Exam Two

Due Jul 17 at 11:59pm **Points** 100 **Questions** 13
Available Jul 11 at 12am - Jul 17 at 11:59pm 7 days **Time Limit** 270 Minutes

Instructions

In the exam, you will need to answer the following questions and you will need R to perform the analysis part.

In the application part, please use a word or pdf file to answer the questions. Other files will not be accepted.

This quiz was locked Jul 17 at 11:59pm.

Attempt History

	Attempt	Time	Score
LATEST	Attempt 1	250 minutes	9 out of 100 *

* Some questions not yet graded

ⓘ Correct answers are hidden.

Score for this quiz: **9** out of 100 *
Submitted Jul 17 at 7:41pm
This attempt took 250 minutes.

Question 1 — 3 / 3 pts

Regarding the violation of multicollinearity, which of the following

description is wrong?

- (•) It changes the intercept of the regression line.
- ( ) It changes the sign of the slope.
- ( ) It changes the slope of the regression line.
- ( ) It changes the value of F-test
- ( ) It changes the value of T-tests

Question 2

3 / 3 pts

Regarding a regression model, which of the following description is wrong? Say x is predictor and y is the outcome.

- ( )
  Without the regression model, the best prediction of y is the mean of y.
- ( ) The amount of variability in y that can be explained
- (•) The regression line does not always pass through the point (X, Y)
- ( )
  The regression models can have more than three predictors at the same time.

Incorrect

Question 3

0 / 3 pts

What can the Pearson's r tell us?

- Causality
- (•) Direction
- Covariance
- Significance

Incorrect

Question 4

0 / 3 pts

Which of the following methods in terms of detecting multicollinearity is wrong?

- Check the tolerance score
- (•) Check the predictors to see whether they are measuring the same constructs
- Check the VIF score
- Check the relationship between the F-value and t-values of the model

Incorrect

Question 5

0 / 3 pts

We try to determine if we can use educational background, interests, and gender to predict an individual's economic status (poor, average, high), which test should we use?

- (•) Multiple regression
- ( ) ANCOVA
- ( ) Logistic regression
- ( ) Pearson's Correlation
- ( ) All the methods are not appropriate.

Incorrect

Question 6

0 / 3 pts

We try to determine if we can use educational background, interests, and gender to see if an individual's annual income differs in terms of their educational background, which test should we use?

- (•) Multiple regression
- ( ) ANCOVA
- ( ) Logistic regression
- ( ) Pearson's Correlation

All the methods are not appropriate.

Question 7

3 / 3 pts

We try to determine if we can use sugar intake and hours of exercise to predict an individual's weight change, which test should we use?

- (•) Multiple regression
- ( ) ANCOVA
- ( ) Logistic regression
- ( ) Pearson's Correlation
- ( ) All the methods are not appropriate.

Incorrect

Question 8

0 / 3 pts

We try to determine if we can use sugar intake and hours of exercise to see if an individual's weight differs at different time period, which test should we use?

- (•) Multiple regression
- ( ) ANCOVA

- Logistic regression
- Pearson's Correlation
- All the methods are not appropriate.

Incorrect

Question 9

0 / 3 pts

In a study, the researcher tries to use sugar intake to predict an individual's weight. However, when the researcher adds another variable (exercise) into the study, he finds out that the effect of sugar intake on weight has increased. Which of the following statement can be true?

- (•) Exercise is a suppressor.
- Exercise is a moderator.
- There is an interaction effect between sugar intake and exercise.
- All the statements are correct.
- All the statements are incorrect.

Incorrect

Question 10

0 / 3 pts

In a study, the researcher tries to use sugar intake to predict an

individual's weight. However, when the researcher adds another variable (exercise) into the study, he finds out that the effect of sugar intake on weight has decreased. Which of the following statement can be true?

- Exercise is a mediator.
- Exercise is a suppressor.
- Exercise doesn't have effects on individuals' weight
- All the statements are correct.
- All the statements are incorrect.

Question 11

Not yet graded / 10 pts

When a suppressor is used in a model, what is the purpose of it, and how does it work? Please provide an example to illustrate your idea.

Your Answer:

A suppressor variable has been defined as a predictor(independent variable) that has zero correlation with the dependent variable. But as per the (Cohen & Cohen, 1975) In practice , variables almost never have an exactly zero correlation with the dependent variable, therefore , Predictors with very small correlation with the dependent variable may also be considered suppressors. When the suppressor variable is used in the model it help remove the unwanted variance from the predictor variable, thus enhancing the relationship between the other independent variable and the dependent variable. When the predictor

variable are added, the changes in the coefficients may be : a) Unknown because they are not noticed, b) ignored because they are not understood, or C) described as the consequences of a variable that is or acts as a mediator or a suppressor (depending on the direction of the change).

Question 12

Not yet graded / 25 pts

Some researches have shown that class size and school budget have significant correlations with students' performance. Recently, students' test scores on general education were randomly selected by the government. Class size (a dummy coded variable indicating smaller to very larger class sizes) and school budget (from one million to thirteen million) were collected. The minister of education wants to know if class size has an impact on general education scores. Be sure to perform a complete analysis and provide a full summary.

DATA

exam-2-12.pdf
(https://harrisburgu.instructure.com/files/477020/download)

Question 13

Not yet graded / 35 pts

A current report has shown that major and highest degrees have significant impacts on individuals' starting salary. Two thousand, one hundred and sixty participants were randomly selected, in terms of their

starting salary, highest degree and major. Now we are interested in using major and degree to predict whether an individual's starting salary is low or high. Be sure to perform a complete analysis and provide a full summary.

DATA

exam-2-13.pdf
(https://harrisburgu.instructure.com/files/477010/download)

Quiz Score: **9** out of 100