

Step 1: Multiple Linear Regression Intuition

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Regressions

Simple
Linear
Regression

$$y = b_0 + b_1 * x_1$$

Multiple
Linear
Regression

$$y = b_0 + b_1 * x_1 + b_2 * x_2 + \dots + b_n * x_n$$

Multiple
Linear
Regression

Dependent variable (DV) Independent variables (IVs)

$$y = b_0 + b_1 * x_1 + b_2 * x_2 + \dots + b_n * x_n$$

Constant Coefficients

The diagram shows the equation $y = b_0 + b_1 * x_1 + b_2 * x_2 + \dots + b_n * x_n$. Green arrows point from labels to parts of the equation: 'Dependent variable (DV)' points to 'y'; 'Independent variables (IVs)' points to 'x1', 'x2', and 'xn'; 'Constant' points to 'b0'; and 'Coefficients' points to 'b1', 'b2', and 'bn'.

- y is a **Dependent Variable** (DV). For Instance, how does a person's salary change with the years of experience he has.
- x_1, x_2, \dots, x_n is an **Independent Variables** (IVs) is variable that, we are assuming that it is causing dependent variable to change.
- b_1, b_2, \dots, b_n is a coefficient for the independent variable and it kinda says how a unit change in x_1, x_2, \dots, x_n affects in y .
- b_0 is a constant term.