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USING STOCHASTIC MODELS FOR SIMULATING SOCIO-ECONOMIC PROCESSES

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Abstract. *Research and modelling of socio-economic processes involves the transition from deterministic values to stochastic ones, which determines the use of normal distribution for economic parameters. The creation of time-varying stochastic models is possible on the basis of the theory of random processes.*

Since the majority of economic values are presented in an aggregated form, and the distribution of values and their frequency of occurrence are usually absent, the work created a dynamic stochastic wage model as close as possible to reality for employees of a large enterprise, residents of a territorial unit.

Calculating the optimal amount of the size range of shoes and clothes for individual countries allows optimizing the profit of large store chains, based on data on the distribution of the size range of goods. It is also interesting to compare the spectrum of the size series for consumers of different countries, which unifies the approaches to choosing a size series.

Key words: *socio-economic process, salary, stochastic model, normal distribution, size range of shoes.*

The study of parameters and characteristics of complex economic systems requires a differential approach to evaluate processes at the micro, macro, and mezo levels. Financial characteristics of economic processes at the macro and mezo levels are studied, as a rule, on the basis of

aggregated or averaged data. To study this type of processes at the micro level, it is advisable to consider not deterministic but stochastic values. That is why the issue of studying certain economic processes at the micro level under the angle of stochastic research is currently of priority importance.

The article proposes to apply modeling of financial and economic processes at the micro level in the form of stochastic values and random processes. Two stochastic models are demonstrated: a dynamic random process of employee wages and a stochastic model of the distribution of anthropometric indicators of a large group of people.

Research and modelling of socio-economic processes involves the transition from deterministic values to stochastic ones, which determines the use of normal distribution for economic parameters. The creation of time-varying stochastic models is possible on the basis of the theory of random processes.

The article also compares the parameters of the normal distribution of anthropometric parameters of residents of

Ukraine and the United States of America. These parameters turned out to be remarkably similar.

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