

Homogeneity of Regression

Analysis of covariance (ANCOVA) requires several assumptions and limitations upon the research data. Most of these assumptions and limitations are similar to those imposed upon research data for analysis of variance (ANOVA). Principally, these assumptions and limitations deal with such issues as outliers, normality, independence and homogeneity of variance between groups.

However, a unique constraint that is required before we can conduct analysis of covariance is that the linear regression equations that represent the linear relationship between the covariant and the dependent variable should have substantially the same slope for each of the groups. This constraint is known as homogeneity of regression and can be ascertained by a formal test of statistical significance.

In our example of analysis of covariance, the meaning and presence of homogeneity of regression can be depicted in the following diagram:

