

## Worksheet 10/16/2023

A guideline to analyze a statistical study:

1. Get a big picture of the study
2. Consider the source
3. Look for bias in the sample
4. Look for problems of defining or measuring the variables of interest
5. Beware of confounding variables
6. Consider the setting and wording in the survey
7. Check that the result is presented fairly
8. Stand back and consider the conclusion

*Based solely on the information given, do you have reason to question the results or the methods used in the following hypothetical studies? Explain your reasoning.*

1) A survey of hourly wages of fast-food workers in a large city samples 20 workers from each of ten fast-food restaurants.

2) A TV talk show host asks the TV audience to text “1” if they support and “2” if they oppose a law requiring background checks for all purchases of firearms.

3) A state Democratic Party polls voters who are registered as Democrats to determine which of its candidate for governor is most likely to win against the Republican candidate.

*Based solely on the information given about the following hypothetical studies, decide whether you would believe the stated claim. Justify your conclusion.*

4) A new diet program claims that 200 randomly selected participants lost up to 15 pounds in six weeks and that the program works for anyone with enough discipline.

5) A spokesperson for a Major League Soccer team claims that the average attendance at home games is 45,236, up 12% over the previous season.

*Identify at least one potential source of bias in the following studies or claims. Explain why the bias would or would not affect your view of the study or claim.*

6) A research study concludes that if everyone shifted to a plant-based diet, we would reduce global land use for agriculture by 75%.

7) Based on a Pew Research Center survey of 35,000 American adults, the percentages of four-year college degree holders among Hindus, atheists, Muslims, Catholics, and all American adults are 77%, 43%, 39%, 27%, and 26%, respectively.

8) According to a Netflix study, 48% of American couples are “cheaters”: They promise each other to watch a film together, but one of them first watches it alone.