

Abstract

Day by day the use of mathematical analysis in different fields is getting wider and more important, due to the fact that mathematics is a servant science that many fields cannot stand without.

Thus, Non-mathematician needs to study and understand specific parts from math that they need to accomplish new achievements, to do researches and conduct experiments.

But the problem some of them face is; how possible it will be for a non-mathematician, for example a psychologist or geologist or any other specialist to understand mathematical laws if he/she never been through them before, in the academic or career life? A person can say this should not be hard since we have developed programming languages and sources to study and analyse, but can a non-specialist apply it? From simple things, how data should be arranged to harder things finding the proper distribution for the data and what distribution to use for generating data.

This study is targeting non-mathematicians mainly though also a mathematician could benefit from it too, to build on or use as needed as it works as an example for statistical analysis in the first place. Theoretical background will be included and some of practical and applied work which will be simplified as much as much as possible, more information will be detailed in the following section.

Another part will be demonstrated is the use of analysis systems such as SAS (Statistical Analysis System) and open sources such as Python.

For non-mathematician, if statistical analysis is not a familiar topic, short introductory example is included, or it is recommended to take a quick look or a short crash course on ANOVA and MANOVA since the study is focusing on these two statistical tests.

Th purpose of focusing on ANOVA since it is very much used in Medical field, health studies, climate, Agriculture, Psychology and more.

Last two sections will discuss the use of the modified MANOVA tests and suggest further steps for the future.