# Cheat Sheet For Identifying Limitations or Bias in Research Papers

When you see a headline in the media claiming a massive scientific breakthrough work through the following five steps before you sell the farm...

## **SAMPLE SIZE AND DIVERSITY:**

Check the number of participants (sample size) and their diversity. A small sample size or a sample that lacks diversity (e.g., only includes certain age groups, genders, ethnicities) can limit the generalizability of the findings. Studies with larger, diverse samples typically provide more reliable results.

## STUDY DURATION AND FOLLOW-UP:

Look at how long the study lasted and whether there was any follow-up with participants. Short-term studies may not capture long-term effects, and lack of follow-up can miss out on crucial data about the sustainability or long-term impact of the findings.

# **CLARITY AND DETAIL IN METHODOLOGY:**

Assess how clearly the study's methods are described. You should be able to understand how the research was conducted, even if some technical details are complex. Vague or incomplete methodology can be a red flag, as it hinders the ability to assess the study's validity.

### **CONFLICT OF INTEREST AND FUNDING SOURCES:**

Always check for any disclosed conflicts of interest or funding sources. Research sponsored by organizations that could benefit from certain outcomes might introduce bias. Although funding from such sources doesn't automatically discredit a study, it's important to be aware of these potential influences.

#### STATISTICAL ANALYSIS AND INTERPRETATION:

Pay attention to how the results are analyzed and interpreted. Be cautious of bold claims that don't seem to be supported by the data. Also, watch for the use of terms like "significant" or "non-significant," and ensure they're used correctly in a statistical context.

Remember, no study is perfect, and it's common for research to have some limitations. The key is to recognize these limitations and consider how they might affect the study's conclusions. By keeping an eye on these five aspects, you'll be better equipped to critically evaluate research papers.



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