Started on	Wednesday, 3 May 2023, 5:50 PM
State	Finished
Completed on	Friday, 5 May 2023, 9:49 PM
Time taken	2 days 3 hours
Grade	**21.00** out of 24.00 (**88**%)

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Information

Question 1: Inference from a sample

Read the following description of the results of a survey conducted by a large Australian bank. Identify the sample, population and target property and comment on whether the poll result provides a good reason to accept the conclusion that is drawn. If you identify multiple issues with the inference from a sample, discuss them.

(12 marks; 100-200 words approximately).

Question **1**
Complete
Mark 11.00 out of 12.00

Opal Banking Union, a large Australian bank, wants to determine the degree of customer satisfaction with its services. It commissions web developers to add a feature to their online banking app: after one month of use, each new customer receives a prompt which asks them to report any issues they have encountered by typing in a textbox. They can also dismiss the prompt by clicking "I haven't encountered any issues". After collecting data for 12 months, the bank receives over 35,000 responses. Of these responses, 12,000 reported an issue, and the remainder selected "I haven't encountered any issues". In their internal annual report, Opal Banking Union reports that roughly 30-40% of their customers were dissatisfied with the bank's services, and thus they must do much more to improve the customer experience.

Marking scheme:

	Mark		Comments
Sample correctly identified		/2	
Population correctly identified		/2	
Target property correctly identified		/2	
Evaluation of the argument		/6	
TOTAL		/12	

Sample:

The 35000 responses which collected by Opal Banking Union through their online banking app.

Population:

The entire group of Opal Banking Union's customers use their online banking app.

Target Property:

Customer satisfaction with Opal Banking Union's services.

Do the poll results support the conclusion drawn?:

The sample may not represent the entire population of Opal Banking Union's customers. The survey only prompts new customers after one month of using the online banking app, so it may not include the experiences of long-term customers who have more opinions about the bank's services. Additionally, older customers who are less comfortable using online banking may not be represented in the sample. Therefore, the sample may only reflect the experiences of a subset of Opal Banking Union's customers, and may not accurately reflect the opinions of the entire customer population.

Furthermore, the survey only asks customers to report issues on the online bank app, so it may not capture all opinions about the bank's

services. Customers who did not encounter any issues may not bother to close the prompt and select the option "I haven't encountered any issues", resulting in a potential bias towards customers with negative experiences with the bank's services. This could lead to the result overestimating the proportion of dissatisfied customers in the population.

Therefore, the results of this survey cannot be used to support the conclusion about the satisfaction levels of the entire population of Opal Banking Union's customers.

Comment:

Mark			
Sample correctly identified		1/2	Not quite. The sample is: the 35,000 new customers who responded to the prompt on Opal Banking Union's app.
Population correctly identified		2/2	Correct.
Target property correctly identified		2/2	Correct.
Evaluation of the argument		6/6	Three problems identified. Very good
TOTAL		11/12	

Information

Click on the 'Next page' button to continue to the next question.

Information

Question 2: Argument for causation

Read the following passage which contains an argument for a causal claim. Does the evidence cited provide a compelling reason to accept the claim that there is a **causal** link between time spent watching videos online and academic performance in primary school children? Explain your answer.

(12 marks, 100-200 words)

Question **2**

Complete

Mark 10.00 out of 12.00

A new study indicates that watching videos and shows online on sites like YouTube and Netflix may be negatively impacting young children's academic performance. In one of the largest studies of its kind, researchers were granted access to hundreds of thousands of test scores of primary school age children. Along with this data they gathered survey responses from the parents of the children, asking how many hours a day they estimated their child spent streaming videos online. They discovered that those children who watched over four hours of video content per day were significantly more likely to perform worse than average on standardised tests, compared with children who watched less than four hours per day.

Marking scheme

	Mark	Comments
Answer to the question whether the argument is successful in establishing the causal claim	/2	
Justification for the answer	/10	
TOTAL	/12	

The passage shows that there is a causal relationship between the amount of time primary school children spend watching videos online and their academic performance. The evidence is researchers analysed standardised test scores and survey responses from the parents of the children. The study found that children who watched more than four hours of video content per day performed worse than average on standardised tests compared to those who watched less than four hours per day.

However, the study relies on self-reported data, which may not be accurate. Children may not be able to report accurately how much time they spend watching videos and what content they are watching, and parents may not know all the online content their child is using. This could cause measurement errors in the study and weaken the relationship between video consumption and academic performance. Furthermore, the study did not explore the specific content of the videos being watched, but not all online video content is equal in educational value. For example, if children spend a lot of time watching entertainment-based videos rather than educational content, this could be an important factor in their academic performance than just the amount of time spent watching videos.

Moreover, although the study indicates a relationship between watching online videos and academic performance, it does not prove that one causes the other. There may be other factors affecting these variables, such as the parent's economic status, educational background, opportunities for educational resources, and whether the children lack parental supervision or have a learning disability. At the same time, the study did not provide information on a specific age range, but different age ranges may have different levels of susceptibility to the effects of video content watching duration. Without controlling for these potential variables, it is difficult to establish a causal relationship between video consumption and academic performance.

Therefore, while the evidence cited in the passage brings some support for a causal relationship between the amount of time children spend watching videos online and their academic performance, it does not determine whether the amount of time spent watching videos brings affect children's academic performance.

Comment:
Marking scheme

	Mark	Comments
Answer to the question whether the argument is successful in establishing the causal claim	0/2	You didn't answer the question. This is a yes or no question and you equivocated. You basically say that there isn't a proven causal link, but at no point say this plainly and clearly.
Justification for the answer	10/10	Problems with correlation identified. Problems with causation identified, i.e., common/confounding causes.
TOTAL	10/12	

◄ Assessment Task 3

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Assessment Task 5 Instructions ►