

MATHEMATICAL METHODS, MODELS AND INFORMATION TECHNOLOGIES IN ECONOMY

Enterprise performance evaluation technique based on the use of production functions

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The article deals with the efficiency estimation of enterprises. The main approaches to the performance evaluation are presented here. The main advantages of parametric methods are considered. The study employed production functions approach. The evolution of production functions' models is analyzed. The article deals with the nature of production functions and the main trends of their application in the economic researches. Two directions of Cobb-Douglas production function transformation are discussed. The fundamentals of production efficiency analysis based on the production function models are established. The requirements for production

function model are analyzed. The economic essence of production functions parameters and their interpretation are considered. The economic analysis technique based upon production function is given. Allocative efficiency is defined as a ratio between the value of resource's marginal product and its price. Technical efficiency is defined as a ratio between simulated output and its real value.

It is concluded that the derived indexes can be used as an efficiency indicators for enterprises. The results obtained confirm the importance of the mathematical methods application.