Day 23 of #100daysofmathandstats: Data sampling Concepts(Contd...)

By Harsh Kathiriya

Outline

- Confidence Interval
- Interval endpoints

Confidence Interval

- The percentage of confidence intervals, constructed in the same way from the same population, that are expected to contain the statistic of interest.
- A confidence interval is how much uncertainty there is with any particular statistic.
- Confidence intervals are often used with a margin of error. It tells you how confident you can be that the results from a poll or survey reflect what you would expect to find if it were possible to survey the entire population. Confidence intervals are intrinsically connected to confidence levels.

Real Example of confidence interval

- The U.S. Census Bureau routinely uses confidence levels of 90% in their surveys. One survey of the number of people in poverty in 1995 stated a confidence level of 90% for the statistics
- The number of people in poverty in the United States is 35,534,124 to 37,315,094. That means if the Census Bureau repeated the survey using the same techniques,
- 90 percent of the time the results would fall between 35,534,124 and 37,315,094 people in poverty. The stated figure (35,534,124 to 37,315,094) is the confidence interval.

Interval endpoints & levels of confidence

- The top and bottom of the confidence interval.
- The percentage associated with the confidence interval is termed the level of confidence.
- The higher the level of confidence, the wider the interval. Also, the smaller the sample, the wider the interval (i.e., the greater the uncertainty).
- The more confident you want to be, and the less data you have, the wider you must make the confidence interval to be sufficiently assured of capturing the true value.

Thank you

Github Link: https://github.com/harsh9898/100daysofstatandmath

Don’t forget to post your queries or feedbacks on the post.

Share or like for the benefit of others.

Source for some of the content: https://www.openintro.org/book/os/