

PALS0045 Week 2 Quiz

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This Quiz is designed to test your understanding of the learning objectives from the lecture in Week 2.

Complete each question and press submit to check your answers.

Q1:

Which statistical tests are variations of the general linear model

- ☒ t-test ✓
- ☐ chi-squared test ✗
- ☒ ANCOVA ✓
- ☒ multiple regression ✓

Correct!

Q2:

If you wanted to test the effect of height and suit colour on perceived authoritativeness what type of GLM would you need to use?

- ☐ one way ANOVA ✗
- ☒ ANCOVA ✓
- ☐ multiple regression ✗
- ☐ within subjects ANOVA ✗

Correct!

There are two independent variables. Suit colour is a categorical variable and height is numeric, whereas the dependent variable (perceived authoritativeness) is numeric, so an ANCOVA is the appropriate test.

Q3:

Which statements are true?

- ☐ If the variance within groups is large compared to the variance between groups then we have evidence against the null hypothesis ✗

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- ☒ If the variance within groups is small compared to the variance between groups then we have evidence against the null hypothesis ✓
- ☐ If the variance within groups is small compared to the variance between groups then we have evidence for the null hypothesis ✗
- ☐ If the variance within groups is large compared to the variance between groups then we have evidence for the null hypothesis ✗

Correct!

Q4:.....A: Y_{ij} B: μ C: A_iD: $S(A)_{ij}$

Which of the symbols above represents the residual in the GLM equation?

- ☐ A ✗
- ☐ B ✗
- ☐ C ✗
- ☒ D ✓

Correct!

Q5:.....A: $\hat{\mu} = Y_{..}$ B: $\mu + A_i$ C: $Y_{i.} - \hat{\mu}$

Which equation can be used to calculate the effect of factor A?

- ☐ A ✗
- ☐ B ✗
- ☒ C ✓

Correct!

Q6:.....A: $\hat{\mu}$ B: $S(A)_{ij}$ C: A_iD: $Y_{i.}$

Which of the below would give you the predicted value for a new individual in group i?

- ☐ A ✗
- ☐ B ✗

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- ☐ C ✗
- ☒ D ✓

Correct!

Q7:

In a one way ANOVA with 16 participants in 4 groups (4 in each group) what are the degrees of freedom for the effect?

- ☐ 1 ✗
- ☐ 2 ✗
- ☒ 3 ✓
- ☐ 4 ✗

Correct!

Q8:

In a one way ANOVA with 16 participants in 4 groups (4 in each group) what are the degrees of freedom for the error?

- ☒ 12 ✓
- ☐ 14 ✗
- ☐ 16 ✗
- ☐ 18 ✗

Correct!

Q9:

What does a significant p value tell us when we conduct a F test for a one-way ANOVA?

- ☐ There is a difference between all group means ✗
- ☒ The differences between the group means is unlikely to have occurred if the groups were drawn from the same population ✓
- ☐ The groups are from the same population ✗
- ☐ The groups were drawn from different populations ✗

Correct!

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Q10:

Which of these are assumptions of a one-way ANOVA?

- ☒ Independent observations ✓
- ☐ Normally distributed dependent variable X
- ☒ Homogeneity of variances ✓
- ☒ Normally distributed residuals ✓

Correct!