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Identifying Effects of Robocalling in the 2011 Canadian Federal Election

Introduction

One of the more prominent scandals of the 2011 Canadian federal election was the influence of "robocalling", or automated messages called to voters with the intent to mislead them from voting correctly, made on the day of the election. Over 6,000 of these calls were made to residents of Guelph (*R. v. Sona*, 2014). The call claimed to be from Elections Canada, and stated the following in both English and French:

> "This is an automated message from Elections Canada. Due to a projected increase in voter turnout, your poll location has been changed. Your new voting location is at the Old Quebec Street Mall, at 55 Wyndham Street North. Once again, your new poll location is at the Old Quebec Street Mall, at 55 Wyndham Street North. If you have any questions, please call our hotline at 1-800-443-4456. We apologize for any inconvenience this may cause. (French version recorded in another woman's voice follows.)" (National Post)

This was not the case, and these fraudulent calls directed an unknown number of voters to this incorrect voting location in an attempt to suppress their votes. These robocalls in particular, which were distributed to residents of the Guelph riding, appeared to target Liberal and New Democratic Party (NDP) voters, in hopes of inconveniencing them enough to prevent their vote against the Conservative party (*R. v. Sona*, 2014). These fraudulent calls in the Guelph riding were traced to the Conservative party offices within that riding (Payton 2012).

Although there is evidence of election fraud in the 2011 election (the conviction of Michael Sona, and clear evidence of attempted voter suppression), is there evidence that this fraudulent activity influenced the outcome of the election, or was statistically significant at all? Considering the population of voters affected by the calls compared with the large population of the riding of Guelph, I suspect that these calls did not have a significant effect on the outcome of the election. Therefore, the data should show minimal, if any, signs of fraud.

Background: Canada's Federal Election Process

Canada has a federal, parliamentary government, with a plurality rule in the election of candidates for the House of Commons. In the process of a federal election, the governor general ends the current parliamentary term at the suggestion of the prime minister. What follows is the election of 338 new members of parliament across the nation (McCullough). The leader of the party campaigns for the role of prime minister, which is achieved when their party holds a plurality of the seats in parliament.

It is possible for elections to happen in quick succession, and have parliament dissolved by the governor general at any time. However, it has recently become standard for federal elections to be held on the third Monday of October every four years, unless certain special circumstances arise (McCullough). The 2011 federal election took place on May 2nd, 2011, which was the same day the robocalls were made.

"Robogate" and *R. v. Sona*

The clear violation of democracy through vote suppression shook up not only citizens of Guelph, but across the country. Protests took place in cities such as Toronto, Ottawa, and Guelph (CTVNews.ca Staff). Later, it was revealed that the list of voters targeted in the Guelph riding

with robocalls was similar to a previously-gathered list of Liberal voters in the riding (*R. v. Sona,* 2014). This list of Liberal voters was known to be collected by the Conservative party office of the area (where communications director Michael Sona operated), giving them the ability to widely mislead voters. By creating an official-sounding message claiming to be from Elections Canada, it was clear that the intent of these robocalls was to inhibit constituents from voting.

Following reports of misleading voters by impersonating Elections Canada, Michael Sona, the Communications Director for the Conservative candidate for the Guelph riding, was convicted of election fraud for the use of these robocalls (*R. v. Sona,* 2014). Sona was known for frequently discussing these calls with his colleagues, even bragging about their impact, suggesting his close connection to the calls.

Within the Guelph riding specifically, if the calls did affect the outcome, Sona's targeting of non-Conservative voters should lead to some significant differences in voters in the Guelph riding, with fraud statistics that suggest election fraud favoring the Conservative party. The alleged 6,738 robocalls made by Sona (*R. v. Sona*, 2014), if considering each robocall as targeting one elector, targeted roughly 6% of eligible voters in Guelph (Payton 2012). This would give an idea of the influence of these robocalls on the election in Guelph, as well as the impact made to each party's voters. It is estimated that 150 or 200 voters showed up to the wrong polling station, then chose to not vote at all upon being turned away (*R. v. Sona*).

Data and Exploratory Analysis

The data used for this analysis comes from Elections Canada, with additional cleaning and analysis to create the files used. The data contains the number of registered voters, the

number of votes per party, and the number of valid votes within a particular Canadian polling station.

For a majority of these analyses, I chose to restrict the domain to the three major political parties (Liberal, Conservative, and NDP parties). A summary of the results from the Guelph ridings confirms that there is no abnormally large number of votes for a third party. An abnormally large number of votes for a third party may suggest fraudulent voting.

Figure 1 shows a boxplot of the proportion of registered voter turnout for each polling station in Canada, with Guelph separated. Here, it is clear that Guelph did not experience a significantly lower turnout than other districts; rather, polling stations in Guelph appear to have a higher turnout rate. This greatly contradicts the earlier thought that misleading voters could be correlated with a decrease in voter turnout across Guelph polling stations. When considering the proportions of turnouts, we can see that the distribution is approximately normal, which can be seen in Figure 2.

Upon further analysis of estimated fraudulent votes, I noted that two districts (10004 and 47003) had expected fraudulent vote counts greater than the margins of victory in these districts. Further analysis shows that some ridings in these districts had voter turnout rates close to 100%. Despite the small size of these districts, I still find it odd that many districts experienced such high turnout rates, when the national turnout rate was 61.1% (Mayrand 2011).

Results

A kurtosis analysis shows that the distribution of vote rates for the winning party is not unimodal, but rather bimodal. This statistic would usually show signs of extreme fraud, but in this case, the bimodality is due to heterogeneity between French Quebec and the remaining

English provinces of Canada, most significantly on the basis of political opinion (Klimek et. al. 16470). The two differ greatly in their political opinions, leading to a bimodal distribution.

To confirm the suspicion that the proportions of turnouts in Guelph are not significantly different than those of other polling stations, I ran a simple one-sided t-test for difference in means. This test led to a p-value of around 0.9, making it very clear that the difference between the two groups is not significant.

In addition to this, for each of three proportions of the datasets, the estimated probabilities of no fraud occurring in the election were greater than 0.98. Using the techniques of the Election Forensics R package, there are little to no signs of fraud observed.

Upon performing a Benford's 2nd digit test on the number of votes obtained by each party on the polling station level, it appears obvious that the data do not conform to Benford's law. Results can be found in Figure 3. For this data, Benford's 2nd digit test results in a very small p-value. This suggests some possibility for fraud, although there are several other explanations for this small p-value. This includes the variance between different polling stations, districts with smaller numbers of constituents, and, once again, the apparent difference between Quebec and the remainder of Canada. Also, there were many instances where a party received less than 10 votes in a particular polling station, meaning that less than half of the observations were actually used to perform the test.

Overall, these statistics give very weak, if any, evidence of fraudulent voting in the 2011 Canadian federal election. It also appears that the robocalls made throughout the Guelph riding did not significantly alter the results of the election.

Conclusion

The readings cited above suggest that election fraud did occur in the 2011 Canadian federal election, so much so that at least one person was prosecuted for attempting to prevent electors from voting (R. v. Sona). This led to further investigation into the distribution and uses of voter data throughout Canada, which is discussed heavily in *Preventing Deceptive Communications with Electors* (Mayrand 2013). However, the data show that this was not significant enough to sway the election. Many Canadians distrusted the government and felt that their democracy was threatened by an attempt to prevent them from voting (Payton 2012).

Although election fraud did occur, there is insufficient evidence to show that the specific fraudulent activity of robocalling had significant effect on the outcome of the election. Despite the 150-200 voters who decided not to vote upon being inconvenienced, the overall effects of the robocalls are not significant enough to indicate incremental fraudulent voting strategies.

Works Cited

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Figures and Tables

Figure 1: Proportions of voter turnout per polling station, Guelph stations compared to all other polling stations.

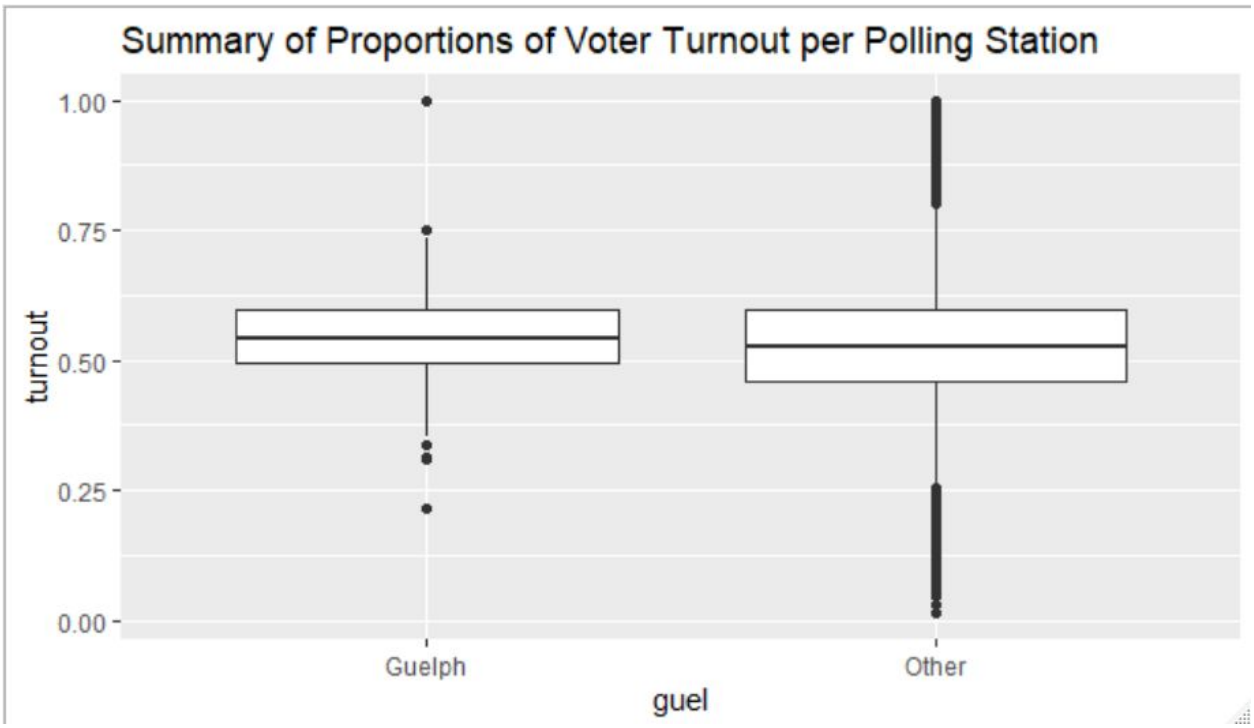

Figure 2: Counts of proportions of voter turnout for Guelph polling stations. Note that the mean appears to be less than the overall Canadian voter turnout of ~60%.

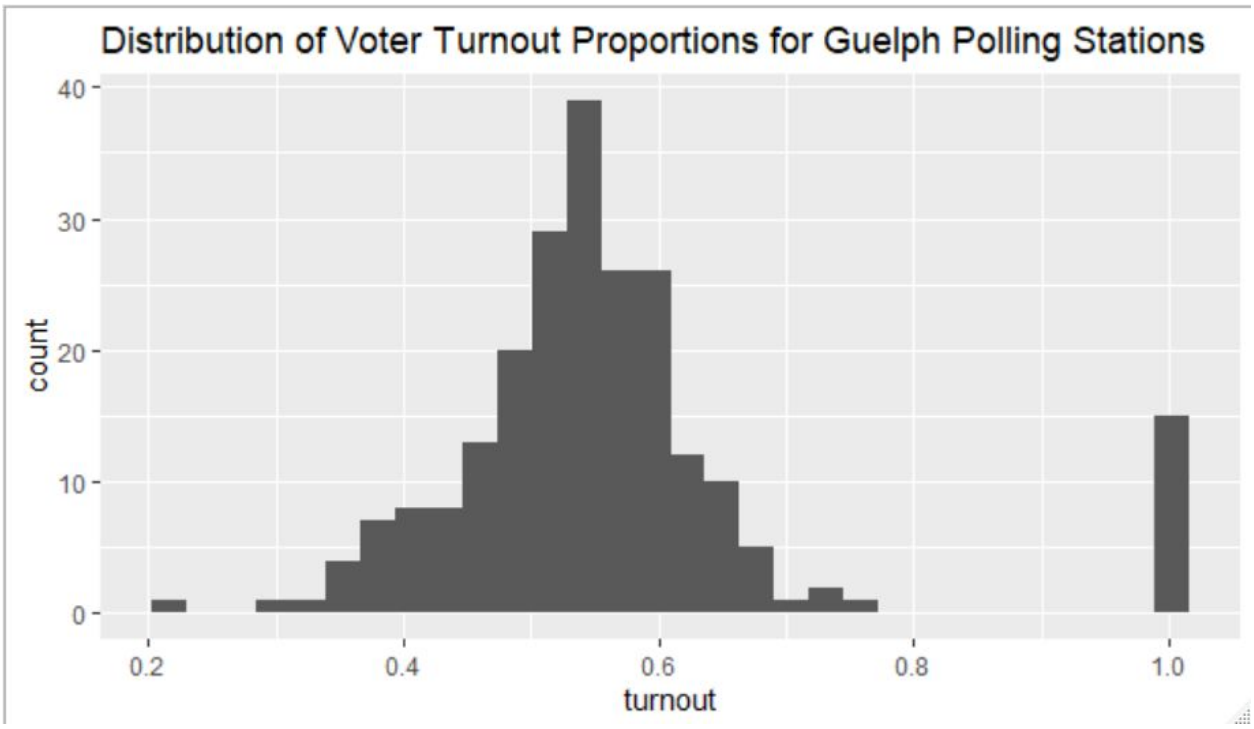

Figure 3: Benford's 2nd digit test analysis of the number of votes acquired by a party at a particular polling station.