Abstract: This work is devoted to the description of linear, logistic, ordinal and multinominal regression models and interpretation of its parameters. Then it introduces a variety of quality indicators of mathematical models and the relations between them. It focuses mainly on the Gini coefficient and the coefficient of determination R^2. The first mentioned is established by modifying the Lorenz curve for ordinal and continuous variables and by comparing the estimated probabilities for nominal variable. The coefficient of determination R^2 is newly defined for the nominal variable and is examined its relationship with Gini coefficient. Assuming normally distributed scores and errors of the model is numerically derived the relation between the Gini coefficient and the coefficient of determiantion for different distribution of continuous dependent variable. Theoretical calculations and definitions are illustrated on two real data sets.