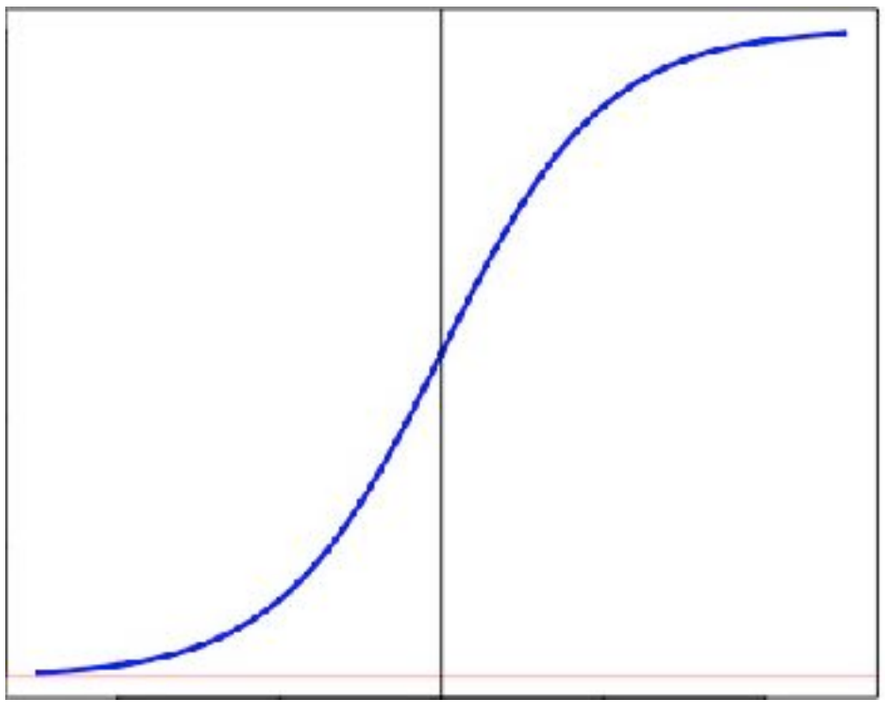


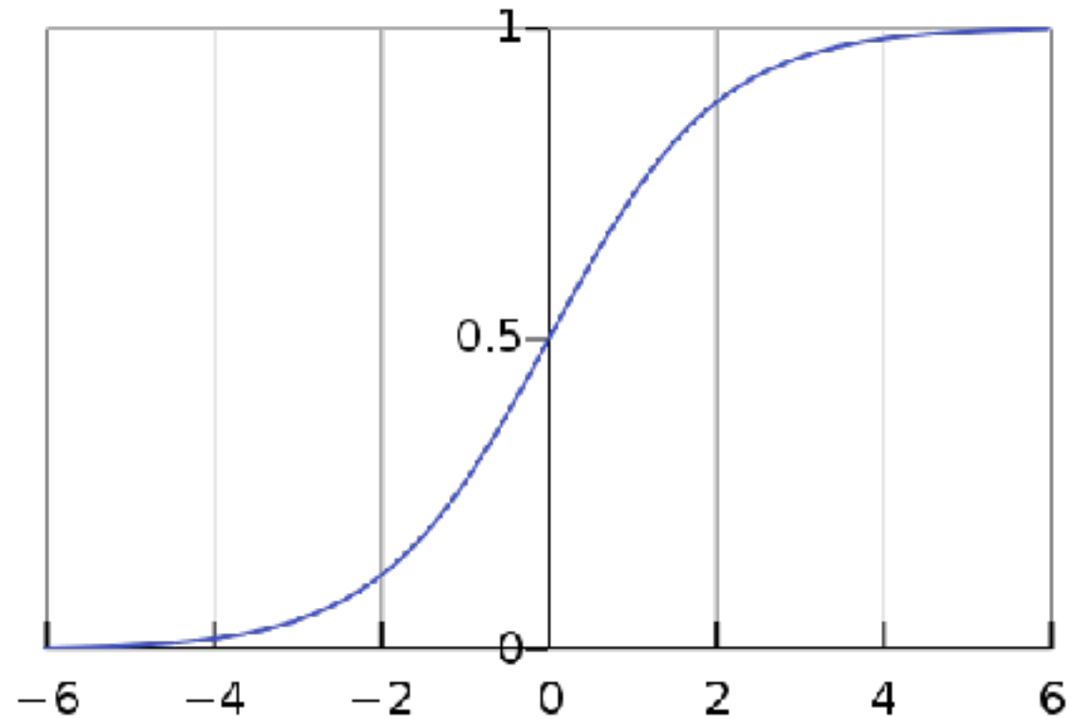
Logistic regression model is a classification model. There are many similarities between the logistic regression model and multiple linear regression, the biggest difference is the dependent variable. Both of these are generalized linear models.

Definition:Logistic regression model is the following conditional probability distribution：

$$P(Y=1\mid x)=\frac{\exp(-g(x))}{1+\exp(-g(x))}$$

$$P(Y=0\mid x)=\frac{1}{1+\exp(-g(x))}$$

Logistic regression measures the relationship between the categorical dependent variable and one or more independent variables by estimating probabilities using a logistic function, which is the cumulative logistic distribution. Thus, it treats the same set of problems as probit regression using similar techniques, with the latter using a cumulative normal distribution curve instead.



Logistic regression is mainly applied in epidemiology. Such as to explore the risk factors of certain diseases, and predict the probability of a disease according to the risk factors. In addition, it can be used survival analysis, hydrology and economics.