M3a2 methods

Science, Statistics

Use of z-scores Due: Introduction First it important to understand what z-score really is. Z-score refers to a statistical measurement of scores in relation to the mean in a group of scores. Sometimes it is referred to as the standard scores. Z-score is useful in the sense that it allows researchers/statisticians to compare two or more scores coming from different normal distributions. This is achieved by transforming scores in a normal distribution to z-score in what ends up to be a standard normal distribution.

Apart from showing a scores relationship to the mean, the standard scores show statisticians whether a score is typical or atypical for a particular data set. Standard scores also offer room to analysts to convert scores from different data sets into scores that can be accurately compared to each other.

Typical Scenario

A good scenario of where to use the z-score especially in the business environment is to measure the bankruptcy probability of a company. Say you are a statistician and you are given a mandate to check whether a company (may be a manufacturing or any other service) is either at a risk of corporate collapse or is at higher level of liquidity and earnings, which can be interpreted as having a smaller probability of bankruptcy. In this case, you need to check or determine signs of company bankruptcy. As an analyst you will have to look at various possible factors 9financial ratios) affecting the stability of a company. This may include;

i) A= Working Capital/Total Assets

ii) B= Retained Earnings/Total Assets

iii) C= Earnings Before Interest & tax/Total Assets

iv) D= Market Value of Equity/Total Liabilities

v) E= Sales/Total Assets

It is important to understand that these factors are unique from each other and have different story about the firm's financial status. It can be a bit confusing to compare them. However, it becomes very easy to compare the different scores using z-score.

The formula in this case is;

So the dependent variable is the bankruptcy level while the independent variables are given as;

i) A= Working Capital/Total Assets

ii) B= Retained Earnings/Total Assets

iii) C= Earnings Before Interest & tax/Total Assets

iv) D= Market Value of Equity/Total Liabilities

v) E= Sales/Total Assets

In this case, when z-score value