

ABSTRACT

Title of graduate qualification work: Improving efficiency of functioning of systems using methods of Data Mining

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Relevance of the research topic: Modern world is characterized by fast growing informatization of the society and economy. It is impossible to imagine an organization which doesn't use computer technologies for data storage organizing. Now data about the organizations' activity is mostly stored electronic formats. The stored kind of data varies depending on the type of an economic system. For example, private companies can store data about the customers, incomes, outcomes, products that they suggest. If the economic systems are viewed as systems functioning in time, it is possible to state that the stored data shows the patterns of their development and can be used for forecasting, market analysis, customer analysis, organization activity optimization, planning, pricing policy.

Amount of stored data is so huge today that a human cannot process it by himself. He faces a problem of creating such means of data analysis that would help to minimize a human's participation in data processing, to speed it up and do a high-quality analysis. All the listed problems' solutions can be found in the field of data mining.

Purpose of work: Exploration of the potential of data mining application for improving of efficiency of the systems functioning, in particular belonging to the service industries and developing of a program product incarnating some machine learning models depending on the taken system's data character.

Tasks: A review of examples of the application of data mining to improve the performance of systems, the theoretical and methodological foundation of methods for data mining, a review of existing products in the field of data mining, the study of

indicators of the economic system taken for analysis, the choice of models for economic system analysis, the development of software implementation of models, evaluation of the effectiveness of the developed software product.

Theoretical and practical significance of the research:

Theoretical and practical significance of the research consists in approbation of the proposed within the framework of the final qualifying work of algorithms for forecasting the performance of economic systems.

Results of the research: After investigating the experience of applying machine learning in the economy and its theoretical and methodological justification, the data on the performance of the sanatorium-and-spa complex of the Stavropol Territory with the help of the developed system of intellectual data analysis were analyzed.

The results of the research show that the use of machine learning to improve the efficiency of the operation of service facilities is possible and has great prospects. However, to date, the collection, streamlining and storage of data is not paid enough attention, which complicates the process of implementing data mining, and the developed systems can analyze only the general state of the analyzed objects.

Recommendations: To improve the accuracy of the analysis of the activities of sanatorium establishments, it is necessary to establish a process of collecting and storing data, and to diversify their character. This would make it possible to apply a larger number of methods of data mining and increase its effectiveness.