

Case Study

Preserving Human Capital in Ukraine in times of War

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ABSTRACT

The key resource and driving force of the economy at this stage of society's development is a person and his or her labor force, which is defined by modern economists as human capital. Given the current war, there is a significant risk of losing and deteriorating the expertise of specialists who have been trained in Ukraine. The article aims to identify the prerequisites, factors, and peculiarities of the situation concerning the preservation of human capital in Ukraine in the context of Russia's military aggression. In the course of the research, analytical and bibliographic method was employed to study the scientific literature on the formation, change, and preservation of human capital in the country. Induction, deduction, analysis, synthesis of information, system-structural, comparative, logical, and linguistic methods, abstraction, and idealization were applied to study and process data. Moreover, the authors conducted an online survey using a questionnaire to identify the most important issues related to changes in the quality and quantity of human capital in the state during the war. Following the results of the study, the main theoretical aspects of the problem of the formation and preservation of human capital were identified. Moreover, the opinion of demographic scientists and specialists of state and local authorities working with migrants and internally displaced persons on key aspects of this issue was studied.

HIGHLIGHTS

- The key resource and driving force of the economy at this stage of society's development is a person and his or her labor force, which is defined by modern economists as human capital. Given the current war, there is a significant risk of losing and deteriorating the expertise of specialists who have been trained in Ukraine.

Keywords: Demographic Structure of the Population, Human Losses, Human Capital, Labor Force, Population, Loss of Human Potential, Restoration of Human Capital, Human Development

Throughout its history, the Ukrainian people have repeatedly suffered significant human losses. At the same time, in recent years, Ukraine has made significant progress in improving the quality of human capital, although since the 1990s the population, labor force, and people employed in the economy have been gradually decreasing. At the same time, the system of training and professional development provided an opportunity to receive high-quality educational services in Ukraine. Therefore, in most areas of professional activity, the level of qualification met the requirements of modern technological development and economic

modernization, which led to high labor productivity. Russia's military aggression against Ukraine and large-scale hostilities led to the loss of a significant part of the population and social infrastructure. This negatively affected the reproduction of human capital and the country's further development.

The theoretical part of the study substantiates the main features of the situation with capital losses.

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Moreover, the key aspects of restoring human capital in Ukraine during the war are outlined. The practical part of the research includes an assessment of the types of psychological reactions to the hostilities in Ukraine, the most common forms of mental and psychological trauma among victims, which require priority work with traumatized persons in order to preserve human capital. It determines assistance forms requiring priority methodological and organizational support as part of measures to preserve human capital. This part also identifies the most popular behavioral and psychological consequences of psychological trauma requiring work with a psychologist to further preserve the effective socialization of a person, as well as clarification of the general attitude of the population to hostilities in terms of their own role in the current situation.

Based on the research results, the following conclusions were made regarding the issues raised. According to the survey participants' standpoints, the most common types of psychological reactions caused by the hostilities in Ukraine are social frustration and anger, and it is individual psychological trauma that should be addressed as a priority in order to preserve human capital. Along with this, there is also collective trauma of the population. According to the survey, medical and social services are the types of assistance that require priority methodological and organizational support as part of measures to preserve human capital in Ukraine. The survey showed that PTSD is the most common behavioral and psychological consequence of psychological trauma that requires the most work with a psychologist. The survey established the respondents' viewpoints on their own role in the current situation. The largest number of Ukrainians is willing to participate in the further restoration of destroyed facilities and economic recovery of the country, as well as demonstrate psychological and physical readiness for further struggle.

LITERATURE REVIEW

The country's population forms the demographic base of human capital. The positive dynamics of quantitative and structural indicators of the population lead to an increase in the number of people employed in the economy. This, in turn, ensures GDP growth, if employees receive

high-quality education and qualifications, as well as effective employment. The World Bank's methodology for measuring human capital, which has been calculating the human capital index since 2018, shows the priority of demographic and educational components in the formation of human capital (Darden, 2023), (Pereira *et al.* 2022).

Maintaining and increasing the population, stimulating its economic activity, and providing quality education are the main conditions for the accumulation of human capital in any country. War, as an embodiment of violence, leads to irreversible losses of the population of the country where hostilities are taking place (Gallo-Cajiao *et al.* 2023).

Besides the direct mortality of people, during the period of hostilities, a significant number of people suffer injuries that damage their health, housing, and social infrastructure, which is a necessary conditions for life. Moreover, the economy is destroyed, employment opportunities are reduced, and household financial resources are destroyed or reduced. (Cornwall, 2022), (Perdana, Vielle & Schenckery, 2022).

A distinction should be made between short- and long-term consequences of the loss of human capital because of war. The loss of the labor force can be attributed to short- and medium-term consequences, while the loss of children and adolescents, and a decline in fertility lead to long-term consequences of a decline in human capital. One of the most negative demographic risks in the field of human capital during hostilities is that the war may result in a change in the population structure in a negative direction, which affects the country's gene pool (Kuzio, 2022), (Rawtani *et al.* 2022).

Many studies by foreign and domestic scholars prove that wars cause long-term losses to the state and society. The biggest losses are in the area of human capital. While physical assets destroyed by war can be restored in a relatively short time if resources are available, human capital requires decades to recover, as it takes decades to give birth, raise, educate, and train a workforce (Morales *et al.* 2022).

In the history of Ukraine, wars have repeatedly brought irreparable losses to the population. According to the Ministry of Reintegration of the Temporarily Occupied Territories of Ukraine, tens

of thousands of Ukrainians have been killed and millions wounded because of Russian aggression against Ukraine. The hostilities have forced many people to leave their homes and start a new life in a new place.

During the hostilities in Ukraine, a significant number of social infrastructure facilities and enterprises were relocated from one region to another. They were forced to rebuild their work in completely new conditions with serious problems with material, financial, and personnel support. This led to a temporary disruption of the educational process. During the hostilities, many medical institutions and enterprises in various fields of activity experienced disruptions in their operations, which reduced their ability to provide jobs and services to the population (Pereira *et al.* 2022), (Catanzaro, Pesenti & Ronco, 2023).

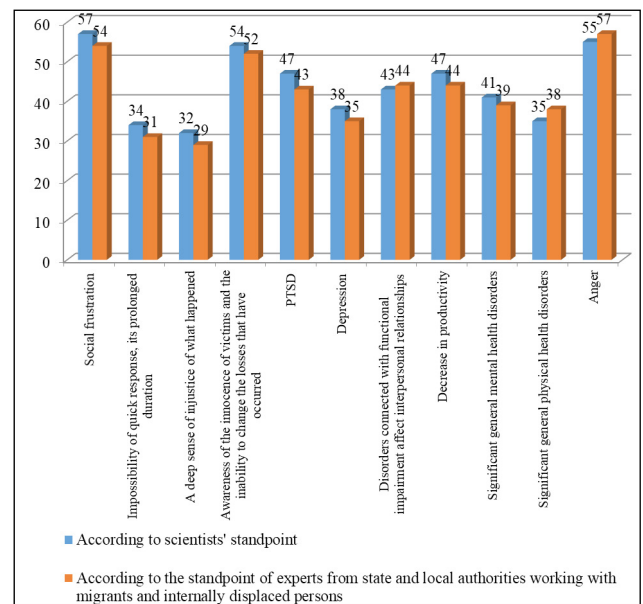
MATERIALS AND METHODS

A practical study of current trends in the preservation of human capital in Ukraine was conducted by interviewing 252 demographic scientists and 204 specialists from state and local governments. The interviewed group of people deals with the problems of migrants and internally displaced persons, as well as work and engage in research and teaching activities in 21 higher education institutions and 14 state institutions in Odesa, Rivne, Zhytomyr and Kyiv oblasts of Ukraine. The study was conducted using the Zoho Survey service.

RESULTS

According to the survey participants' standpoint, currently, in the context of a difficult geopolitical situation in the world, it is particularly important to identify the most common types of psychological reactions caused by the hostilities in Ukraine (Fig. 1).

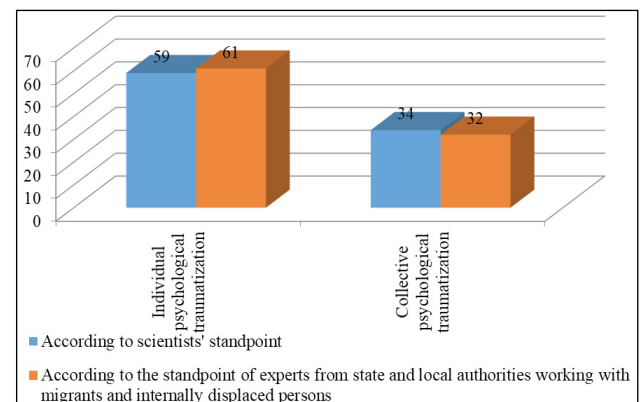
It can be observed from Figure 1 that the most common types of psychological reaction to Russia's war in Ukraine are social frustration (this type of impact on the psychological state was rated by respondents at 54-57% out of 100%, which is the highest among other types of influence) and anger (55-57%). Reactions including realizing the victims' innocence, PTSD and disorders linked to functional impairment, as well as disturbance of the victims' interpersonal relationships are also fairly prevalent.



Source: compiled by the authors.

Fig. 1: The most common types of psychological reactions to the hostilities in Ukraine among affected persons, %

The survey made it possible to identify the types of mental and psychological trauma that require priority work with affected persons in order to preserve human capital (Fig. 2).



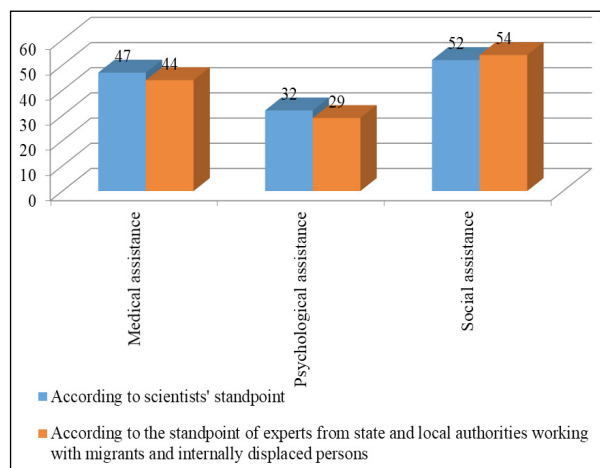
Source: compiled by the authors.

Fig. 2: Types of mental and psychological traumatization that require priority work with affected people in order to preserve human capital, %

As can be seen from Fig. 2, both in the opinion of scholars and professionals working directly with migrants and internally displaced persons, individual psychological trauma is the most common type of trauma, as evidenced by the 59 and 61 % for this type of trauma indicated by survey participants, respectively. At the same time, the questionnaire reveals that there is individual

and collective traumatization, which, accordingly, negatively affects both individual psychosomatic and public health in general.

The survey studied the respondents' standpoints on the types of assistance that require priority methodological and organizational support as part of human capital preservation measures in Ukraine (Fig. 3).



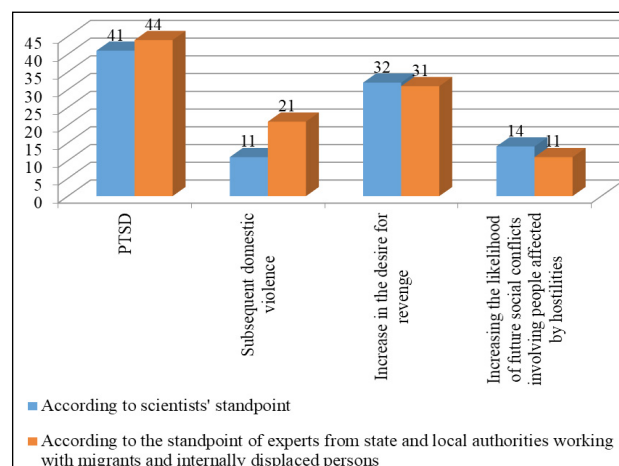
Source: Compiled by the authors.

Fig. 3: Types of assistance that require priority methodological and organizational support as part of human capital preservation measures, %

It can be observed from Fig. 3 that the most affected persons need social support (the need for this type of service is rated the highest, at 52-54%, respectively), as well as medical care (47-44%). The survey has shown that victims also require psychological assistance, the proportion of which, compared to the need for medical and social support, is smaller, but the demand for the help of qualified psychologists is still significant (29-32% out of 100%).

An important result of the survey is the identification of behavioral and psychological consequences of psychological trauma that most require work with a psychologist to further preserve the effective socialization of affected persons (Fig. 4).

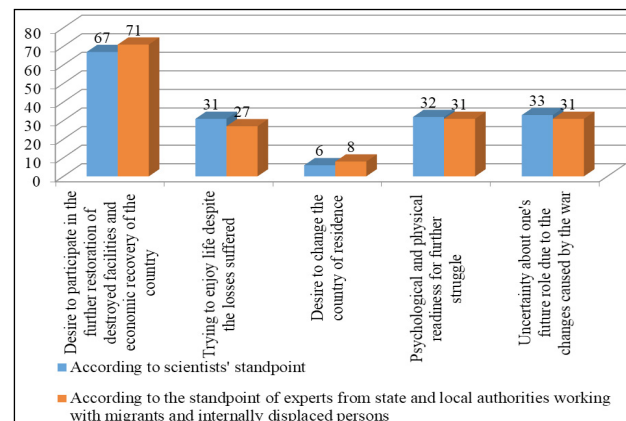
The conducted research indicates the connection between the psychological trauma of a person who has not been worked out with a psychologist as a result of the war, and PTSD, forasmuch as 41-44% out of 100% indicate this, which is the highest indicator among other possible disorders of the psychological state of the affected persons.



Source: Compiled by the authors.

Fig. 4: The most popular behavioral and psychological consequences of psychological trauma that require work with a psychologist to further preserve effective socialization, %

The survey revealed the general attitude of the population to hostilities in terms of their own role in the current situation (Fig. 5).



Source: Compiled by the authors.

Fig. 5: The general attitude of the population to hostilities in terms of their role in the current situation, %

As can be seen from Fig. 5, the highest numbers of points (67-71%) of affected persons are ready to participate in the further restoration of destroyed facilities and economic recovery of the country, as well as demonstrate psychological and physical readiness for further struggle (31-32%). According to respondents' observations, relatively few (6-8%) victims have the desire to change their country of residence, while a large number of them (31-33%) are currently uncertain about their future participation in the country's fate due to the changes related to the hostilities.

DISCUSSION

International experts on demographic issues who have studied the consequences of the war in Ukraine call the Ukrainian economy today a severely damaged one. This has affected the population's income, employment opportunities, and the state's ability to invest in human capital. However, the most negative demographic consequences have been the deaths and displacement of people (Storonyanska *et al.* 2022), (International Organization for Migration (IOM), 2022).

The successful functioning of the education system is of great importance for the formation of qualitative characteristics of human capital. During the war, most educational institutions ceased to operate, and a significant number of them were destroyed (Driedger, 2023).

The education system suffered heavy material and organizational losses during the war. It affects both the quality component and the organizational process of human capital formation negatively. Ukraine has also suffered significant losses in the field of scientific research, as the active hostilities on the territory of Ukraine have destroyed the property and buildings of many scientific institutions and research infrastructure; including unique scientific equipment and facilities, research laboratories (Storonyanska *et al.* 2022).

Due to the war, many research institutes lost the ability to conduct scientific work through either the death or migration of their employees.

In the long term, namely, if we assess the possibility of changing the numerical and structural composition of the population in Ukraine over the next few decades, the demographic factor may become a determining factor for the economic development of the state (United Nations High Commissioner for Refugees (UNHCR), 2022), (International Organization for Migration, 2023).

Besides the loss of human potential, Ukraine may face the problem of providing people with jobs and income, as well as housing, if refugees return to the territory that has been significantly affected by the consequences of the hostilities. This will require significant organizational and financial resources (Shulzhenko & Gaydulin, 2022).

Given the above, one of the main ways to preserve the state's human resources potential and its

further reproduction is to create conditions for the effective retraining of people who have lost their jobs, as well as to conduct a competent and effective information campaign to support the career growth of such employees. Under these conditions, it is important to provide material state incentives for employers and job seekers, providing professionals with comprehensive opportunities for personal and professional employment (Borger, 2022), (Anjum, Aziz & Hamid, 2023).

The development of human capital in Ukraine needs to implement new directions and approaches to public-private partnerships that will provide co-financing, organizational, and methodological support for such joint work.

Effective areas of work of state and public institutions that can help optimize the development of human capital include an effective foreign policy, including cooperation with the diaspora, which is and will be a powerful tool for lobbying Ukraine's interests during and after the war in the international arena. Such cooperation should include the creation of a system of communication with Ukrainians living in other countries, and cultural, informational, educational, and political support for cooperation (Beckley, 2018), (Office of the High Commissioner for Human Rights, 2022).

CONCLUSION

Thus, the analysis of the scientific literature on the topic of the study and the results of the questionnaire survey showed that the war leads to very large losses of human capital in Ukraine. The main risks are related to the reproduction of human capital after the war and include the following consequences of hostilities: violent deaths of civilians and military personnel, injuries that lead to disability, and reduced life expectancy. There is a destruction of the economy, a reduction in the country's budget revenues and investments in social infrastructure, a loss of jobs due to the destruction of enterprises, and reduced production and investment, which increases unemployment.

Nowadays, both for Ukraine and for the pan-European space, it is extremely important to continue and deepen research related to the assessment of losses and prospects for preserving human capital during the war. This can be used to develop an effective social policy for the restoration

of the country's demographic resources in the postwar period.

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