Applied Multivariate Statistical Concepts 1st edition Hahs Vaughn Test Bank

SKU: 9780415842365-TEST-BANK

Test Bank Chapter 2

Answers to each question are in bold. Feedback (in bold) follows each set of answers.

1. In hypothesis testing, the probability of rejecting H_0 when H_0 is false is denoted by which one of the following?

a) α
b) 1 - α
c) β
d) 1 - β

Feedback: Rejecting H_0 when H_0 is false is a correct decision and specifically, one minus beta--also known as power

2. In hypothesis testing, the probability of rejecting H_0 when H_0 is true is denoted by which one of the following?

a) α
b) 1 - α
c) β
d) 1 - β

Feedback: Rejecting H_0 when H_0 is true is a Type I error, also known as alpha

3. In hypothesis testing, the probability of failing to reject H_0 when H_0 is true is denoted by which one of the following?

a) α
b) 1 - α
c) β
d) 1 - β

Feedback: Failing to reject H_0 when H_0 is true is a correct decision, computed as one minus alpha

4. The probability of making a Type I error when rejecting H_0 when H_0 is true, at a significance level of .10, is which one of the following?

a) 0%
b) 5%
c) 10%
d) 100%

Feedback: The probability of making a Type I error, which is rejecting H_0 when H_0 is true, is alpha. In this case, alpha is .10 so the probability is 10%.

5. Which one of the following is an assumption of the independent *t* test?

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a) equal sample sizes
b) independence
c) linearity
d) muticollinearity

Feedback: Assumptions of the independent *t* test include independence, normality, and homogeneity of variance.

6. The number of hours elite athletes spent training per week was measured immediately before competition and immediately after. To determine if the mean number of hours differs before versus after competition, which statistical test would be generated?

a) independent *t* test
b) dependent *t* test
c) simple regression
d) *z* test

Feedback: In this case, cases have been measured pre and post, reflecting paired samples or dependent *t* test

7. A researcher wants to determine if time in incarceration can be predicted by family home income. Which statistical test would be generated to answer this question?

a) independent *t* test
b) dependent *t* test
c) simple regression
d) two-factor ANOVA

Feedback: This is a prediction model with one dependent variable (time in incarceration) and one independent variable (family home income), thus simple regression is appropriate.

8. An increase of one point on the independent variable results in an increase of some value on the dependent variable. Which statistic is reflected in this statistic?

a) criterion
b) independent variable
c) intercept
d) slope

Feedback: The sample slope is referred to alternately as (a) the expected or predicted change in *Y* for a one-unit change in *X*, and (b) the unstandardized or raw regression coefficient.

9. A value of +.75 indicates which type of relationship?

a) negative
b) positive
c) neutral

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Feedback: Positive values indicate positive relationships.

10. A researcher has collected data on two categorical independent variables and one continuous dependent variable. If they are interested in using all the variables in one model, which one of the following statistical procedures is their only option?

a) independent *t* test
b) dependent *t* test
c) simple regression
d) two-factor ANOVA

Feedback: Of the procedures listed, only the two-factor ANOVA can accommodate two categorical independent variables and one continuous dependent variable

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