

# New dq's week 4



**ASSIGN  
BUSTER**

QUESTION ANOVA a. List and explain the three assumptions for using ANOVA (Lind, Ch. 12, p. 392) The three assumptions of the ANOVA include:

Independence of variables:

This means that the data in the groups are independent and not dependent

Normality:

This assumption states that the data in each data is normally distributed.

Variance homogeneity:

This means that the variance of the data in the groups is the same

b.

(1) Suppose the data planned for an ANOVA test does not meet the assumptions, which nonparametric test would be used

Chi square test

(2) Do you find anything interesting about how the data is manipulated in this nonparametric test

The Chi square test is applied on the contingency table for the purpose of testing the null hypothesis of independence of the rows and the columns of the table.

c. What benefit does ANOVA provide when testing three or more sample means instead of the t-test

ANOVA has an advantage over T test in that it allows the detection of interaction effects between the variables and through this it allows for even more complex hypothesis tests

d. With ANOVA, the independent variable (IV) is an Attribute and the dependent variable (DV) is Numeric. Identify the IV and DV in the Example

QUESTION 2

NONPARAMETRIC METHODS:

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Nonparametric applications are used when data does not meet the assumptions for parametric tests, or the data is non-numeric.

a. What is the lowest data " level of measurement" that can be used in Chi-Square Tests

The level of measure is determined by the nature of variable that are under investigation using the chi square test, however a zero value on the contingency table may result into type one or type two errors.

b. What are the assumptions (limitations) for using Chi-Square, Lind, Ch. 15, p. 531

The chi square assumes that the data is a random sample

The chi square test also assumes that the variables are independent

The variables are assumed to have a similar and known distribution. This is to say that they variables have the same distribution

The chi square test also assumes that two variables are related by chance

c.

(1) What happens if an expected frequency in one cell was zero

If one frequency on the contingency table is zero then may result into type one or type two errors, this is to say that our hypothesis will be biased.

(2) Would this result in Type I or Type II error

A Type I error occurs when we reject the null hypothesis when it should actually have been accepted, Type II error occurs when we fail to reject the null hypothesis when we would have actually rejected it. If one value is equal to zero then it means that we will either have a type one error or a type two error, if the result is equal to zero then we wil have a type two error and if the nresult is a very large number which is infinite then we will have a type one error.

d. Does the Contingency Table sum data values or data counts

The contingency table adds up data values and not data counts, we calculate the marginal total that adds up to the grand total

Question 3

Find the attached Excel document

Question four

Please find Excel document attached