

Bezpartochnyi Maksym

*PhD in Economics, Associate
Professor, Post-Doctorate Fellow,
Chair of Economics Enterprises,
Poltava University of Economics and
Trade*

Živitere Marga

*Academician, Professor, Dr.oec.,
Rector's Advisor, Head of the
Department of Economics, ISMA
University*

Riashchenko Viktoriia

*Dr. oec., Professor, Department of
Management and Marketing,
Director of the Entrepreneurship
program, ISMA University*

**USE OF CLUSTER
ANALYSIS TO ENSURE
THE EFFECTIVE
FUNCTIONING AND
DEVELOPMENT OF
RETAIL**

In today's conditions of increased competition in the consumer market actualized the problem need to improve the competitiveness of trade enterprises. Under these conditions, the key issue is the search optimization reserves the retail price, which is the economic profit. As a result, a significant number of trade enterprises held strategy of optimizing costs, focusing on

Different ways of its realization: the rejection of costly imports; cost savings through the creation of private brands.

One of the modern tools to ensure effective functioning and development of commercial enterprises is cluster analysis.

The goal of clustering of trade enterprises is further detailed study of individual groups of economic agents and improves their operations and detects communication between the scale of operations, logistics activity and productivity of their businesses business activity.

The choice of variables in cluster analysis is one of the most important steps in the research process.

Regarding the group of trading companies proposed to use three sets of indicators:

1) operational indicators that characterize the scale and characteristics of trade enterprises (assortment product groups, the activities of trade, retail trade volume, structure of property, the number

of trade workers, etc.);

2) financial-economic indicators characterizing the financial and economic state of commercial enterprise and the effectiveness of its business (cost on 1 money proceeds from sales, profitability, staff productivity, capital productivity, flexibility of working capital, the turnover rates, liquidity, etc.);

3) logistics indicators characterizing the level of logistics activity clustering of objects (the proportion of workers performing logistics functions in the structure of personnel, the level of information security logistics management level logistization functional areas of commercial enterprise).

In forming the scorecard second group should be considered an important point – the nature of these indicators. They should not be absolute values and relative. Otherwise, cluster analysis of commercial enterprises based on financial and economic indicators will take into account not only their current status and efficiency of economic activity, but its magnitude as natural that the sales revenue, profit, material costs and other absolute financial and economic indicators of trade on order higher than the mini.

Index of information security logistics management information describes the availability and efficiency of its receipt, determined by the degree of use in commercial enterprise of modern information technology and the introduction of local and corporate information systems to quickly make informed logistics solutions. Under the terms of logistization functional activities of commercial enterprises refers to the degree of use of logistic approach in purchasing, sales, shipping and storage areas. An important aspect of the use of cluster analysis is a clear fixation feature space, which must be unique, so the selection area should be approached with the utmost care. If substantial reasons not followed advantage of a scale for the signs, they can be measured in different units. However, in this case requires further made the transition to the single values of the scale. This can be achieved by applying point scale (10-, 100-point, etc. depending on the purpose and nature of research indicators), ranking and standardization attributes of the objects.

Go to point scale requires a significant amount of additional work: the choice of the most appropriate scale for the evaluation of each selected measurement scale, which is very time-consuming procedure and requires the involvement of experts to study the industry.

The method of ranking is to replace the absolute values of their ranks

that objects studied initially ordered by the values of the best indicators of the worst, and then assign each indicator rank (place), and further studies are operated ranks. This method has a significant drawback – artificially decreasing the distance between objects. These deficiencies deprived way of standardization indicators. This should be possible to consider the specific features and quality choose the most appropriate method of valuation. That valuation is appropriate to bring the values of operational, financial and economic indicators of trade and logistics enterprises in comparable units. If possible, regulation should be based on values that are independent of the sample, is theoretical or reference.

The solution to the problem of cluster analysis is a partition of objects that satisfy certain optimality criterion. This criterion can be functional, expressing the desirability level partitioning options and different groupings. Therefore, an important step cluster analysis (fig. 2.1) is to determine the criteria clustering objects. Choice optimality criterion (degree of closeness or distance of objects) is the main point in the cluster analysis, which depends crucially on the final group at a given algorithm partitioning. In each task, this choice is made differently, considering the main goal of the study, and the physical nature of the statistical information used. Results of cluster grouping trade enterprises operating and logistics parameters define the specific management of their logistics activities, which consists in taking into account technological features of the trading process (own production, packaging and packaging, transportation within the warehouse assortment structure and resources) and the assessment of the current level logistization functional activities, identifying areas not covered logistics, in order to concentrate on them major effort management personnel.

Financial and economic indicators have been identified as clustering parameters for comparison with the results of multidimensional clustering trade enterprises logistics indicators generalization which made it possible to conclude that the logistic activity of commercial enterprises significantly affect their financial position and performance of business.

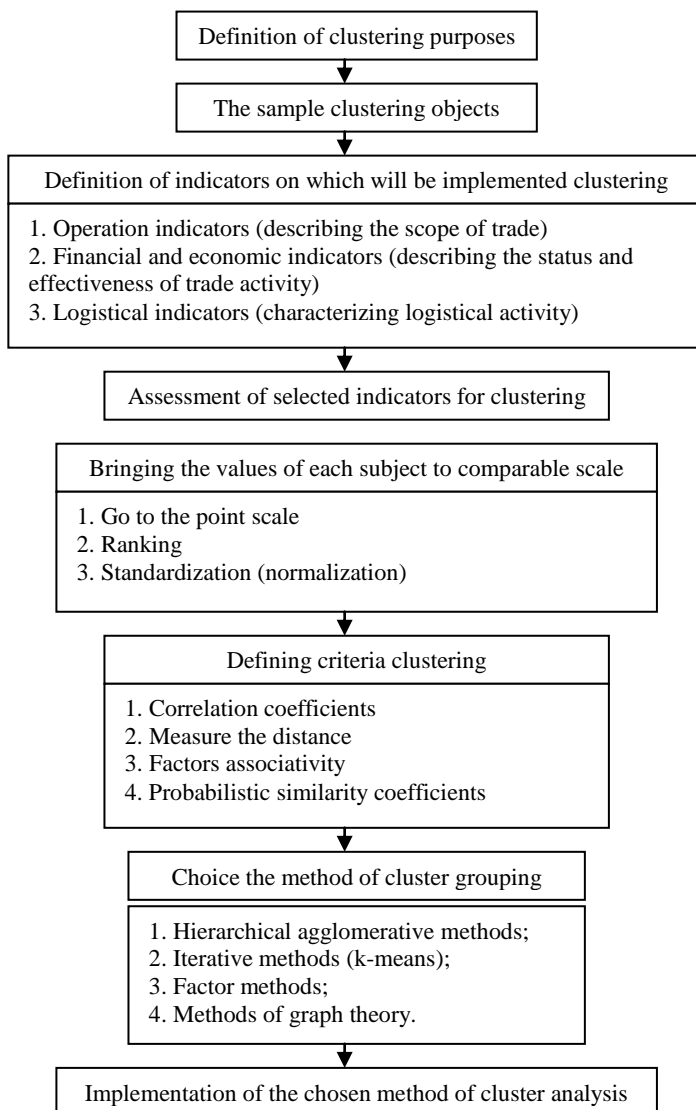


Figure 2.1. Algorithm group of trade enterprises based on cluster analysis

Suggested author

This comparison allows pre-determine the causes of the poor

condition of the company, unacceptable trade organization (operation of fixed assets, low level of automation of trading) or inefficient management of logistics flows (of uncoordinated movement, neglect and environmental conditions, lack of optimization calculations of parameters of traffic flow). In the case of relevance for a particular trade enterprise of the other causes of inefficient economic activity, further evaluation of integrated logistics activities by functional ingredients will reveal more detail and explore problem areas in their organization to resolve and address the identified problems.

References

1. Bezpartochnyi M. (2014) Using cluster analysis when assessing the performance of trade enterprises. Trade, commerce, business, collection of scientific papers. - Lviv: Lviv Commercial Academy. - Vol. 17, pp. 24-27.
2. Aldenderfer M.S. (1984) Cluster Analysis. – London-New Delhi: Sage Publications, 88 p.
3. Brian S. (1993) Cluster Analysis. – 3-rd ed. – London-New York: Halsted Press, 170 p.
4. Romesburg Charles (2004) Cluster Analysis for Researchers. – North Carolina: Lulu Press, 334 p.