October polling updates in Newfoudland and Labrador for Liberal Party

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Non-technical executive summary

The report wants to show the October polling updates in Newfoundland and Labrador for the Liberal Party. We thought about the survey methodology and decided to use stratified sampling for our survey. After that, we asked local people who have the right voting to do the survey and analyzed it. We found out that nearly half of our respondents supported the Liberal Party, and for each region, the percent of the vote was similar. The data we found is essential as it can show if the Liberal Party can win in the election. Moreover, it can tell them the gap between the Liberal Party and other political parties. There are weaknesses that this time we did not consider the respondents' age, and the sample size may not be large enough. Next time, we should consider each citizen's age and divide people into different age groups. The report can be found in GitHub https://github.com/christy723/October-polling-updates-in-Newfoudland-and-Labrador-for-Liberal-Party.git.

Introduction

The report investigates the October polling updates in Newfoundland and Labrador for the Liberal Party. We hope to use the report to let the Liberal Party understand their popularity in that province. It can help the Liberal Party think about what they can do to attract more votes and the gap between each political party. These days, the Liberal Party is the first choice for auld

citizens living in Newfoundland and Labrador, but it does not mean they will one hundred percent win the election. They should do more to widen the gap with other parties. We got 700 responses in that area for six different regions by the survey to know which political party the Canadian citizens older than 18 years old live in Newfoundland and Labrador support. After that, we discussed and analyzed our data to get information about the Liberal Party's votes.

Survey methodology

The survey population is the Canadian citizen at least 18 years old and lives in Newfoundland and Labrador, and the population size is 56000. The sample frame in this survey is a list of Canadian adult citizens living in Newfoundland and Labrador. Our sample is 1400 adult citizens living in Newfoundland and Labrador. We use stratified sampling for our data. Since the population size is large in Newfoundland and Labrador, and the standard deviation may be extensive if we sample all the data together, it is better to choose stratified sampling. There are several statistical properties:

1. The element is Canadian adult citizenship live in Newfoundland and Labrador, and it is around 56,000.

2. There are six regions in Newfoundland and Labrador, Avalon, Bonavista-Burin-Trinity, Coast of Bays-Central-Notre Dame, Labrador, Long Range Mountains, St.John's East, and St.john's South-Mount Pearl. Since people who live in the same region have more probability of choosing the same party, We regard each region as a stratum.

3. The person(element) has been divided into six strata base on the region where the person lives, and each element can only be assigned to one of the strata. The total number of

strata elements is the same as the number of Canadian adult citizenship live in Newfoundland and Labrador.

4. In each stratum, we will choose numbers of people to do our survey.

There are two advantages to use stratified sampling. First, it can lower the standard deviation inside the strata, and we will have smaller errors compared to another sampling. Second, Since the sample size is large, it is cheaper and comfortable to handle the data if we put elements into different strata. We do our survey by email, phone call, message, and online application. We use different ways to collect our survey result to ensure the diversity of people do our survey. We estimate to cost 8000CAD. We will use 4000CAD to do our survey and connect our respondents. We may use around 2000CAD to build our dataset and analyze the data. We regard the left 2000CAD as extra money so that we still have money to use if there is an emergency. To avoid too much non-response surveys, we should first let people trust us and know what we are doing. It is better to explain the survey patiently and let everyone know how helpful they are for our survey before showing them the survey. We will not push people to do our survey, and As we think at least half of the people will reply to our survey, the surveys we send in Newfound and Labrador will more than two times the sample size. Similarly speaking, we send 1400 surveys to adult citizens living in this area in different regions. The non-response or wrong response will make our standard error larger and make our result far from the real situation. We hope our target people respond, and before using the data from the survey, we check all the information. We promise all our respondents that the only place we use the data in this survey will not use the data in other places. We will not ask our respondents any personal information, and for the address, respondents only need to provide the region where they live.

Survey design

There are totally two questions in the survey. First, people should choose the region they belong

to. After that, they can choose the political party they support.

Results

Table 1.The table below shows the mean, variance, standard error for each stratum and total

	Mean	Variance	Standard error
Avalon	0.5000	0.2512	0.5012
Bonavista-Burin-Trinity	0.5000	0.2510	0.5010
Coast of Bays-Central-Notre Dame	0.5000	0.2511	0.5011
Labrador	0.4000	0.2427	0.4926
Long Range Mountains	0.4960	0.2510	0.5010
St. John's East	0.3000	0.2118	0.4595
St. John's South-Mount Pearl	0.4960	0.2510	0.5010
Total (Non-stratified sampling)	0.4671	0.2491	0.4991
Total (stratified sampling)	0.4671	0.0003	0.0186

Discussion

As we can see from the table 1, the mean in three regions is more extensive than 0.50,

which means more than half of the citizens in that region support the Liberal Party. In most of

the regions, the number of supporters of the Liberal Party is more than 40.00%. St. John's East is

the only region where citizens choose the Liberal Party is only around 0.30. Except for St. John's East, the Liberal Party gets more votes in other regions than other political parties. The total mean for the Liberal Party is 0.47, and after we are using a stratified sample, the variance and standard error become smaller.

Shortcomings and weakness

We feel like there are several weaknesses in this survey. First, we may need to think about the age group and gender of our respondents. Second, the sample size may not be large enough. We should survey more people. Finally, maybe it is better for us to compare this monthly update with last month to think about what happens this month make the change of polling.

Appendices

1. GitHub link https://github.com/christy723/October-polling-updates-in-Newfoudland-and-Labrador-for-Liberal-Party.git

2. Survey Website https://www.surveymonkey.com/r/JV858ZC

3. Short screen

Political party citizen support in Newfoudland and Labrador

1. Which region are you represnet?

○ Avalon

○ Bonavista-Burin-Trinity

○ Coast of Bays-Central-Notre Dame

○ Labrador

○ Long Range Mountains

○ St. John's East

○ St. John's South-Mount Pearl

2. Which political party you vote for?

○ Liberal

○ New Democrat

○ Conservative

○ Green

○ Other (please specify)

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Done

Reference

Federal election 2019 live results. (n.d.). Retrieved October 08, 2020, from
https://newsinteractives.cbc.ca/elections/federal/2019/results/

Wang, X. (n.d.). Retrieved October 08, 2020 *A2data.csv*.