

What is a Regressor? (Definition & Examples)

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A regressor is a statistical model that is used to predict the value of a continuous variable based on one or more independent variables. It is a type of supervised learning algorithm that is commonly used in data analysis and machine learning. The goal of a regressor is to find the relationship between the independent variables and the dependent variable, and use that relationship to make accurate predictions on new data. Examples of regressors include linear regression, decision trees, and support vector machines. These models are often used in various fields such as finance, marketing, and healthcare to make predictions and inform decision making.

What is a Regressor? (Definition & Examples)

In statistics, a regressor is the name given to any variable in a regression model that is used to predict a response variable.

A regressor is also referred to as:

An An A A predictor variableA feature

All of these terms are used interchangeably depending on the type of field you're working in: statistics, machine learning, econometrics, biology, etc.

Note: Sometimes a response variable is called a "regressand."

Regressors in Regression Models

Most regression models take the following form:

$$Y = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \varepsilon$$

where:

Y: The response variable
 β_i : The coefficients for the regressors
 x_i : The regressors
 ε : The error term

The whole point of building a regression model is to understand how changes in a regressor lead to changes in a response variable (or "regressand").

Note that regression models can have one or more regressors.

When there is only one regressor, the model is referred to as a *simple* regression model and when there are multiple regressors, the model is referred to as a *multiple* regression model to indicate that there are *multiple* regressors.

The following examples illustrate how to interpret regressors in different regression models.

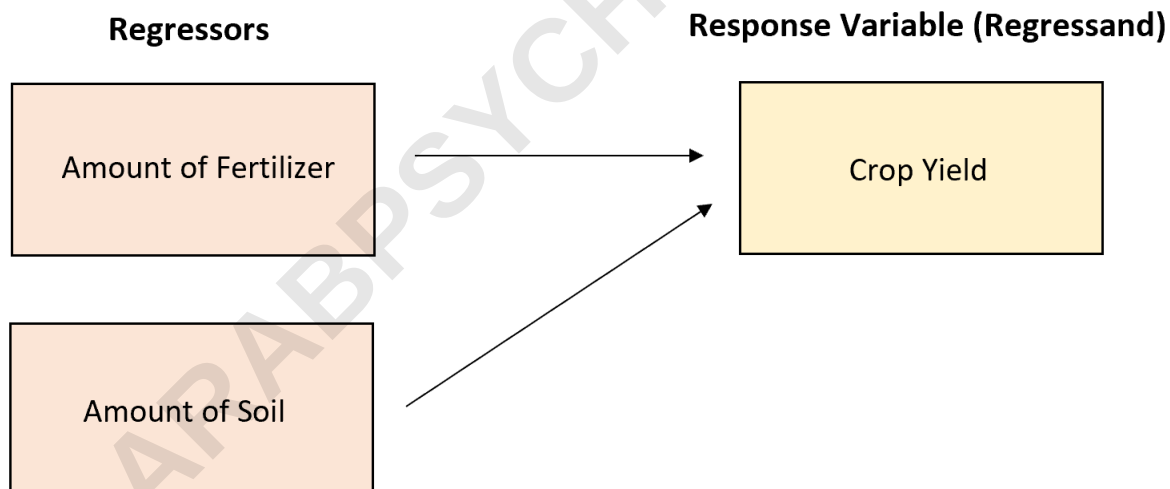
Example 1: Crop Yield

Suppose a farmer is interested in understanding the factors that affect total crop yield (in pounds). He collects data and builds the following regression model:

$$\text{Crop Yield} = 154.34 + 3.56 * (\text{Pounds of Fertilizer}) + 1.89 * (\text{Pounds of Soil})$$

Here's how to interpret these two regressors:

Fertilizer: For each additional pound of fertilizer used, crop yield increases by an average of 3.56 pounds, assuming the amount of soil is held constant. **Soil:** For each additional pound of soil used, crop yield increases by an average of 1.89 pounds, assuming the amount of fertilizer is held constant.



Example 2: Exam Scores

Suppose a professor is interested in understanding how the amount of hours studied affects exam scores. He collects data and builds the following regression

model:

$$\text{Exam Score} = 68.34 + 3.44 * (\text{Hours Studied})$$

This model has one regressor: Hours studied. We interpret the coefficient for this regressor to mean that for each additional hour studied, exam score increases by an average of 3.44 points.

