

Gendered Language in Political Advertisements

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Hypothesis

There is a correlation between the perceived gender of the language used in an ad and the demographics the ad reaches, and therefore we will find a clear distinction in the language used in ads targeted towards males vs females. These language differences will be present in the vocabulary as well as the punctuation used.

Data

Our data comes from the facebook ad library accessed via the graph API. Our full dataset consists of 2368 ads each containing information on the page that created it, the age and gendered reach of that ad, and the text of the ad. The data did not require any cleaning beyond discarding those ads that were missing the ad text.

Findings

Claim #1: Ad text is insufficient to understand the gender of the people viewing the ad across all political ads.

Support for Claim #1: Using a list of words from previous studies of gendered language, we categorized each ad with a gender bias term stemming from the number of words coded masculine or feminine in the ad. Additionally, we calculated the gender reach of each ad and used that as a dependent variable in a multiple regression that also included linguistic features of the ad. None of the terms in the regression had high enough coefficients and low enough p values to make a strong claim.

Variable	Coefficient	P Value
Gender bias	-0.1854	0.000
# of nouns	0.0141	0.000
# of adverbs	0.0049	0.001
# of adjectives	-0.0038	0.015
# of punctuation	0.0081	0.113

Claim #2: There is a meaningful difference between the gender reach of different candidates' ads.

Support for Claim #2: We ran a t-test comparing the average gender reach of Biden ads vs. Trump ads. We found that there was a meaningful difference between the two. The test resulted in a test statistic of 28.02, 700 degrees of freedom, and a p-value of $2.23e-116$. Because of this, we can reject our null hypothesis and conclude that there is a significant difference in the reach distributions between Biden ads and Trump ads. The mean percentage of women reached by Biden was 65.4% while for Trump it was 41.3%. This indicates that the ads run by Biden receive significantly more female viewership than the ads run by Trump.