

Statistics Project: Bias in Surveys

Purpose: To investigate how much different forms of bias can affect the results of a survey.

Due Dates: Proposal: Monday, October 20 Report/Presentations: Tuesday, Oct. 28
Individual Reflection: Wednesday, October 29

Note: Each component is due at the beginning of the period on the specified date. After that, components are considered late and points will be deducted.

Project: The project will be done in groups of one to three. You will design a survey on an interesting topic of your choice, but you must design it so you can address ONE of the following questions:

- Is it possible to word a question in two different ways that are logically equivalent, but have much different responses?
- Do the people you choose affect the responses you receive?
- Does anonymity change the responses to sensitive questions?
- Does providing extra information affect the responses?

Components (see respective section for details):

1. Proposal
2. Report
3. Oral Presentation
4. Individual reflection

Proposal: Each group will submit a typed proposal (about half-page to one-page) that will address each of the following topics. It must be written in complete sentences and in paragraph form.

1. A definition of the population of interest
2. A copy of your survey question(s).
3. A short description of how you will create bias and what direction you think the bias will swing.
4. Where and how you will collect your data.

NOTE: Survey 40 people for the unbiased group and 40 for the biased group. You may not survey the same person for both groups.

Report: The report is the essential piece of this project. It should address the following questions/main points:

- Set the stage: Introduce your questions and your population of interest. Explain in your own words, the purpose of this project.
- Sampling: Explain what sampling methods you used. This should be detailed enough for someone not in your group to repeat your methods. How did you select your participants? Explain how you created bias in your survey.
- Results (in narrative form): What were the results you got from surveying the "unbiased" group? What were the results you got from surveying the "biased" group? Explain what kind of bias was displayed through your project.

- Visual representation to compare both groups: Make sure you use an appropriate graph that will allow you to compare the questions. Be mindful of the type of data you have gathered (qualitative or quantitative) as this will determine what type of graph is appropriate.

Oral Presentation (<5 mins): All group members need to participate equally. Explain the highlights of your report. You must show your visual representation. To receive full credit for your presentation everyone in your group must speak clearly and with confidence.

Individual Reflection: Every group member will complete an individual (at least one page) reflection that will address the following:

- Explain the type of bias your group created (include a definition and how your group met that definition). How did your group achieve this bias?
- What were the difficulties in this project?
- Explain the role you played in the success of your group.
- If you were to assign a grade to your group, what would it be? Why?

If you were to assign a grade to each of your group members based on their contribution to the group, what would you assign? (This will be highly confidential and the teacher is the only person who will read this).

Rubrics: Total ____/40

	Effectively addresses (5 pts)	Almost effectively addresses (4 pts)	Partially addresses (3 pts)	Inadequately addresses (0 pts)
Proposal – Content	Proposal addresses all 4 components necessary and is	Proposal is not written in the appropriate format <u>OR</u> is missing 1 component	Proposal is missing 2 components	Proposal is missing 3 or more components
Proposal – Timeliness	Proposal is submitted at the beginning of the period on the due date		Proposal is submitted on the due date (after the beginning of the period)	Proposal is submitted after the due date
Report – Content	Report is well written and addresses all questions/main points	Report addresses all questions/main points but writing is weak	Report does not address 1 – 2 questions/main points	Report is missing 3 or more questions/main points
Report – Timeliness	Report is submitted at the beginning of the period on the due date		Report is submitted on the due date (after the beginning of the period)	Report is submitted after the due date
Oral Presentation	All group members participate, speak clearly and are knowledgeable on their project		Some group members do not participate <u>OR</u> group members seem unknowledgeable about their project	
Individual Reflection	Individual reflection addresses each question and is well written	Individual reflection addresses each question but writing is weak	Individual reflection does not address 1 – 2 questions	Individual reflection is missing 3 or more questions
Individual Reflection - Timeliness	Reflection is submitted at the beginning of the period on the due date		Reflection is submitted on the due date (after the beginning of the period)	Reflection is submitted after the due date
Individual Participation	Group ratings indicate participation was equal		Group ratings indicate that student did not contribute fairly	Group ratings indicate that student did not contribute at all