Case Question 3\_Understanding Political Polls

Due on Oct 2 ; one data file is available

Answer the following questions in your presentation:

1 ) What is a random sample? How would you go about collecting one? What factors must you consider when designing a sample frame?

**Random sampling is a part of the sampling technique in which each sample has an equal probability of being chosen.**

**Probability Samples**

* **Random-Digit Dialing (RDD)**  
  Samples of telephone area codes and exchanges are selected, and then random digits are added to the end to create 10-digit phone numbers. The first step ensures phone numbers are distributed properly by geography. The second step, adding the random numbers, makes sure that even unlisted numbers are included. This has traditionally been the standard practiced by almost all public pollsters. The major advantage of RDD is the coverage of the population: Everyone with a telephone is eligible to be sampled. The major disadvantage is that it is expensive, since many of the landline telephone numbers generated are non-working numbers and cellphone numbers need to be manually dialed by interviewers.
  + **Within Household Sample Selection**
  + In households in which more than one eligible respondent resides—in the case of election polls, more than one registered voter--further sampling among the members of the household should be done to produce a random sample of voters. Journalists should ask how respondents were selected. Simply taking the person who answers the telephone will not necessarily result in a representative sample.
* **Registration-Based Sampling (RBS)**  
  This begins with a sample of individuals drawn from lists of registered voters, to which phone numbers are then matched (or sometimes available from the voter list). This is less costly and more efficient, as almost all calls result in reaching a working phone number, which is not true of an RDD sample. One disadvantage of an RBS sample is that voter lists often do not include unlisted telephone numbers or full coverage of cellphone numbers; additionally they may not include voters who have just moved or registered to vote.

The case says that 38% will vote Liberal. Is this a fact or an estimate?

It is an estimate calculated from the sample. In our case around 38% of 2638 people voted for the liberal party. This is corresponding to 1002 people within the sample.

The case says that the survey is accurate within 1.9% points. What exactly does this mean?

1.9 percent is the margin of error. It is calculated using

The case says that the sample consisted of 2,638 people. Where did this number come from?

The case also says the results are accurate 19 times out of 20. What does this mean?

Indicating study is based on 95% Confidence Level.

The Ontario poll has 940 people whereas the nation poll had 2,638 people. Why this difference? How does the smaller sample size affect the results? How can they still be confident the poll is right 19 times out of 20?

The difference is due to the expansion in the margin of error (1.9 vs. 3.2)

Smaller number of people will lead to a larger margin error which is equivalent to a larger range for the same confidence level.

The journalist said that support drops off dramatically after age 65. Do you agree with this statement? If not, why is he wrong?

Assuming 2638 total sample ¼ in 50-64 & ¼ in 65 + equal to 660 people. For 660 sample size 95 % Confidence Level Margin of error is 3.82. This applies to both groups and the difference is 6 percent. They can be found in the same distribution. In order to prove they would need a larger sample from each group.