

ECONOMETRIC MODELING THE INDICATORS OF POPULATION MIGRATION

The study of the development of any state, changing its internal state is impossible without the study of migration flows and their impact on the development of society. Completely closed population today can be considered only population of the globe, in the open population migrations change directly its size and composition.

In recent years, the migration flow has been considerably reduced, but its balance is negative. However, the greatest development has been received by labor migration. Very often during a leisure trip, or remaining after the expiry date of the official stay in another country, our compatriots work there, usually illegally. The process of this migration is spontaneous and poorly studied. The fact that tourist visa is only the way to cross the border, shows the poor state migration policy. The result was social vulnerability of migrant workers on disability for various reasons, low wages, no work on qualifications, etc.

All mentioned above indicates the need for making an appropriate regulatory framework, establishing a wide network of state control, and coordination of joint efforts of organizations, departments dealing with migration issues. This can occur by means of properly organized migration research, built on the basis of mathematical models and methods.

Analysis of the literature in migratology revealed the existence of many classifications of migration patterns. This indicates the incompleteness of research in the field of mathematical modeling of migration movements. Summarizing the previous experience of using the mathematical models in migration studies, we note a number of approaches to the classification of mathematical models. Thus, some authors, offer the determination of models by the levels of research: macro- or micro- approach. At the macro level they often use regressive and gravitational models. The common thing to them is that the modeling results are the number of migrants. The difference lies in the fact that in calculating by the regressive models factors of the signs are taken into account and gravitational models pay attention to different characteristics of the area.

Another approach is based on modeling migration flow or its structure. Models of migration patterns differ from models of migration flows so that their migration flows are interrelated and considered simultaneously all together. For the analysis and prediction of migration structure development Markov's and balance models are used, and Markov's models are used more often. The advantage of Markov's models is their dynamics and ability to reflect probabilistic and statistical features of migration movement. A necessary condition of using balance model is the relative constancy of migration coefficients that are determined by statistical data for previous years that creates certain difficulties in the calculations. Because of this balance model is little used in the modeling migration processes.

Models of migration flows and migration structure can be combined to one class in terms of their use at the macro level. The disadvantage of application of balance modeling method is the fact that this method requires a very large amount of computational works.

The authors consider the main methods as the methods of extrapolation and balance ones relating to deterministic methods of research. Each of the methods has certain relationships with other methods. For example, the predicted values calculated by the method of extrapolation, are used for making adjustments in forecasts of migration performed by using the balance method.

Models of population movement, grouped on the basis of "age" or "sex-age" are also included into the classification of migration models. These models, called demographic, link together the number of different age (or sex and age) groups at different time intervals. Yu.A. Korchak-Chepurkivskyi is the author of the first table of population migration, combined with mortality. Demographic models include the method of "movement of ages" that can be used to obtain net migration. However, the most researches in demography are carried out by using the method of cohorts, considering migrations as the first set of events.

Thus, when modeling the migration movements of population both mathematical and demographic methods and models are widely used. Due to the fact that in recent years in studies on migratology the trend away from the use of mathematical tools toward the general theoretical positions (detection and classification of conditions and factors that influence migration) have been observed, topical is the application of mathematical modeling for the analysis of contemporary migration movements of population, the structure of migration flows, their directions, etc.