154

Notes: Participation of Grade counts the number of appearances of different grade levels across all rounds. The p-values indicated in column (4) are calculated using a t-test.

Table 4: School Level Summary Statistics

	Mean	Min	Max
Number of Tournaments Attended per Year	2.647	1.000	15.691
Size of Team	8.567	2.000	68.550
Number of Gold Bids	0.524	0.000	8.911
Number of Silver Bids	0.4996	0.000	6.978
Female Team Ratio	0.430	0.000	1.000
Total Number of Identified Schools	1,145		

Note: Female Team Ratio is the total number of female students on that team divided by the total number of participants on that team. These statistics are averaged for all schools we identified.

Table 5: MM vs FF Win Rate Logit Regression

	All Rounds		*Novice*	*Varsity*
	(1)	(2)	(3)	(4)
Gender	-0.200^{***}	-0.187^{***}	-0.029	-0.208^{***}
	(0.013)	(0.023)	(0.066)	(0.025)
Opponent Gender	0.200^{***}	0.160^{***}	0.008	0.176^{***}
	(0.013)	(0.023)	(0.067)	(0.025)
Grade		0.376^{***}	0.062	0.410^{***}
		(0.012)	(0.041)	(0.013)
Opponent Grade		-0.434^{***}	-0.083^{*}	-0.454^{***}
		(0.011)	(0.050)	(0.013)
School Controls	N	Y	Y	Y
Constant	0.00002	-0.303^{***}	-0.066	-0.367^{***}
	(0.009)	(0.048)	(0.135)	(0.057)
Observations	109,038	40,812	3,956	36,856
Log Likelihood	$-75{,}340.740$	$-26{,}166.940$	$-2{,}700.953$	$-23{,}393.780$
McFadden's R2	0.003	0.654	0.800	0.623

*p<0.1; **p<0.05; ***p<0.01

Note: The dependent variable is the win or loss of the round. Standard errors are enclosed in the parenthesis. The chart subsets all rounds to only MM v FF rounds, with a total of 109,038 observations. Column (1) includes the full data set, Column (2), (3), and (4) add individual and School controls. whereas column (4) subsets for Novice rounds and column (5) subsets for only Varsity rounds. Control variables include total team size, number of Gold bids, and number silver bids obtained by the team's school and opponent's school during that year. Grade is the average grade of the two debaters on the team.

Table 6: MM vs MF Win Rate Logit Regression

	All Rounds		*Novice*	*Varsity*
	(1)	(2)	(4)	(5)
Gender	-0.108^{***}	-0.105^{***}	0.074	-0.120^{***}
	(0.012)	(0.021)	(0.073)	(0.022)
Opponent Gender	0.108^{***}	0.069^{***}	-0.147^{**}	0.085^{***}
	(0.012)	(0.022)	(0.075)	(0.023)
Grade		0.421^{***}	0.141^{***}	0.444^{***}
		(0.011)	(0.044)	(0.013)
Opponent Grade		-0.478^{***}	-0.119^{**}	-0.494^{***}
		(0.011)	(0.055)	(0.012)
School Controls	N	Y	Y	Y
Constant	0.0001	-0.306^{***}	-0.160	-0.341^{***}
	(0.009)	(0.047)	(0.146)	(0.055)
Observations	113,080	44,623	3,434	41,189
Log Likelihood	$-78{,}306.060$	$-28{,}429.500$	$-2{,}328.367$	$-26{,}038.820$
McFadden's R2	0.001	0.637	0.798	0.610

Note: *p<0.1; **p<0.05; ***p<0.01

Note: The dependent variable is the win or loss of the round. Standard errors are enclosed in the parenthesis. The chart subsets all rounds to only MM v MF rounds, with a total of 113,080 observations. Column (1) includes the full dataset, Column (2), (3), and (4) add individual and School controls. whereas column (4) subsets for Novice rounds and column (5) subsets for only Varsity rounds. Control variables include total team size, number of Gold bids, and number silver bids obtained by the team's school and opponent's school during that year. Grade is the average grade of the two debaters on the team.

Table 7: Round Type MM v FF Logit Regression

	Prelims		*Eliminations*		
	(1)	(2)	(3)	(4)	(5)
Gender	-0.277^{***}	-0.184^{***}	-0.205^{***}	-0.209	-0.277^{***}
	(0.043)	(0.024)	(0.071)	(0.155)	(0.046)
Opponent Gender	0.229^{***}	0.163^{***}	0.129^{*}	0.122	0.239^{***}
	(0.043)	(0.025)	(0.071)	(0.154)	(0.047)
Controls	Y	Y	Y	Y	Y
Constant	-0.369^{***}	-0.314^{***}	-0.157	-0.397	-0.450^{***}
	(0.089)	(0.051)	(0.161)	(0.439)	(0.108)
Observations	11,939	35,516	5,296	1,400	10,667
Log Likelihood	−7,318.015	−22,704.950	−3,405.080	−788.619	−6,432.804
McFadden's R2	0.696	0.673	0.441	0.452	0.669

*p<0.1; **p<0.05; ***p<0.01

Note: The dependent variable is the Win/Loss of the round. Column (1) is the first two preliminary rounds, or the rounds that are randomly paired. Column (2) subsets all prelim rounds. Column (3) indicates all elimination rounds. Column (4) subsets the Bid Round, or the round that determines the team who receives a Bid. Column (5) consists of random rounds in Varsity. Controls include both team's experience, team size, and the School's total number of Gold and Silver Bids.

Table 8: Round Type MM v MF Logit Regression

	Prelims		*Eliminations*		
	(1)	(2)	(3)	(4)	(5)
Gender	-0.135^{***}	-0.093^{***}	-0.165^{***}	-0.109	-0.153^{***}
	(0.041)	(0.023)	(0.057)	(0.117)	(0.043)
Opponent Gender	0.060	0.047^{**}	0.189^{***}	0.112	0.094^{**}
	(0.042)	(0.023)	(0.057)	(0.118)	(0.044)
Controls	Y	Y	Y	Y	Y
Constant	-0.359^{***}	-0.298^{***}	-0.289^{**}	-0.037	-0.430^{***}
	(0.088)	(0.050)	(0.146)	(0.372)	(0.105)
Observations	12,530	38,044	6,579	1,868	11,437
Log Likelihood	−7,645.268	−24,146.980	−4,225.948	−1,029.055	−6,873.133
McFadden's R2	0.686	0.660	0.422	0.438	0.664

*p<0.1; **p<0.05; ***p<0.01

Note: The dependent variable is the Win/Loss of the round. Column (1) is the first two preliminary rounds, or the rounds that are randomly paired. Column (2) subsets all prelim rounds. Column (3) indicates all elimination rounds. Column (4) subsets the Bid Round, or the round that determines the team who receives a Bid. Column (5) consists of random rounds in Varsity. Controls include both team's experience, team size, and the School's total number of Gold and Silver Bids.

Table 9: Regional Differences: MM vs FF Logit Regression

	NE	MW	SE	SW	W
	(1)	(2)	(3)	(4)	(5)
Gender	−0.205***	−0.280***	−0.137**	−0.328***	−0.127***
	(0.040)	(0.062)	(0.060)	(0.068)	(0.048)
Opponent Gender	0.144***	0.230***	0.167***	0.162**	0.132***
	(0.040)	(0.064)	(0.061)	(0.069)	(0.048)
Controls	Y	Y	Y	Y	Y
Constant	−0.387***	−0.204	−0.332***	−0.261*	−0.168
	(0.079)	(0.137)	(0.125)	(0.151)	(0.107)
Observations	15,345	5,566	6,330	4,706	8,047
Log Likelihood	−9,887.075	−3,536.342	−3,979.973	−2,928.871	−5,269.735
McFadden's R2	0.628	0.581	0.702	0.629	0.695

Note: *p<0.1; **p<0.05; ***p<0.01

Note: The dependent variable is whether or not the debate team won the round. Column (1) represents the Northeast region, including ME, NH, VT, MA, RI, CT, NY, PA, NJ, and MD. Column (2) represents the midwest region, which includes WI, MI, IL, IN, OH, ND, SD, NE, KS, MN, IA, and MO. Column (3) represents the southeast region, which includes the states of DE, DC, LA, VA, WV, NC, SC, GA, FL, KY, TN, MS, AL, and AR. Column (4) includes the states in the southwest, which is TX, OK, AZ, and NM. Column (5) represents the west, which includes ID, MT, WY, NV, UT, CO, AK, WA, OR, and CA. Controls include graduation year, school team size, and number of Gold and Silver bids for each school.

Table 10: Regional Differences: MM vs MF Logit Regression

	NE	MW	SE	SW	W
	(1)	(2)	(3)	(4)	(5)
Gender	−0.046	−0.239***	−0.097*	−0.175**	−0.130**
	(0.034)	(0.056)	(0.053)	(0.073)	(0.052)
Opponent Gender	−0.009	0.122**	0.138***	0.092	0.107**
	(0.034)	(0.057)	(0.053)	(0.079)	(0.052)
Controls	Y	Y	Y	Y	Y
Constant	−0.345***	−0.242*	−0.252**	−0.326**	−0.240**
	(0.074)	(0.131)	(0.118)	(0.163)	(0.116)
Observations	18,375	6,370	7,322	4,185	7,305
Log Likelihood	−11,818.540	−4,033.937	−4,617.144	−2,615.980	−4,655.309
McFadden's R2	0.596	0.562	0.692	0.647	0.691

Note: *p<0.1; **p<0.05; ***p<0.01

Note: The dependent variable is whether or not the debate team won the round. Column (1) represents the Northeast region, including ME, NH, VT, MA, RI, CT, NY, PA, NJ, and MD. Column (2) represents the midwest region, which includes WI, MI, IL, IN, OH, ND, SD, NE, KS, MN, IA, and MO. Column (3) represents the southeast region, which includes the states of DE, DC, LA, VA, WV, NC, SC, GA, FL, KY, TN, MS, AL, and AR. Column (4) includes the states in the southwest, which is TX, OK, AZ, and NM. Column (5) represents the west, which includes ID, MT, WY, NV, UT, CO, AK, WA, OR, and CA. Controls include graduation year, school team size, and number of Gold and Silver bids for each school.

Table 11: Attrition Regression (Logit)

	All Debaters		*Female*	*Male*
	(1)	(2)	(3)	(4)
Gender	0.385***	0.265***		
	(0.037)	(0.046)		
Partner Gender		0.206***	0.280***	0.100
		(0.050)	(0.073)	(0.071)
School Team Size		0.012***	0.014***	0.009***
		(0.002)	(0.003)	(0.002)
School Bids		−0.031***	−0.033***	−0.028***
		(0.005)	(0.007)	(0.006)
School Team Female Ratio		−0.065	−0.417***	0.390***
		(0.106)	(0.159)	(0.151)
Individual Win Ratio		−2.994***	−2.591***	−3.331***
		(0.112)	(0.167)	(0.152)
Constant	−0.154***	1.044***	1.255***	1.123***
	(0.025)	(0.067)	(0.126)	(0.085)
Observations	11,804	11,804	5,101	6,703
Log Likelihood	−8,128.256	−7,638.302	−3,337.087	−4,285.751
McFadden's R2	0.065	0.121	0.047	0.074

*p<0.1; **p<0.05; ***p<0.01

Note: The dependent variable is whether a debater quits the activity, defined as 1 if the debater stopped participating in tournaments in their senior year, and 0 otherwise. Column (1) analyzes all debaters who graduated in the year 2020 or prior, and column (2) includes individual and school level controls. Column (3) subsets for only female debaters, and column (4) only male debaters. All variables are averaged over the debater's entire career. Standard deviations are included in the parentheses below each coefficient.

Table 12: Attrition Regression (Conditional Logit)

	All Debaters		*Female*	*Male*
	(1)	(2)	(3)	(4)
Gender	0.386***	0.284***		
	(0.044)	(0.050)		
Partner Gender		0.212***	0.319***	0.155*
		(0.055)	(0.090)	(0.084)
School Team Size		0.035***	0.033***	0.034***
		(0.005)	(0.008)	(0.007)
School Bids		−0.067***	−0.069***	−0.062***
		(0.008)	(0.013)	(0.011)
School Team Female Ratio		−0.034	0.159	−0.252
		(0.195)	(0.340)	(0.311)
Individual Win Ratio		−3.794***	−3.568***	−4.103***
		(0.146)	(0.239)	(0.201)
Observations	11,802	11,802	5,101	6,701
R^2	0.007	0.084	0.062	0.083
Log Likelihood	−5,786.540	−5,309.981	−1,905.798	−2,692.819

*p<0.1; **p<0.05; ***p<0.01

Note: The regression is similar to Table 11 with the inclusion of fixed effects using student ID for all columns. The dependent variable is whether a debater quits the activity, defined as 1 if the debater stopped participating in tournaments in their senior year, and 0 otherwise. Column (1) analyzes all debaters who graduated in the year 2020 or prior, and column (2) includes individual and school level controls. Column (3) subsets for only female debaters, and column (4) only male debaters. Standard deviations are included in the parentheses below each coefficient. As variation only exists from within each individual debater's career, the school level control variables account for differences in team composition and success from year to year.

Table 13: Total Number of Rounds Attended (Linear)

	All Debaters			Female	Male
	(1)	(2)	(3)	(4)	(5)
Gender	−4.740***	−1.700***	−1.794***		
	(0.563)	(0.568)	(0.560)		
Partner Gender		−1.814***	−1.702***	−1.814**	−1.536
		(0.615)	(0.608)	(0.878)	(1.015)
School Team Size		−0.048**	0.071	−0.053	0.124
		(0.022)	(0.054)	(0.077)	(0.078)
School Bids		2.141***	1.868***	1.507***	2.096***
		(0.055)	(0.090)	(0.129)	(0.130)
School Team Female Ratio		2.029	8.158***	−4.334	14.562***
		(1.301)	(2.133)	(3.295)	(3.673)
Individual Win Ratio		40.886***	48.837***	39.653***	57.466***
		(1.287)	(1.485)	(2.118)	(2.212)
Constant	23.843***	−2.002**			
	(0.370)	(0.806)			
Observations	11,804	11,804	11,802	5,101	6,701
R^2	0.006	0.286	0.142	0.115	0.165

*p<0.1; **p<0.05; ***p<0.01

Note: The dependent variable is the total number of rounds attended by an individual debater over their entire career. Column (1) displays multiple regression coefficients and analyzes all debaters who graduated in the year 2020 or prior. Column (2) includes individual, partner, and school level controls to the multiple linear regression. Column (3) fixes school effects in order to examine variation between teammates attending the same school, including controls. Column (4) and (5) repeat the fixed effects regression in column (3), but subset for female and male debaters only, respectively.

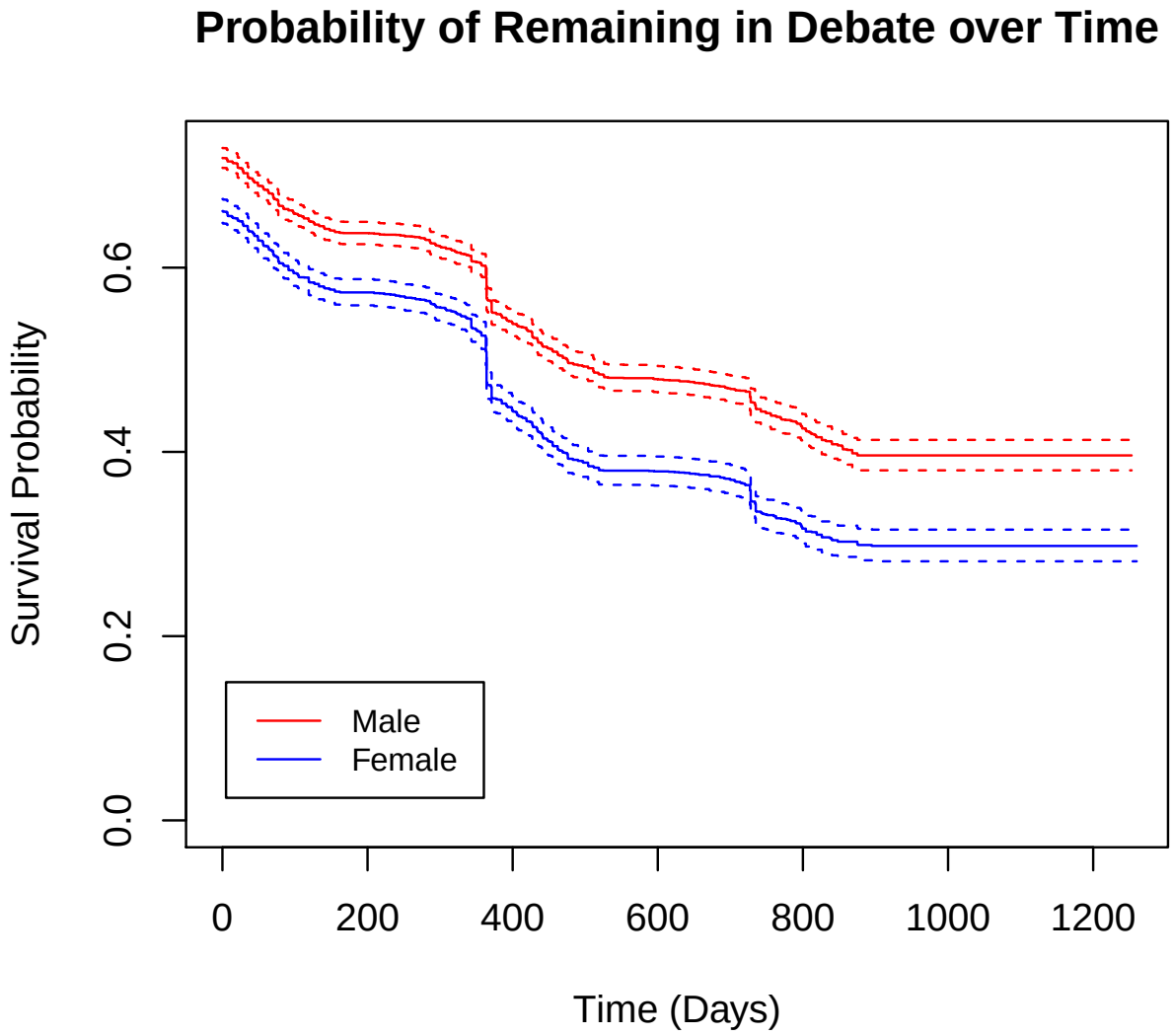
Table 14: Round Results (Fixed Effects by Student)

		Female	*Male*
	(1)	(2)	(3)
Gender	-0.037^{***}	-0.019^{***}	-0.018^{***}
	(0.001)	(0.003)	(0.002)
Experience		0.010^{***}	0.009^{***}
		(0.0003)	(0.0002)
Grade		0.029^{***}	0.027^{***}
		(0.001)	(0.001)
School Bids		0.006^{***}	0.006^{***}
		(0.0003)	(0.0002)
School Team Size		-0.0004^{**}	-0.00004
		(0.0002)	(0.0001)
Lag of WL		-0.081^{***}	-0.073^{***}
		(0.005)	(0.004)
Observations	403,870	39,180	63,429
R^2	0.004	0.135	0.131
Adjusted R^2	-0.066	0.015	0.042
F Statistic	$1{,}606.857^{***}$	892.625^{***}	$1{,}446.477^{***}$

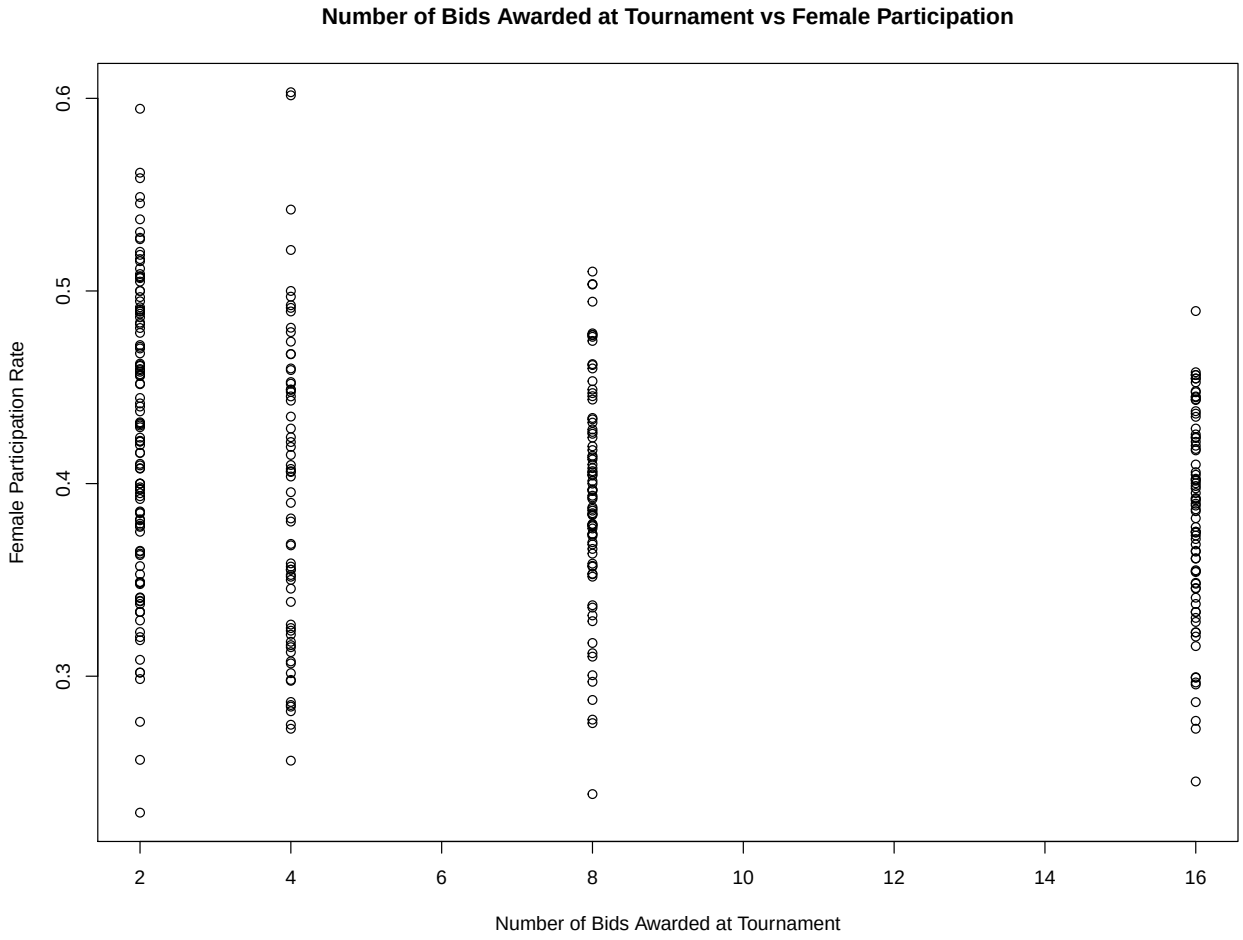
*p<0.1; **p<0.05; ***p<0.01

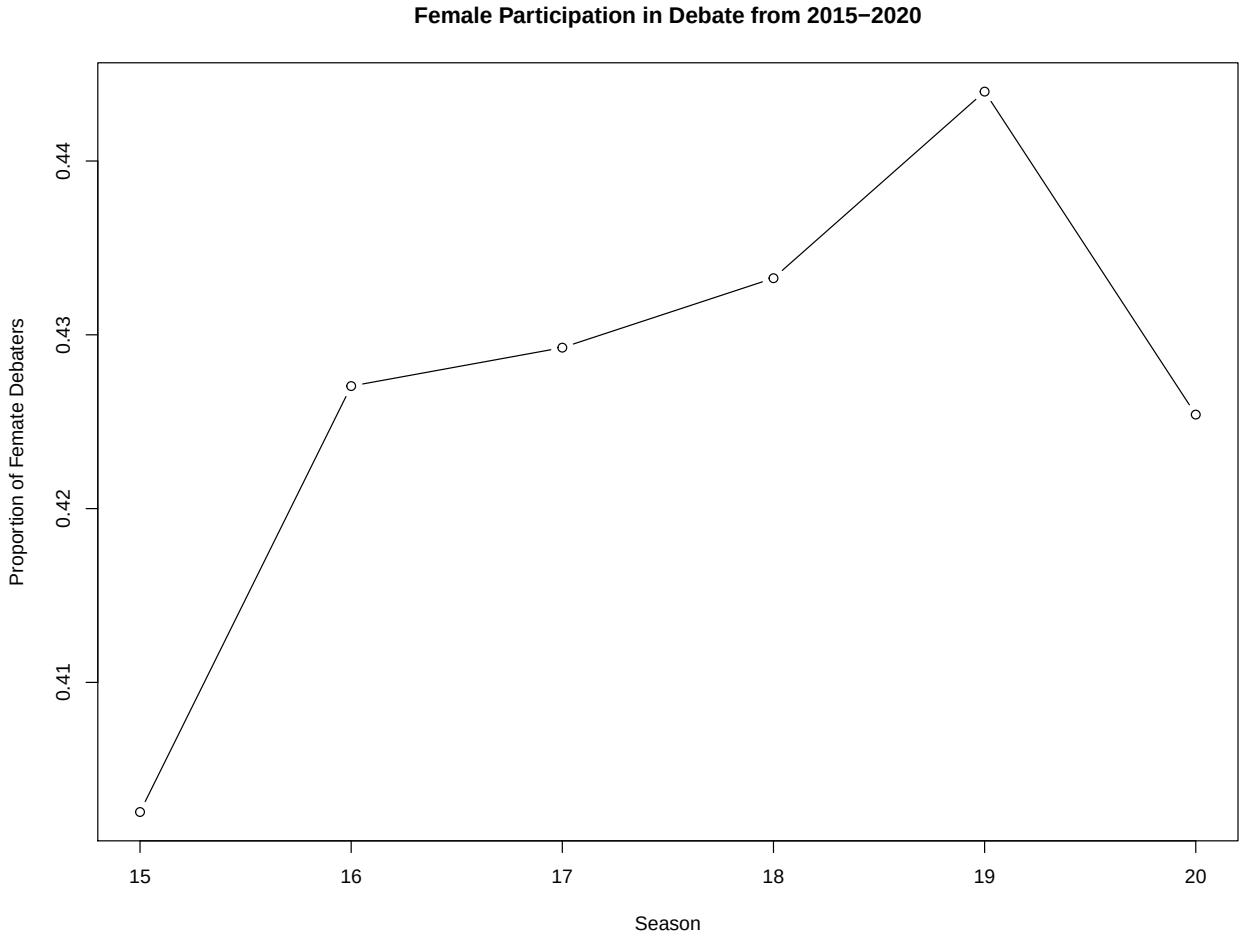
Note: The dependent variable is whether the individual debater wins or loses the round, notated as 1 for a win and 0 for a loss. Each column displays the coefficients for a multiple regression with fixed effects by student ID. Column (1) analyzes the full data set of rounds, while column (2) subsets only female debaters and column (3) subsets for only male debaters. All variables are measured as the difference between the observed team and the opponent team. Lag of WL is introduced in order to counteract the effect of power-matching in most rounds debated; a debater is more likely to lose a round immediately after winning one due to being matched up against a more difficult opponent.

7 Appendix A: Cox Proportional Hazards Model



8 Appendix B: Figures





9 Appendix C: List of Tournaments Used

Tournament	Date	Bid	State	Novice
Grapevine Classic	9/13/14	Quarters	TX	N
Yale Invitational	9/19/14	Octos	CT	N
The Harker School Nichols Invitational	9/27/14	Quarters	CA	N
Bellaire Forensic Tournament	10/18/14	Quarters	TX	Y
New York City Invitational	10/18/14	Octos	NY	N
Capitol Beltway Fall Classic	10/25/14	Finals	MD	N
St. Andrew's Classic	10/25/14	Finals	MS	N
Tim Averill Invitational	10/25/14	Quarters	MA	N
Hoover Classic	11/1/14	Finals	AL	N
Corona Rostrensis at Charlotte Latin	11/8/14	Finals	NC	N
George Washington Debates	11/8/14	Finals	CO	N
Nova Titan Invitational	11/8/14	Quarters	FL	N
Malcolm A Bump Memorial Tournament	11/15/14	Finals	NY	Y
Peach State Classic	11/15/14	Semis	GA	N
Presentation PF Invitational	11/15/14	Finals	CA	Y
Earlybird Forensics at Wake Forest	12/6/14	Quarters	VA	N
La Costa Canyon	12/6/14	Semis	CA	N
The Princeton Classic	12/6/14	Octos	NJ	N
Ridge Debates	12/12/14	Semis	NJ	Y
John Edie Holiday Debates hosted by Blake	12/20/14	Octos	MN	N
Arizona State HDSHC Invitational	1/10/15	Octos	AZ	N
Laird Lewis	1/10/15	Octos	NC	Y
Sunvitational	1/10/15	Quarters	FL	Y
Winston Churchill Classic	1/10/15	Finals	TX	Y
Copper Classic	1/17/15	Semis	UT	Y
James Logan MLK Tournament	1/17/15	Quarters	CA	N
Barkley Forum for High Schools	1/24/15	Octos	GA	N
Columbia University Invitational	1/24/15	Quarters	NY	N
Golden Desert Debates at UNLV	2/1/15	Quarters	NV	N
Stanford National Invitational	2/7/15	Octos	CA	Y
The Scarsdale Invitational	2/7/15	Finals	NY	Y
Cal Invitational UC Berkeley	2/14/15	Octos	CA	Y
University of Pennsylvania Tournament	2/14/15	Quarters	PA	N

Tournament	Date	Bid	State	Novice
Milo Cup at Millard North	2/21/15	Semis	NE	N
SWSDI	3/7/15	Finals	AZ	Y
Grapevine Classic	9/11/15	Quarters	TX	N
Earlybird Forensics at Wake Forest	9/12/15	Quarters	NC	N
Yale Invitational	9/19/15	Octos	CT	N
Jack Howe Memorial	9/26/15	Finals	CA	Y
The Harker School Nichols Invitational	9/26/15	Quarters	CA	Y
Holy Cross Exhibition	10/3/15	Finals	LA	N
The Tradition at Cypress Bay	10/3/15	Quarters	FL	N
St. Andrew's Classic	10/16/15	Finals	MS	N
CSU Fullerton High School Invitational	10/17/15	Finals	CA	Y
New York City Invitational	10/17/15	Octos	NY	N
Capitol Beltway Fall Classic	10/23/15	Finals	MD	N
Corona Rostrensis at Charlotte Latin	11/1/15	Finals	NC	N
Florida Blue Key	11/1/15	Octos	FL	Y
Tim Averill Invitational	11/1/15	Semis	MA	N
Apple Valley MinneApple Debate	11/7/15	Octos	MN	Y
Peach State Classic	11/13/15	Semis	GA	Y
Badgerland Debate Tournament	11/14/15	Semis	WI	N
Central Valley Bear Brawl	11/14/15	Finals	WA	Y
Ed Long Invitation at Hockaday	11/14/15	Finals	TX	N
Presentation PF Invitational	11/14/15	Finals	CA	Y
The Scarsdale Invitational	11/14/15	Finals	NY	Y
The Scarsdale Invitational	11/14/15	Semis	NY	N
Central Valley Bear Brawl	11/15/15	Finals	WA	N
Glenbrooks Speech and Debate Tournament	11/21/15	Octos	IL	N
Villiger Saint Josephs University	11/21/15	Semis	PA	N
University of the Pacific	12/1/15	Semis	CA	Y
Alta Silver and Black Invitational	12/3/15	Quarters	UT	N
Longhorn Classic at UT	12/4/15	Finals	TX	N
George Mason Patriot Debates	12/5/15	Quarters	VA	N
La Costa Canyon	12/5/15	Quarters	CA	N
Millard West Invitational	12/5/15	Finals	NE	Y
The Princeton Classic	12/5/15	Quarters	NJ	N
Ridge Debates	12/11/15	Semis	NJ	Y
Isidore Newman School Invitational	12/12/15	Finals	LA	N

Tournament	Date	Bid	State	Novice
John Edie Holiday Debates hosted by Blake	12/19/15	Octos	MN	N
Sunvitational	1/8/16	Quarters	FL	N
Arizona State HDSHC Invitational	1/9/16	Octos	AZ	N
Laird Lewis	1/9/16	Octos	NC	Y
Puget Sound High School Tournament	1/9/16	Finals	WA	Y
James Logan MLK Tournament	1/14/16	Quarters	CA	N
Copper Classic	1/16/16	Semis	UT	Y
Stanford National Invitational	1/16/16	Octos	CA	Y
Barkley Forum for High Schools	1/30/16	Octos	GA	N
Golden Desert Debates at UNLV	2/6/16	Quarters	NV	N
Cal Invitational UC Berkeley	2/13/16	Octos	CA	Y
Harvard National Forensics Tournament	2/13/16	Octos	MA	Y
University of Pennsylvania Tournament	2/13/16	Quarters	PA	N
Milo Cup at Millard North	2/20/16	Quarters	NE	N
Columbia University Invitational	3/4/16	Quarters	NY	N
SWSDI	3/4/16	Finals	AZ	Y
Earlybird Forensics at Wake Forest	9/9/16	Quarters	NC	N
Grapevine Classic	9/9/16	Quarters	TX	N
Yale Invitational	9/16/16	Octos	CT	N
Jack Howe Memorial	9/23/16	Finals	CA	Y
Valley Mid America Cup	9/23/16	Semis	IA	N
Holy Cross Exhibition	10/1/16	Finals	LA	N
The Harker School Nichols Invitational	10/1/16	Quarters	CA	N
Georgetown Invitational	10/8/16	Finals	DC	Y
Capitol Beltway Fall Classic	10/12/16	Finals	MD	N
CSU Fullerton High School Invitational	10/14/16	Finals	CA	Y
Bellaire Forensic Tournament	10/15/16	Quarters	TX	Y
New York City Invitational	10/15/16	Octos	NY	N
Plano West Wolf Classic	10/23/16	Semis	TX	N
St. Andrew's Classic	10/29/16	Finals	MS	N
Tim Averill Invitational	10/29/16	Semis	MA	N
University of the Pacific	10/29/16	Semis	CA	Y
Florida Blue Key	11/1/16	Octos	FL	Y
Apple Valley MinneApple Debate	11/5/16	Octos	MN	Y
Nova Titan Invitational	11/5/16	Semis	FL	N
Badgerland Debate Tournament	11/11/16	Semis	WI	N
Central Valley Bear Brawl	11/12/16	Finals	WA	Y

Tournament	Date	Bid	State	Novice
Peach State Classic	11/12/16	Semis	GA	Y
Presentation PF Invitational	11/12/16	Semis	CA	Y
The Scarsdale Invitational	11/12/16	Semis	NY	Y
The Tradition at Cypress Bay	11/12/16	Quarters	FL	N
Glenbrooks Speech and Debate Tournament	11/19/16	Octos	IL	Y
Hoover Classic	11/19/16	Finals	AL	Y
Villiger Saint Josephs University	11/19/16	Semis	PA	N
Alta Silver and Black Invitational	12/3/16	Quarters	UT	N
George Mason Patriot Debates	12/3/16	Quarters	VA	N
Longhorn Classic at UT	12/3/16	Finals	TX	N
Millard West Invitational	12/3/16	Finals	NE	Y
The Princeton Classic	12/3/16	Quarters	NJ	N
Isidore Newman School Invitational	12/9/16	Finals	LA	N
La Costa Canyon	12/9/16	Quarters	CA	N
Ridge Debates	12/9/16	Semis	NJ	Y
John Edie Holiday Debates hosted by Blake	1/1/17	Octos	MN	N
Winston Churchill Classic	1/6/17	Finals	TX	Y
Arizona State HDSHC Invitational	1/7/17	Octos	AZ	Y
Puget Sound High School Tournament	1/7/17	Finals	WA	Y
University of Houston Cougar Classic	1/7/17	Finals	TX	N
James Logan MLK Tournament	1/13/17	Quarters	CA	N
Copper Classic	1/14/17	Semis	UT	Y
Durham Academy	1/14/17	Finals	NC	N
George Washington Debates	1/14/17	Finals	CO	N
Sunvitational	1/14/17	Octos	FL	N
Columbia University Invitational	1/21/17	Quarters	NY	N
Barkley Forum for High Schools	1/28/17	Octos	GA	N
Golden Desert Debates at UNLV	2/4/17	Quarters	NV	N
Pennsbury Falcon Invitational	2/4/17	Finals	PA	N
Stanford National Invitational	2/11/17	Octos	CA	Y
University of Pennsylvania Tournament	2/11/17	Quarters	PA	Y
Cal Invitational UC Berkeley	2/18/17	Octos	CA	Y
Harvard National Forensics Tournament	2/18/17	Octos	MA	Y
Milo Cup at Millard North	2/18/17	Quarters	ME	N
SWSDI	3/3/17	Finals	AZ	Y
Lakeland Westchester Classic	3/4/17	Finals	NY	Y
Grapevine Classic	9/8/17	Quarters	TX	N
UK Season Opener	9/8/17	Octos	KY	Y
Laird Lewis	9/15/17	Octos	NC	Y

Tournament	Date	Bid	State	Novice
Yale Invitational	9/15/17	Octos	CT	N
Valley Mid America Cup	9/23/17	Semis	IA	N
Holy Cross Exhibition	9/29/17	Finals	LA	N
Jack Howe Memorial	9/30/17	Semis	CA	Y
The Harker School Nichols Invitational	9/30/17	Quarters	CA	N
The Presentation Invitational	10/7/17	Semis	CA	Y
The Tradition at Cypress Bay	10/7/17	Quarters	FL	N
Georgetown Invitational	10/8/17	Finals	DC	Y
Bellaire Forensic Tournament	10/13/17	Quarters	TX	Y
CSU Fullerton High School Invitational	10/13/17	Finals	CA	Y
New York City Invitational	10/13/17	Octos	NY	N
Plano West Wolf Classic	10/20/17	Semis	TX	N
Capitol Beltway Fall Classic	10/21/17	Finals	VA	N
St. Andrew's Classic	10/27/17	Finals	MS	N
Tim Averill Invitational	10/27/17	Semis	MA	N
University of the Pacific	10/27/17	Semis	CA	Y
Florida Blue Key	11/1/17	Octos	FL	Y
Apple Valley MinneApple Debate	11/3/17	Octos	MN	Y
Nova Titan Invitational	11/3/17	Semis	FL	N
SF Roosevelt Sweetstakes	11/4/17	Finals	SD	Y
Badgerland Debate Tournament	11/10/17	Semis	WI	N
Central Valley Bear Brawl	11/10/17	Finals	WA	Y
Ed Long Invitation at Hockaday	11/10/17	Finals	TX	N
Katy Taylor	11/10/17	Finals	TX	Y
Peach State Classic	11/10/17	Semis	GA	Y
The Scarsdale Invitational	11/10/17	Semis	NY	Y
Hoover Classic	11/17/17	Finals	AL	N
SCU Dempsey Cronin Invitational	11/17/17	Finals	CA	Y
Glenbrooks Speech and Debate Tournament	11/18/17	Octos	IL	Y
Villiger Saint Josephs University	11/18/17	Semis	PA	N
Alta Silver and Black Invitational	11/30/17	Quarters	UT	N
George Mason Patriot Debates	12/1/17	Quarters	VA	N
Longhorn Classic at UT	12/1/17	Finals	TX	N
Millard West Invitational	12/1/17	Finals	NE	Y
The Princeton Classic	12/1/17	Quarters	NJ	N
Isidore Newman School Invitational	12/8/17	Finals	LA	N
La Costa Canyon	12/8/17	Quarters	CA	N
Ridge Debates	12/8/17	Semis	NJ	Y
John Edie Holiday Debates hosted by Blake	1/1/18	Octos	MN	N
Arizona State HDSHC Invitational	1/5/18	Octos	AZ	Y

Tournament	Date	Bid	State	Novice
Puget Sound High School Invitational	1/5/18	Finals	WA	Y
Winston Churchill Classic	1/5/18	Finals	TX	Y
Copper Classic	1/12/18	Semis	UT	Y
James Logan MLK Tournament	1/12/18	Quarters	CA	N
Sunvitational	1/12/18	Octos	FL	N
University of Houston Cougar Classic	1/12/18	Finals	TX	N
Durham Academy	1/13/18	Finals	NC	N
George Washington Debates	1/13/18	Finals	CO	N
Lexington Winter Invitational	1/13/18	Quarters	MA	Y
Columbia University Invitational	1/19/18	Quarters	NY	N
Barkley Forum for High Schools	1/26/18	Octos	GA	N
Colleyville Heritage Winter Invitational	2/2/18	Finals	TX	Y
ETHS Superb Owl	2/2/18	Finals	IL	N
Pennsbury Falcon Invitational	2/2/18	Semis	PA	N
Golden Desert Debates at UNLV	2/3/18	Quarters	NY	N
University of Pennsylvania Tournament	2/9/18	Octos	PA	Y
Stanford National Invitational	2/10/18	Octos	CA	Y
Milo Cup at Millard North	2/16/18	Quarters	NE	N
Cal Invitational UC Berkeley	2/17/18	Octos	CA	Y
Harvard National Forensics Tournament	2/17/18	Octos	MA	Y
Lakeland Westchester Classic	3/1/18	Finals	NY	Y
SWSDI	3/2/18	Finals	AZ	Y
Grapevine Classic	9/7/18	Quarters	TX	N
UK Season Opener	9/7/18	Octos	KY	Y
Yale Invitational	9/14/18	Octos	CT	Y
Valley Mid America Cup	9/21/18	Semis	IA	N
Villiger Saint Josephs University	9/21/18	Semis	IA	N
Jack Howe Memorial	9/22/18	Semis	CA	Y
Holy Cross Exhibition	9/28/18	Finals	LA	N
Milpitas Invitational	9/29/18	Finals	CA	Y
The Presentation Invitational	10/5/18	Quarters	CA	N
Georgetown Invitational	10/6/18	Finals	DC	Y
Nova Titan Invitational	10/6/18	Semis	FL	N
Plano West Wolf Classic	10/9/18	Semis	TX	N
Bellaire Forensic Tournament	10/11/18	Quarters	TX	N
CSU Fullerton High School Invitational	10/12/18	Finals	CA	Y
New York City Invitational	10/12/18	Octos	NY	N
St. Andrew's Classic	10/19/18	Finals	MS	N
Capitol Beltway Fall Classic	10/20/18	Finals	VA	N
University of Michigan Tournament	10/24/18	Finals	MI	Y
Tim Averill Invitational	10/26/18	Semis	MA	N

Tournament	Date	Bid	State	Novice
University of the Pacific	10/28/18	Semis	CA	Y
Florida Blue Key	11/1/18	Octos	FL	Y
Apple Valley MinneApple Debate	11/2/18	Octos	MN	Y
Lincoln Southwest Silver Talon	11/3/18	Finals	NE	Y
Badgerland Debate Tournament	11/9/18	Semis	WI	N
Ed Long Invitation at Hockaday	11/9/18	Finals	TX	Y
Katy Taylor	11/9/18	Finals	TX	Y
Peach State Classic	11/9/18	Semis	GA	N
SF Roosevelt Sweetstakes	11/10/18	Finals	SD	Y
The Scarsdale Invitational	11/10/18	Semis	NY	Y
The Tradition at Cypress Bay	11/10/18	Quarters	FL	N
Glenbrooks Speech and Debate Tournament	11/17/18	Octos	IL	Y
Alta Silver and Black Invitational	11/29/18	Quarters	UT	N
George Mason Patriot Debates	11/30/18	Quarters	VA	N
La Costa Canyon	11/30/18	Quarters	CA	N
The Princeton Classic	11/30/18	Octos	NJ	N
Millard West Invitational	12/1/18	Finals	NE	Y
Isidore Newman School Invitational	12/7/18	Finals	LA	Y
Longhorn Classic at UT	12/7/18	Semis	TX	N
Ridge Debates	12/7/18	Semis	NJ	Y
The Paradigm at Dowling Catholic	12/7/18	Quarters	IA	N
SCU Dempsey Cronin Invitatonal	12/14/18	Semis	CA	Y
John Edie Holiday Debates hosted by Blake	1/1/19	Octos	MN	N
Arizona State HDSHC Invitational	1/4/19	Octos	AZ	Y
Puget Sound High School Invitational	1/11/19	Finals	WA	Y
Sunvitational	1/11/19	Octos	FL	N
University of Houston Cougar Classic	1/11/19	Finals	TX	N
Winston Churchill Classic	1/11/19	Finals	TX	Y
George Washington Debates	1/12/19	Finals	CO	N
Copper Classic	1/18/19	Semis	UT	N
Durham Academy	1/19/19	Semis	NC	N
James Logan MLK Tournament	1/19/19	Quarters	CA	N
Lexington Winter Invitational	1/19/19	Quarters	MA	Y
Barkley Forum for High Schools	1/25/19	Octos	GA	N
Columbia University Invitational	1/25/19	Quarters	NY	N
Lewis and Clark Invitational	1/25/19	Finals	OR	Y
Colleyville Heritage Winter Invitational	2/1/19	Finals	TX	Y
ETHS Superb Owl	2/1/19	Finals	IL	N
Pennsbury Falcon Invitational	2/1/19	Semis	PA	Y
Golden Desert Debates at UNLV	2/2/19	Quarters	NV	N
University of Pennsylvania Tournament	2/8/19	Octos	PA	Y

Tournament	Date	Bid	State	Novice
Stanford National Invitational	2/9/19	Octos	CA	Y
Milo Cup at Millard North	2/15/19	Quarters	NE	N
Cal Invitational UC Berkeley	2/16/19	Octos	CA	Y
Harvard National Forensics Tournament	2/16/19	Octos	MA	Y
Lakeland Westchester Classic	2/28/19	Finals	NY	Y
SWSDI	3/1/19	Finals	AZ	Y
Grapevine Classic	9/6/19	Quarters	TX	N
UK Season Opener	9/7/19	Octos	KY	Y
Yale Invitational	9/13/19	Octos	CT	Y
Jack Howe Memorial	9/21/19	Quarters	CA	Y
Valley Mid America Cup	9/21/19	Semis	IA	N
Holy Cross Exhibition	9/27/19	Finals	LA	N
Milpitas Invitational	9/28/19	Semis	CA	Y
Nova Titan Invitational	10/5/19	Semis	FL	N
Bellaire Forensic Tournament	10/11/19	Quarters	TX	N
Presentation PF Invitational	10/11/19	Quarters	CA	N
Saint James Classic	10/11/19	Finals	AL	N
Georgetown Invitational	10/12/19	Finals	DC	Y
New York City Invitational	10/18/19	Octos	NY	N
Saint James Classic	10/18/19	Finals	MS	N
Plano West Wolf Classic	10/25/19	Semis	TX	N
Tim Averill Invitational	10/25/19	Semis	MA	N
Capitol Beltway Fall Classic	10/26/19	Finals	VA	N
University of Michigan Tournament	10/30/19	Finals	MI	Y
Florida Blue Key	11/1/19	Octos	FL	Y
Apple Valley MinneApple Debate	11/8/19	Octos	MN	Y
Ed Long Invitation at Hockaday	11/8/19	Finals	TX	Y
Lincoln Southwest Silver Talon	11/9/19	Finals	NE	Y
The Scarsdale Invitational	11/9/19	Semis	NY	Y
The Tradition at Cypress Bay	11/9/19	Quarters	FL	N
Badgerland Debate Tournament	11/15/19	Semis	WI	N
Katy Taylor	11/15/19	Finals	TX	Y
Peach State Classic	11/15/19	Semis	GA	Y
SF Roosevelt Sweetstakes	11/16/19	Finals	SD	Y
SCU Dempsey Cronin Invitational	11/22/19	Semis	CA	Y
Glenbrooks Speech and Debate Tournament	11/23/19	Octos	IL	Y
Villiger Saint Josephs University	11/23/19	Semis	PA	N
Alta Silver and Black Invitational	12/5/19	Quarters	UT	N
Longhorn Classic at UT	12/6/19	Semis	TX	N
The Princeton Classic	12/6/19	Octos	NJ	N
Millard West Invitational	12/7/19	Finals	NE	Y
Isidore Newman School Invitational	12/13/19	Finals	LA	Y

Tournament	Date	Bid	State	Novice
La Costa Canyon	12/13/19	Quarters	CA	N
Ridge Debates	12/13/19	Semis	NJ	Y
The Paradigm at Dowling Catholic	12/13/19	Quarters	IA	N
Cheyenne East Holiday Classic	12/20/19	Finals	WY	N
John Edie Holiday Debates hosted by Blake	1/1/20	Octos	MN	N
Arizona State HDSHC Invitational	1/10/20	Octos	AZ	Y
Laird Lewis	1/10/20	Quarters	NC	N
Puget Sound High School Invitational	1/10/20	Finals	WA	Y
Sunvitational	1/10/20	Octos	FL	N
University of Houston Cougar Classic	1/10/20	Finals	TX	N
Winston Churchill Classic	1/10/20	Finals	TX	Y
George Washington Debates	1/11/20	Finals	CO	N
Peninsula Invitational	1/11/20	Finals	CA	N
James Logan MLK Tournament	1/17/20	Quarters	CA	N
Durham Academy	1/18/20	Quarters	NC	N
Lexington Winter Invitational	1/18/20	Quarters	MA	Y
Barkley Forum for High Schools	1/24/20	Octos	GA	N
Columbia University Invitational	1/24/20	Quarters	NY	N
Colleyville Heritage Winter Invitational	1/31/20	Finals	TX	Y
ETHS Superb Owl	1/31/20	Finals	IL	N
Lewis and Clark Invitational	1/31/20	Finals	OR	Y
Pennsbury Falcon Invitational	1/31/20	Semis	PA	Y
Puyallup Speech and Debate Invitational	1/31/20	Finals	WA	Y
Golden Desert Debates at UNLV	2/1/20	Quarters	NV	N
Bethel Park Black Hawk Invitational	2/7/20	Finals	PA	Y
University of Pennsylvania Tournament	2/7/20	Octos	PA	Y
Stanford National Invitational	2/8/20	Octos	CA	Y
Harvard National Forensics Tournament	2/13/20	Octos	MA	Y
Copper Classic	2/14/20	Semis	UT	N
Cal Invitational UC Berkeley	2/15/20	Octos	CA	Y
Milo Cup at Millard North	2/21/20	Quarters	NE	N
Lakeland Westchester Classic	2/27/20	Finals	NY	Y
Smoky Mountain	2/27/20	Finals	TN	N

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