

2.4 – Bias and Survey Design

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If you conduct a survey and collect information firsthand, this is called _____ data. This type of data is easy to work with because you control how it is collected.

Information obtained from similar studies conducted by OTHER researchers is called _____ data.



Part 1: Principles of Survey Design

Basic Principle #1:

A survey is not merely a collection of questions, thrown together without purpose—surveys should be designed around specific needs for information about a _____ topic.

Basic Principle #2:

Both parties to the survey have responsibilities:

- The interviewer's work must be mostly done in advance; identify relevant variables, craft questions, design the flow of the survey.
- The interviewee's task is to—having agreed to answer questions—be _____.

Basic Principle #3:

A prime task of the interviewer at the question design stage is to help the interviewee be honest.

Part 2: Open vs. Closed Questions

1. Open Questions

Examples:

How do you feel about the salaries paid to professional athletes?

What is the most important issue for King's students?

2. Closed Questions

Part 3: Types of Closed Questions

i) _____

Circle the appropriate response:

a) Gender: M F

b) Age: under 14 15 or 16
 17 or 18 19 and over

ii) _____

Which of the following sports do you enjoy watching? (check all that apply)

- | | |
|-------------------------------------|-----------------------------------|
| <input type="checkbox"/> Basketball | <input type="checkbox"/> UFC |
| <input type="checkbox"/> Baseball | <input type="checkbox"/> Lacrosse |
| <input type="checkbox"/> Hockey | <input type="checkbox"/> Soccer |

iii) _____ – asks survey respondents to compare different items using a common scale. It can also be used just to rate one item using a scale.

How satisfies were you with your grade from the first unit test? (check the one that applies)

___ *Very dissatisfied*

___ *Dissatisfied*

___ *Satisfied*

___ *Very Satisfied*

Using a scale of 0 = not at all to 4 = very important, please rate the importance of each of the following aspects of service in a restaurant

	0	1	2	3	4
Speed of service	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Friendliness of staff	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Helpfulness of staff	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Value for money	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Taste of food	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

iv) _____ – asks survey respondents to compare a list of objects to one another by ORDERING them

When choosing a restaurant to eat at, please rank the following in order of importance from 1 to 4 where 1 is the most important to you and 4 is the least important to you

___ *Speed of Service* ___ *Ease of parking* ___ *Cleanliness* ___ *Friendliness of staff*

Part 4: Good vs. Bad Questions

Good Questions are:

Good Questions avoid:

Example 1: What's wrong with each of the following questions?

1. Given the increasing problem of obesity amongst teenagers in North America, do you agree that King's should make physical education a mandatory class for every grade?

2. Do you think the NHLPA should have agreed to the last CBA?

3. Which player would you not select first in a fantasy hockey draft?

- ☐ Ovechkin
- ☐ Crosby
- ☐ Malkin
- ☐ Stamkos

Part 3: Types of Bias

The results of a survey can be accurate only if the sample is _____ of the population and the measurements are objective. The methods used for choosing the sample and collecting the data must be free from _____. Statistical bias is any factor that favours certain outcomes or responses and hence systematically _____ the survey results.



Sampling Bias:

Household Bias:

Non-response Bias:

Response/Measurement Bias:

Example 2: Identifying Bias

You are the campaign manager for your best friend, Rebecca, who is running for student council Prime Minister. You have been asked to determine the overall level of support for Rebecca among the 1500 students at your school. Design a sampling method that will provide the least **sampling bias**.

Potential Solution --- Plan A

To save time, you have decided that a sample of about 50 students will provide a good picture of the school's political landscape. Students have lunch periods 2, 3, or 4. By random draw from a hat, you have decided to conduct the survey in the cafeteria during period 4. The first 50 students who enter the cafeteria are given the questionnaire, and you instruct them to fill it out and return it to you before the end of lunch.

What is wrong with this scenario?

Plan B

To fix the problems with Plan A, you have decided to provide a questionnaire to one person from each homeroom (your sample size is now 73). You can wait until the respondent finishes with the questionnaire to collect it. This will eliminate the non-response bias.

What is wrong with this scenario?

Create a Plan C that is free from as much bias as possible:

Example 3: Identifying Sources of Response Bias

Consider the questionnaire below developed by Rebecca's friends. Identify examples of response bias.

Election Survey (brought to you by the friends of Rebecca committee)				
Circle the appropriate response				
Gender:	Male		Female	
Grade:	9	10	11	12
On Election Day, I intend to vote for:				
	Rebecca	Mable		Jacob
Circle what you would like:				
	more dances			
	more theme-dress days			
	more holidays			
	more fun			