QESS I-Cap Project

TIPS FOR STUDENT RESEARCH

SPSS in Research

T-Test

Compares the means of two groups to see if they are statistically different from each other. There are different types of t-tests, such as independent samples t-test and paired samples t-test.

Example

Use an independent samples t-test in SPSS to compare the average test scores of students taught with two different teaching methods to see if one method leads to higher scores.

ANOVA (Analysis of Variance)

Used to compare means across three or more groups or conditions. Variants include one-way ANOVA and repeated measures ANOVA.

Example *Conduct a one-way ANOVA in SPSS to test if there are differences in customer satisfaction across three different store locations.*

Chi-Square Test

Examines the association between categorical variables by comparing observed frequencies to expected frequencies.

Example *Use the chi-square test in SPSS to determine if there's a significant relationship between gender and preference for a new product.*

Correlation Analysis

Measures the strength and direction of the relationship between two continuous variables.

Example *Perform Pearson correlation in SPSS to examine the relationship between hours of study and exam scores among students.*

Regression Analysis

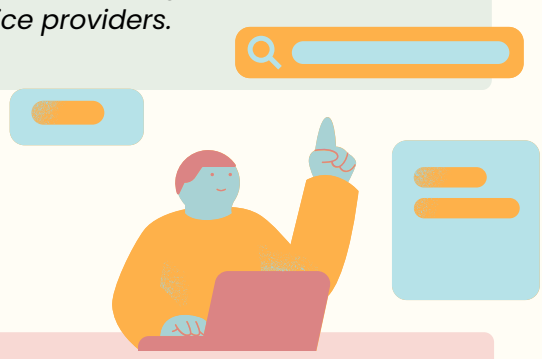
Evaluates the relationship between a dependent variable and one or more independent variables. Variants include linear regression and logistic regression.

Example *Use linear regression in SPSS to predict house prices based on square footage and number of bedrooms.*

Mann-Whitney U Test

A non-parametric test used to compare differences between two independent groups when the data is not normally distributed.

Example *Apply the Mann-Whitney U test in SPSS to compare customer satisfaction ratings from two different service providers.*



Wilcoxon Signed-Rank Test

A non-parametric test used to compare two related samples or matched pairs when the data is not normally distributed.

Example *Use the Wilcoxon signed-rank test in SPSS to assess the difference in pain levels before and after a treatment within the same group of patients.*

Kruskal-Wallis Test

A non-parametric alternative to ANOVA, used to compare three or more independent groups when data is not normally distributed.

Example *Conduct the Kruskal-Wallis test in SPSS to test if there are differences in satisfaction ratings across different age groups.*

Friedman Test

Example

Use the Friedman test in SPSS to analyze the change in test scores across three different times for the same group of students.

A non-parametric test for detecting differences in treatments across multiple test attempts, similar to repeated measures ANOVA.