THE DEMOGRAPHIC FACTOR IN SHAPING STATE POLICY FOR HIGHER EDUCATION OF UKRAINE

Abstract
The article examines key indicators of the demographic crisis in Ukraine, highlighting manifestations of the nation’s aging and natural population decline.

It’s determined that understanding and analyzing the demographic situation allows for predicting changes in the size and structure of the student population, which is crucial for the effective development of higher education in Ukraine. Considering the trends of declining birth rates and an aging population, it is important to adapt admission strategies for students and educational programs accordingly. The examination of the demographic crisis helps identify key challenges, such as a decrease in the number of high school graduates, which can impact competition within the higher education environment.

The trends examined in the article, including the decline in the birth rate of the Ukrainian population, the aging of the nation, the level of migration, and the loss of the civilian population due to the war, enable us to characterize the situation in Ukraine as depopulation. Notable changes in the demographic landscape and shifts in the population structure occurred after February 24, 2022, including irreversible human losses, population emigration (over 10 million people), and a decline in the average birth rate. A correlation was identified between the number of births each year and the dynamics of educational services’ capacity. It was observed that higher education in Ukraine will confront significant demographic challenges in the next 17 years. In the context of the strategic goal to restore Ukraine’s human capital, the article suggests viewing higher education as an effective instrument of state policy in a cyclical process: attaining higher education, integrating graduates into the national economy, ensuring financial stability, fostering active citizenship, and promoting loyalty to the state—all contributing to an improvement in the demographic situation.

Keywords: depopulation, nation’s aging, human capital, higher education in Ukraine, educational services capacity, demographic crisis.
In the conditions of a full-scale Russian war against Ukraine all state resources – military, political, economic, diplomatic, human etc. are concentrated on achieving the goal of preserving statehood, reoccupation of Ukrainian territories and restoring the state sovereignty of Ukraine within the borders of 1991. And the problems of humanitarian content and the catastrophic drop in demographic indicators is of extraordinary importance too. After all, the restoration of Ukraine’s human capital in the context of the strategic reconstruction of the state is one of the most difficult and important tasks after the war.

Before 2022, the experts of the Ptoukha Institute for Demography and Social Studies predicted a decrease in the population of Ukraine by 5.5 million (that is, in 2050 it could amount to 35–38 million people). But in January 2023 in an interview with Forbes the director of the Institute, Ella Libanova, announced the population of Ukraine at 34–35 million people. The International Monetary Fund, in turn, estimated the population of Ukraine at 31.95 million people at the beginning of 2023 (see Fig. 1).


**Figure 1.** Population of Ukraine (1980–2023)

4. Ibid.
Of more than 12 million Ukrainians who crossed the border with European countries after February 24, 2022, only 1.5 million returned.\(^5\) Two thirds of those who received refugee status abroad are women and children. Therefore, since national education is influenced by the population aged 15–24 and the dynamics of its ratio with the total population of the country, the author proceeds from the assumption that such a progressive deterioration of Ukrainian demography will lead not only to the depopulation and problems of social economic aspect but will inevitably create new challenges for education system of Ukraine.

This thesis is based on the State Statistics Service of Ukraine data, the Ministry of Education and Science of Ukraine data, reports and forecasts of the Ptoukha Institute for Demography and Social Studies of the National Academy of Sciences of Ukraine, as well as statistical data of the International Monetary Fund, the European Commission, and the United Nations.

Separate practical aspects of the specified problem became the subjects of research by domestic authors: Ella Libanova\(^6\), Vira Safonova\(^7\), Anton Shapoval, Yuriy Martynenko\(^8\), Tetiana Obolenska\(^9\), Olena Malynovska\(^10\), Anna Kornienko and Serhii Voitko.\(^11\) However, in the conditions of a full-scale war, studying the issues of the influence of demographic processes on the development of education in Ukraine, in particular, higher education, is the subject of complex, interdisciplinary studies, which Ukraine needs today. Because of the importance of their applied aspect and the formation of a road map for the development of education after the war and in the context of the restoration of the nation’s human capital.

The article aims to pinpoint potential challenges and risks facing higher education in Ukraine amidst a full-scale war and the subsequent post-war recovery. This objective is pursued by analyzing the dynamics of demographic indicators, existing forecasts, and assessments of the socio-economic parameters of Ukraine’s development.

Starting from 1991, the demographic situation in Ukraine remained negative in terms of birth and death rates, which made natural population growth impossible. According to the International Monetary Fund, the population of Ukraine reached its highest value in 1992: 51.87 million people were recorded then (see Fig. 1). Pre-war forecasts and calculations indicated that, if the current average birth rate had maintained (one woman – 1.2 children), by 2050 the population of Ukraine would have been 32 million inhabitants.\(^12\) However, even this scenario seems quite optimistic today. As of May 2023, the demographic situation in Ukraine should be assessed as depopulation associated with natural (reduction in population growth) and artificial factors (Russian war against Ukraine).

First, it should be assumed that any estimates of the demographic situation in Ukraine have an error, because after 2001 no population census was conducted in the country, statistics are currently suspended,
and the data used by scientists to calculate and build demographic forecasts is several indirect indicators. For example, big-data information from mobile operators, data about bank cards and their functioning, personal accounts in the “Diia” application, etc. However, even before 2001, several quantitative and qualitative characteristics of the demographic structure of the population acquired signs of a formed trend. First, it is about the aging of population in Ukraine.

According to the estimates of the Institute of Demography and Social Research, unlike the countries of the European Union, where changes in the number of the population have a steady correlation with the migration balance, the population in Ukraine is formed mainly by natural means.\textsuperscript{13} The highest average birth rate in Ukraine was 1.8 in 1990.\textsuperscript{14} However, for the generation of parents to be replaced by the generation of children, it must be at least 2.15.\textsuperscript{15} That is, population growth will occur if one woman gives birth to two or more children during her lifetime. According to E. Libanova, in 2021, the average birth rate in Ukraine was only 1.1. At the same time, the European indicator was 1.2. The researcher assumed that in 2023 it will border on catastrophic for the reproduction of the Ukrainian population and will amount to (an optimistic forecast) 0.8 children per woman.\textsuperscript{16}

Even according to the latest data recorded by the State Statistics Service, in January 2022, the population decline reached 39,160 people: the number of deaths (57,200 people) more than tripled the number of births (18,100 people).\textsuperscript{17} In 2021, the absolute rate of natural population decline was 442.4 thousand people (see Fig. 2).

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{figure2.png}
\caption{Natural and migration population growth in Ukraine (2018 – January, 2022)}
\end{figure}

\textit{Formed by the author on sources}\textsuperscript{18}

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\bibitem{Ibid} Ibid.
\bibitem{State2} State Statistics Service of Ukraine, Osvita. Naselelnia [Education. People], https://www.ukrstat.gov.ua/
\bibitem{Ibid2} Ibid.
\end{thebibliography}
It should be emphasized that the existing practices of attracting immigrants in Ukraine, considering the national indicators of socio-economic development, the level of corruption, the state of the human rights and law enforcement system, etc., had uncertain prospects of quantitatively compensating the natural reduction due to the increase in migration. Its highest indicator – 22.6 thousand people was recorded by the State Statistics Service of Ukraine in 2014. Instead, the coronavirus pandemic, and later the full-scale Russian invasion of Ukraine, significantly affected the security and economic attractiveness of the country and stopped the positive dynamics and pace of the influx of immigrants.

From the total number of the population in a specific year, the reduction in birth rate is 9–10%, however, due to the accumulation of the trend, it significantly affects the demographic structure of the population of Ukraine as a whole. It is about the annual decrease in the specific weight of the population aged 0–17 years while the group of 60 years and older is stable (see Table). Moreover, the gradual decrease of the population group aged 16–59, which represents the economically active population, poses threats not only to the educational market (but the group also aged 15–24 is important for calculation.

Another significant set of factors that aggravated the demographic problems of Ukrainians were irreversible human losses because of the full-scale Russian invasion of Ukraine. The author proceeds from the understanding that the statistics of military and civilian losses existing in the public space are not final, accurate, and in some places these data require verification, which will be possible only after the complete de-occupation of the territories of Ukraine, the return of the deported population, and the identification of the mass burial sites of the tortured victims of the Russian occupiers.

So, starting from February 24, 2022, more than 12 million people left Ukraine; 8,173 Ukrainian civilians died (including more than 500 children) and 13,620 (including 992 children) were injured (Statistics “Word and Deed” with reference to the UN). It is still unknown how many Ukrainians died in the practically destroyed Severodonetsk, Lysychansk, Popasna and other settlements. According to the most conservative estimates, about 20,000 people could have died in Mariupol. The statistics of losses of personnel of the Armed Forces of Ukraine cannot be calculated during hostilities and the continuation of the war.

Formed by the author on sources

<table>
<thead>
<tr>
<th>Year</th>
<th>Total number of populations, thousands of people</th>
<th>People under 17 y. o., thousands of people</th>
<th>16–59 y. o., thousands of people</th>
<th>60 years and older, thousands of people</th>
</tr>
</thead>
<tbody>
<tr>
<td>2018</td>
<td>42 216,8</td>
<td>7 609,3</td>
<td>25 641,3</td>
<td>9 679,8</td>
</tr>
<tr>
<td>2019</td>
<td>41 983,6</td>
<td>7 579,7</td>
<td>25 293,7</td>
<td>9 827,1</td>
</tr>
<tr>
<td>2020</td>
<td>41 732,8</td>
<td>7 533,9</td>
<td>24 968,1</td>
<td>9 978,2</td>
</tr>
<tr>
<td>2021</td>
<td>41 418,7</td>
<td>7 459,7</td>
<td>24 618,9</td>
<td>10 121,6</td>
</tr>
<tr>
<td>January, 2022</td>
<td>40 997,7</td>
<td>7 348,5</td>
<td>24 294,9</td>
<td>10 152,4</td>
</tr>
</tbody>
</table>

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19 Malynovska, Migration in Ukraine: Facts and Figures.
21 Obolenska, “Marketyhnyi i sfery osvitnih posluh” [“Marketing of educational services”], 14.
24 Ibid.
Thus, having analysed the key parameters of the demographic situation in Ukraine, which can be qualified as depopulation, it can be stated that even before the full-scale Russian invasion, there was a tendency to reduce the population and decrease the specific weight of population groups aged 15–24, which are important for the study of the educational component of demographic processes, was progressive.

In 2019, Ukrainian researchers A. Kornienko and S. Voitko calculated and predicted the future capacity of the educational services market for 2019–2033. The methodology was based on the number of births 17 years ago, i.e. 2002, the number of deaths under the age of 17 years, statistics of academic mobility, inflow and outflow of migrants under the age of 17, the number of the population under the age of 17 who refused to enter secondary special educational institutions, higher education institutions and the number of potential students who can get a second higher education. The authors constructed the dynamics of demand on the educational services market (see Fig. 3).

![Figure 3. Forecast of the dynamics of demand in the market of educational services capacity in Ukraine 2019–2029](image)

Therefore, according to the forecast received at that time, the indicator of the capacity of educational services of Ukraine was supposed to increase from 2019 to 2028.

According to this forecast, in 2023, the expected number of applicants was more than 400,000 people. It should be noted that in the “Procedure for admission to higher education in 2023” presented by the Ministry of Education and Science of Ukraine, the number of school graduates (and, accordingly, the estimated number of applicants to higher education) was calculated at 450–470 thousand people. At the beginning of the admission campaign – 2023, Deputy Minister of Education and Science Mychailo Wynnyckyj noted that this year only 260,000 people wrote the NMT (National Multi-subject Testing). For correlation, according to statistical data from 26 EU countries, as of June 27, 2023, almost 790,000 Ukrainian children were integrated into the school systems of

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26 Safonova, “Prohnozni aspekty rozvytku vyshchoi osvity v umovakh demohrafichnoi kryzy v Ukraini,” 126.
these countries.\textsuperscript{30} These statistics do not include data from Great Britain, USA, Canada, and other countries to which Ukrainians left, as well as information from Russia and Belarus, where Ukrainian citizens were deported.

Since the UN reports that 87\% of Ukrainian refugees are women and children, and considering data from countries that are not the members of EU, it can be assumed that there are much more Ukrainian students abroad.\textsuperscript{31} The Ministry of Education and Science of Ukraine calculates that the number of Ukrainian children displaced abroad is more than 500,000, and another 161,000 schoolchildren are registered as internally displaced persons by the relevant Ministry.\textsuperscript{32}

In 2006 460,300 children were born in Ukraine, after 17 years – in 2023 the number of school graduates – entrants to higher education institutions declared by the Ministry of Education and Science of Ukraine are 281,000 people. Then this percentage is 61\%. And this reproduces the trend observed in previous years: 2014 – 65.9\%, 2015 – 62 \%, 2016 – 65 \%, 2017 – 68.6 \%.\textsuperscript{33} However, this approach has a significant error, because in the structure of applicants of a certain entry year there are always those who enter “in the wrong year”. Finally, in the strategic dimension, the key problem remains not the current number of higher education graduates of Ukraine, but real tools and systemic state policy (including pro-natal) that will form an effective cycle in the future: obtaining national higher education – being in demand on the labour market and engaging in the national economics system – personal financial security, an active civic position and loyalty to the state – improving demographic indicators and overcoming the demographic crisis.

“Lack of leadership in the formation of human capital and social cohesion,” – was identified as one of the problems of national higher education system, according to the Strategy for the Development of Higher Education in Ukraine for 2022–2032.\textsuperscript{34} In the conditions of a full-scale invasion, the Strategy needs clarification in the sense of assessing threats precisely in the context of the implementation of the task of human capital formation.

Thus, higher education in Ukraine as a set of state tools for the formation of economically efficient, loyal human capital, education of citizens with a proactive position, etc. faced several threats and challenges, which significantly intensified after the Russian invasion of Ukraine. In addition to several current problems of institutional, regulatory, personnel, and financial support, there are some old problems: depopulation, qualitative changes in the structure of the Ukrainian population, the washing out of groups of key consumers of educational services, on which the entire system of Ukrainian higher education was traditionally focused. These demographic problems accumulated in Ukraine over the decades, significantly aggravated by the circumstances of the war.

Researching the activities of higher education institutions and state policies in the realm of adult education in Ukraine holds promise for future scientific exploration. Adults constitute the economically active population of the country, requiring training and/or further development of their professional skills to remain competitive in the labor market.


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The Demographic Factor in Shaping State Policy for Higher Education of Ukraine

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ДЕМОГРАФІЧНИЙ ЧИННИК КОРИГУВАННЯ ДЕРЖАВНОЇ ПОЛІТИКИ УКРАЇНИ В ГАЛУЗІ ВИЩОЇ ОСВІТИ

У статті проведено аналіз основних показників демографічної кризи в Україні, виявлено ознаки накопичених проблем, пов’язаних із старінням нації та природним зменшенням чисельності населення. Це дає підстави оцінювати ситуацію в країні як депопуляцію населення. Після 24 лютого 2022 р. зафіксовано значне погіршення демографічного фону та якісні зміни в структурі населення, а саме: безповоротні втрати людей, еміграція населення та зниження середнього показника народжуваності.

Мета статті – на основі динаміки демографічних показників, прогнозів та оцінювання соціально-економічних параметрів розвитку України виокремити потенційні виклики та ризики для вищої освіти в Україні в умовах повномасштабної війни й повоєнного відновлення та напрямами коригування державної політики в галузі вищої освіти.

Встановлено, що починаючи з 1991 р. демографічна ситуація в Україні залишалася негативною щодо показників народжуваності і смертності, що унеможливлювало природний приріст населення. І, на відміну від країн Європейського Союзу, міграційна привабливість України через низку показників економічного розвитку, рівень корупції, бізнес-клімат тощо є недостатньою для залучення постійних потоків іммігрантів в Україну.

Виявлено взаємозв’язок між кількістю народжених дітей у відповідний рік та динамікою місткості ринку освітніх послуг. Зроблено прогноз щодо найбільших демографічних викликів у відповідній освіті України через 17+ років.

У контексті стратегічного завдання відновлення людського капіталу України запропоновано розглядати вищу освіту як ефективний інструмент державної політики за таким циклом: здобуття вищої освіти – залучення випускника ЗВО до національної економіки – фінансова безпека, активна громадянська позиція та лояльність до держави – поліпшення демографічної ситуації.

Ключові слова: депопуляція населення, старіння нації, людський капітал, вища освіта України, експорт вищої освіти, місткість освітніх послуг, демографічна криза.

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