

What is the definition and example of partial regression coefficient?

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A partial regression coefficient, also known as a standardized regression coefficient, is a statistical measure used to determine the strength and direction of the relationship between a dependent variable and a specific independent variable, while controlling for the effects of other independent variables. It is calculated by standardizing the regression coefficient, making it easier to compare the effects of different variables on the dependent variable. For example, in a study examining the relationship between income and education level, the partial regression coefficient for education would show the strength and direction of the relationship between education and income, while controlling for other factors such as age or occupation.

Partial Regression Coefficient: Definition & Example

A partial regression coefficient is the name given to the regression coefficients in a .

This is in contrast to a plain old "regression coefficient", which is the name given to the regression coefficient in a .

The way to interpret a partial regression coefficient is: The average change in the associated with a one unit increase in a given predictor variable, assuming all other predictor variables are held constant.

The following example explains how to identify and interpret partial regression coefficients in a multiple linear regression model.

Example: Interpreting Partial Regression Coefficients

Suppose we want to know if the number of hours spent studying and the number of prep exams taken affects the score that a student receives on a certain college entrance exam.

To explore this relationship, we can fit a multiple linear regression model using hours studied and prep exams taken as predictor variables and exam score as a response variable.

The following regression table shows the output of the model:

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