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Required Quiz 10.1: Week 10 Quiz

Due Dec 5 at 11:59pm Points 20 Questions 20
 Available Nov 22 at 12am - Dec 5 at 11:59pm Time Limit 30 Minutes

Submission Details:

Time: 19 minutes
 Current Score: 16 out of 20
 Kept Score: 16 out of 20

Instructions



⌚ Learning Outcome Addressed

1. Apply factor and cluster analysis real-time data
2. Apply various statistical tools in the business scenario

It is now time to assess your understanding of the concepts covered so far in this module.

Quiz Instructions

- The time limit for this quiz is 30 mins. Kindly complete and submit this quiz within this time.
- You have only one attempt to answer the quiz.
- All quiz attempts must be attempted by **Friday, December 5, 2025, by 11:59PM IST.**

Note: This is a graded quiz and counts towards programme completion.

This quiz was locked Dec 5 at 11:59pm.

Attempt History

	Attempt	Time	Score
LATEST	Attempt 1	19 minutes	16 out of 20

Score for this quiz: 16 out of 20

Submitted Dec 1 at 8:21am

This attempt took 19 minutes.

Question 1

1 / 1 pts

In a multiple regression model, if adding more variables increases R² significantly, what does this suggest?

- The original model was more accurate
- The new variables have no effect on the dependent variable
- The new variables help explain more of the variance in the dependent variable
- The model is overfitting

That's correct

Correct!

Question 2

0 / 1 pts

Why is adjusted R² considered a better measure than R² in multiple regression?

Correct Answer

- It adjusts for the number of predictors
- It adjusts for the sample size
- It is always higher than R²
- It adjusts for the correlation between predictors

You Answered

That's incorrect

Question 3

1 / 1 pts

Which of the following is a limitation of R²?

Correct!

- It cannot be negative
- It does not account for the number of predictors in the model
- It cannot be used with multiple predictors
- It indicates the relationship between variables

That's correct

Question 4

1 / 1 pts

Which of the following values can the coefficient of determination (R²) take?

Correct!

- Between 0 and 1
- Any real number
- Between -1 and 1
- Only positive values

That's correct

Question 5

0 / 1 pts

If a model's R² is 0.85,

You Answered

- All of these

Correct Answer

- The model explains 85% of the variance in the dependent variable
-
- The independent variable explains 85% of variance in the dependent variable
- adjusted R² can be any value lesser than R²

That's incorrect

Question 6

0 / 1 pts

In multiple regression, which of the following represents the change in the dependent variable for a one-unit change in an independent variable, holding all other variables constant?

Standardized coefficient

Correlation coefficient

Residual

Unstandardized B coefficient

You Answered

Correct Answer

That's incorrect

Question 7

0 / 1 pts

In multiple regression analysis, the F-value is used to assess model fitness. What does a high F-value indicate?

The relationship between the independent variables is strong.

The model is statistically significant and explains a substantial portion of the variance in the dependent variable.

The independent variables have little to no effect on the dependent variable.

The residuals are normally distributed.

That's incorrect

Question 8

1 / 1 pts

What is the primary advantage of using the p-value approach over the critical value approach?

It can only be applied to normally distributed data.

It does not require setting a significance level.

It provides a direct probability measure of the evidence against the null hypothesis.

It is simpler to compute than the critical value approach.

Correct!

That's correct

Question 9

1 / 1 pts

When using the p-value approach, what does a p-value that is less than the significance level (α) indicate?

Correct!

- The null hypothesis is rejected.
- There is insufficient evidence to reject the null hypothesis.
- The results are inconclusive.
- The null hypothesis is accepted.

That's correct

Question 10

1 / 1 pts

Can adjusted R² be negative?

Correct!

- Yes
- None of these
- Depends on the magnitude of the dependent variable
- No

That's correct

Question 11

1 / 1 pts

Which of the following statements is true about multicollinearity in multiple regression?

Correct!

- It occurs when the residuals are correlated
- It occurs when there is a high correlation between the dependent and independent variables
- It occurs when independent variables are highly correlated with each other
- It improves the model's predictive accuracy

That's correct

Question 12

1 / 1 pts

Which of the following would likely cause R² to change?

Correct!

- All of these

- Removing an relevant variable from the model
- Adding an irrelevant variable to the model
- Adding a relevant variable to the model

That's correct

Question 13

1 / 1 pts

If the correlation coefficient (r) between two variables is 0.8, what is the R^2 ?

Correct!

- 0.64
- 0.4
- 1.6
- 0.8

That's correct

Question 14

1 / 1 pts

When R^2 is close to 1, the model:

- Explains very little of the variance in the dependent variable
- Explains all the variance in the dependent variable
- Is a poor fit for the data
- Explains most of the variance in the dependent variable

That's correct

Question 15

1 / 1 pts

If R^2 is 0, what does this imply about the regression model?

- The model perfectly predicts the dependent variable
- There is a strong negative correlation between the dependent and independent variable(s)
- The model has a 50% error rate
- The model does not explain any of the variations in the dependent variable

That's correct

Question 16

1 / 1 pts

Which R² value suggests the best fit for a regression model?

- 0.20
- 0.80
- 0.99
- 0.50

Correct!**That's correct****Question 17**

1 / 1 pts

When using multiple regression to assess the impact of advertising expenditure, pricing, and product quality on sales, what would a significant positive coefficient for advertising expenditure suggest?

- There is no relationship between advertising expenditure and sales
- Sales increase as advertising expenditure decreases
- Sales remain constant regardless of advertising expenditure
- Sales increase as advertising expenditure increases

Correct!**That's correct****Question 18**

1 / 1 pts

What is the main purpose of adjusted R²?

- To adjust for the degrees of freedom in the model
- To adjust for the correlation between the predictors
- To adjust for the number of predictors in the model
- To adjust for the correlation between the dependent and independent variable(s)

Correct!**That's correct****Question 19**

1 / 1 pts

Which measure should be used to compare models with different numbers of predictors?

- Adjusted R²
- R²
- Correlation coefficient

Correct!

Standard error

That's correct

Question 20

1 / 1 pts

What is a potential drawback of using R² as the sole measure of a model's goodness of fit?

Correct!

- It does not indicate whether the predictors are significant
- It always equals 1 for perfect models
- It can decrease when adding more predictors
- It can only be used for linear regression models

That's correct

Quiz Score: 16 out of 20

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