

## NECESSITY APPLICATION DISPERSION ANALYSIS OF ENTERPRISES IN MODERN CONDITIONS

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A characteristic feature of the modern stage of development the world economy is its high dynamic and the high speed of the market formation process relationships. Therefore, a significant number of domestic machine-building enterprises in the world the financial crisis has shown its unreadiness respond to such changes and confidently adapt to them in the external and internal environment.

Throughout the content has changed in recent year's competition and the winner of that subject management, whose knowledge allows creating competitive advantages, that is, to detect the potential of any value, generate unique ideas and knowledge that might interest the future consumers of its products. To decrease both prevention of risk taking management enterprise decisions must identify those that affect its activities, to detect the acceptable level of risk and how it is calculation [1].

By intensifying of competition on world's market particular importance acquire guaranteeing of competitive advantages to native enterprises. At present, when a relatively high level of quality is achieved industrial products by different manufacturers - competitors and convergence of the level prices for similar products, as well as reinforcement of goods of various kinds of services, the listed types (factors) of competitiveness of the production is not enough [2].

Today the Ukrainian economy needs to identify and take into account the great complex of interconnected factors for operational acceptance suspended management solutions. But there is a limited analytical capability due to insufficiency informational software and personnel which has sufficient information and analytical training.

Consequently, a method of deterministic factor analysis, which is characterized by a clear dependence of the factors and the resulting index in the factor model, is not enough for a thorough analysis of the object's activity.

So the question arises not only of deterministic factor analysis, but also of stochastic factor analysis, which allows taking into account the influence of a set of factors that are uncertain (probabilistic).

Methods of statistical analysis of data are used to compare objects of research. In the practice of economic research often there are problems relating to a group of objects (sets of observable data).

Dispersion analysis is a statistical method designed to establish the structure of the link between the productive and the factor characteristics. The dispersion analysis can be used for a limited number of units of observation. In addition, it is particularly effective in conditions where the effect of a sign significantly changes under the simultaneous action of several factors with different the power of influence.

The dispersion method of analysis plays an important role in economic research due to the fact that it has an independent value.

Dispersion analysis is a mathematical-statistical method of studying the results of observation, which depend on various simultaneous factors. It was created in the 20's years of XX century the efforts of R. Fisher and significant development in the

writings of Iytsa. The basics of dispersion analysis in 1933 were described M.F. Derevitsky in additional sections before the textbook by V. Johansen “Elements of the exact the doctrine of variability and heredity” [3].

One of the methods for such tasks is a dispersion analysis - a statistical method for detecting the random variable (parameter) of the simultaneous action of one or more factors on the investigated one. The dispersion analysis consists in the allocation and evaluation of individual factors causing a change in the investigated random variable. In doing so, the decomposition of the total sample variance is made on the components, due to independent factors. Each of these components is an estimate of the general dispersion aggregate. To evaluate efficacy the influence of this factor, it is necessary to assess the significance of the corresponding sample dispersion in comparison with the dispersion of the reproduction due to random factors.

The relationship between studied traits can be measured by the coefficient of determination, which is the ratio of the total variance intergroup. The verification of the significance of dispersion estimates is carried out using Fisher's criterion. When the calculated value of Fisher's criterion is less tabular, then the influence of the investigated factor cannot be considered significant. When the calculated value of Fisher's criterion is more tabular, this factor affects the mean change.

Further it is believed that the following assumptions:

1. Random errors observations have a normal distribution;
2. The factors affect only the change of mean values, and the variance of observations remains constant.

The research factor may be known or unknown, of natural or artificial origin, such as: experimental conditions, measurement and processing techniques, and the like.

Factors considered in the dispersion analysis, there are three types (see Figure 1).

Under the influence of two or more factors, if their mutual conditionality (“cross-over”) is assumed, the fact of the interaction of the factors (pair or combination) is statistically confirmed or rejected, and the share of the general dispersion associated with such interaction is determined.

Due to this method the following tasks are solved: quantitative measurement of the force of influence of factor characteristics and their combinations on productive; assessment of the probability of influence and its confidence limits; analysis of individual averages and statistical estimation of their difference. In addition, in the in-depth analysis, the dispersion method may perform auxiliary functions that allow other analytical methods to be reasonably used.

Therefore the dispersion analysis is used in cases where it is necessary to provide factors of the ranks that form separate elements of the market or the composition of the economic ones indicators on the degree of their importance or strength of influence on enterprises. Take into account when analyzing the activity of enterprises a set of all factors that affect the final figures is difficult. It is necessary to highlight the main ones that is, identifying factors and conducting them their quantitative analysis. The influence of other, less meaningful factors is taken into account qualitative level. This can be done by using a dispersion analysis.

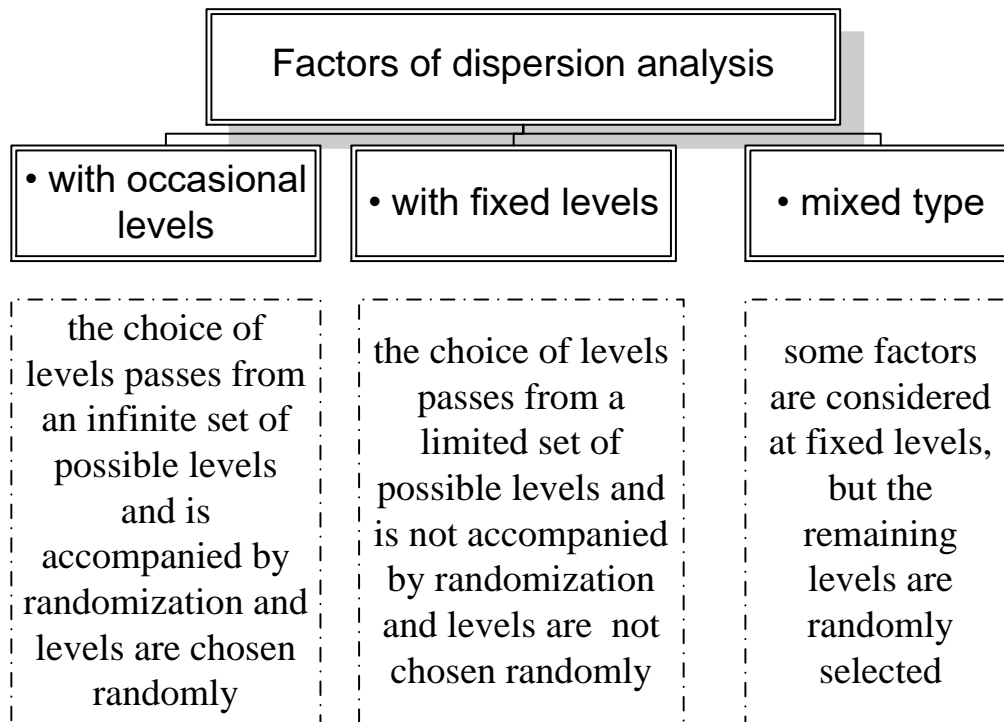


Figure 1 – Classification of dispersion analysis's factors

Thus, the dispersion analysis is used to determine the relationship between the indicators, quantitative assessment of risk parameters. In the analysis of enterprises can different methods and models of analysis are used. Their number and the breadth of application depends on the specific objectives of the analysis and is determined by its tasks in each individual case. When collecting compulsory statistical information, it is quite easy to conduct a dispersion analysis of domestic activities to ensure financial and economic security.

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