

MATHEMATICAL METHODS, MODELS AND INFORMATION TECHNOLOGIES IN ECONOMY

STRATEGIC PERSONNEL MANAGEMENT ON THE BASIS OF PRODUCTION FUNCTION

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The purpose of the conducted research is the construction of non-linear models in order to determine a kind of dependence between independent and dependent quantities. In this research, the labour resources (average number of regular staff) and fixed assets value serve as independent quantities, while dependent quantity is presented by the volume of products sold (goods, services).

In order to achieve stated purpose, graphic and analytical methods of statistics were used, in particular, Cobb-Douglas production function; module of non-linear esti-

mation in Statistica system was used for building multiple non-linear models.

As a result of the conducted research, production functions for different types of economic activities are received, function parameters as indicators of factors' influence on dependent quantity and effectiveness of labour resource use are determined. Relationship types between the factors and function are described.

A scientific novelty is presented by production functions for each type of economic activity, which are obtained as a result of conducted research. A possibility of using production functions at the macrolevel is proved.