

Predictor and Response Variables

In an observational study or an experiment, the variable whose values are to be predicted from values of other values is called a **response** variable and variables whose values are used to predict values of another variable are called **predictor** variables.

Response variables are also sometimes known as **dependent** variables, **criterion variables**, **outcomes** or **endpoints**.

Predictor variables are also sometimes known as **independent** variables, **factors** or **covariates**. Predictor variables may be further categorised either as variables you are interested in, called **explanatory variables**, or variables you need to include in your analysis because they strongly affect either the response or the predictor or both. The second type of variables may be called **nuisance** or **control** variables.

Examples:

1. A lecturer at Loughborough University wants to study whether gender affects student's final graduation grade. Here the **predictor** variable is gender and the **response** variable is final graduation grade.
2. A scientist wants to investigate whether height effects how quickly 100 students run the hundred metres. Here the **predictor** variable is height and the **response** variable is how quickly the students run the hundred metres.
3. A nail artist wishes to find out if the type of nail varnish effects how long nails take to dry. Here the **predictor** variable is nail varnish and the **response** variable is time taken to dry.

References:

<http://www.theanalysisfactor.com/the-many-names-of-independent-variables/>

<http://www.theanalysisfactor.com/confusing-statistical-term-6-factor/>

<http://www.theanalysisfactor.com/confusing-statistical-terms-5-covariate/>