

Abstract of the Article

"Theoretical and Methodological Aspects of the Application of Binary Linear Regression in the Tasks of Economic Forecasting"

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The article dwells on economic and mathematical conditions of the correct application of an ordinary least squares method in the forecasting tasks with a binary linear regression method.

The carried out analysis of theoretical propositions of mathematical statistics as to the correct application of a least-squares method for estimating linear regression parameters has shown the following: the distribution law of the studied change as well as the law of accidental error distribution do not have to be obligatory normal; if the law of error distribution is normal the variance of model parameters can be calculated with the help of theoretical formulae; if the law of accidental error distribution is unknown, it is necessary to apply stochastic methods for estimating variance of model parameters; a correct application of an ordinary least squares method is possible not only subject to homoscedasticity but also under a moderate heteroscedasticity; if there is an autocorrelation, parameter estimation can be substituted; if there is a moderate heteroscedasticity or an autocorrelation, the application of an ordinary least squares method results in the increase in the variance of model parameters.

Also the article gives some guidelines for the application of an ideal regression simulation scheme according to Monte Carlo method, which can be used for studying the inadequacy of a linear model and the dependence of the model parameters estimation on the law of accidental error distribution.