

Homework 6 - Hypothesis Testing for Two Samples

- Deadline : Midnight Friday Week 10
- Submit by Email
- Subject Line : "MA405 Homework 6 Submission"
(*Dont not write anything else*)

Task 1 Testing Normality (3 Marks)

- You should each have a data set in the "CheckingNormality" Zip File.
- You should have 5 numeric variables in your file: X1,X2,X3, X4 and X5.
- What I want you to do is to test each of these variables for Normality.
- Use Formal hypothesis Tests, Graphical Procedures
- Also make a determination based on summary statistics (kurtosis, Skewness)
- Write a short report outlining your conclusions : 5 Pages or so including the images from SPSS.
- You dont have to add too much discussion to this one, just a written statement of your conclusion for each variable, with some justification.

Task 2 Two Sample Testing Procedures (4 Marks)

- (i) You should find your data sets in "Factory" Zip file
- (ii) Is there a significant difference in means between factories A and B?
(Hint: Use **Analyse** | **Compare Means**, and use FactoryCode to specify the groups: here A is Factory Code 1, B is Factory Code 2)
- (iii) Is there a significant difference in variances between the two factories?
- (iv) **IGNORE** Is the rate of defective components the same for Factory A as for Factory B?
- (v) Use graphics, (i.e boxplots and histograms), to compare all four factories.
(hint: Use **Analyse** | **Explore**, and use ***factories*** as a factor)

Task 3 Paired T-test (3 Marks)

- You should each have a data set in the "BeforeAfter" Zip File.
- Is there a significant difference between Before and After?