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Developing Social Responsibility Among Young Ukrainian Scientists in the Context of the New Socio-Economic Reality

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Abstract

The paper presents an analysis of the social responsibility of young scientists in Ukraine during the COVID-19 pandemic. It is based on the results of a mass sociological survey

conducted as part of the project "Realisation of the potential of young scientists in the integration of science, education, business". The research methodology examines the key characteristics of the young scientist's profile. The research is limited to the period before the war in Ukraine. The obtained results demonstrate the directions of their social responsibility, including the effectiveness of promoting information about scientific achievements, ways of popularisation of science, the resources necessary for the success of young scientists, the commercialisation of intellectual property rights of young scientists and the implementation of scientific and practical developments of young scientists.

Keywords: social responsibility, young scientists, socio-economic reality, pandemic

JEL Classification Code: M14

Introduction

The beginning of the third decade of the 21st century is characterised by significant contradictions and disproportions in the economic and social development of society. In the economic sphere, significant achievements have been obtained in the growth of GDP volumes, labour productivity, and the economic efficiency in the production of goods and services. Both nominal and real income of the population is increasing. However, social problems such as poverty, unemployment, property stratification, excessive income differentiation, low level and quality of life of the vast majority of the population are becoming increasingly acute. Additionally, environmental problems such as air and water pollution, soil and mineral depletion due to economic activity, climate change are also critical issues. Furthermore, the most pressing challenge for the world today is Russia's military aggression against Ukraine. These features of the new socio-economic reality pose serious challenges to social development, including the urgent need to ensure its stability and balance.

For about three decades, the coordination and balancing of economic, social and ecological development has been a focus of science, politics and business of developed countries. The concept of sustainable development (UN, 2022) emerged from this cooperation, which emphasises the idea that economic growth must be accompanied by social development and cannot be pursued at the expense of future generations. This requires preserving the state of the environment, arable land, clean air, water, and mineral resources.

The implementation of the concept of sustainable development is facilitated by the development of the ethical principle of social responsibility, which emphasises the importance of considering the impact of any activity on the social and environmental spheres of society. Management decisions should therefore be made in favour of finding a compromise between profit maximisation, solving social problems and

minimising or eliminating negative environmental impacts. To this end, it is important to develop the concept of social responsibility and implement it at all levels, from the individual to the global, in all spheres of human life, including the economic, environmental, political, social and educational spheres.

The field of science, and, in particular the awareness of scientists, plays an important role in implementing this task. The directions of scientific research and their impact on society and the environment largely depend on the extent to which scientists are guided by the principles of social responsibility in their work. Therefore, the development of social responsibility among scientists is of great importance, especially among young scientists, as they lay foundations for the future development of science.

Literature review

It is worth noting that the issue of scientific research in the field of social responsibility development in Ukraine has only recently begun to receive attention. A. Kolot et al. (2012), S. Tsymbaliuk and T. Shkoda (2022), M. Artiushyna et al. (2018), M. Makhsma (2017), M. Żemigala (2022), and others have made significant contributions to the scientific study of social responsibility.

In their monograph, A. Kolot et al. (2012) examine the phenomena of social responsibility of subjects at the personal, corporate, institutional and state levels. S. Tsymbaliuk and T. Shkoda (2022) focus on the issues of social responsibility in labour remuneration in the healthcare sector of Ukraine in terms of the decent work concept. M. Artiushyne et al. researched the state of social responsibility of vocational and training institutions. M. Makhsma (2017) dedicated his publication to the issues of social responsibility of large agribusiness in the context of ensuring sustainable rural development and employment. T. Borsen Hansen (2006) studied social responsibility of scientists using an analytical model. One of the latest publications in the field of social responsibility of science is by M. Żemigala (2022), where he considers the process of scientific research realisation and a scientist's responsibility.

However, it is worth noting that the development of social responsibility among young scientists has mostly been neglected, despite the need for scientific, methodical and applied research on this topic.

Therefore, the purpose of this work is to investigate the current state of social responsibility development among young scientists and to outline directions for its improvement in the context of the formation of a new socio-economic reality.

Methodology

The methodology of this research is based on the project "Realisation of the potential of young scientists in the integration of science, education, business" (2020–2022), registered under state registration number 0120U102126. It was awarded the title of the best scientific project of young scientists 2021 in the "Scientific Project" category by the Young Scientists Council of Ukraine.

A mass sociological survey was conducted in 2020 to determine the current state of the potential of young scientists in the fields of science, education, business, and socio-political spheres, using a Google Form. The profile of the modern young scientist in Ukraine was prepared based on the results of this survey. It is worth noting that the survey was conducted during the COVID-19 pandemic but before the Russian invasion of Ukraine.

Results

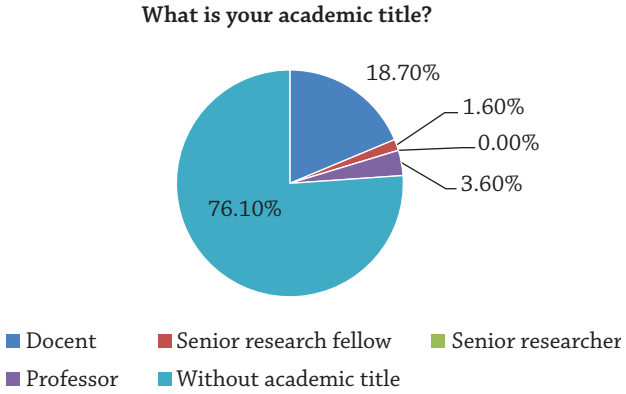
In 2020, as part of the project "Implementation of the Potential of Young Scientists in the Integration of Science, Education, and Business" (Shkoda et al., 2020), a group of young scientists conducted an online survey. 579 scientists from various regions of Ukraine participated in it. A quarter of the respondents were PhD students, and a fifth were associate professors. Among the interviewees, one could find also assistants, doctoral students, senior lecturers, researchers, secretaries and representatives of other scientific positions. More than 60% of respondents have a scientific degree, with 51.8% holding a PhD and 9.7% holding a doctorate. Almost 40% of the respondents do not yet have a scientific degree. With regard to scientific titles, more than three quarters of the surveyed respondents do not hold a scientific title, while 19% have the title of associate professor (see Figure 1). A small percentage of respondents hold the titles of professor and senior researcher.

In order to identify the motivational factors for scientific activity among young scientists, their monthly income was determined. As a result of the survey, it was found that the largest group of scientists (approx. 40%) had an average monthly income of 5–7 thousand hryvnias, while another 14% reported earning up to 5 thousand hryvnias. This means that more than 40% of young scientists receive extremely low incomes, which can act as a disincentive for productive scientific activity (see Figure 2).

To identify the interests of scientists, the question "What do you like most about your work?" was asked. Interestingly, more than 300 respondents (52%) were most

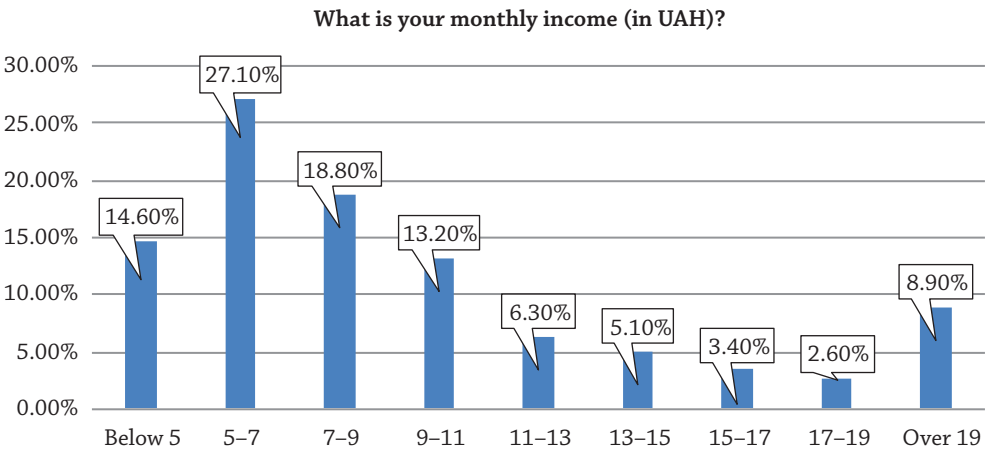
attracted to working on projects, while almost 40% stated that they enjoy scientific work. Only a quarter of the surveyed respondents (24.9%) reported that they enjoy teaching activities. Other responses included the importance of their social role, working with young people, and other factors.

Figure1. Distribution of respondents by academic title



Source: calculated by the authors on (Shkoda et al., 2020).

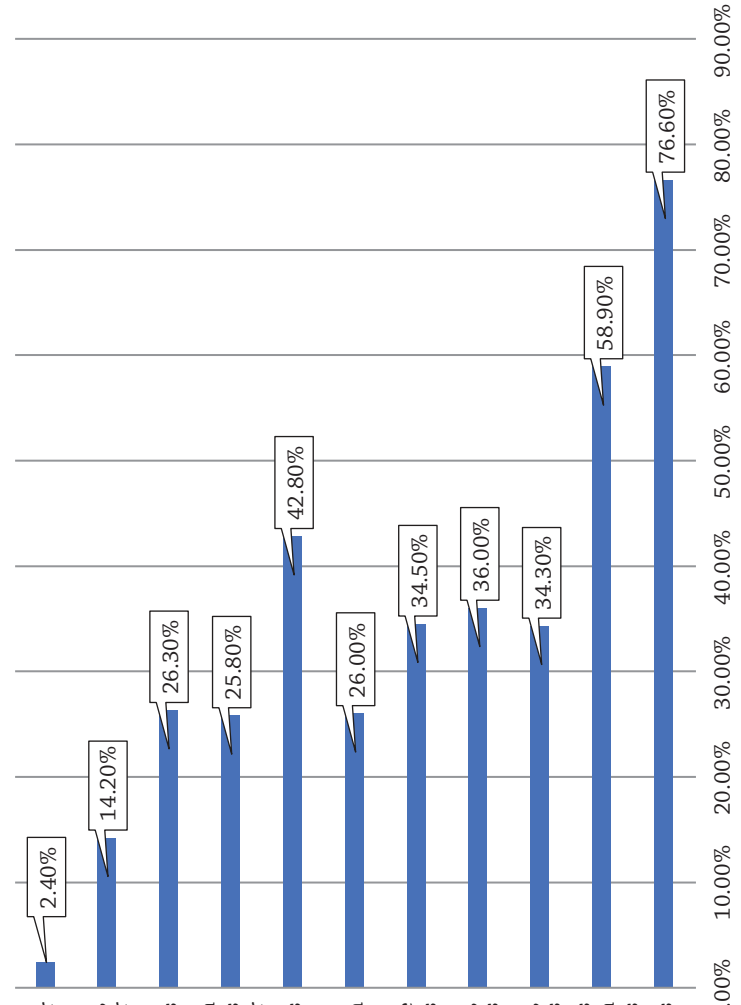
Figure 2. Distribution of respondents by the level of monthly income received



Source: calculated by the authors according to (Shkoda et al., 2020).

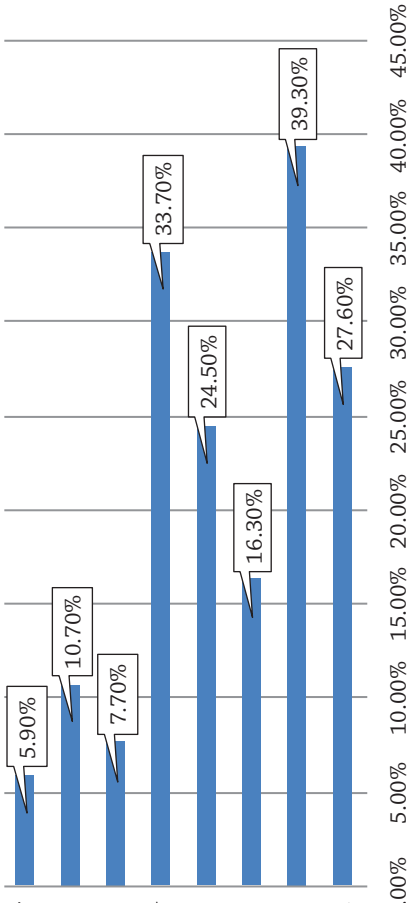
Young scientists consider participation in scientific conferences and forums to be the most important way of promoting their scientific achievements. This was emphasised by 441 respondents (76.2%) (Figure 3).

Figure 3. Distribution of respondents' answers to questions about the effectiveness of ways of promoting information about scientific achievements



Source: calculated by the authors according to (Shkoda et al., 2020).

Figure 4. Distribution of respondents' answers to questions about the popularisation of science



Source: calculated by the authors according to (Shkoda et al., 2020).

According to 33% of respondents, participation in internet projects is also an effective way to promote information about their scientific achievements. Other effective directions of promotion include, among others, mass media, investment forums, publication in government publications.

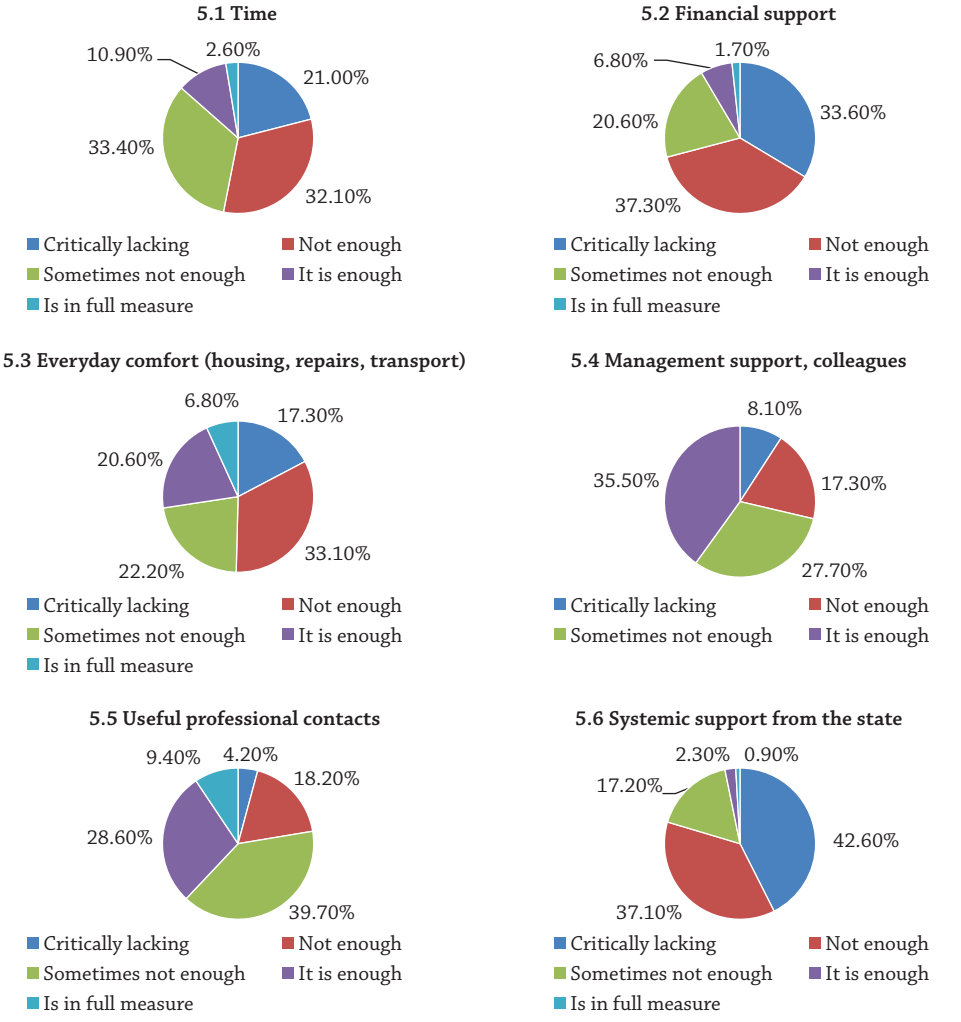
When asked "Do you promote science and if so, how?" a significant portion of the surveyed scientists responded that they popularise science by publishing scientific articles. 26% of the interviewed scientists noted that they give public lectures. More than a third of the respondents promote their scientific achievements through their activities on the Internet. Every tenth respondent participates in the activities of the Small Academy of Sciences, thereby spreading scientific achievements. Unfortunately, a significant proportion of scientists (27% of young scientists interviewed) are not involved in the popularisation of science at all (Figure 4). Undoubtedly, this group of young scientists could be involved in the dissemination of scientific developments, but effective incentives must be created to encourage their participation.

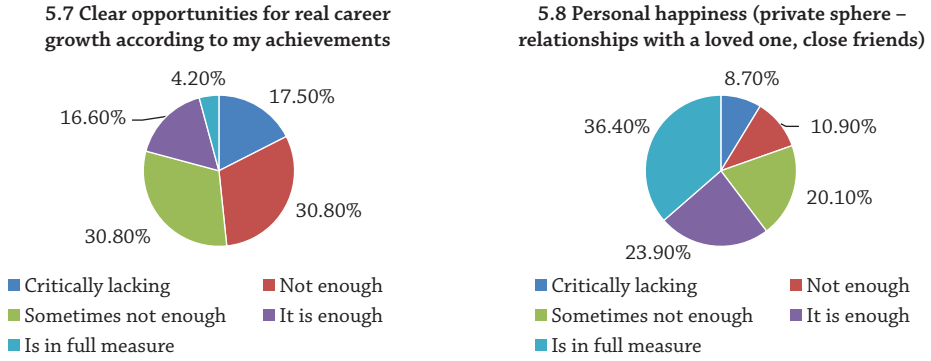
The means of influencing young scientists can be diverse (economic, organisational, administrative, psychological). Each of these methods has its own advantages and disadvantages, and can be effective under specific conditions. However, at the current stage of the formation of a new socioeconomic reality characterised by the exacerbation of old global problems and the emergence of new challenges, such as the world pandemic, the moral and ethical aspect of the development of science becomes particularly relevant. In this context, it is crucial to increase social responsibility of young scientists in their professional activities. It is worth noting that there is significant room for improving the social responsibility of young scientists in Ukraine. A sociological study revealed that less than 20% of respondents participate in activities related to social responsibility only once a year, with one in five young scientists engaging in such activities twice a year. Although, there is a group of scientists who are more active in this area, it is relatively small. In fact, only 5.5% of young scientists participate in social responsibility programmes up to 10 times a year. It is concerning that the largest group in this distribution consists of scientists who generally ignore social responsibility activities. For example, 14 respondents (28%) answered that they had never participated in such events. There could be various reasons for this, such as a lack of awareness or deliberate disregard for such measures. Unfortunately, the survey did not provide a a clear explanation for this situation. In order to engage this group of scientists in activities related to social responsibility in the future, it is necessary to identify the reasons for such passivity and take steps to eliminate them.

Numerous factors contribute to the effective realisation of scientists' potential. Among these factors, the social atmosphere within the scientific team is crucial. A friendly atmosphere, a healthy moral and psychological climate, and team spirit are well known to significantly increase staff motivation for highly productive

scientific work. For young scientists, a favourable social atmosphere is especially important, as they require support in their development as specialists. However, it is worth noting that only every fourth young scientist receives full support with a third of respondents stating that they receive support whenever possible. On the other hand, one in ten young scientists complains that they do not receive the necessary support and another 12% of respondents reported doing everything what is assigned to them at work. Some even mentioned facing artificial obstacles in their scientific advancement instead of feeling supported, which significantly reduces their motivation for professional development.

Figure 5. Assessment of resources necessary for the success of young scientists



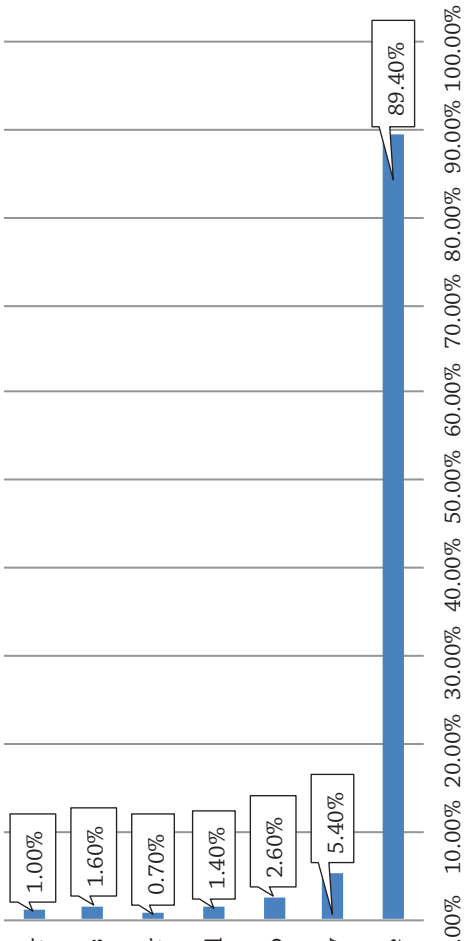


Source: calculated by the authors according to (Shkoda et al., 2020).

The success of a scientist depends on various factors, including the degree of satisfaction with their profession, activity, results, and life. In general, youth is characterised by optimism, energy and enthusiasm, which contributes to a positive perception of life and work. However, it is worth noting that a significant number of young scientists (over 200 people) indicated that they lack financial resources to feel happy (Figure 5). Additionally, time and living conditions are other resources that young scientists are lacking. About 200 respondents mentioned that they sometimes do not have enough time, while a similar number of respondents are dissatisfied with their living conditions. These findings highlight the need for improvement in almost all types of resources necessary for carrying out scientific activities, with financial resources being the most pressing need for young scientists.

Improving the financial security of young scientists and expanding funding for their research is crucial, and one important direction for achieving this goal is the commercialisation of scientific achievements. In the current socio-economic reality, modern scientists must not only engage in scientific research, but also be able to profitably implement it or commercialise it. Therefore, young scientists should become entrepreneurs who can effectively present their scientific products, promote them, and find paying and interested consumers. Unfortunately, in Ukraine, the degree of commercialisation of scientific research results is quite low, especially among young scientists. The results of the survey confirm this fact, with 90% (517 people) of surveyed young scientists having no experience in commercialising the rights to their intellectual property results. The largest share of those with such experience reported commercialising their scientific results in pedagogical activities (4.8% of the respondents – 28 people). A little over 1% of respondents stated non-production spheres as the area of commercialisation. An even smaller proportion of scientists (0.7%) has experience in exercising their intellectual property rights in scientific activities (Figure 6).

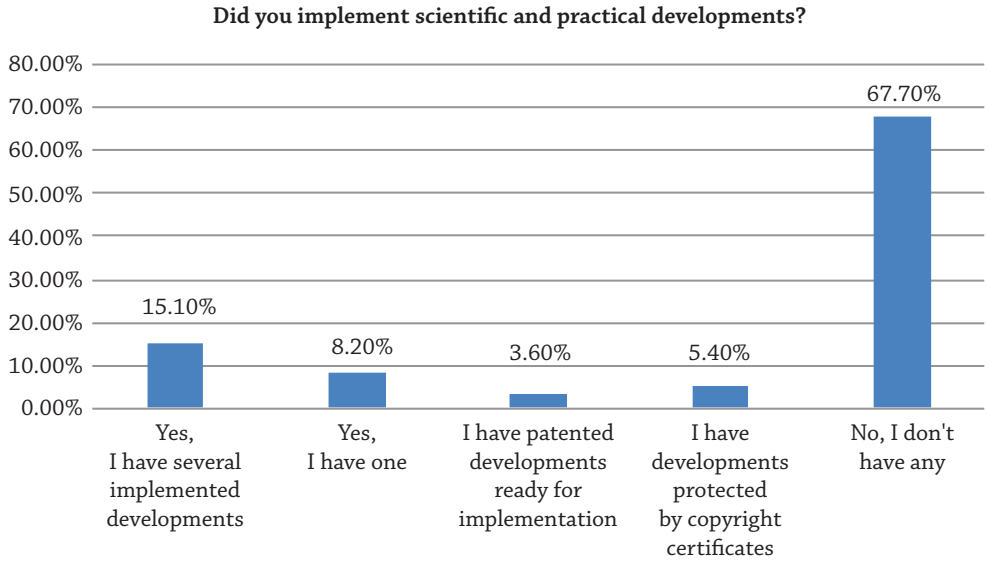
Figure 6. Experience and spheres of commercialisation of intellectual property rights results of young scientists



Source: calculated by the authors according to (Shkoda et al., 2020).

An important aspect of scientific work is the implementation of research results in practical applications. However, young scientists often face difficulties in this area. According to the survey results, only 12.8% of young scientists have several scientific developments that have been implemented (Figure 7). Less than 10% of respondents noted that they have only one implementation in practical activity. The proportion of scientists who have patented scientific developments ready for implementation is slightly smaller.

Figure 7. The presence of implemented scientific and practical developments among the surveyed respondents



Source: calculated by the authors according to (Shkoda et al., 2020).

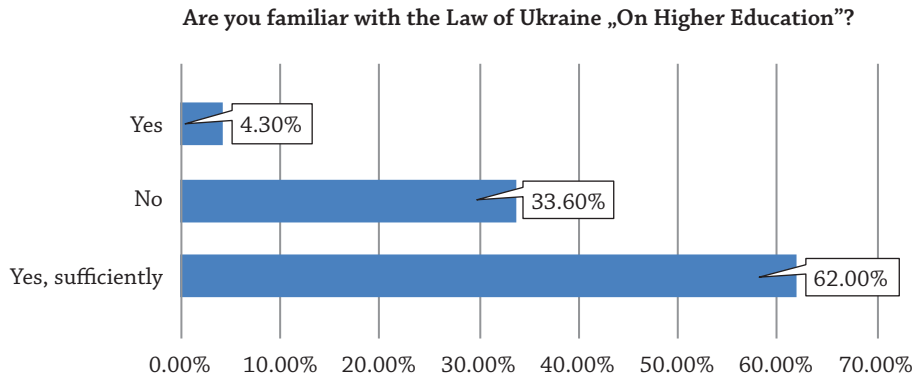
Unfortunately, the largest group of respondents (67.6%) reported having no experience in implementing their scientific achievements in practical activities. This indicates a low level of awareness among young scientists about the possibilities of implementing scientific achievements, as well as a lack of interest in implementation, as it often has little impact on their material compensation.

The effective realisation of the scientific potential and social responsibility of a young scientist depends largely on their awareness of the normative and legal framework that regulates scientific activities. In Ukraine, the most important regulatory documents in this area are currently the laws: "On Higher Education", "On Scientific and Scientific and Technical Activities", "On Innovative Activity" and others. These documents declare development prospects, rights, duties, responsibilities and other

important aspects of the country's educational and scientific sphere. However, the survey revealed a rather low level of awareness among scientists regarding the main provisions of these laws. Therefore, it is essential for young scientists to familiarise themselves with the content of the Law of Ukraine "On Higher Education" (Figure 8).

More than 300 respondents indicated that they were sufficiently familiar with the content of the Law of Ukraine ''On Higher Education''. Less than 200 respondents noted that they are only familiar with this document superficially. However, the situation with awareness of the Laws "On Scientific and Scientific-Technical Activity", "On Innovative Activity" is somewhat worse. Only less than half of the surveyed respondents believe that they are sufficiently familiar with the provisions of the Law "On Scientific and Scientific-Technical Activities". Approximately the same proportion of respondents admitted that they are familiar with the law superficially, while more than 10% are completely unfamiliar with the content of this regulatory document. The situation is even worse with knowledge of the Law of Ukraine "On Innovative Activity", the most scientists indicating only superficial familiarity or a lack of familiarity with the main provisions. It is evident that young scientists lack knowledge of the normative and legal framework for the development of their scientific activities, which negatively affects their social responsibility.

Figure 8. Distribution of answers regarding the familiarity of young scientists with the Law of Ukraine "On Higher Education"



Source: calculated by the authors according to (Shkoda et al., 2020).

It is worth noting that the conditions for carrying out scientific and educational activities for young scientists in Ukraine have never been particularly favourable, and the situation has become even more challenging during the COVID-19 pandemic and the subsequent quarantine restrictions. In these circumstances, the need to increase social responsibility in society, particularly in the healthcare sector, is particularly

urgent, as awareness of compliance with the recommendations of the Ministry of Health Care of Ukraine directly public health and the ability to overcome the pandemic. However, according to the results of the survey conducted by the Council of Young Scientists of Ukraine, only 64.3% of the surveyed scientists are fully aware of the recommendations of the Ministry of Health Care of Ukraine regarding quarantine measures. Furthermore, less than half of respondents (47.8%) expressed a desire to learn more about these recommendations (CYSU, 2020).

The majority of surveyed respondents (94.5%, 91.5% and 85.3% respectively) follow quarantine measures such as wearing masks, regularly washing their hands and avoiding crowded places (CYSU, 2020).

It is worth noting that the communication restrictions due to quarantine have posed a serious challenge for the entire society. However, young scientists responded by increasing their participation in scientific activities online, including preparing scientific publications (84.6%), participating in scientific conferences (54%), and taking online advanced training and internships (almost 40%) (CYSU, 2020). A third of the respondents also reported activating their existing scientific communications online.

Other types of scientific activity, such as completing projects or scientific works (almost every third person), starting new scientific research (almost 30%), and preparing grant applications (23.5%) during quarantine, were performed by a smaller percentage of young scientists. Few scientists joined volunteer or public projects (13.6%). Unfortunately, there was also group of scientists who did not take advantage of any opportunities during the quarantine (almost 4%).

Conclusion

Summarising the results of published surveys and our own research, the authors can state that, in general, there is a fairly high level of social responsibility among the young scientific community in Ukraine during the quarantine. This is demonstrated by:

- an increase in scientific activity regarding the preparation of scientific publications, participation in international conferences;
- an increase in the level of qualifications, completing internships online;
- completion of existing projects and preparation of new grant applications, and other types of scientific activity.
- sufficient awareness of the quarantine recommendations of the Ministry of Health and their compliance by the vast majority of young scientists.

At the same time, significant obstacles to the high social responsibility of young scientists remain, including:

– the unacceptably low price of their scientific work, reflected in the extremely low salaries of a significant proportion of scientists;
– the lack of funding for scientific research from scientific, educational institutions, business, and the state;
– the low degree of commercialisation and implementation of scientific achievements of young scientists in practical activities, caused by their lack of relevant competences and the bureaucratisation and non-transparency of this process, and others.

In this regard, the authors suggest several important measures that can contribute to increasing the social responsibility of young scientists in the new socio-economic reality of Ukraine, including::

– popularisation the ethical principle of social responsibility among the scientific through information and consulting activities, sharing best practices, and implementing it in the scientific sphere;
– increasing funding for science from the state budget, particularly for young scientists, creating modern infrastructure and providing access to innovative information and communication technology;
– diversification funding sources for scientific research, attracting funds from international financial donors, business structures, and other interested parties to expand international scientific cooperation, increase the mobility of young researchers, and develop their international scientific careers;
– raising the salaries of young scientists to the average level in the economy and expanding their compensation packages;
– improving working conditions and organisation of young scientists, especially in achieving work-life balance;
– expanding the competences of young scientists regarding the commercialisation of scientific research results and their introduction into business practices through relevant informational and educational activities;
– improving communication and transparency regarding opportunities for young scientists to participate in scientific project competitions, simplifying grant programme procedures and ensuring transparency in the selection process.

Implementation these measures can increase the social responsibility of young scientists, intensify their scientific research, and promote the more effective commercialisation of their human capital.

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