Correlation between Political Party and Preferred News Station

Table of Contents

Plan of Investigation 3

Data and Calculations 5

Conclusion 8

Works Cited 9

Statement of Task

I plan to conduct a survey to investigate the correlation between political party and preferred news station. The media has power over what information the public receives and can shape how someone views the world around them based on how the information is delivered. It is important to know if different political parties prefer different sources of information because this could influence voter’s opinions and views of the world.

* Null Hypothesis: Political preference and a person’s preferred news program are not correlated and have no relation.
* Alternate Hypothesis: A correlation exists between a person’s political preference and his or her preferred news program.

Plan of Investigation

I plan to conduct a survey of 100 students from my school. **Figure 1:** I will be asking students which political party they would identify themselves as, Democrat, Republican, or independent, and then inquiring which news channel they primarily listen to. I will be giving students the choice of CNN, MSNBC, and Fox or give them the option to say that they do not watch the news\*\*\*see figure 1. I chose these particular channels because they are 24 hour news networks and are the three most popular and familiar news channels in the United States. I will be polling only upper classmen because I feel older students near the voting age will be more likely to follow the news and have a preference of a news channel. I will also be polling students primarily in higher level classes such as AP Government in addition to the Mock Trial team because this demographic is more likely to be politically aware and to watch the news. I will also indicate to students that the news channel most watched by their family would suffice for preferred channel because students are at this age likely to follow their parents’ preferences in terms of political party and favorite news station. Having not left their parents homes to live independently, the students I am surveying will receive the most political indoctrination from their parents and will likely share the same views.

Once the data is gathered, I will analyze and compare the data. I will first put the raw data into a table totaling the number of students in each category. I will then use this data to determine the expected frequencies by multiplying the column total with the row total and divide by the total number of students (100). I will then create pie charts depicting the percentage of students in a political party that watch a particular news program. This will allow a reader to form an idea of whether political party and preferred news channel are related by the size of the categories in the pie graphs. Next, I will take the observed frequencies and expected frequencies and perform a chi squared test to see if a relationship exists between political and preferred news program. To run the chi squared test I will take the sum of all the expected values subtracted from the observed values and divide by the sum of the expected values. I will also find the degrees freedom by multiplying the number of columns minus one to the number of rows minus one. I will then take this value and compare it to the significance level of 5%. In this case the significance value is 18.55. If the value from my chi squared test is larger than this value then the test indicates that political party and favorite news program are dependant and my alternative hypothesis will be supported.

I expect to find a large percentage of Republicans to favor Fox news because it is widely known as a conservative news channel and will therefore appeal to the Republican base. I am very curious to find out which news program is favored by Democrats and Independents. The modern media is often accused of carrying a liberal bias so I am interested to see which channel is favored by this demographic. I also want to see which channel is most favored by Independents who fall in between the spectrum. I expect the Independents will favor CNN because overall CNN is the top ranked news program in America.

Calculations and Data

**Figure 2:** Raw Data of Student’s Political Party and Preferred Television News Channel

* This is the raw data organized into a chart showing the number of each student who identified as a certain party and what news program he or she watched



**Figure 3:** Observed Frequencies of Student’s Political Party and Preferred Television News Channel

* By adding the totals in each category the raw data can be organized into a chart depicting the observed frequencies.



**Figure 4:** Expected Frequencies of Student’s Political Party and Preferred Television News Channel

* Multiply each row total by the column total and then divide by the total number of students to find the expected counts

10.89$=\frac{33×33}{100} $ 10.56$=\frac{33x 32 }{100}$ 6.60$=\frac{33 x 20}{100}$ 4.95$=\frac{33 x 15}{100}$

$9.24=\frac{28 x 33}{100}$ 8.96$=\frac{28 x 32}{100}$ 5.60$=\frac{28 x 20}{100}$ 4.20$=\frac{28 x 15}{100}$

$12.87=\frac{39 x 33}{100}$ 12.48$=\frac{39 x 32}{100}$ 7.80$=\frac{39 x 20}{100}$ 5.85$=\frac{39 x 15}{100}$



**Figure 5:** Observed vs. Expected Counts Pie Charts

* The following graphs allow readers to visually compare the observed frequencies and the expected frequencies. The percentages are shown in each graph and if my alternative hypothesis is correct, the one section of the observed graph should be significantly larger than the corresponding section of the expected graph. I choose to use because pie charts help illustrate proportion and will effectively allow the reader to see the relationship between the political party and news preference.





**Chi Squared Test**

* The Chi Squared test will determine if a relationship exists between the two factors being examined. To perform the test one must use the following equation. The higher the Chi Squared value, the more likely the variables are related.

$47.778=\frac{\begin{array}{c}\left(15-10.89\right)^{2}+\left(0-10.56\right)^{2}+\left(16-6.60\right)^{2}+\left(2-4.95\right)^{2}+\left(6-9.24\right)^{2}+\left(18-8.96\right)^{2}+\\\left(1-5.60\right)^{2}+\left(3-4.20\right)^{2}+\left(12-12.87\right)^{2}+\left(14-12.48\right)^{2}+\left(3-7.80\right)^{2}+\left(10-5.85\right)^{2}\end{array}}{10.89+10.56+6.6+4.95+9.24+8.96+5.6+4.2+12.87+12.48+7.8+5.85}$

X2= 47.778

**Degrees freedom**

* The Degrees fredom can be found by multiplying the number of rows minus one with the number of columns minus one. This number can then be used as a reference to look up the correlation value to determine if the chi squared statistic is high enough for the variable to be considered related. Higher degrees pof freedom means that a higher chis squared statistic is needed.

df= (r-1)(c-1)

= (4-1) (3-1)

Degrees Fredoom= 6

At 5% relationship the p value is 18.55

**47.778**$ \geq 18.55$

With a larger chi squared value than p value, the variables are dependant. This means that my data supports my alternate hypothesis is supported by my data and political party and news preference are correlated.

Conclusion

My results indicated that a relationship exists between political party and the preference of news channel in students at Newbury Park High School. This means that certain news channels appeal to different political parties. This indicates a bias in the media which is supposed to deliver information free of political bias. My pie charts indicate that a large percentage of Republicans overwhelmingly chose Fox News as their preferred source of news and Democrats indicated a preference to CNN or MSNBC. Meanwhile, Independents showed to be less likely to watch the news than Democrats of Republicans. This is one weakness in my survey because people who did not have a political opinion and were not informed about politics were typically put in this category. This could create a false result of Independents following the news less than either of the two main political parties. Also, smaller political parties such as the Libertarians and the Green Party were included as being Independent even though these parties often align with one of the two major parties and hold similar political views. If I were to conduct the survey again I would include another category labeled as other in which these smaller parties could be included. I feel like this could account for the relatively large number of Independents that indicated they preferred Fox News as their primary source of television news.

While I did get a strong relationship in my results there are several factors that could limit my results. The main limit on my results is the small demographic I surveyed. One hundred people is not a good indicator of the trends of an entire nation. Also, my polling sample consisted of nonvoting students who are less likely to follow the news or have a defined political ideology than an older demographic. Many of the students I surveyed reported Comedy Central as their preferred source of news which does not fit into my categories. Comedy Central is not a 24 hour news channel and therefore did not fit in with my survey. This survey is further complicated by the prevalence of other sources of news other that television. Many people rely on the internet as the primary source of news rather than television which could result in a large number of students reporting that they do not watch the news. This could be misleading because it implies that these students do not follow the news at all when in fact they do so from other sources than television news. If I could perform the survey again I would poll a larger demographic of older people get more accurate results. Finally, while my chi squared test indicated a strong relationship between the variables I was testing, it is important to remember that just because factors seem related they might not have anything to do with each other. All my calculations were mathematically sound but math can never take into account all the variables that compromise a human being and not be able to prove without any uncertainty the way humans think.

Works Cited

\*\*\* anything not referenced was taken from class notes or IB data booklet

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