Unit 2 GRASPS: Survey Bias

**GOAL**:

You will design and conduct an experiment to investigate the effects of response bias in surveys. Then, you will effectively communicate your findings in written and oral form.

**ROLE**:

You are a college student in a statistics class required for your psychology major.

**AUDIENCE**:

Your target audience is the local college community.

**SITUATION**:

You are a psychology major taking a statistics class in college. You are tasked with designing and conducting an experiment to uncover the effects of response bias in surveys and reporting on your findings. You may choose any topic for your survey, but you must design your experiment so that it can answer at least one of the following questions:

* Can the wording of a question create response bias?
* Do the characteristics of the interviewer create response bias?
* Does anonymity change the responses to sensitive questions?
* Does providing extra information affect the responses?

**PRODUCT PERFORMANCE**:

You will submit a typed paper and create a poster to present to others.

**STANDARDS and CRITERIA for SUCCESS**:

**This project consists of 3 parts.** Interim deadlines are included to help focus your efforts.

 **Proposal (20%):** Your group must submit a completed project proposal form that outlines your survey question and the details of your experimental design. The proposal is worth 20% of the total grade, so don’t treat it casually.

The proposal is due for approval no later than Tuesday, October 29th.

**You may not start your project until it has been approved.**

**The written report (40%):**

* I will need tosign off on your collected data no later than Wednesday, November 6th.

*(Do not start writing your report until I have done so).*

* The written report must be typed and graphs should be done on the computer.

The report is due no later than Friday, November 15th and should include the following sections (clearly labeled).

* **Introduction:**  What form of response bias were you investigating?  Why did you choose the topic you chose for the survey? What results do you expect?
* **Methodology:**  Describe how you conducted your experiment and why you think your design was effective.  Note: This section should be very similar to your proposal.
* **Results:**  Present the data in both tables and graphs in such a way that conclusions can easily be made.  Make sure to label the graphs/tables clearly and consistently.
* **Conclusions:**  What conclusions can be drawn from your experiment?  Be specific.

 Were the results as you had anticipated?

 Did you encounter any problems during your project?

 Would you do anything different if you were to repeat your experiment?

 What did you learn from this project?

**Poster & Presentation (40%):**

* The poster is due Friday, November 15th.
* Poster Presentations will be made to your classmates on Friday, November 15th. Posters will be displayed in a prominent location in the school for your fellow students to enjoy. The poster should completely summarize your project yet be simple enough to be understood by a student who has had no formal statistics instruction.

**Your poster should include:**

* Title and objective: the type of response bias investigated and the survey questions.
* Data collection methods: how you used control, blocking, randomization.
* At least 2 visuals: experimental design schematic (required), graphs, tables, digital photos.
* Results and conclusions.

**Note:** All work is due at the beginning of the period, even if you or your partner is absent.

Significant points will be deducted for late work (10% per day).

**Examples of Successful Projects: (from another teacher, Josh Tabor’s students)**

Milk vs. Orange Juice
 1.   Which do you prefer, milk or orange juice, as a breakfast drink?  (milk: 14%)
 2. Milk contains high levels of vitamin D and calcium.  Do you prefer milk or orange juice as

 a breakfast drink?  (milk:  64%)
Cheating
 1. Do you cheat in class?  (anonymous:  47% would)
 2. Do you cheat in class?  (not anonymous:  15% would)

Make-Up   (all questions asked to males)
 1.  Do you find females who wear makeup attractive?  (wearing makeup:  75% yes)
 2.  Do you find females who wear makeup attractive?  (without wearing makeup:  30% yes)

Time Online
 1.  On average, how many hours a week do you spend online:  0-5, 6-10, 11-16, 17-25, 26-35, or more?
 2.  On average, how many hours do you spend online each week:  0-5, 6-10, 11-16, or more?
    (For this question, the students anticipated that subjects would be embarrassed to put more.
      In the first question, 50% answered over 17 hours, but in the second question, 0% did.)

**Scoring Rubrics**

**The written report** will be scored for AP appropriate content and accuracy.

|  |  |
| --- | --- |
| **Introduction** Form of Response Bias Topic choice & reasoning  | **15%** |
| **Methodology** Setup of randomized comparative experiment Appropriate use of control, random assignment, and replication Appropriately labeled experimental design diagram | **30%** |
| **Results** Data collection results displayed in appropriate tables and graphs  | **15%** |
| **Conclusion** Interpret results back to original form of response bias Discussion of problems encountered Changes that would be made if experiment was repeated What was learned | **40%** |

**The poster** will be scored for clarity, communication and visual appeal.

|  |  |
| --- | --- |
| **Title and Objective** survey question and type of response bias | **15%** |
| **Data Collection Methods** brief discussion of how the experiment was carried out | **25%** |
| **Visual Aids** experimental design diagram, graphs, pictures | **25%** |
| **Results and Conclusions** clear and concise | **15%** |
| **Visual Appeal** clean, professional and fun to look at | **15%** |

Unit 2 GRASPS: Survey Bias Due: \_\_\_\_\_\_\_\_\_\_

Project Proposal Form

Each group of two must turn in one project proposal form. Attach extra sheets if necessary.

1. Which of the following four questions are you seeking to answer with your surveys?

[ ]  Can the wording of a question create response bias?

[ ]  Do the characteristics of the interviewer create response bias?

[ ]  Does anonymity change the responses to sensitive questions?

[ ]  Does providing extra information affect the responses?

1. Write down your survey question and describe changes you will make to the question, to the interviewer’s appearance or to the survey design in order to affect the changes you hope to observe in #1.
2. What are your anticipated results?

**Outline of Experimental Design**

1. How will you obtain your subjects for this experiment? (You must use a minimum of 30 subjects to achieve sufficient **replication**.)
2. Describe how you will carry out your experiment. Be specific! Include a diagram of your experimental design if you wish. Explain how your design addresses the issues of **control** and **random assignment**. Be sure to discuss your survey administration method (in person, paper ballot, Survey Monkey, google form, etc.) in detail.