

§5B - SHOULD YOU BELIEVE A STATISTICAL STUDY?

8 GUIDELINES TO HELP ANSWER THIS QUESTION:

GUIDELINE 1 - IDENTIFY THE GOAL, POPULATION, & TYPE OF STUDY

↑
CLEARLY DEFINED?

↑
OBSERVATIONAL OR EXPERIMENTAL?

↑
SINGLE BLIND?

↑
DOUBLE BLIND?

e.g. 100 PEOPLE GIVEN THEIR HOROSCOPE & ASKED IF ACCURATE.
85% SAY YES.
BELIEVE IT?

e.g. *10

GUIDELINE 2 - CONSIDER THE SOURCE
POTENTIAL FOR BIAS

e.g. TOBACCO RESEARCH INSTITUTE

GUIDELINE 3 - SAMPLE BIAS

→ SELECTION BIAS

TELEPHONE POLL IN 1936

→ PARTICIPATION BIAS

PARTICIPATION IS VOLUNTARY

- INTERNET POLLS

GUIDELINE 4 - PROBLEMS DEFINING/MEASURING THE VARIABLE OF INTEREST

e.g. HOW MUCH DO PEOPLE LIKE SOMETHING

↑
ITEMS OR QUANTITIES THE STUDY
SEEKS TO MEASURE.

e.g. HOW MUCH DO PEOPLE EXERCISE

GUIDELINE 5 - CONFOUNDING VARIABLES

e.g. RADON & LUNG CANCER

GUIDELINE 6 - SETTING & WORDING OF SURVEYS

e.g. "HAVE YOU EVER BEEN ARRESTED?"

e.g. "DO YOU WANT HIGHER TAXES?"

"DO YOU WANT MORE GOVERNMENT PROGRAMS TO ASSIST THOSE IN NEED?"

GUIDELINE 7 - CHECK THAT RESULTS ARE PRESENTED FAIRLY

GOOGLE "MISLEADING GRAPHS"

e.g. "30% OF CCNY STUDENTS SCORED BELOW NATIONAL AVERAGE ON SAT"

GUIDELINE 8 - CONSIDER THE CONCLUSIONS

- DID THE STUDY ACHIEVE ITS GOALS?
- DO CONCLUSIONS MAKE SENSE?
- CAN WE RULE OUT ALTERNATIVE EXPLANATIONS OF RESULTS
- PRACTICAL SIGNIFICANCE?