

Week 7 Friday

Standard Error

Make sure you know your neighbors' names. Then discuss:

What is “standard error”?

Can you explain to your neighbors what this term means *conceptually* in an example context of your choosing?

Difference of proportions

1. A simple random sample of California and Oregon residents had 10,000 Californians and 5000 Oregonians. 8% of California residents reported having insufficient sleep during the past 30 days, while 9% of Oregon residents reported having insufficient sleep during the past 30 days.

Compute and interpret a 90% confidence interval for the difference in the proportion of people reporting having insufficient sleep for California and Oregon.

2. A simple random sample of California and Oregon residents had 10,000 Californians and 5000 Oregonians. 8% of the California residents reported having insufficient sleep during the past 30 days, while 9% of Oregon residents reported having insufficient sleep during the past 30 days.

Compute and interpret a p-value for the data under the hypothesis that proportions of people reporting having insufficient sleep in California and Oregon are the same.

Let $p_{<40k}$ be the proportion of people who feel personally affected by US government shutdowns among the people making less than \$40,000 per year, and let $p_{\geq 40k}$ be the proportion of people who feel personally affected by US government shutdowns among the people making at least \$40,000 per year. Based on the results of a poll, a 95% confidence interval for $p_{<40k} - p_{\geq 40k}$ was found to be $(-0.16, 0.02)$.

3. Consider the following statement: “A 95% confidence interval for $p_{\geq 40k} - p_{<40k}$ is $(-0.02, 0.16)$.” This statement is:

(A) True

(B) False

Let $p_{<40k}$ be the proportion of people who feel personally affected by US government shutdowns among the people making less than \$40,000 per year, and let $p_{\geq 40k}$ be the proportion of people who feel personally affected by US government shutdowns among the people making at least \$40,000 per year. Based on the results of a poll, a 95% confidence interval for $p_{<40k} - p_{\geq 40k}$ was found to be $(-0.16, 0.02)$.

4. Consider the following statement: “Among poll respondents, more people in the wealthier income group felt personally affected by US government shutdowns.” This statement is:

(A) True

(B) False