

Linear regression analysis is used to predict the value of a variable based on the value of another variable. The variable you want to predict is called the dependent variable. The variable you are using to predict the other variable's value is called the independent variable. This form of analysis estimates the coefficients of the linear equation, involving one or more independent variables that best predict the value of the dependent variable. Linear regression fits a straight line or surface that minimizes the discrepancies between predicted and actual output values. There are simple linear regression calculators that use a "least squares" method to discover the best-fit line for a set of paired data. You then estimate the value of X (dependent variable) from Y (independent variable). You can perform linear regression in Microsoft Excel or use statistical software packages such as IBM SPSS® Statistics that greatly simplify the process of using linear-regression equations, linear-regression models and linear-regression formula. SPSS Statistics can be leveraged in techniques such as simple linear regression and multiple linear regression. Linear-regression models are relatively simple and provide an easy-to-interpret mathematical formula that can generate predictions. Linear regression can be applied to various areas in business and academic study. You'll find that linear regression is used in everything from biological, behavioral, environmental and social sciences to business. Linear-regression models have become a proven way to scientifically and reliably predict the future. Because linear regression is a long-established statistical procedure, the properties of linear-regression models are well understood and can be trained very quickly.