

Are Political Opinions Affected by Social Media?

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Abstract

Since the introduction of social media, correlations have been found with attention span, behavior, and other social aspects of individuals' lives. However, it has never been made demonstrably clear if social media affects political opinion or political polarization. Some have hypothesized that social media algorithms cause specific content to be fed to the user, thus causing political polarization. The goal of this paper is to establish if there is a correlation or relationship between social media and the strength of one's own political belief; along with seeing if social media affects the political party identification itself. I first thought there would be a positive correlation between social media usage and a left-leaning political opinion. Linear regression tests and Chi-Squared tests were performed. It was found that while social media does not directly affect political belief, there is a positive correlation between social media usage and the strength of one's own political opinion. This could be due to algorithms that feed content that users agree with.

Keywords: social media, political opinion, political polarization, correlation

Introduction

When smartphones became popularized in the early 2010s, the changes became clearly apparent. Smartphones, and specifically, the social media applications used on them, have been found to have a direct correlation with shortened attention spans, as a study conducted by Alaparhi (2024) found that the majority of students believe social media decreased their attention span. The usage of social media platforms such as TikTok and Instagram can affect attention span due to captivating algorithms, which cater content to each specific individual. The spike of dopamine in the brain due to specifically catered short-form content leads to people struggling to keep their minds off of social media, creating addictive behavior (Thangavel, 2023). As such, the longing to be on a social media application can lead to a decline in attention span (Thangavel, 2023). These sites can also lead to a decrease in academic performance, as in a study it was found that for college students, excessive usage of social media created a negatively correlation with grades (Talaue, 2018). The reason for this correlation is because of a lack of attention span. Along with the negative impact on grades, social media usage can also lead to the rapid spread of misinformation. One study found that there was a high correlation between the use of social media and belief in conspiracy theories (Enders et al., 2021). Social media allows for individuals susceptible to misinformation and conspiracy theories to be indoctrinated by false ideas and the spread of these ideas; which leads to more people falling for misinformation. Furthermore, social media can lead to political polarization, as it prompts users to share their own opinions and discuss with others. Along with this, the mainstream showcase of controversial current events leads to a melting pot of ideas posted by users, leading to discussions and arguments; ergo leading to stronger opinions (Anderson, 2022). I hypothesize that more social media usage will lead to more polarized views regarding political opinion and; additionally, I hypothesize a more left-leaning outlook regarding their political opinion. This paper will focus on the statistics behind political polarization due to social media, and examine if there is a correlation between social media usage and political opinion. The study aims to see if there is any correlation between political opinion. It is unknown if there is a direct correlation between social media usage and strength of political opinion.

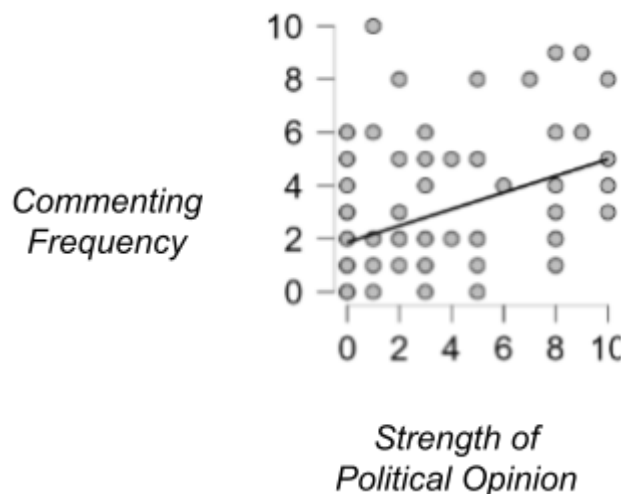
Methods

A survey was emailed to 18,069 people, and 102 people responded. Emails were sourced from recurring customers of a company catering to golfers. The survey consisted of 16 items and asked questions regarding the respondent's political outlook, social media usage, and demographic information. Of the respondents, 91% identified themselves as White, 8% as Hispanic, 2% as Asian, and 1% as Black. Men made up 76% of respondents, while 24% of respondents were women. Respondents aged 21-35 made up 12% of the sample, 16% of respondents were aged 36-50 years old, 26% were aged 51-65 years old, and 36% were aged 65 years old or older. Approximately 29% of respondents had a high school diploma or equivalent or attended college for some time, and 62% of respondents graduated with an associate's degree or higher. Of the respondents, 4% claimed to be making less than \$30,000 annually, 8% claimed to be making \$30,000 to \$60,000 annually, 28% claimed to be making \$60,000 to \$100,000, 33% claimed to be making \$100,000 to \$180,000, and 27% claimed to be making more than \$180,000. The majority of respondents claimed to not use social media often, as only 7% claimed to use social media for more than four hours a day. Similarly, only 7% of respondents claimed to be open about their political views online. Statistical tests will be performed in order to test for any correlations between variables.

Analysis

First, a linear regression test, a T-test for the slope, was performed to test if there was a correlation between often commenting on social media and the strength of each person's political views. These two specific variables were chosen in order to test if social media usage correlates with political polarization. We performed a test of: $H_0: B = 0$ $H_a: B \neq 0$. Where B is the slope of the regression line relating commenting frequency on a scale of 1-10 to the strength of people's political opinion on a scale of 1-10 at a significance level of .05.

All conditions were checked and met excluding random sampling. The following scatterplot shows the association between commenting frequency and the strength of political opinion.



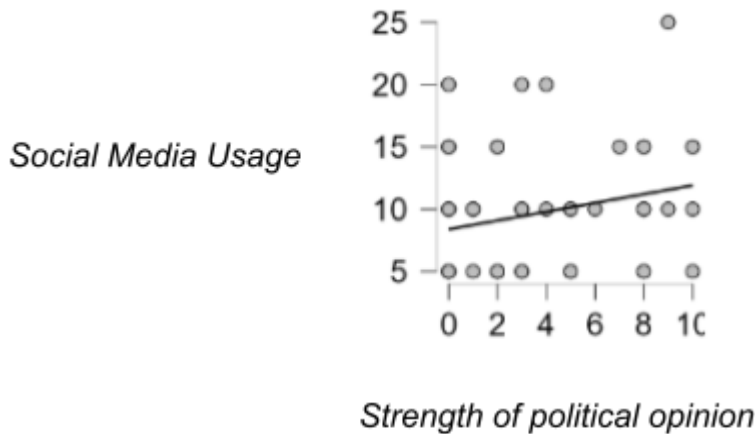
A p -value of less than 0.001 was found, along with an r -value of 0.408, demonstrating that there is a positive correlation between the two variables. The p -value is less than the significance level of 0.05. Therefore, it is clear that increased social media comments online



relate to the strength of people's political opinions. However, it is unclear if the use of social media itself is the root cause or the commenting itself. A second *t*-test for the slope was constructed in order to test if there is a correlation between social media usage itself and the strength of political opinions.

We then performed a test of: $H_0: B_2 = 0$ $H_a: B_2 > 0$. Where B_2 is the slope of the regression line relating to social media usage scale of 1-10 at a significance level of .05.

Since respondents were only asked for an estimate of their social media usage, each estimate was assigned an integer. Less than one hour or less of usage was assigned the number 5, one to two hours was assigned the number 10, two to three hours was assigned the number 15, four to six hours was assigned the number 20, and 8+ hours was assigned the number 25. All conditions excluding random selection were met. The following scatterplot was created based on the data:



A *p*-value of .011 was generated, along with an *r*-value of 0.249, showing a positive correlation. Since the *p*-value is less than the significance level of 0.05, there is convincing evidence of a correlation between the two variables.

While the relationship between social media usage and political polarization was observed, it is still unclear if there is a relationship between social media usage and political party affiliation. A chi-squared test for homogeneity was performed to test if H_0 : There is no difference in political party identification based on social media usage or H_a : There is a difference in political party identification based on social media usage. A significance level of 0.05 was used.

All conditions were assumed to be met excluding random selection. The following chart was created.

	1 hour or less	1-2 hours	3-4 hours	4-6 hours	8+ hours
Republican	17	17	12	1	0
Democrat	6	2	2	2	0
Independant	12	9	1	1	1



A p -value of 0.117 was generated, along with degrees of freedom equaling 8 and a Chi-squared statistic of 12.854. Therefore since the p -value is greater than the significance level it is not reasonable to assume that there is a difference in political party identification based on social media usage. Therefore, while social media usage may increase political polarization, there is no evidence that it affects political party identification.

Discussion

The purpose of this study was to see if there is a correlation between political polarization and social media usage; along with social media usage and political party association. It was found that there was a positive correlation between social media and the strength of political opinion, with a p -value of .011. However, it was found social media only affects political polarization but not political affiliation. This demonstrates that social media causes an increase in the strength of old beliefs, it does not create new beliefs. Commenting frequency was also found to have a positive correlation with the strength of political opinion. This study shows how it is important to be aware of social media consumption because it may affect the strength of one's political beliefs. However, it is still not clear why social media causes this; one reason could be algorithms feed users more content they agree with, causing more political content that users agree with to be shown to the user. Social media is already fine-tuned to feed content to the users to keep them addicted; in order to keep users on it for longer (KOÇ, 2023). It has already been established that social media algorithms push content that can cause damage to the mental health of teenagers, so it can be inferred that social media may affect some other aspects of their lives (Costello et al., 2023).

Limitations

Note that the respondents were only customers from one specific company related to golf, so that may account for bias. Furthermore, the study consisted of a convenience sample. There was no random sampling, the results were obtained from a survey, so only one type of demographic responded. Many people also chose to not respond to the survey, resulting in response bias. The large count condition for the Chi-squared test may have not been met.



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