

What are the results of a repeated measures ANOVA?

Authored by
stats writer

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A repeated measures analysis of variance (ANOVA) is a statistical method used to examine the effects of one or more independent variables on a dependent variable that is measured multiple times. In other words, it is a type of statistical test that allows for the comparison of means across multiple time points or conditions within the same group of participants. The results of a repeated measures ANOVA provide information on the overall significance of the independent variables and their interaction with the dependent variable, as well as any significant differences between the means of the repeated measures. This statistical analysis is commonly used in experimental and clinical research to assess the effects of interventions or treatments over time, and can help to identify patterns and trends in the data. Overall, the results of a repeated measures ANOVA provide valuable insights into the relationship between variables and are crucial for drawing meaningful conclusions from the data.

Report the Results of a Repeated Measures ANOVA

A is used to determine whether or not there is a statistically significant difference between the means of three or more groups in which the same subjects show up in each group..

When reporting the results of a repeated measures ANOVA, we always use the following general structure:

A brief description of the independent and dependent variable. The overall F-value of the ANOVA and the corresponding p-value.

Here's the exact wording we can use:

A repeated measures ANOVA was performed to compare the effect of on .

There a statistically significant difference in between at least two groups ($F(\text{between groups df, within groups df}) = , p =)$.

The following example shows how to report the results of a repeated measures ANOVA in practice.

Example: Reporting Results of a Repeated Measures ANOVA

Researchers want to know if four different drugs lead to different reaction times. To test this, they measure the reaction time of five patients on the four different drugs.

Since each patient is measured on each of the four drugs, they use a repeated measures ANOVA to determine if the mean reaction time differs between drugs.

The following table shows the results of the repeated measures ANOVA:

ANOVA

Source of Variation	SS	df	MS	F	P-value
Between Groups	680.8	4	170.2	18.10638	0.0000052
Within Groups	698.2	3	232.7333	24.75887	0.0000002
Error	112.8	12	9.4		
Total	1491.8	19			

Here is how to report the results:

A repeated measures ANOVA was performed to compare the effect of a certain drug on reaction time.

There was a statistically significant difference in reaction time between at least two groups ($F(4, 3) = 18.106, p < .000$).

Things to Keep in Mind

Here are a few things to keep in mind when reporting the results of a repeated measures ANOVA:

Use a descriptive statistics table.

It can be helpful to present a descriptive statistics table that shows the mean and standard deviation of values in each treatment group as well to give the reader a more complete picture of the data.

As a general rule of thumb, you should round the values for the overall F value and any p-values to either two or three decimal places for brevity.

No matter how many decimal places you use, be sure to

be consistent throughout the report.

The following tutorials explain how to report other statistical tests and procedures in APA format:

How to Report Pearson's Correlation (With Examples)

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