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19 January 2023

STAT 522 HW1

1. Read the articles by Roush (1996) and Holden (2009). Based on the problem and arguments presented in the articles, what do you think about using sampling or a sample adjustment instead of taking a full census? Write one or two typed paragraphs on your thoughts about this question.

The discussion between proponents and opponents of applying some sampling techniques on the census happens around mainly three things: budget, data accuracy, and subjectivity. Considering those factors, I am in the favor of the sampling technique on the census.
First, when it comes to the budget, it is always good to cut unnecessary costs. The amount that the sampling technique helps to reduce would be great. The cost comes from the national budget, which should be utilized as much as possible. The bureau estimates that sampling rather than interviewing the last 10% of the population in 2000 will cost $900 million less than the $4.8 billion it would cost to merely repeat the 1990 census. If the government can apply $900 million to help the poor household which is the main cause of this census accuracy problem, that would be a win-win situation for both the government, those poor, and regular citizens. Second, the goal of the census is to figure out how many people the US holds at a specific point. To obtain the exact number of population would be an ideal case. Yet, the original method does not provide us the exact number either. There is always the margin of error as well. If that's so, using the statistical sampling technique to assess the accuracy of an inevitably incomplete count is a practical and logical approach. Lastly, the subjectivity seems problematic. It is true that statistics can provide the objective result with some margin of error and from the non-statistician perspective, some sampling techniques seem skeptical. However, this is something the statistician needs to work on convincing politicians or non-statistician. There is no truly correct method to do this census. We always have some margin of error. We need to put an effort to make them understand the statistical sampling method gives us one of the most objective results.