Question Asked 9th Aug, 2016

Raveena Kim Lai
Universiti Malaysia Terengganu

Correlation or regression? or Anova (one/two way ANOVA)?
How can live coral cover (%) affects the coral reef fish biomass (gram/500m^2) and the Vibrio density (cfu/microliter) according to depth (3m and 10m)

Two-way ANOVA | Coral Reef | ANOVA | Coral Reef Ecology | Marine Biodiversity | Statistical Analysis

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st recent answer

Ashfaque Ahmed
University of Dhaka

12th Aug, 2016

Dear Raveena

I think you can run two-way ANOVA to test your hypothesis.

Regards

Cite

If you are trying to find out if data sets from various data groups (e.g., reef sites) have same means or not then you can use ANOVA; but only if the data meet assumptions inherent in ANOVA analysis. If you are trying to find out if % live coral cover is different among various reefs sites at two depths then a two-way ANOVA can be used. You can also do that with Vibrio density. Most statistical software programs will do that.

On the other hand we use regression for forecasting and predictions. This assumes that there is a cause and effect relationship between the variables. You can run a regression analysis between % live coral cover (independent variable) and fish biomass (dependent variable) and between Vibrio density (independent variable) and fish biomass (dependent variable).

I do not think you are really interested in correlation since this only tests if there is an relationship between two or more variables, and the strength of that relationship. It does not imply causation.

Have a look at these links:

http://www.differencebetween.net/science/mathematics-statistics/differences-between-correlation-and-regression/

http://www.differencebetween.net/miscellaneous/difference-betweeen-anova-and-regression/

http://www.theanalysisfactor.com/why-anova-and-linear-regression-are-the-same-analysis/

http://www.allanalytics.com/author.asp?section_id=1413&doc_id=252823

Hope this helps a little.

Tom

Cite 2 Recommendations

Alfonso Balmori-de la Puente
Institute of Evolutionary Biology
10th Aug, 2016

Dear Raveena,

If I have understood what you want to do well, maybe you can try to perform a MANOVA with two different independent and categorical factors: “live coral cover” and “depth” (in this case “live coral cover” should be divided in some ranges to make it categorical) and two dependent and continuous variables: “coral reef fish biomass” and “Vibrio density”.

You can check for more information in this page: http://www.statsoft.com/Textbook/ANOVA-MANOVA#multivariate

Best wishes,

Alfonso

Cite

Rajiv Pandey
Indian Council of Forestry Research and Education (ICFRE)
11th Aug, 2016

Dear Raveena

Please decide whether the case is existing (natural) or you are creating the situation. Depending upon this, you decide the statistical tests.

For controlled (creating), you may go for ANOVA. For natural case (Sampling) you may opt regression analysis (Simpel or Multiple).

Regards

Rajiv

Cite

Rénald Belley
Fisheries and Oceans Canada
11th Aug, 2016

Just to let you know, another great place to ask stats questions is on Cross Validated:

http://stats.stackexchange.com/questions

Cite

Can you help by adding an answer?

Answer

Add your answer

Add your answer

ilar questions and discussions

Is double-reporting (ANOVA and correlation/regression) good or bad?

Question 9 answers

Asked 11th Oct, 2014

Vladimir Kosonogov

If we study the influence of one variable on another, we can (1) artificially divide the independent parametrical variable into several levels and apply ANOVA or (2) apply corellation/regression analysis in case if the independent one is normally distributed.

Long time ago statisticians (Irwin & McClelland, 2003; Maxwell & Delaney, 1993) recommended to apply corellation/regression analysis (although in psychology it is still very usual to artificially divide the continuous data into groups). In my manuscript I did both analysis just in case (both confirmed the hypothesis), but one reviewer calls it "double-reporting" and "restate ot the data" and propose deleting correlation analysis.

What is your experience and opinion?

View

Which correlation coefficient is better to use: Spearman or Pearson?

Question 177 answers

Asked 13th Apr, 2013

Walter Folly

I´m performing a correlational study of two temporal series of data in order to identify positive or negative correlations between them. Which correlation coefficient is better to use: Spearman or Pearson?

View

What is the acceptable range of skewness and kurtosis for normal distribution of data?

Question 267 answers

Asked 19th Apr, 2014

Naeem Aslam

It is desirable that for the normal distribution of data the values of skewness should be near to 0. What if the values are +/- 3 or above?

View

Is a Likert-type scale ordinal or interval data?

Question 160 answers

Asked 1st Jun, 2014

Reginald L. Bell

I've heard arguments that a Likert-type scale is ordinal data. I've heard arguments that this type of data is interval data. Some believe it is quasi-ordinal-interval data. Which exactly is it?

View

What is the difference between T-test and ANOVA?

Question 17 answers

Asked 16th Feb, 2015

Madeeha Javed

T-test is used for the analysis of two groups and ANOVA is used for more than two groups. Is that right?

View

Which post hoc test is best to use after Kruskal Wallis test ?

Question 71 answers

Asked 1st Dec, 2014

Morgane A. L. Comby

I used the non parametric Kruskal Wallis test to analyse my data and want to know which groups differ from the rest. I have read about Wilcoxon–Mann–Whitney and Nemenyi tests as "post hoc" tests after Kruskal Wallis. Are they supposed to give similar results? Which one is the best?!

View

How can I conduct a correlation test between a nominal variable and a scale or continuous variable?

Question 21 answers

Asked 5th Dec, 2016

Ruba Alassaf

hello everyone,

How can I conduct a correlation test between a nominal variable (gender) and a scale or continuous variable (mean of productivity for the employee)?

the mean of productivity is calculated by summing up the scores (5-point scale) of every response to a set of 15 statements and divided by 15.

so i ended up with a continuous variable and i want to see if there is a correlation between productivity and being male or female. I know that anova will indicate if there is a significant difference or not.. but my objective is to see which gender is more productive in my sample.

Note: My Sample size is 120 employees

thank you

View

Can I use Pearson's correlation coefficient to know the relation between perception and gender, age, income?

Question 9 answers

Asked 26th Dec, 2015

Arvind Bhadrashetty

I have collected data for a study with variables perception of health and demographic characteristics of respondents. I have perception scores and categorical variables like gender, age group , income group, education, socioeconomic status etc. Can I use Pearson's correlation coefficient to know the relationship between these variables?

View

What is the difference between ANOVA & MANOVA?

Question 10 answers

Asked 11th Mar, 2015

Madeeha Javed

Please clearly describe the difference.

View

ated Publications

Coral Reef Ecology Essay

Thesis

Nov 2016

Jon Yaden

THIS IS NOT A THESIS - IT IS AN ESSAY. Written for Introductory Marine Biology course at Santa Monica College, California. Assignment was to provide an overview of coral reef ecology. Paper received 49/50, and final grade earned in the course was 94%.

View

S1 Table

Data

Aug 2018

Jacqueline Zoccolotti · Camilla Olga Tasso · María Isabel Amaya Arbeláez · [...] · Janaina Habib Jorge

Tables from statistical analysis. Table A. Two-Way ANOVA for Biofilm Formation Capacity (adhesion phase). Table B. Two-way ANOVA for Biofilm Formation Capacity (24 hours). Table C. Two-Way ANOVA for the Alamar Blue assay in the adhesion phase. Table D. Two-factor ANOVA test for the Alamar Blue assay after 24 hours of biofilm formation. Table E. Two...

View

Which Effect Size Measure is Appropriate for One-Way and Two-Way ANOVA Models? A Monte Carlo Simulation Study

Article Full-text available

Jul 2018

Soner Yigit · Mehmet Mendes

It is very important to report some effect size measures that will show if the observed differences among the groups are also of practical significance along with statistical significance while reporting statistical analysis results. Performances of four commonly used effect size measures (Eta-Squared, Partial Eta Squared, Omega Squared and Epsilon...

View