

“A university displaced twice: Irreversible and erroneous losses of human capital”

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SPECIAL ISSUE: ACADEMIC MANAGEMENT IN THE CONDITIONS OF WAR

Oksana Zakharova (Ukraine), Larysa Prodanova (Ukraine)

A UNIVERSITY DISPLACED TWICE: IRREVERSIBLE AND ERRONEOUS LOSSES OF HUMAN CAPITAL

Abstract

Due to Russian military aggression in Ukraine, two waves of relocating educational institutions from occupied and dangerous territories have occurred over the past nine years (in 2014 and 2022). In the first place, relocation affected those universities that were based in industrial regions before the war and trained professional personnel for large industrial enterprises. The speed of the country's post-war recovery will depend on the availability of professional specialists able to restore industrial enterprises' functioning. Therefore, it is necessary to highlight the changes in the human capital of displaced universities due to relocation. The aim of this study is to assess the losses of human capital the displaced universities suffered due to Russian military aggression. Using the example of Donetsk National Technical University, which has been relocated twice, the study illustrates the stages in which the organizational structure of one of the university's divisions changed and the number of teachers decreased in 2014–2023. The study describes the key features of the first and second displacement waves and their implementation specifics. The survey of the resigned teachers demonstrated the losses of human capital experienced by the university over nine years. The benefits for those Ukrainian universities which have hired displaced teachers are exemplified. The results of this study indicate that the experience of displaced universities should be scrutinized at the ministerial level and used to develop strategies for restoring the human capital of the displaced universities and further accumulating human capital in Ukrainian higher education.

Keywords

higher educational establishment, temporary displacement, human capital, teachers' resignation

JEL Classification

I23, I32, J44, J61

INTRODUCTION

Beyond any doubt, the basis for scientific and pedagogical potential in the country is laid by a quality education. Universities that occupy leading positions in the rating of higher education institutions of Ukraine play an important role in ensuring the high quality of educational services and training competitive specialists. Therefore, comprehensive preservation and support to develop the human capital of these flagships of Ukrainian education should become a guideline for strategic changes in the entire educational system. This will become a solid foundation for rebuilding the Ukrainian economy. The amount

- 1 1998–2015 – a teacher at Donetsk National Technical University (2012–2015 – Head of Management and Business Law Department). In 2014–2015, organized the department's activities at the displaced university in Krasnoarmiysk, Donetsk oblast (now this city is named Pokrovsk). Since 2015 – a professor at Cherkasy State Technological University.
- 2 1997–2016 – a teacher of Mykhailo Tugan-Baranovskyi Donetsk National University of Economics and Trade (2002–2004 and 2015–2016 – Head of Economic Theory Department). During 2015–2016, resumed the department's activities after the educational institution moved to Kryvyi Rih, Dnipropetrovsk oblast. Since 2016 – a professor at Cherkasy State Technological University.

of time required to repair and rebuild the Ukrainian economy in the post-war period will depend on two key factors: the number of investments and the competence of specialists from all fields equipped with knowledge of innovative technologies and algorithms to make effective management decisions. Thus, preserving the scientific and pedagogical potential is a driver of a prosperous future for independent Ukraine and an effective tool to assist the Ukrainian economy in overcoming the crisis.

The government should pay sufficient attention to implementing this task and creating favorable conditions. Unfortunately, due to the Russian military aggression, some leading universities were forced to temporarily relocate their activities to the Ukraine-controlled territories. An arduous and lengthy process of adaptation and survival began in the new, harsh conditions, accompanied by significant scientific, academic, pedagogical, and image losses. This study attempts to estimate the scale of the academic and pedagogical losses that the displaced universities have suffered.

The purpose of this study is to assess the human capital losses resulting from the displacement of the universities caused by the Russian military aggression in the example of Donetsk National Technical University. This state-owned higher education establishment has been displaced twice, in 2014 (from Donetsk to Pokrovsk) and in 2022 (from Pokrovsk to Lutsk).

1. RESULTS

1.1. Prerequisites for human capital loss due to displacement

When a vast territory of the Donetsk and Luhansk oblasts was temporarily occupied, and the Autonomous Republic of Crimea was annexed in 2014, the education system of Ukraine accepted an overly difficult task of relocating the educational institutions from the occupied regions to the territory controlled by Ukraine. As a result, the higher education management was confronted with several serious challenges: the impossibility of physically transporting the material and information base, the necessity to arrange accommodation for students and teachers and organize a full-fledged educational process, more than often in the premises that were unsuitable for that purpose. However, the initiatives proposed by the Ministry of Education and Science of Ukraine and the self-sacrificing work of the university teachers facilitated preserving the universities.

The full-scale military attack on Ukraine in February 2022 forced some of the displaced higher education institutions to be relocated to safer Ukrainian-controlled territories – once again. These events raise essential questions – how did the circumstances of force majeure affect the human capital of universities? Was the management of the displaced universities able to preserve their human capital, which they

possessed in September 2014? These issues are topical today since four of the displaced universities had been powerful educational institutions with global recognition and had been ranked in the top twenty of the TOP-200 ranking of Ukrainian universities for many years before being relocated. Therefore, this study seeks to analyze these complex questions.

Over the past few years, the Ukrainian educational community has undergone significant qualitative transformations and has become more hardened, united, and tolerant, mainly attributed to three factors. The first factor is the full-scale war in Ukraine that started more than a year ago. The war has brought irreparable casualties and losses that affected everyone, and, on the other hand, support, and limitless opportunities that foreign partners have offered to Ukrainians. However, the Russian military aggression against Ukraine started in 2014 on the territory of the Donetsk and Luhansk oblasts and the Autonomous Republic of Crimea; hence, this factor has been acting on the vast university teachers' community in Ukraine for more than nine years.

Secondly, Ukrainian teachers have withstood the pandemic and become aware of the necessity to transfer their professional activities to remote mode. Thirdly, Ukrainian teachers deliberately set out to ensure the quality of higher education and tested themselves in various roles when undergoing complex accreditation procedures of a new format.

In 2014, the transformations of the educational environment were not yet in place. Hence, the academic community was unprepared and thus generally adopted a negative and indifferent attitude of distancing and alienation from the representatives of educational institutions who suddenly found themselves in a predicament in the occupied or annexed territories. According to the orders of the Ministry of Education and Science of Ukraine, issued in October 2014, eighteen state and one private higher education institution in the Donetsk and Luhansk oblasts and the Republic of Crimea were administratively displaced to the territories controlled by Ukraine. The situation looked less disastrous for those institutions where the immediate rectors were organizing the relocation procedures. Each displaced institution has a unique survival story, although general trends can be defined.

At the relocation stage, the displaced universities started to suffer the loss of teachers, who formed the human capital of each institution. Thus, teachers lacked organizational, financial, psychological, or other assistance during the relocation (Zakharova, 2019a, 2020a). Under harsh work conditions and the absence of wages (often up to six months), part of the employees of the affected institutions decided to stay in the occupied territories; some migrated outside the country, some joined other educational institutions in Ukraine, or abandoned educational activities. A small group of teachers remaining at educational institutions as of January 2015 was forced to enthusiastically organize a full-fledged offline educational process and support units and services. A year or two of dedicated work “for wear and tear” and a lack of minimal comfort or work motivation tools provoked the second wave (2015–2016) of scattering the most competent teachers. The third human capital loss wave was observed during 2020–2022 and was brought about by the consequences of the pandemic, the high probability of a military attack from the aggressor country, and the hostilities immediately following.

The case of the Educational and Research Institute “Higher School of Economics and Management” (a subdivision of Donetsk National Technical University) demonstrates how the trends in the loss of human capital were related to its relocation. In peacetime, the Educational and Research Institute

“Higher School of Economics and Management” mission was to train highly qualified economists of various specializations for the industrial enterprises in the Donetsk oblast. The competent academic staff allowed the institute to ensure high-quality training for managers, financiers, accountants, practical and theoretic economists, marketers, personnel managers, sociologists, specialists in economic cybernetics, and international economists. For decades, this fact has been proved by high employment rates among graduates and rapid career growth for the most capable alumni at the region’s industrial enterprises and businesses. On the other hand, a significant reduction in the number of teachers at the institute and their relocation to sub-standard living and working conditions, as well as teachers being stressed and depressed for a long time, are high-risk factors contributing to the decline in the quality of educational services.

1.2. 2014 – The first displacement

In October 2014, the university moved to the city of Krasnoarmiysk (now Pokrovsk) of the Donetsk oblast (DonNTU, 2023). As a result, 218 university employees were transferred, 178 of whom were full-time employees. At the beginning of 2020, the number of full-time employees at the institute constituted 163 people, demonstrating the tendency to shrink.

At the beginning of 2014, the Higher School of Economics and Management Educational and Research Institute, the university’s largest and youngest structural unit, consisted of two faculties, 11 departments, 16 Doctors of Sciences, and about 80 Candidates of Sciences (Figure 1).

As few as 42 teachers moved in 2014 together with the institute (including 6 Doctors of Sciences). Of these, 27 employees were employed until the end of 2019, and 19 were employed until the end of 2022. The institute’s structure has changed accordingly and is now represented by two departments of the economic direction (the Department of Enterprise Economics and the Department of Management and Financial and Economic Security). Therefore, in the nine years of military aggression, the institute suffered the loss of about 80 highly professional specialists and nine departments and ceased to exist as a separate unit

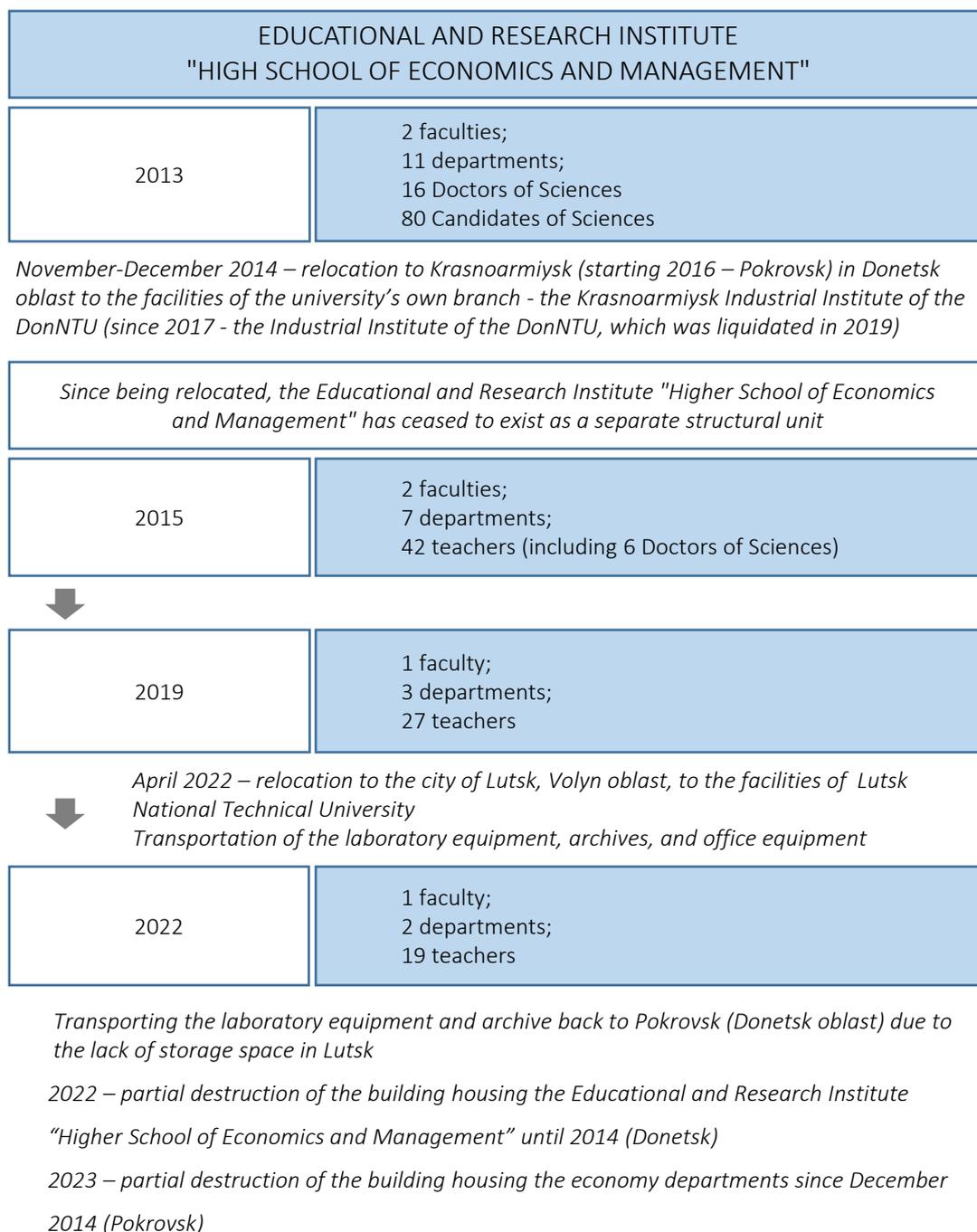


Figure 1. Transformation of the Educational and Research Institute of Donetsk National Technical University “Higher School of Economics and Management” in 2014–2023

at the beginning of 2015. The number of students decreased from several thousand to several hundred. Of course, positive processes of raising the teachers’ professional and qualification levels were in place during that period; however, only three Doctors of Sciences of those initially employed by the university in Donetsk remain employed by the institute today.

1.3. 2022 – The second displacement

In April 2022, because of the full-scale invasion that approached Pokrovsk, the university moved to the city of Lutsk, Volyn oblast. The university was relocated to the facilities of Lutsk National Technical University by order of the Ministry of Science and Education of Ukraine.

The host university provided a part of the laboratory building (about 900 square meters) for the relocated university to conduct its activities. Donetsk National Technical University evacuated the most valuable equipment and archives to Lutsk. Heating was absent in the new premises. The provided building was in disrepair and needed more space to properly use the equipment or house the archive; thus, the archive and equipment were returned to Pokrovsk in December 2022. The administrative staff and heads of the university's structural divisions moved to Lutsk. More than 85% of the teachers evacuated to other regions of Ukraine and abroad. The educational process was delivered remotely online.

Consequently, at the beginning of 2023, 132 full-time teachers remained employed by the university. At the same time, there was a gradual reduction in the total number of staff rates (December 2015 – 182.2, December 2018 – 156.1, December 2022 – 124.0 rates) and the average teacher's rate at the university.

2. ASSESSMENT OF CHANGES IN THE UNIVERSITY'S HUMAN CAPITAL

Qualitative losses of teachers by the institute and the university inevitably affected the university's rating (Figure 2).

The sharpest drop that the university's rating has demonstrated was by the Consolidated Rating of Higher Education Institutions of Ukraine – from 4th place, which the university held in 2013, its ranking dropped to 71-72th place in 2022. In the rating of the TOP-200 Higher Education Institutions of Ukraine, the university slumped from 18th place in 2013 to 41st place in 2022, which means that the university has yielded its leadership position. At the same time, before 2017, the university had managed to maintain high positions in the rating due to the inertia of the higher education system and the amount of human capital previously accumulated by the university. However, the univer-

Source: Eurosvita (2023), Osvita (2023a, 2023b), Webometrics (2023).

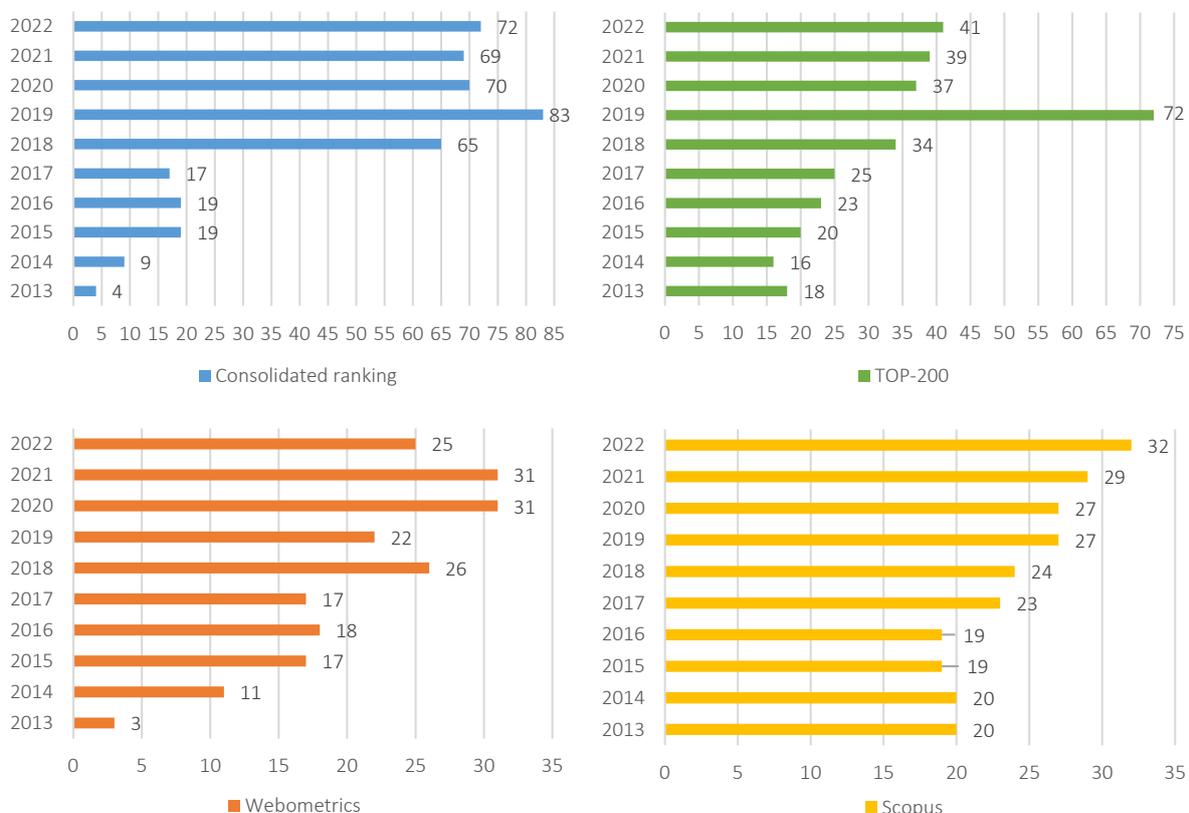


Figure 2. Dynamics of Donetsk National Technical University in all-Ukrainian and international university rankings in 2015–2022

sity's rankings in Webometrics and Scopus also deteriorated, a direct consequence of the human capital reduction at the institute and the university due to the displacement.

To estimate the amount of human capital the institute has lost, a questionnaire was developed to interview 20 economics professors who resigned from the university at different times during 2015–2022. Therefore, performance was calculated only when the respondent was not employed by the university under study (Table 1).

Table 1 does not reflect the whole picture of losses; however, considering the number of publications produced by the former university teachers in scientific journals included in Scopus or Web of Science, the losses are rather noticeable. Thus, in 2022, the teachers at Donetsk National Technical University published eight papers in business, management, and accounting (41 articles) and 4 studies in economics, econometrics, and finance (34 articles). These numbers are comparable to 12 articles published in 2022 by for-

mer university professors. A similar situation is characteristic of all other evaluation indicators in Table 1. Consequently, the university's loss of teachers significantly hinders its further strategic development.

Within the framework of Ukrainian higher education, teachers of the Educational and Research Institute "Higher School of Economics and Management" joined and strengthened the human capital of Kyiv National University of Trade and Economics, National Aviation University, Dnipropetrovsk State University, Vasyl' Stus Donetsk National University, Kremenchuk Mykhailo Ostrohradskyi National University, Cherkasy State Technological University, Zaporizhia National University, and Uzhgorod National University (Zakharova, 2020b). Nonetheless, forced relocation, resignation, and search for a new workplace harmed the psycho-emotional state and, as a result, the productivity of former Donetsk National Technical University teachers. The same applies to all representatives of the displaced institutions without

Table 1. Performance of 20 former economy teachers of Donetsk National Technical University throughout their employment at other Ukrainian and foreign universities in 2015–2022

Source: Questionnaire results.

Performance indicator	2015	2016	2017	2018	2019	2020	2021	2022
1. The number of published research papers, in total, among them:	77	105	132	160	121	136	151	157
–indexed in Scopus, WoS	1	1	1	5	3	10	4	12
–in Ukrainian professional editions	18	26	41	45	23	55	59	65
–in foreign editions	3	2	4	8	8	10	12	15
–in monographs (Ukraine)	–	3	5	9	10	9	6	5
–in monographs (foreign)	1	1	2	1	1	1	1	–
–in conference proceedings	54	72	79	92	76	52	69	60
2. Being awarded a diploma or a certificate:	1	–	–	1	2	–	–	–
–Candidate of Sciences	1	–	–	–	–	–	–	–
–Associate Professor	–	–	–	–	2	–	–	–
–Professor	–	–	–	1	–	–	1	–
3. Supervising a doctoral student who was awarded a degree:	1	2	–	2	3	–	1	1
–Candidate of Sciences	–	1	–	2	–	–	1	–
–Doctor of Sciences	1	1	–	–	3	–	–	–
4. The number of students-winners at the All-Ukrainian contest of student research works and Olympiads	–	–	2	6	2	–	–	–
5. Internship in a foreign higher education institution (people)	3	2	2	2	2	1	1	1
6. Professional development	3	5	4	3	6	5	6	4
7. The number of licensed specialties and educational programs	2	2	5	7	5	6	3	4
8. The number of accredited specialties and educational programs	2	2	4	5	3	4	4	2
9. Supervising a doctoral student	–	–	2	3	1	1	2	2
10. Supervising a graduate student	2	3	3	3	1	2	3	4
11. Supervising a graduate student who was awarded the Ph.D. degree	1	–	–	1	1	1	3	1
12. Educational and methodical publications	8	35	38	46	37	58	67	43

exception and assumably reduces both the human capital and the teachers' productivity. The survey confirmed this assumption and proved that, along with other consequences of being displaced, the former university teachers experience:

- inferior professional position, since for 30% of the respondents, the place they hold in the new university is inferior to the one they had at their native university;
- unsatisfactory level of their professional ambitions – 50% of respondents declared complete or partial dissatisfaction;
- a sense of social insecurity – 60% of respondents have reported full or partial insecurity;
- the need to improve living conditions – 75% of the respondents mentioned the need to improve their standard of living at least partially since they rent housing or live in a dormitory.

The survey has also revealed a rather alarming fact – the absolute majority of the institute's former teachers do not intend to return to their native region and university in the post-war period, which is a significant obstacle to restoring the potential and image of the university in the future. In addition, three former teachers have been employed by the UN Mission in Ukraine and the missions of other international organizations, which also calls into question the likelihood of their return to the university. This is a negative trend since the industrial restoration in Donetsk and Luhansk oblasts in the post-war period will demand highly professional and competent economists of various profiles. It is impossible to satisfy this demand without full-fledged, high-quality, functioning higher education institutions. Therefore, today the university management should develop a strategy for reverse displacement and complete recovery of the university's activities in Donetsk as soon as the city is liberated. The plan should involve searching for ways to return the most competent teachers and further enhance the human capital. The necessity of this step is explained by the fact that, first of all, the majority of teachers of the Educational and Scientific Institute "Higher School of Economics and Management" had a high-quality engineering and economic background and were able to assess

the specifics of the personnel demand of the industrial enterprises in the region.

The current study has only examined the consequences of being displaced for one of the 19 displaced universities. However, the obtained conclusions can be mapped on most displaced educational institutions (Nikolaev et al., 2023). These processes illustrate that Ukrainian universities have been replenished with highly competent internally displaced teachers. Despite psychological, social, financial, and material problems that confront them, the teachers have dedicated a lot of effort to their new workplace, thereby increasing its ratings. Unfortunately, the Ministry of Education and Science of Ukraine or individual educational institutions have not yet assessed such contributions. Therefore, to obtain an approximate assessment of such a contribution, a survey was conducted with displaced university teachers who, during 2014–2022, joined Cherkasy State Technological University. Twelve respondents (10 from Donetsk and 2 from Luhansk) were surveyed regarding their educational and scientific activities at Cherkasy State Technological University (Table 2).

The trends described in Table 2 demonstrate that since 2015, thanks to the employment of internally displaced teachers, the university has significantly increased its scientific and educational performance, reflected in the number of research papers in publications indexed by Scopus. Thus, over the past eight years, internally displaced teachers have published 92 Scopus-indexed publications, which is 23% of the total number of university-affiliated papers in this scientometric database. Therefore, it is likely that the contribution of teachers from the occupied regions positively influenced the university's rating (Figure 3).

The university generally achieved positive changes in all four ratings during the studied period. Obviously, the entire university team has contributed to this achievement. Still, the contribution made by the internally displaced teachers was significant for the overall success.

The survey studying the internally displaced teachers' self-assessment of social security while being employed at Cherkasy State Technological University fetched the following results:

Table 2. Performance of 12 internally displaced teachers employed by Cherkasy State Technological University throughout their direct employment at the university in 2015–2022

Source: Questionnaire results.

Performance indicator	2015	2016	2017	2018	2019	2020	2021	2022
1. The number of published research papers, in total, among them:	55	68	122	145	111	97	103	98
–indexed in Scopus, WoS	2	–	4	11	10	18	20	27
–in Ukrainian professional editions	19	24	36	37	30	27	29	20
–in foreign editions	4	5	9	10	9	10	11	15
–in monographs (Ukraine)	4	7	14	14	8	5	7	9
–in monographs (foreign)	2	–	8	7	4	3	5	2
–in conference proceedings	24	32	51	66	50	34	31	25
2. Being awarded a diploma or a certificate:	–	–	1	3	1	1	–	–
–Candidate of Sciences	–	–	1	–	1	–	–	–
–Associate Professor	–	–	–	2	–	–	–	–
–Professor	–	–	–	1	–	1	–	–
3. Supervising a doctoral student who was awarded a degree:	3	3	5	5	6	2	2	–
–Candidate of Sciences	2	2	3	4	2	2	2	–
–Doctor of Sciences	1	1	2	1	4	–	–	–
4. Internship in a foreign higher education institution	–	1	2	5	4	1	–	–
5. Professional development	–	–	1	2	4	3	2	4
6. The number of licensed specialties and educational programs with in-person participation	–	1	1	1	4	–	–	–
7. The number of accredited specialties and educational programs with in-person participation	2	4	3	4	1	1	2	1
8. Admission and training in:	1	1	–	–	1	–	1	1
–graduate school	1	1	–	–	–	–	–	–
–doctoral school	–	–	–	–	1	–	1	1
9. Supervising a doctoral student	–	–	2	4	3	3	2	3
10. Supervising a graduate student	1	3	6	6	13	5	6	9
11. Supervising a graduate student who was awarded the Ph.D. degree	–	–	–	1	–	1	2	1
12. Opponent for dissertations	1	2	1	2	4	5	4	3
13. Member of the editorial board in Ukrainian professional editions	7	6	6	9	12	12	12	12
14. Member of the editorial board in foreign editions	–	–	–	2	2	2	2	2
15. Educational and methodical publications	9	22	21	18	12	11	10	8

- only one person feels completely socially protected, while six people are mostly or entirely unprotected;
- only one person's professional ambitions have been completely satisfied at the new higher education institution, while for four respondents, their aspirations are mostly or completely unsatisfied;
- four people own housing in the territory controlled by Ukraine, while the others are forced to rent accommodation or live in the university's dormitories;
- only one person is completely satisfied with the living conditions.

This study demonstrates a rather difficult situation in which the displaced educational institutions and the displaced teachers found themselves. Due to financial and accommodation problems, health issues, difficulties adapting to a new corporate environment, and other reasons, internally displaced teachers repeatedly change institutions. Unfortunately, such circumstances do not contribute to continuous professional development, which reduces the overall competitiveness of the higher education system of Ukraine.

Source: Eurosvita (2023), Osvita (2023a, 2023b), Webometrics (2023).

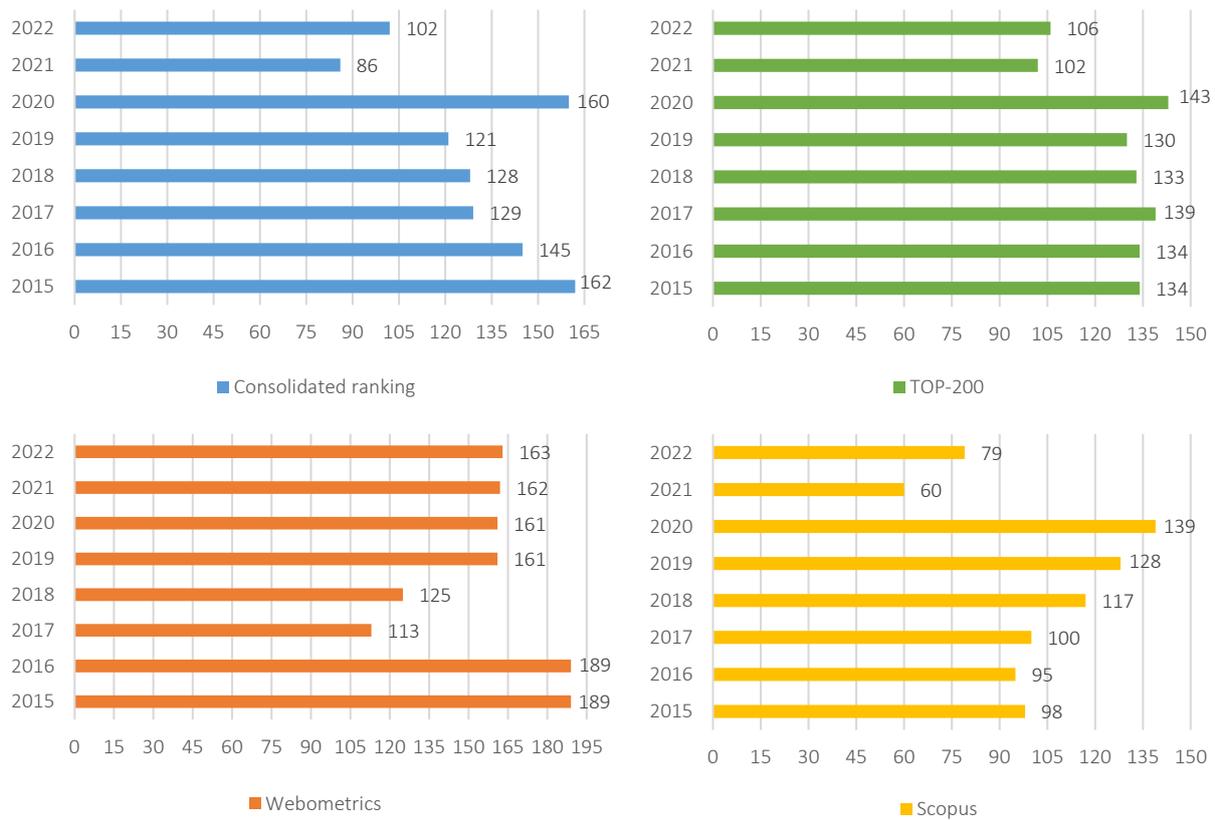


Figure 3. Dynamics of Cherkasy State Technological University in all-Ukrainian and international university rankings in 2015–2022

CONCLUSION

The results of this investigation showed the scale of the human capital loss suffered by the Ukrainian universities displaced by Russian military aggression from the occupied territories of Ukraine. The paper determines the consequences of these losses for the Ukrainian higher education system. The example of Donetsk National Technical University, which was relocated twice during 2014–2023, illustrates the process of reducing the powerful educational and scientific potential that the university possessed before 2014.

Three stages of human capital loss by displaced Ukrainian universities in war conditions are identified. Stage one – relocation of the university when some teachers refused to move to a new location; stage two – the first year of the university in the new place, when the teachers resigned intensively; stage three – the following years of the university in a new city, when the teachers continued to leave gradually.

The study has found that the losses of human potential generally resulted from the lack of effective support for the displaced universities at the state, regional, and local levels. At the same time, there was a decrease in the demand for highly professional teachers in the regions where the universities were relocated due to a decreased labor market capacity and a lower potential number of applicants. Internally displaced teachers' resignations provoked a reduction in the main indicators of the universities' performance and a drop in their ratings, which resulted in inevitable human capital losses for the displaced institutions and the whole Ukrainian higher education system.

Ukrainian universities should consider the experience of the Donetsk National Technical University when building their own strategy for preserving human capital and personnel policy. In addition, the experience of the relocated universities should lay the foundation for the governmental approach to protecting the human capital of Ukrainian higher education.

AUTHOR CONTRIBUTIONS

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