

# BR10965247 «STUDY OF FACTORS, CHARACTERISTICS AND DYNAMICS OF DEMOGRAPHIC PROCESSES, MIGRATION, URBANIZATION IN KAZAKHSTAN, DEVELOPMENT OF DIGITAL MAPS AND FORECASTS»

## PROGRAM IMPLEMENTATION IN 2022

*The purpose of the study of the second stage (2022)* is to identify the influence of a system of factors on demographic development, challenges, risks, consequences of migration and urbanization, to substantiate the parameters of the future demographic situation, the directions of adaptation of migration policy in order to strengthen the demographic potential of Kazakhstan.

### THE OBJECTIVES OF SECOND STAGE (2022):

- to consider the impact of political and legal; economic; socio-cultural; natural and ecological; historical and geographical factors; urbanization; COVID-19 pandemic on the demographic development of Kazakhstan.
- to assess the socio-political, socio-cultural risks of migration in Kazakhstan, to identify problems of integration and adaptation of migrants
- to analyze the challenges of urbanization in Kazakhstan, the impact of the COVID-19 pandemic on urban development, demographic and migration potential and profile of cities in Kazakhstan;
- to assess the parameters of the future demographic situation, to develop a demographic forecast taking into account the dynamics of the mortality rate, the gender and age structure of the population;
- to investigate institutional and legal measures aimed at regulating migration processes, to assess the achievability of target indicators, to identify and justify the tasks of migration policy in the context of demographic development of the Republic of Kazakhstan;
- create vector layers and a digital basis for thematic demographic maps.
- to update information, post information about research results, program activities, publications, implementations.

### RESULTS OF SECOND STAGE (2022):

- it is shown that in the long-term historical process, demographic evolution and regional demographic structure in Kazakhstan are due to a combination of economic, political, socio-cultural factors that determined the transition from the traditional type of reproduction to the industrial one, a change in the role of education, the quality of medical care, the position of women in society, an increase in the number of small and medium-sized families, the peculiarities of the ethno-social structure of society,

different contributions of large ethnic groups to the dynamics of population reproduction;

- the influence of socio-economic factors based on the relationship of fertility with GDP per capita, per capita nominal incomes and the proportion of the population with an income below the subsistence minimum in different time intervals is considered, different degrees of closeness between variables (positive, not observed, negative) in different historical periods are revealed;

- based on cluster analysis, regions were grouped by demographic potential based on the coefficients of total mortality, infant mortality, demographic burden, the proportion of children born fifth or more in order, clusters with high (1), stationary (2) and low (3) demographic potential were identified, it was shown that the slowdown in demographic growth occurs under the influence of the third cluster, it is shown that there are no positive links between per capita income and demographic indicators in cluster groups;

- the role of socio-cultural factors is considered through the accessibility of education, it is shown that the specifics of the placement of vocational educational institutions determines the increasing difference and a twofold gap in the age groups of graduates of grades 9 and 11 in rural areas;

- the analysis of cause-and-effect relationships of the stability of demographic development on the basis of a normative dynamic model, which showed that the instability of fertility since 2015 is due to a decrease in the number of women of fertile age as a consequence of trends in the late 1990s and a decrease in the birth rate in the order of the first and second child, and to maintain a stable demographic reproduction, it is necessary to support large families (more than 4-5 children);

- based on the conducted expert survey on the problems of migration processes in Kazakhstan, an assessment of socio-political and socio-cultural risks of migration is given, the most important among which are identified marginalization, increased crime, social tension, lack of legal competence and rejection of the culture and traditions of the host country, interethnic, intergroup conflicts, lack of linguistic and communicative competencies;

socio-economic risks of migration (labor, youth, rural) have been identified, a set of attracting and pushing factors for the population of Kazakhstan has been identified, with the identification of vulnerable points affecting the population's relocation to other countries and regions; measures to improve the mechanisms for regulating migration flows have been proposed,

The influence of living standards on migration processes has been studied, a comparative analysis of regions has been carried out by the proportion of workers with an average salary level not exceeding the socially necessary consumer budget, it is shown that in most regions of Kazakhstan the number of workers with a low average monthly salary (up to 150 thousand tenge before taxes) ranges from 52% to 74%;

the main factors of successful adaptation of migrants are identified, and recommendations are given on the adaptation of internal migrants, primarily young

people, and the integration of external migrants, taking into account the selected groups

based on the results of the focus groups conducted in the North Kazakhstan region, the main problems of the implementation of the South-North program are identified, it is shown that resettlement programs will be ineffective until push factors prevail to a greater extent in the arrival regions, recommendations are given to improve the effectiveness of programs by combining tasks to preserve the local population and attract voluntary migrants, reduce hidden factors of social conflicts during the implementation of the program by introducing the principles of inclusive development;

a multifactorial factor model of the relationship of migration processes with the level of nominal wages, unemployment, informal employment, living standards of the population, investments, cultural and educational environment has been developed;

- the analysis of the challenges of urbanization in the context of the concept of urban metabolism on the example of Astana, Almaty, revealed a positive correlation between energy consumption, emissions of pollutants and population, revealed a higher degree of dependence of electricity and heat consumption of Astana and atmospheric pollution in Almaty on population growth;

- the social consequences of the growth of three Kazakh megacities are considered, the dynamics and structure of employment, unemployment, per capita expenditures and income of landscaping, restrictions for growth in terms of demographic capacity of megacities by territory and water resources are analyzed, a correlation analysis of the relationship between the population and the crime rate, the number of self-employed, housing prices in Astana and Almaty is carried out;

- an assessment of the demographic consequences of the COVID-19 pandemic on the cities of Kazakhstan was carried out, which manifested themselves in a relative decrease in the rate of urbanization, a decrease in the birth rate in cities, high excess mortality among the urban population, an increase in maternal and perinatal mortality among the urban population, a change in the structure of causes of mortality during the pandemic;

- alternative methods of assessing the level of urbanization are considered, taking into account the actual population in settlements of different types, it is revealed that the potential of urbanization in Kazakhstan, taking them into account, has a higher level;

- an analysis of the profile of demographic stability and mobility of the urban population of the regions and 59 cities of Kazakhstan was carried out, a rating assessment of the demographic stability of the cities of Kazakhstan was given;

- alternative approaches to the classification of cities in Kazakhstan are proposed, taking into account the average low population density indicators, an assessment of the level of diversification and a comparative assessment of the vulnerability of the urban framework of the regions, including taking into account demographic stability on the example of the cities of Kostanay and North Kazakhstan regions;

- it is recommended that when developing programs for resettlement to labor-deficient regions, along with the formal status of the settlement, different criteria should be taken into account: number, natural growth, demographic stability, population density, diversification and vulnerability of the urban framework of the territory, ensuring ethno demographic balance, borderline.

- variants of population forecasts up to 2050 have been developed based on various forecast models: forecast based on the perspective method (27,469 thousand people) and forecast based on the method of movement (30,287 thousand people); forecast using the average growth coefficient (25,113 thousand people); forecast based on natural and mechanical movement (25,640 thousand people.); forecast based on a polynomial of the second degree (30,829 thousand people) and a polynomial of the third degree (44,797 thousand people);

- a forecast of demographic dynamics, the number and composition of the population up to 2100, changes in demographic indicators and demographic structure in the context of age groups has been developed, on the basis of which, among which the main trends are changes in life expectancy, fertility, mortality, the ratio of men and women, demographic loading and aging of the population;

- population forecast by regions of Kazakhstan up to 2050 by gender and age groups have been made;

- shortcomings of the institutional and legal framework for regulating migration processes in Kazakhstan, developed as part of the reform of the state planning system, inconsistency of the Migration Policy Concept with the requirements of regulatory methodological documents; inadequate use of methods of analysis of processes and phenomena in the field of migration regulation, have been identified.;

- based on the analysis of actual and projected migration indicators, the program documents assess the quality of the choice of indicators in terms of the full coverage of the tasks set for migration policy, the development of the methodology for their assessment, the achievability of target indicators, an expanded list of indicators is recommended.;

- the directions of migration policy that contribute to strengthening the demographic potential and human resources of Kazakhstan, including modernization and improvement of the quality of the institutional and legal framework containing parameters and tools for regulating migration processes, strengthening control over migration flows, countering the outflow of skilled labor and youth, attracting highly qualified foreign workers, recommended a list of target indicators that ensure compliance with the plans of national projects, development plans of central government agencies and regions.

- the analysis of the collected cartographic materials was carried out and the revision of cartographic vector data was carried out on the territory of the regions of the Republic of Kazakhstan, vector data (administrative-territorial units) were created on the territory of the Republic of Kazakhstan, on a geo information platform, based on topographic and other maps.

- information on research results, program activities, publications, and implementations has been posted. <https://project.ieconom.kz/>

*Degree of approbation and implementation.*

At the second stage (2022), including the period from November 15, 2021 to November 1, 2022, 41 articles were published, including: 4 articles in publications indexed in the Scopus, Web of Science citation databases, including 2 articles - Q2 (Social Sciences 90 percent, Demography 67 percent); 10 articles in editions recommended by Control Committee in Education and Science of the Republic of Kazakhstan; 5 articles in other foreign citation databases; 22 articles in materials of international and foreign conferences.

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- Certificate of entry of information into the State register of rights to objects protected by copyright composite work) / No. 25328 dated April 21, 2022 (Modeling and forecasts of socio-demographic changes in the quality of life and health of the population in the context of the introduction of digital technologies in Kazakhstan)

The report was prepared by an interdisciplinary team of researchers on the basis of the Institute of Economics of the SC MSHE RK, including doctors, PhD candidates in economic, geographical, mathematical, physical, legal sciences, masters of geography, natural sciences, economics, sociology, as well as doctoral students and undergraduates.

Scientists of the Institute of Economics (Almaty, Astana branch), Al Farabi Kazakh National University (Almaty), Suleiman Demirel University (Kaskelen), Turan University (Astana, Almaty), KIMEP University (Almaty), Asfendiyarov Kazakh National Medical University (Almaty), Institute of Socio-Economic and Energy Problems of the North of Komi, NC Ural Branch RAS (Russia, Syktyvkar) took part in the research.

The preliminary report by 2022 year was discussed by Academic Council of the Institute of Economics (Protocol Solution No.3 of June 22, 2022). The annual report was reviewed and approved by the Academic Council of the Institute of Economics (Protocol Solution No.6 , October 6, 2022).