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Political Bias in the Polls

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Our main focus of this research was to investigate the phenomenon of herding, which is where pollsters chose to adjust their polls to match the other published, and sometimes more reputable poll in favor of posting their own unmolested results. Herding can be difficult to identify, as herding can make the average poll more accurate while also decreasing the overall polling average. In 2016, the average polling error was 4.8 points, which was 0.8 points above the average polling error for presidential elections dating back to 1998 (2018, May 30). Even though the 4.8 percent average error was the highest since before the 1998 election, that is not enough to prove that pollsters were herding their predictions, as there are many other factors that could lead to inaccurate polling averages.

Prior to the 2016 Presidential Election, FiveThirtyEight assigned each of the pollsters from who they aggregate their polling data from a “grade” that took the value of letter grade ranging from A-F. For our analysis of the polls, we chose to eliminate any grade below a C-, as that is considered a failing grade, and would also not be included in FiveThirtyEight’s forecast. We then grouped all the grades into either the A/B group or the B/C group. Any pollster receiving a grade greater than or equal to a B+ would be placed in the A/B group, and any pollster with a grade less than a B+ or greater than a D would be placed into the B/C group. We also had to adjust the vote percentage per candidate, as the polls in the data published did not always sum to 100% after all the potential candidates of that poll were added together. To account for this, we created a new proportion for the percentage of Trump vote by dividing

Trump's percentage of the predicted vote divided by the sum of Trump and Clinton's percentage of the vote. For the purpose of our research, we only viewed the polls as the newly calculated Trump proportion of the vote, as also investigating Clinton's proportion of the vote would yield the same results.

Our first course of action was to compare the two groups by running two sample t-test to compare the predictions on a state by state basis between A/B and B/C with the goal of determining whether or not there was a statistically significant difference in the polling averages between the two groups in each state. Our results were that in 25 out of the 50 states there was a statistical difference between the mean polling average of the A/B's and the B/C's. However, the issue with this analysis was that not all the assumptions for a t-test were not met. Even though the data for the two groups were independent from each other, the data points within each group were not all independent of each other. Many of the polls gathered in each state were from the same pollster, which means it is more likely than not that many of those polls were gathered with the same methodology, same question set, and sent out to the same response pool.

To account for the lack of independent samples, we utilized the proc mixed procedure on SAS, which accounts for the lack of independence in the observations from the data set. This modified t-test resulted in only Arizona, Illinois, and Pennsylvania having statistically different means between the two groups, which was a large difference from previously having 25 states with different polling averages across groups.

One indication that herding did possibly happen has to do with the spread of the polls, and specifically the spread of the polls within the last two weeks of the election. In general, 68% of polls should fall into the range of the mean polling average plus and minus the standard error of the polling average (2014, November 14). To investigate if the polls were too tightly clumped

together, we chose to look at only the polls within two weeks of the election (come up with some reason later). We calculated an average poll result and an average standard error in the last two weeks of each state leading up the election. We chose to not look at all the weeks prior to the election as we did not believe that to be as accurate. Herding takes time to develop, as there has to be existing polling results published to “herd” off of.

26 percent, or 13 out of 50 states polling predictions had over 68% of their polls within the standard error of the mean. While this analysis did not give us a definite answer to the question of does herding in the polls exist, it does tell us it is more likely herding did exist. The 68 percent range is considered very optimistic, as it only accounts for theoretical sampling error, and does not take into consideration the other sources of uncertainty that accompany polling, such as being able to get a representative pool of subjects in the poll, getting an accurate estimate of the voter turnout, and the natural uncertainty that surrounds politics. Those factors lead us to believe that none of the states should have over 68% of the polls inside the two week range. The fact that 13 of the states were in the range tells us that other manipulation to the polls was most likely done.

Herding in statistical polling is a very difficult idea to quantify and prove. On one hand, polls should not be punished for being accurate and similar to other polls. On the other hand, polls are random samples, and theoretically should follow the same distribution as other random samples in that there will be variability. While we have yet to discover concrete proof that some pollsters were herding, we also are more confident than when we started that herding did exist in the 2016 presidential election polling. See figure 1 below, which is a scatter plot of the predictions from Kansas. Pollsters with a grade of A/B are blue, and the B/C are red. The Horizontal line represents Trump’s true proportion of the vote he received. Prior to 40 days

before the election, the gap between A/B and B/C is between 10 and 15 points. But, in the last 40 days of the election, the A/B group average stays relatively the same, but the average for the B/C gets closer and closer to the average from the A/B group. Historically, as the election gets closer, the accuracy of the polls also increases, which could mean it is normal for the polls to behave the way they did in Kansas. However, we still find it very suspicious how the difference in averages goes from a steady increase to a steady decrease, and the change in the direction of the average line for B/C group does start moving in the direction of the A/B group as the election nears. That trend in the data leaves us with two plausible scenarios for what could have happened. The first is that the A/B polls were more accurate early on in detecting public opinion, and it took the B/C polls another couple of weeks to produce better results, which would explain the change in direction of their mean line. The second scenario is that the B/C pollsters did in fact start altering their polls to match the A/B polls as the election drew nearer, which would also explain the change in direction of their mean line.

Many of the cases we identified in different states as potential herding could be the product of either one of the two scenarios listed above. In reality, we believe the true answer is that both scenarios are correct, and that they also happen simultaneously. As the A/B polls are higher rated by FiveThirtyEight than the B/C polls, they are expected to be more accurate, and therefore would be more likely to be more accurate while the election is still more than a month away than the B/C polls. By that reasoning, B/C polls could appear to be herding by having their results get closer and closer to the A/B polls, when in fact they are not herding, and just took longer to arrive to the same conclusion. In the case of Alabama (see figure 2 below), the same trend that was present in the Kansas polling also appears. More than 80 days out from the election, the B/C polling average was more than 15 points over the A/B polling average. As the

election approaches, the B/C polling average steadily approaches the A/B polling average, and eventually gets as close as within 7 points. This is suspicious, as the A/B polling average stays very constant in the last 80 days before the election, but the B/C line moves closer and closer towards the A/B average. If this was an isolated incident, we would want to give the B/C polls the benefit of the doubt, and assume they did not herd, and naturally became more accurate as the election approaches. However, as we saw the A/B average stay close to constant and the B/C average get closer and closer to the A/B average in many states, we believe it is much more likely the B/C polls are herding off of the A/B in an attempt to get more accurate poll results.

Figure 1

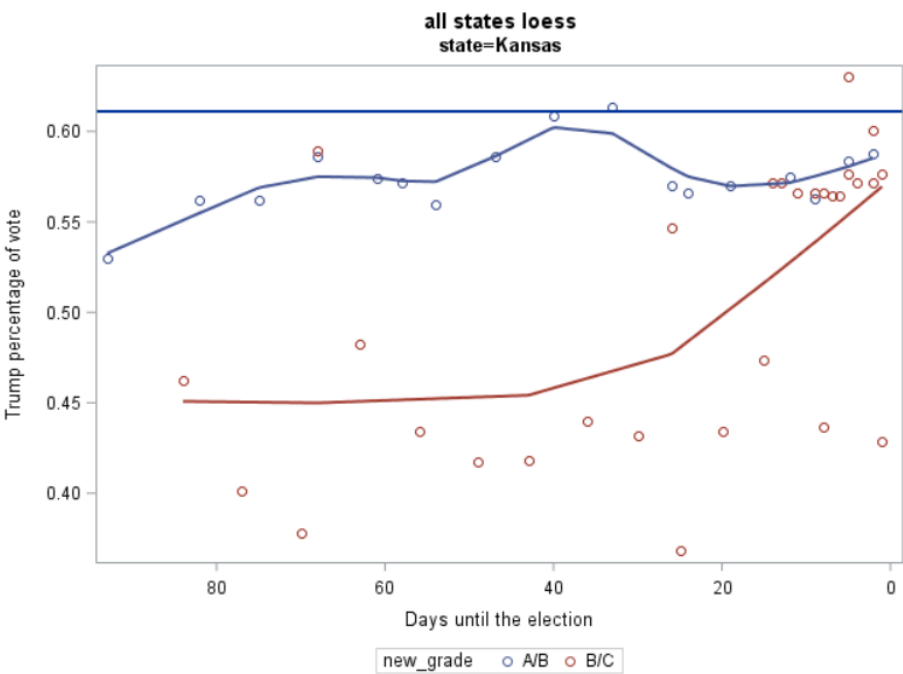
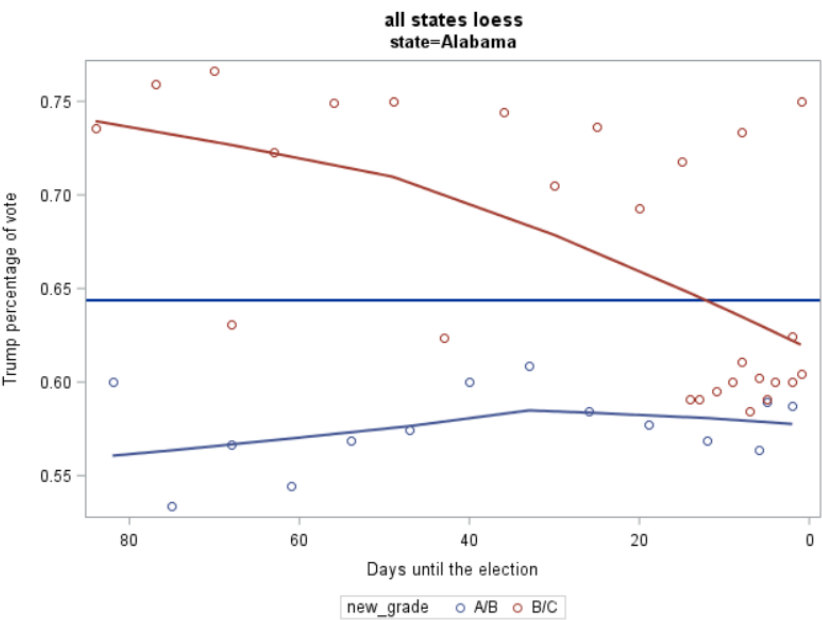


Figure 2



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