ABSTRACT

Bachelor thesis: 123 p., 32 tables, 58 fig., 3 add. and 17 references.

DEMOGRAPHIC PROCESSES, DIFFERENT EQUATIONS, ARMA, FORECASTING, MIGRATION, TIME SERIESES, PYTHON, EVIEWS.

Topic: Models and methods of forecasting demographic processes

The work considers the problem of modeling and estimating demographic processes forecasts using difference equations, namely, several types of autoregressive models, as well as a software product for achieving the set goals.

Object of research: demographic processes in Ukraine.

Subject of research: the choice of the structure of mathematical models that adequately describe the demographic processes and provide a qualitative estimation of the forecast.

Objective: To assess the current demographic situation in Ukraine by modeling key demographic indicators and estimate the forecast for the next 5 years.

Methods of research: methods of time series analysis using autoregressive models and their modifications.

This work contains results of simulation of demographic processes using autoregressive equations, as well as the estimation of the medium-term forecast by key demographic indicators. A software product designed to construct autoregression models and their modifications of time series has been developed, as well as for estimation of forecasts with the help of constructed models.

For modeling and estimating forecasts, data from the State Statistics Service of Ukraine for the last 17 years have been used.