POPULATION DEMOGRAPHIC THE PROCESSES THEORETICAL AND METHODOLOGICAL BASIS OF STATISTICAL STUDY

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Abstract.

The science of statistics collects information about all aspects and aspects o the population reconstruction process and statistical analysis is enough.

Repopulation is a natural process based on birth and death. But while birth and death are biological processes, they are influenced by a number of socio-economic factors. An increase in the level of education of the population, improvement of living conditions, development of medicine and the formation of a medical service system for the population lead to a decrease in population mortality and an increase in the life expectancy of the population. This, in turn, has a positive effect on the continuity of generations

There are specific demographic mechanisms of the population regeneration process, including demographic consciousness, demographic tendencies, management of the regeneration process, the ratio of chance and necessity in demographic processes, etc. enters. Such mechanisms are preserved for a certain period of time in the stages of social development and represent reforms in the reconstruction of the population.

At the current stage of the development of the society, the specific features of population reconstruction have been formed in the countries of the world.

These features are closely related to the historical development, economic, social and demographic conditions of the states.

Changes in the process of population regeneration are determined using its quantitative parameters. There are exogenous and endogenous parameters of population regeneration. Exogenous parameters of population reproduction are f(x) and λ(x), f(x) represents the birth function, λ(x) represents the survival function. Based on these functions, the gross coefficient of population regeneration (R) is determined. The gross rate of population renewal is for each reproductive, i.e., childbearing age (15-49 years) Determines how many girls a woman can have while maintaining her fertility status during the period under study and is expressed by the following formula:

$$R = \delta \sum_{15}^{49} Fx$$

R – gross coefficient expression;

δ - of those born common in the amount girl of children weight (0.488).

Fx - young groups according to birth coefficient;

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$\sum_{15}$ 15-49 young in groups birth of coefficients sum[1].

Population repeat set up of being endogenous parameters – of the population young composition S (x), also population repeat set up of being determined by the net coefficient (R_0) and the net coefficient of natural growth (r). The net rate of population reproduction is a pure indicator that clearly expresses the change of generations. This coefficient determines the number of children born to a girl who lived to the age of their mother and is expressed using the formula $R_0 = RL_x$.

Here: R_0 is the expression of the net coefficient; R – gross coefficient; L_x - girls who lived to the age of their mother.

The net coefficient of natural growth is r=0, when R_0 =1, the population does not change for a certain period of time. If r≠0, R_0 ≠1, the population will change. Depending on the parameters of population reconstruction, the types and mode of population reconstruction are determined. They are divided into expanded type, reduced type and simple type of population reproduction .

In the expanded type of population reproduction, R_0 >1, r>0, in this case, the population increases regularly; in the normal type of population regeneration, R_0 =1, r=0, the number of the population does not change, it is in a stationary state, and in the case of reduced population regeneration, R_0 <1, r<0 is small. In this type of repopulation, the population decreases .

The above parameters are correct for women in most cases will come They are also adapted to calculate hypothetical generations[2] and real generations[3]. In both cases, it is used in the analysis of the recurrence of a specific population (with a constant pattern of formation).

Repopulation can be characterized as a change in the number of population R (t) as a result of the interaction of three functions: f(x,t), l (x,t) and c (x,t) .

Repopulation is an endogenous process. In such a process, the influence of the age structure of the population on the subsequent age structure of the population decreases as one moves away from a certain starting time. But it is increasingly connected with exogenous functions.

Repopulation from one type to another (extended population repopulation, normal population repopulation, normal population repopulation set up from being shortened type) type pass in science demographic called transition.

The concept of the demographic transition was created by the French demographer L. Landry in 1903-1934. In 1945, the American population scientist F. Newstime coined the phrase "Demographic Transition" into science.

It is noted in the sources that the transition of the population from one type to another is the result of human control of demographic processes such as birth, death, marriage and separation during the development of society.

Demographer specialists demographic to pass four to stage separates

The first stage. This stage was observed in developed countries in the middle of the 20th century. In it, the birth and death rates among the population began to decrease. But the death rate decreased much faster than the birth rate. In some countries, the birth rate is almost unchanged. As a result, natural population growth will be very high.

The second stage. The process of decreasing mortality continues and the decrease reaches its climax. And the rate of birth rate is accelerating. As a result, natural population growth slows down.

The third stage. At this stage, as a result of the decrease in birth and death rates, the increase in the average life expectancy of the population, the proportion of the elderly in the population increases. This leads to an increase in the number of deaths. Fertility further declines and normal population re-establishment occurs. That is, the Netto coefficient is equal to 1. In other words, each mother leaves only one daughter in her place - a mother-to-be. At this stage, stabilization in the age structure of the population is not fully observed. The group with the least number of deaths in the population is young people the weight is relatively high.

In the fourth stage mortality will be high. Death and birth rates are equal. The process of demographic stabilization will be completed[1].

In the study of all demographic processes, including population regeneration, statistical methods are mainly used in the following four areas:

1. Gathering information about the processes that form population reconstruction (including reconstruction of incomplete data);
2. In the processing and statistical analysis of information about these processes;
3. Determining the patterns of population regeneration and socio-demographic correlation;
4. Calculating general indicators of population regeneration and studying its characteristics.

The method of statistical observation makes it possible to obtain accurate indicators of population regeneration. Population using these indicators the parameters of the reconstruction are studied. Statistical monitoring uses the data of the population register, the data of the organizations for regular registration of demographic processes (FXDYo) and the results of sociological-demographic research.

Primary quantitative indicators of the process of population regeneration are calculated, processed and prepared for scientific analysis in a statistical manner.

It is known that a number of demographic factors influence the process of population regeneration. The method of distribution lines is used in their identification and scientific analysis. There are three more lines in the study of demographic processes: dividing the population into lines by age and gender; dividing the population into rows by groups (by families, places of residence); dividing into lines according to demographic processes (for example, children born according to the age of the mother, decisions according to the length of marriage, marriage according to age groups, etc.);

Analysis and description of the collected data on the components of population reconstruction is based on the method of the system of relative indicators.

Demographic coefficients are used in the study of the statistical analysis of population renewal, regional characteristics and their mutual differences in different socio-demographic groups. Demographic coefficients are divided into two groups:

"A" – group coefficients determines changes in the speed of population movement and the intensity of demographic processes.

"B" - group coefficients - quantitatively represents structural changes
"A" group coefficients to the point according to 3 to separated:

1. Coefficients determining the rate of population change under the influence of demographic factors that increase the number of the population (birth, immigration) (population growth in a certain period and average annual growth, natural growth, migration growth).

2. Coefficient of intensity of demographic processes. This coefficient, in turn, is two divided into groups:

1) General coefficients of demographic processes - (total birth rate - number of births per 1,000 population; total death rate - number of deaths per 1,000 population; total marriage rate - number of married persons per 1,000 population; total divorce rate - number of divorces per 1,000 population. ;). also demographic of processes special coefficients too developed, they are demographic processes of special groups of the population (women, men, reproductive age women, marriage age population, different age groups) provides accurate information about the ratio of demographic processes in these groups to 1000 people.
Standardization coefficients are also used in regional and periodic comparisons of demographic processes.

2) Intensity coefficients of demographic processes in cohorts are used for periods and general-cumulative coefficients when studying demographic processes in cohorts.

Group "B" coefficients represent the relative indicators of individual groups of the population (the number of men per thousand women), demographic load and fertility indices. Also, indicators used in the study of the influence of socio-economic and demographic factors on demographic processes (in the population of a certain age, the proportion of employed people, or gender, the weight of the employed, marital status, births of mothers in certain age groups, the weight of the first children compared to the total number of births, etc. .).

Demographic factors (proportion of the age-sex composition of the population, the weight of women of reproductive age 15-49 in the population, death process, marriage and divorce processes) have a high influence on population regeneration.

proportion of young people in the population and the high rate of marriage are the main reasons for population regeneration. Today's youth

define the future of population regeneration .

In the population the elderly of weight high while on the contrary in the future The process of repopulation leads to a decrease in indicators. Marriage of the process high to be marriage age population in the composition of families high to be too to birth positive effect reach is a factor in the intensity of generational change.

The high rate of mortality, especially of infants and the population of reproductive age, has a negative impact on the generational transition. also Divorce, especially divorce in the first 1-5, 5-10 years of marriage, to a certain extent, causes a decrease in the birth rate of a new generation.

The impact of economic factors on population regeneration is increasing at the current stage of society's development. Employment of the population, women's participation in social production, acquiring knowledge, skills and qualifications, starting a family, and having children have a unique effect on population regeneration.

It should be noted that social factors also play an important role in population regeneration. To them, the demographic policy of the state, family, marriage and childbearing by society and state support, the development of medicine and the level of medical services provided to the population, the population especially of women informativeness degree, can include the expansion of awareness and promotion of contraceptives.

Studying the type of reconstruction of contemporaries in the years close to the years of population census will be of obvious scientific and practical importance. Such an approach to the issue provides an opportunity to develop an active demographic policy, ways to implement certain actions to improve the demographic situation.

For these purposes, the following 3 groups of indicators are used:

- population dynamics;
- intensity level of demographic processes;
- the level of exchange of one generation with another (in the statistical literature, it is called the population renewal rate) [4].

The rate and description of population regeneration is expressed not by the natural growth rate, but by the actual rate of regeneration or progression rate.

There are a number of other indicators related to the mode of population reproduction, for example, the length of life of a generation, how many years the population doubles, etc.

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