

Unit 4 Discussion Example – Initial Post

When the results of a survey or poll are published, the sample size and the margin of error are both given. For example: 1000 voters were surveyed and $39 \pm 2\%$ of the voters agree with the president. In this example $N=1000$ and the margin of error (MoE) is 2%.

This website lists several public opinion polls. Search the site and find a poll where the sample size and margin of error are given. Try to find a poll dealing with a topic in your profession or one in which you are really interested.

<http://www.pollingreport.com>

Determine the following information for the selected poll results and include in your initial post:

1. URL for the website. State the poll question, the sample size n , and the margin of error (also known as sampling error).
2. Interpret the results of your poll using your own words and full sentences. Note: Depending on the question asked, your poll may have more than one poll result – you only need to discuss one result.
3. State the confidence interval using the MoE. What does this confidence interval estimate?
4. Use worksheet (CIE Proportion.xlsx) to calculate the confidence interval based on the sample size and the number of successes (the proportion you are interested in). Use a confidence level of 95%.
5. What is the calculated confidence interval? How does this compare to the interval in part 3 using the poll's MoE?
6. Discuss potential biases that could skew sampling results.

1) Opinions about Hydraulic Fracturing ("fracking") were surveyed nationally during March 2016. These survey results can be found at: <http://www.pollingreport.com/energy.htm>

The question posed was "'Do you favor or oppose hydraulic fracturing or 'fracking' as a means of increasing the production of natural gas and oil in the U.S.?"

Sample size, $n = 1,019$ adults nationwide. Margin of error ± 4 .

2) 36% were in favor of fracking as a method for increasing our energy resources in the US
51% were opposed of fracking as a method for increasing our energy resources in the US
13% were unsure of their opinion on fracking for increasing our energy resources in the US

3) The confidence interval for each result is found by adding/subtracting the MoE from the result.

In favor: $(36 - 4\%, 36 + 4\%) = (32\% - 40\%)$

4) & 5) Using CIE Proportion.xlsx, I will enter the following variables:

$n = 1019$

Number of Successes = 36% of 1019 = $0.36 * 1019 = 366.84$ rounded to 367 people

Confidence Level = 95%

Confidence Interval is (0.3307 – 0.3896)
or (33.07% - 38.96%)

Data	
Sample Size	1019
Number of Successes	367
Confidence Level	95%
Intermediate Calculations	
Sample Proportion	0.360157
Z Value	-1.9600
Standard Error of the Proportion	0.015038
Interval Half Width	0.0295
Confidence Interval	
Interval Lower Limit	0.3307
Interval Upper Limit	0.3896

6) I can imagine many biases that would affect the results of this survey. The first bias might be in the selection of recipients of this survey. A selection bias might be present if the sample selection is not representative of the general population. A sampling error might be present as well as is what the margin of error represents, for this case, 4%. We do not know what organization sponsored the surveying process and analysis. If the sponsoring organization was a fracking company, this could present an ethical question about the results. These are just a few considerations for these survey results.