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**SUBSTANTIATION OF THE NEED TO CONSIDER  
THE DEMOGRAPHIC DATA IN PLANNING  
THE REGIONAL EDUCATION SYSTEM DEVELOPMENT**

**ОБҐРУНТУВАННЯ НЕОБХІДНОСТІ ВРАХУВАННЯ  
ДЕМОГРАФІЧНИХ ДАНИХ ПРИ ПЛАНУВАННІ РОЗВИТКУ  
РЕГІОНАЛЬНОЇ ОСВІТНЬОЇ СИСТЕМИ**

*The article substantiates the need to consider the demographic data in planning the development of the regional education system. The results of diagnosing the state and development of the educational system of Kharkiv region are explained, its main tendencies, problems and threats are revealed. The scenarios of possible changes in the education system of the region are presented and the probabilities of additional opportunities for its development are established.*

**Key words:** *management cycle functions, regional education system, demographic crisis, birth rate.*

*У статті науково обґрунтовується необхідність врахування демографічних даних при плануванні розвитку регіональної освітньої системи. Висвітлено результати діагностування стану й розвитку освітньої системи Харківської області, виявлено її основні тенденції, проблеми та загрози. Наведено сценарії можливих змін в системі освіти регіону та встановлені ймовірності появи додаткових можливостей для її розвитку.*

**Ключові слова:** *функції управлінського циклу, регіональна освітня система, демографічна криза, рівень народжуваності.*

**Problem setting.** In the course of its historical development, the state has been confronted with certain tasks, which are solved by means of its functional activity, aimed at supporting the life of society and are implemented by the system of authorities, their apparatus through a set of management functions.

Planning is a general function of management, "the essence of which is to determine the goals of the activity and ways to achieve them" [2, p. 526]. Most often it is used in the economic sphere at the level of companies, enterprises, organizations to assess their condition using economic-mathematical and balance methods.

In the social sphere, the function of planning gives an opportunity to assess the real state of social processes that affect its development, to identify major trends, contradictions, problems and to develop a set of measures aimed at solving or avoiding problems in the future. To do this, relevant information is collected and processed, the desired state of the management entity is determined, forecasts are made, plans, programs are developed, etc.

Concerning the prognostication, which is defined as sound judgments about the possible state of the object in the future or alternative ways and terms of reaching these states, the social forecast, according to V. Bakumenko, is aimed at the social development of the country, its regions or separate territories, is made for a long-term and medium-term perspective and contains an analysis of the development of the social sphere over a period of time, a description of its main problems; description of the state of the resource potential use; forecast of competition in the markets of the main types of goods and services; possible directions for solving problems of social sphere development; defining social development goals and priorities and working out proposals for measures to achieve them, etc. [2, p. 586]. Forecasts should precede plans, programs and management decisions, assess the course and consequences of their implementation or non-implementation.

Forecasting is the result of the forecasting process, which is, in turn, one of the important sub-functions of the planning function. Note that forecasting the development of the regional education system (hereinafter referred to as RES) is part of the social forecast. There is a distinction between search (determining the future state of the forecast system based on historical data) and normative (determining the main intermediate targets to ensure the achievement of a given system state) forecasting. In the managerial cycle, this sub-function gives an opportunity to analyze the state of the system, identify patterns and problems of its development, work out or adjust already designed strategy for the development of the investigated system, as well as investigate and anticipate those situations in which this system may turn out in the future.

In the context of our study, the RES development prognosis is a scientifically sound assumption about a possible status and development of this system in the future, which allows management subjects to work out effective planning steps for the development of this system and to foresee the possibility of internal and

external hazards, to establish the likelihood of additional opportunities.

**Recent research and publications analysis.** Theoretical, methodological and methodological principles of educational management, forecasting the development of the education system are sufficiently represented in the scientific works of Ukrainian and foreign scholars. However, substantiation of the need to consider demographic data when planning RES development has been left beyond the authors' attention.

Application of methods of content analysis, analysis and synthesis, comparison, method of concomitant changes allows to consider contradictions that arise during RES development planning, namely:

at the scientific-theoretical level there is a contradiction between the existence of a considerable amount of research, in which planning is considered as an independent process in management activity, and the need to develop the theory and practice of the process of planning the education system development as an independent subject of research with specifically defined goals and priorities;

at the practical level – between the actual practice of the planning process and its scientific and theoretical substantiation; between state forecasting and strategic planning of RES development, taking into account the peculiarities of socio-economic development of the region itself, the interests of the population, the needs and demands of the society and the corresponding regional target programs, the authorities' plans of activity in the sphere of education.

**Paper objective** is to scientifically substantiate the need to consider demographic data when planning RES development; to illuminate the results of diagnosing the RES condition and development using Kharkiv region as an example, to identify the main trends, problems and threats; to provide scenarios for possible changes in the region's education system and to identify the likelihood of additional opportunities for its development.

**Paper main body.** Since the early 90s of the XX century devastating factors have emerged in Ukraine that have adversely affected the self-reproduction process of the population and the socio-demographic situation in the country as a whole. Important factors in this situation are decline in birth rates, loss of the multi-child parenting tradition, mortality intensification, aging, health deterioration and depopulation, sharp decrease in the number of marriages, growth of labor and educational migration and more.

In the last thirty years, in Ukraine the state of the demographic crisis (crisis of demorealism), which is characterized by "loss of ability of the social organism to self-reproduction of the population in previously achieved quality and quantity" [5], has been only worsening, becoming more acute problem. The population of the country is decreasing every year, first of all because of low birth rate – the birth rate in Ukraine is almost 30% lower than the one registered in the early 1990s (12.7), and in 2017 amounted to 9.4 persons per 1000 people. In the world ranking (United Nations birth rate) in 2015, Ukraine ranked 172 with an indicator of 10.9 births per 1000 people among 199 countries [7]. Recently, there has been

a tendency for this position (ranking place) to fall steadily. Such a rapid decline in absolute and relative birth rates only exacerbates the demographic crisis in Ukraine.

As for the total birth rate, according to the State Statistics Service of Ukraine, in 2017 it amounted to 1,374 per 1 woman (1,283 in the city, 1,522 in rural areas). Rivne (1,735), Zakarpattia (1,641) and Volyn (1,617) oblasts have the highest index among the regions of the country, while Sumy (1,130), Kharkiv (1,168) and Chernihiv (1,181) oblasts have the lowest index [1, p. 52].

Therefore, it should be emphasized that the dynamics of birth rates is a defining characteristic of the country as a whole and the region in particular. These indicators influence the formation of education policy in general as well as the development of the regional education system.

We are going to try to make a forecast of the development of RES under the conditions of demographic crisis, to identify the main trends and threats to its development. Let us consider the case of RES development of Kharkiv region as one of the leading regions of Ukraine in scientific and educational sphere. It should be noted that education as a system, process and result plays a key role in the political and socio-economic development of the state and the region, as well as in the transformations taking place in the country today.

We should outline that forecasting is an important factor that determines the overall direction of the development of socio-economic processes. The demographic forecast is a reasonable prediction of the main parameters of population movement and the future demographic situation [3, p. 226]. The demographic forecast should consider the general population law, statistical patterns and probable conceptualization of demographic events. Such an event in Ukraine was an external military aggression, the active phase of which occurred in 2014-2015, and as a result of which the population decreased sharply (by almost 14 thousand people), and also such a population category as internally displaced persons (hereinafter referred to as IDPs) appeared.

In our case, the forecast of RES development is based on the statistics of the State Statistics Service of Ukraine, the Main Department of Statistics in Kharkiv region, regional authorities in the field of education and personal observations of the authors. We also inquire into the legislative and regulatory documents of central and regional authorities aimed at the development of education and demographic occurrences that have affected the quantitative and qualitative changes in RES. Amongst others, Kharkiv region ranked second in Ukraine, accepting the largest number of IDP families with children relocated from the temporarily occupied territory and hostility areas during 2014-2015 [4]. Moreover, the largest number of migrants came from Donetsk and Luhansk regions, which by 2014 had the highest birth rates in Ukraine, and consequently, the education system in these areas was the most extensive – with the largest number of educational institutions and the number of people who studied in them.

The analysis of the demographic situation in Kharkiv region shows the ex-

istence of demographic windows (“pitfalls”), i.e. the moments of demographic depression – decrease in population (Fig. 1).

The first window includes 1999-2003, i.e. the years with the lowest birth rates. The lowest figure was in 2001 (19025 children were born) [6, p. 44]. The second window opens in 2017 with the mark of 21631 births. The following year, it dropped below the 2001 mark, reaching 19657 births. However, it should be emphasized that the situation in 2019 is only worsening, and even the published data for half a year (8884 births) suggest that the birth rate continues to fall. These indicators will negatively affect the development of the education system in the region. Namely, if you look at the years with demographic “pitfalls” and determine the years when children will go to secondary school and then enter higher education institutions, one can predict that the consequence of the first window will be the lowest number of secondary school graduates, who can enter higher education institutions, expected from 2019 to 2022, and as a result of the second window, both secondary schools (from 2023) and the higher education institutions (from 2035) will experience a shortfall. In addition, since 2018 12-year secondary education has been implemented in Ukraine. This means that secondary school will not have graduates in 2029 and, accordingly, the higher education institutions will not be able to have the necessary admission, even by government order.



Fig. 1. Demographic situation in Kharkiv region (as of August 2019)

Of course, it can be argued that the figure shows only the births of children born in Kharkiv region and does not show the number of children who moved from the temporarily occupied territory and areas of hostility. The personal obser-

vations of the authors give grounds for claiming that pre-school and general secondary education institutions, especially in the city of Kharkiv, are overcrowded. This means that due to IDP children, the number of persons enrolled in regional educational institutions is much higher than the birth rate.

The results of the demographic situation analysis in Kharkiv region give grounds for predicting the possibility of emerging hazards in the development of RES, among which are:

- reducing the number of persons studying in educational establishments and, accordingly, reducing the number of educational institutions themselves;
- loss of full employment, first of all by scientific and pedagogical workers, their irrelevance in the labor market;
- worsening of the situation regarding ensuring the accessibility of the population to quality education;
- increase in offers of educational services in non-formal education, etc.

At the same time, the factors that can improve the situation in Kharkiv region could be:

- relocation of IDP families with children;
- internal educational migration;
- increasing offers for pedagogical and scientific-pedagogical staff in the educational services market in the non-formal education sector;
- increasing number of foreign students.

As for the data on the current state of development of the informal education sector in the region, 357 courses and 267 trainings, as well as 288 offers on tutoring, were offered to the population in September 2019 in Kharkiv region.

Among the most common training areas are personal development, time management; negotiations, communications; psychology, neurolinguistic programming; sales, work with clients; company management and more. (Fig. 2).

The least demanded in the market of educational services in the informal sector of Kharkiv region are:

- hotel and restaurant business, HoReCa;
- real estate;
- labor protection, business security;
- trainings for children and adolescents;
- Information Technology;
- logistics, customs, foreign economic activity;
- industry, manufacturing;
- purchase, distribution;
- women only, etc.

It can be predicted that, in the future, the loss of full or partial employment of the teaching and research staff of formal education institutions will increase their supply in the non-formal education market in the future. Therefore, in order not to lose the pedagogical and scientific and pedagogical potential of Kharkiv region, regional authorities have to consider appropriate fuses, for example, to ac-

tively develop the informal education sector, to inform the population about the possibilities of a differentiated approach in providing educational services, about their quality and accessibility.

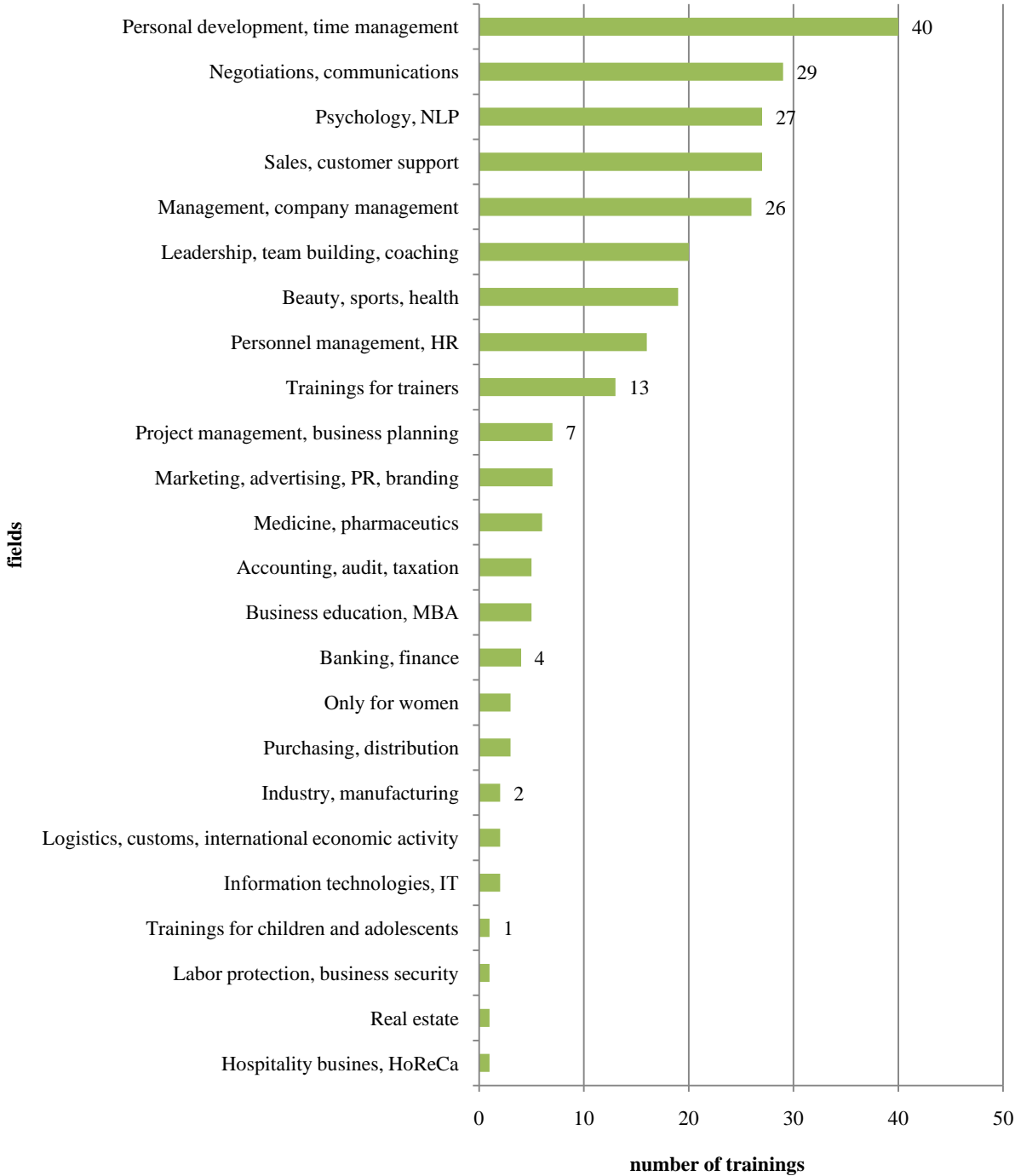


Fig. 2. Trainings according to the fields in Kharkiv region, as of September 2019.

Regarding the possibility of increasing the number of foreign students in educational institutions in the region, we can say that according to the Department of Science and Education of Kharkiv Regional State Administration, the number of foreign students in regional educational institutions has decreased by about 270

6,000 in the last 4 years. Minor changes have occurred in the regions that provide foreign students (Fig. 3).

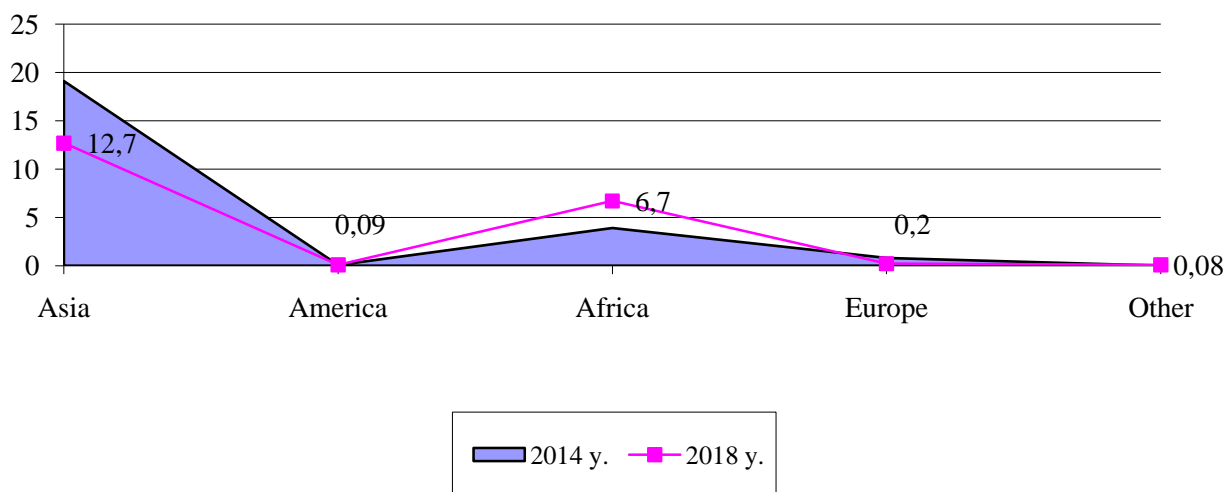


Fig. 3. Dynamics of the number of foreign students, by major regions-providers of foreigners for training, thousand

Thus, while Asian countries remain the main regions of foreign student supply, there has been a doubling of the number of foreigners coming to study from Africa. Unfortunately, Kharkiv region higher education institutions are practically not in demand among students from European countries. The number of students from Europe who come to study in Kharkiv is only falling (for the last 4 years their number has decreased 4 times).

**Conclusions of the research.** The foregoing indicates that the system-forming component of RES development planning is management, which should cover the complex of managerial decisions, which in turn form the legal field of prognostic activity, which allows to obtain and organize reliable information about the status and trends of system development, identify hazards and develop measures to overcome or avoid them.

Representatives of regional state authorities as subjects of administration, as well as pedagogical and scientific-pedagogical workers, heads of educational establishments, employers and representatives of the local community should be interested in the working out and implementation of prognosis of RES development and should take into account the relevant demographic data. However, it should be noted that this level of forecasting activity is currently one of the least organized in Ukraine, prompting the search for ways and means to involve all administration entities in this activity.

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