

Roman Demydenko

SESE "The Academy of Financial Management",

Kyiv, Ukraine, moamasterknu@gmail.com

ORCID ID: <https://orcid.org/0000-0001-6508-9577>

NORMING OF SCIENTIFIC AND RESEARCH LABOUR: STATE REGULATION

Abstract. *The article touches upon the issues of regulating characteristics of scientific and research labour. The core observations of the study were dedicated to the principles and modern regulation of the process of norming of scientific and research labour (NSRL). The interconnection of economic and legal aspects of the research was indicated and the necessity of cross-discipline studies was proclaimed. The importance of reformation in the sphere of NSRL for the purpose of budget expenditures harmonization was pointed out. The definition of state regulation of norming scientific and research labour (SR NSRL) was suggested. The main principles of SR NSRL system formation considering the R&D performers' interaction were clarified. The complexity of the scientific and research labour environment and the difference between working time and scientific labour was detailed. The importance of the SR NSRL system for the purpose of Ukrainian intellectual capital accumulation was described. The research results also contain the justification of the role of mandatory and variative components balancing within the regulation system. A critical analysis of regulatory and legal support and the failure of the government policies in the field of SR NSRL was carried out. It is noted that the issues of NSRL are more ignored compared to the legislation on remuneration of scientific work. It is proposed to focus on the scientific substantiation of measures to optimize human resources in the field of R&D based on the results of the implementation of NSRL measures. Emphasis is placed on the need to analyze the international experience in regulating the NSRL, in particular in the countries of the European scientific and educational space. It is also recommended to continue the research on the impact of NSRL on the balance of working and leisure time. The actuality of development and scientific justification of human resources optimization (as a result of NSRL) was discovered. The perspectives of following observations in the field of analysis the regulation of R&D private and public performers were introduced.*

Key words: state regulation of norming scientific and research labour, human resources management in research and development (R&D), labour emigration, liaison of economy and law, state policy in the field of research and development, reformation of science and education, sectors of research and development, legislation on scientific and research labour.

JEL classification: H83, I22, I23, I28, L15, M49, M51, M52, M54, O22, O32, O34, O38.

Демиденко Р. К.

аспірант НДФІ ДННУ "Академія фінансового управління",

Київ, Україна, moamasterknu@gmail.com

ORCID ID: <https://orcid.org/0000-0001-6508-9577>

НОРМУВАННЯ НАУКОВО-ДОСЛІДНОЇ ПРАЦІ: ДЕРЖАВНЕ РЕГУЛЮВАННЯ

Анотація. У статті висвітлено регуляторні характеристики науково-дослідної праці. Основну увагу приділено принципам та сучасному регулюванню процесу нормування науково-дослідної праці (ННДП). Описано взаємозв'язок економічних і правових аспектів, визначено важливість реформування у сфері ННДП для цілей гармонізації видатків державного бюджету. Запропоновано визначення поняття "державне регулювання нормування

© Демиденко Р. К., 2021

науково-дослідної праці" (ДР ННДП). Охарактеризовано принципи співпраці суб'єктів ДіР у процесі взаємодії в контексті формування системи ДР ННДП. Зроблено акцент на важливості останньої для збереження інтелектуального капіталу України. Обґрунтовано роль збалансованості між обов'язковими й опціональними компонентами системи регулювання, здійснено критичний аналіз нормативно-правового забезпечення та неуспешності розгортання урядових політик у галузі ДР ННДП. Зазначено, що питання ННДП є більшою мірою проігнорованими порівняно із законодавством щодо оплати наукової праці. Запропоновано зосередити увагу на науковому обґрунтуванні заходів з оптимізації людських ресурсів у сфері ДіР за результатами розгортання заходів ННДП. Наголошено на необхідності аналізу міжнародного досвіду регулювання ННДП, зокрема в країнах європейського науково-освітнього простору.

Ключові слова: державне регулювання нормування науково-дослідної праці, управління людськими ресурсами в дослідженнях і розробках (ДіР), трудова еміграція, взаємозв'язок економіки та права, державна політика в галузі досліджень і розробок, реформування освіти та науки, сектори досліджень і розробок, законодавство про науково-дослідну працю.

Рис. 2. Літ. 31.

Демиденко Р. К.

аспірант НИФИ ГУНУ "Академия финансового управления", Киев, Украина

НОРМИРОВАНИЕ НАУЧНО-ИССЛЕДОВАТЕЛЬСКОГО ТРУДА: ГОСУДАРСТВЕННОЕ РЕГУЛИРОВАНИЕ

Аннотация. В статье освещены регуляторные характеристики научно-исследовательского труда. Основное внимание уделено принципам и современному регулированию процесса нормирования научно-исследовательского труда (ННИТ). Описана взаимосвязь экономических и правовых аспектов, определена важность реформирования в сфере ННИТ для целей гармонизации расходов государственного бюджета. Предложено определение понятия "государственное регулирование нормирования научно-исследовательского труда" (ГР ННИТ). Охарактеризованы принципы сотрудничества субъектов ИиР в процессе взаимодействия в контексте формирования системы ГР ННИТ. Сделан акцент на важности системы последнего для сохранения интеллектуального капитала Украины. Обоснована роль сбалансированности между обязательными и опциональными компонентами системы регулирования, осуществлен критический анализ нормативно-правового обеспечения и неудач в развертывании правительственных политик в области ГР ННИТ. Указано, что вопросы ННИТ в большей степени проигнорированы по сравнению с законодательством по оплате научной работы. Предложено сосредоточить внимание на научном обосновании мероприятий по оптимизации человеческих ресурсов в сфере НИОКР по результатам развертывания мероприятий ННИТ. Указано на необходимость анализа международного опыта регулирования ННИТ, в частности в странах европейского научно-образовательного пространства.

Ключевые слова: государственное регулирование нормирования научно-исследовательского труда, управление человеческими ресурсами в исследованиях и разработках (НИОКР), трудовая эмиграция, взаимосвязь экономики и права, государственная политика в сфере исследований и разработок, реформирование в образования и науки, секторы исследований и разработок, законодательство о научно-исследовательском труде.

Considering the environment of comprehensive globalization processes, the trends of nowadays development of modern postindustrial countries are prescribed by the level of fulfillment of human rights on the professional field choice, the

employment type or the self-employment sphere. While analyzing the transnational outline of scientific interaction it becomes obvious that the rates of international labour market competition rise up, so the last ones cause the urgency of national regulation system enhancement. Mentioned means are aimed to accumulate the intellectual capital represented as the labour of highly competent employees. The direct impact of scientific and pedagogic employees is defining the state of Ukrainian education and science from the point of view of consumption of effects from observed spheres (commercialization) that is why the pool of issues on state regulation of scientific and researching labour of qualified employees has the high level of importance.

The robusticity of priority industries of national economy under the conditions of global crisis is determined by the depth of establishment of balance principles. This equilibrium could be achieved with use of combination of dispositive and imperative components, which are shown as the variative part chosen by the employee and the list of mandatory statements of state regulation accordingly.

All attempts of government reformation regarding the retention of valuable human capital personalized as notably qualified scholars ought to predict the increase the amount of unambiguity and transparency within the liaison of identification of working hours of such associates and the appropriate remuneration of scientific and researching labour. As the definition of scientific and researching labour contains the nonlinear and creative items and the significant level of emotional intensity the state regulation of observed phenomenon is characterized by the complexity of interconnected factors.

This research covers the approach of state regulation of identification and norming of scientific and researching labour (NSRL) both in the sphere of economy and law. Introduced cross-discipline economic and legal nature of arisen problems forces the adaptation of state regulation system to the recent challenges in the strategic spheres as education and science. The initiation of balanced standard of governance centralization, working hours and rest period, which are based on the fundamental constitutional human freedoms, would affirm the valuable economic outcome as the result of the increase of productivity of labour in the intellectual sphere of national economy.

The importance of researches in the sphere of state regulation of NSRL rises up due to the global economic recession started between 2019 and 2020. It has been indicated by reputable authorities that the global level of unemployment and state debts would reach 10% and 19% accordingly [1-4]. Consequently, the provision of satisfied level of efficiency of human resources management in research and development and education sectors with use of NSRL would support the elimination of negative crisis displays in the national economy.

The harmonization of the system of state regulation of NSRL based on the principle of flexibility has to be set on as to save such an important resource as scientific experts. One of the threats for R&D sector is a potential migration of scientists to the underintellectual engagements in service industries that, in most cases, ignores the acquired qualifications. From the point of view of economy described requalification devaluates the investment resource, which has been spent for the education and scientific preparation of described staff. The disclosed

occurrence is spreading among national: the thing is that the high level of working load and the poor financial compensation are incomparable with bordering spheres, particularly for the private sector representatives.

Scientific justification of necessity of the implementation of updated state regulation approaches in the sphere of NSRL appears as the advantageous factor of formula funding of higher education institutions (HEI). The appearance of transparent and simple terms of the identification of scientific and researching labour is likely to lead to the increase both of normative level of workload and actual labour pay. For this reason the refreshed mechanisms of state regulation of NSRL would be represented as the incremental part of correlation between the funding and the scientific intellectual product.

Considering the fact that most part of scientists is engaged in the state R&D sector, the state regulation of NSRL issue is deeply integrated to national budget policies. The lack of efficient ways of controlling of scientific and researching labour and derivative expenditures on payroll of scientific employees changes the status of R&D sector to the uncontrollable source of state budget funds erosion that is relevant to the statements of national economic security.

At the same time the emigration of Ukrainian scientists to the European Union countries is unacceptable. The successful implementation of flexible policy in the sphere of human resources in R&D of foreign competitors causes the situation that the employment abroad includes unattainable for Ukraine level of remuneration and working conditions, which in fact attracts specialists from Ukraine. In this dimension the disability of efficient scientific and researching labour regulation both for planning and compensation the losses of qualified personnel is taking place, which has a destructive multiplicative effect.

Eventually, the improvement of the state regulation of NSRL taking into account all statements justified above is dedicated to create the structure of real state guarantees that would be projected under the condition of budget sequester. The unification of fundamental definitions and principles of NSRL would provide the immunity of science and education resources. Indeed, the rollout of NSRL approaches is impossible without respective legislative support, which could reflect the strategic guides of national economy development.

The whole pool of problems of state regulation of science and higher education is quite familiar for scholars. Especially, issues of fundamentals of reformation of education and science as well as notable characteristics of scientific labour were sophisticatedly defined within published thesis, monographs and articles in industrial periodicals. The observed theme was escalated in contributions of [5-18].

Regarding the archaic system of legislation in the sphere of state regulation of scientific and researching labour, recent adoption of the Law of Ukraine On Scientific and Technical Activities and cancellation of variety of qualified legislation acts on scientific and researching interaction, the considerable quantity of relations lost the scientific justification within the government policy implementation.

For the purposes of harmonization of obtained results of scientists additional clarification could take place. Particularly there are no suggestions on systematization of approaches on policies of state regulation of NSRL. Additionally, the profound analysis could be conducted regarding the balance within the structure of legislative

components of NSRL, the interconnection of economy and law might be analyzed. Also the certain characteristics of scientific and researching labour as the object of state regulation were not identified and the specific legislation on NSRL was not observed profoundly.

Consequently, the general purpose of current study is considered as to identify the system of state regulation of NSRL¹ and to clarify the modern condition of its components. The following tasks might be listed to meet the aforementioned purpose: (i) to define the relation between economy and law within the process of state regulation of NSRL; (ii) to develop the principles of state policy in the field of NSRL; (iii) to decompose the term and role of state regulation of norming of scientific and researching labour; (iv) to analyze the system of general and special legislation of NSRL engagements.

As to receive the high-quality research, the economy and law might be estimated as the adjoining spheres of state regulation of R&D sector at all and the inseparability have to be assumed. The state regulation of random industry is reflected through the system of legal support. The law appears at the moment of the foundation of obligations of few parties on common activity. Current provocations in R&D sector have to be met by the well-prepared regulation system, which could exist only with the efficient legislation. Whether the durable system of state regulation in R&D sector takes place, some negative occasions might be substituted by the self-regulated system performers that would be empowered by rights of acting from themselves.

The legislative support in the sphere of R&D regulation is expected to prescribe the milestones of scientific and educational activities, rights and responsibilities of the parties described above. First of all the employment relations ought to be regulated because the creative scientific labour is the crucial factor of scientific product creation. As the technology development seems to be like the geometric progression while processing the enormous arrays of information which is impossible to be handled by human, the creative labour of scientist occupies the specific weight in the results of R&D. Also the order of labour planning (normalization), working timelines, remuneration and rest have to be structured in the sphere of R&D conduction. Although the system of state regulation of NSRL is the complex mechanism, the legislative support has to be marked as the priority tool of science management. Nevertheless, the main emphasis of current study is dedicated to scientific labour planning (NSRL). The role of the state could be summarized not for the liquidation of unsuccessful policies implementation consequences (*"firefighting"*) but it has to be perceived as the creator of the ecosystem with the basis formed with static eternal rules of interaction.

In fact the modern type of scientific and researching labour predetermines its characteristic with the internal complexity. From the point of view of clear theory the scientific and researching labour might be represented as the solid economic resource [12, 14] while the practical definition binds the observed term with the

¹ The study is fulfilling the scientific works plan for the topic "Theoretical and methodological basics for science and practice on norming and stimulating of scientific and researching labour" (0118U000277) of SESE "The Academy of Financial Management".

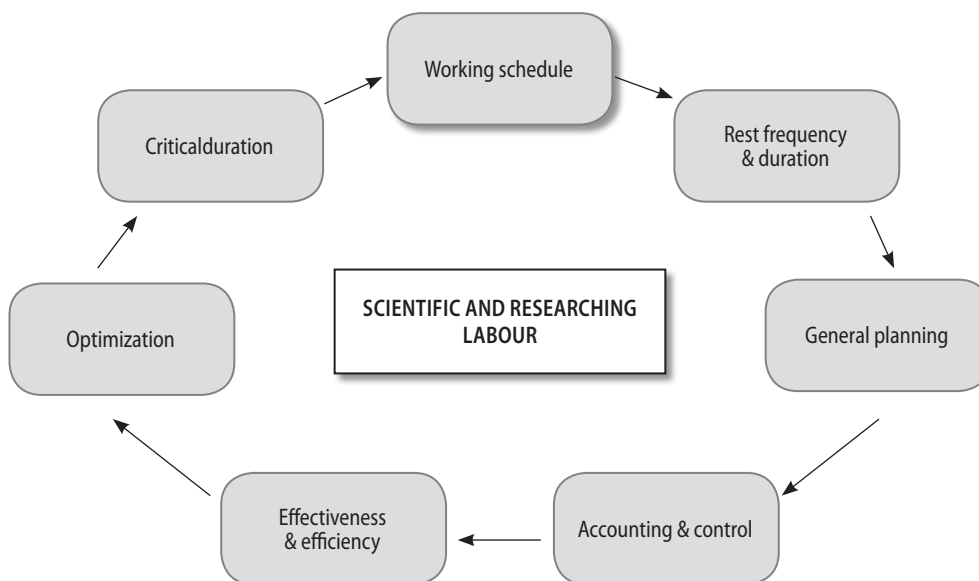


Figure 1. Reflections of scientific and researching labour

Created by author.

components of expenditures object, state legal regulation and object of strategic investment. Consequently, the scientists labour contains different elements that define the whole core of the peculiarities of researched item (Figure 1).

The relations of offering and utilization of scientific labour came up much time ago, however such process are still being regulated intuitively and with a low level of formalization. The culture of labour planning is poorly developed in Ukrainian R&D both for public and private sector and has just started its own establishment, so the legislative initiative would definitely improve the process.

Generally legal scholars within their approaches on identifying the scientific and researching labour are noticing the main sense as the duration of working hours of appropriate staff. Oppositely to the pointed out above the scientific and researching labour is the close term concerning working hours: the clue is that the contribution of a researcher differs with untraditional synergic result and mental intensity. Regarding current study the exact difference between mentioned terms have to be revealed. Firstly, the scientific and researching labour includes wired quantity of parts comparing to working hours. Working time, or working hours, is more defined category and is being cited mostly in legal science. Contrary, for the scientific and researching labour other qualities are required such as high qualification and mandatory communication skills for the scientific associate.

Secondly, the scientific and researching labour is not limited by the time and location of the scientist because the process of creative research and ideas generating are perpetual and dynamic. At the same time, the working hours approach is being applied for the control of compliance of maximum weekly or monthly duration, which is guaranteed by labour law. That is why the working hours category could not be involved in the research of state regulation of NSRL.

After all, the working hours is being associated strictly with the physical presence of a researcher on the working place at the scientific institution, but the scientific and researching labour deals with generation of new knowledge.

Uniting the last explanations it should be highlighted that the current research is being regarded especially to the points of state regulation of scientific and researching labour, particularly for the component of planning (normalization). The following definition might be suggested paying attention to the interconnection of economic and legal variations. The state regulation of norming of scientific and researching labour could be defined as the interconnection of structures of organizational and legislative support, prescribed by government, which is directed on the enhancement of system-creating function in the sphere of human capital management in the sphere of R&D, based on the balancing of interests of stakeholders and scientist self-fulfillment. The sense of SR NSRL system consists of symbiotic combination of elements of legislative support, scientific labour harmonization principles and methodological means of allocation of labour as the form of intellectual capital. Particularly the process of SR NSRL means the fare balancing of stakeholders' interests on distribution of human resources in R&D sector simultaneously with boosting the efficiency metrics of scientific engagements.

The interpretation of SR NSRL category might be divided for the broad and limited scope. Initially, the SR NSRL is directed for the structuring and reforming of scientific labour planning legislation and an exact regulation tasks are being performed during the legislative process. More applicable display of SR NSRL prescribes the identification of certain list of relevant legal norm, which would be applied for the specific scientific works and would ensure the equation of NSRL functions. Undoubtedly, the complex of exact elements of SR NSRL for each of the R&D performers would be unique, because the infallible system of such regulation is expected to be completed with universal elements, which are applicable for any user.

Nowadays the initiation of SR NSRL reforms should be based on the compensative inclusion of imperative (obligatory) and dispositive (option) particles as well as other dualistic dimensions (Figure 2).

The expectable part of SR NSRL system is dedicated to the justification of the principles of interaction of NSRL performers. The fundamental principle is an economic justice considering the fare mutuality between invested resources and obtained intellectual goods. It is normal that the administrating party rely to get beneficial applied results of R&D after providing the ecosystem of scientific labour and complementary social guarantees. Instead of that the R&D performers have to be supplied by the professional safety and multiaspect recognition after the utilization of their intellectual capital.

Frankly the reaching of mentioned principle is quite problematic due to lack of funding of science in Ukraine and distrust of scholar community to the governing structures. Inconsistent policy and residual allocation of resources for the scientific sector have been undervalued the scientific labour and damaged the industry at all, consequently the reforming in the sphere of legal security of scholars is needed to be cleared from incompetent abstraction on the real problems and has to be guided for the reanimation events for the Ukrainian R&D sector.

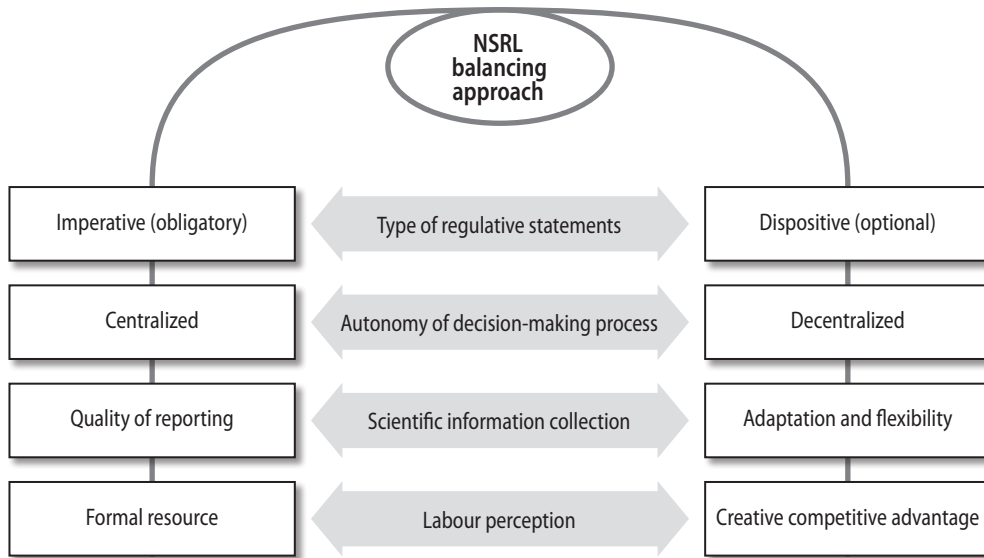


Figure 2. **Balancing alternatives within NSRL regulation**

Created by author.

Significant attention has to be paid for the treatment of the principle of iterative planning of scientific labour. Analyzing the way how the government dependent on the crisis is being managing the optimization of budget expenditures and sequester, the attempts of changing the period of planning and increasing the frequency of controlling in the R&D sector would ensure the reliability of science management, though the bigger financial losses and intellectual capital neglect would not occur.

The significant factor of SR NSRL policies efficiency reaching is the optimization of the structure of legislative support. It is obvious that the sophisticated system of scientific labour planning (normalization) has to be consisted of transparent order of legislation with the reference for the exact level of classification according to legal power. Limited list of issues on scientific and researching labour is regulated by actual legislation, particularly [19-23]:

- the Constitution of Ukraine (art. 43 and 45 concerning the right to work and rest);
- the Code of Laws on Labour of Ukraine (art. 51 concerning shortened duration of working hours);
- the Law of Ukraine On Scientific and Technical Activity (art. 6 concerning general duration of working hours);
- the Law of Ukraine On Higher Education (art. 56 concerning shortened duration of working hours);
- the Law of Ukraine On Vacations (art. 6 concerning annual main vacations).

The notable stage of harmonization of Ukrainian legislation in the sphere of scientific and researching labour has been established due to adoption of the modern release of the Law of Ukraine On Scientific and Technical Activity. Mentioned document prescribes the legal position of scientific employee. The

regulation of performance of scientific activities within higher education institutions (hereinafter-*HEI*) as the subject of R&D is defined in the Law of Ukraine On Higher Education published in 2014. Especially, the shortened duration of working time was announced for the exact list of scientific and pedagogic associates who are performing scientific educational, methodological and organizational activities.

At the same time, analyzing the lower level of legislation it is certain that the relations in the field of NSRL are regulated only by one normative act that is The Order of Ministry of Education and Science No 450 of 07.08.2002. Attentive review of described legislation act provides the following remarks. Firstly, the content of the Order is dedicated strictly for the HEI as well as the nomenclature of duration norms for the purpose of planning and accounting of certain works is connected only with the education part of activities with the aim to compensate the labour of pedagogic associates. Therefore described items are absolutely isolated from the fulfillment of managerial functions in the sphere of R&D and could not be applied for the scientific and researching labour efficiency assessment.

Secondly, observed order was issued almost twenty years ago and any edits of the document are absent. As the processes of scientific researches and pedagogic activities have been impacted dramatically from the time of order adoption, the validity of the document does not mean the real actuality and enough utility.

Generalizing the analysis, it has to be insisted that neither common labour legislation nor special acts in the sphere of science and higher education are covering the statements concerning NSRL and its state regulation. The main point of current legislation in the sphere of scientific and researching labour is dedicated to the overall guaranties of remuneration, rights and obligations of a scholar, when the NSRL interaction highlighting the planning aspects is not regulated. Respectively, it could be assumed that the SR NSRL system is not fully completed on the fundamental level and the intellectual capital represented by scientific and researching labour is formally ignored for the purpose of planning in R&D sector [25].

Another word, the fair statement is that there is a lack of legislative instruments of SR NSRL. The poor quantity of norms on compulsory scientific and researching labour planning and the gap of norms creation process as well as absence of NSRL integration approach indicate the illegality of NSRL policies development. At the same time all initiatives of R&D performers on classification and norming of scientific labour would not be characterized as systematic and consistent, and the information about scientific labour efficiency estimation comparing normal and actual figures would be definitely ignored and lost.

As the development of normative support of NSRL has just been established it is crucial to follow the common rules of creation of legislative system of observed sphere. The core idea is to balance the composition of laws, including incorporated legislation, and lower level industrial normative acts, because the legislation system for scientific and pedagogic labour could be described as unbalanced [26]. The big deposition of specific weight of legislation for the level of industrial bylaw acts (mostly represented by ministry orders) is indicating the government resources allocation for the separated problems consequences correction, which has the petty level of strategic vision of R&D prosperity and logical order.

The additional attention ought to be paid to the general state legal regulation of scientific and researching labour and the particular norming process while discussing the draft release of The Labour Code of Ukraine. One of the opportunities of legislation improvement in the sphere of NSRL is the separation of special provisions in the Book Four (Special Regulation of Labour Relations of Particular Categories of Employees and Employers) of code. Such structuring might be made for the increase of importance of scientific labour and for the systematization of relations in the scientific sphere, simultaneously with providing of social safety for scientists and efficient utilization of labour in R&D sector [27-29].

Summarizing the current research the following unique characteristics of state regulation normative support of NSRL might be uncovered. The analysis of professional periodicals and researchers' contributions has affirmed that the description of NSRL issues on the cross-discipline level has been made quite primitively. The rational way of further observations on mentioned problems might consist in the estimation of economic effects of legislation unification events. The thing is that the quantitative justification of potential reforms of legal regulation of scientific and researching labour would certainly have a positive impact on the level of self-sufficiency of scientific industry.

The overview of legislation on labour in R&D of Ukraine has proved the fact that the norming aspect for scientific and researching labour is being almost ignored. The acting system of normative acts is mostly oriented on general declarative guarantees of scientific and researching labour associates and the real achievement of the last ones is highly contradictory. In fact there are no statements on scientific and researching labour norming within the legislation and the main aim of norming is not clarified as well as the interconnection with other R&D management processes. That is why it has to be highlighted one more time that the NSRL approach is generally illegal because of lack of completed legislation basis.

Also the attention of researchers has to be paid to the overall provisions of scientific and researching labour legislation [30]. Considering the special importance of human resources as the part of R&D results the system of SR NSRL has to be enhanced regarding the balance of working time and rest with establishment of objective methods of scientific labour efficiency assessment. Eventually, the complex legislative initiative might lead to the raise of R&D sector and would ensure the increase of attractivity level of science for national scholars.

The prominent researching interest has arisen on the issue of diversification of reformation instruments through the R&D performers. The implementation of the modern system of state regulation in the sphere of scientific and researching labour includes the promotion of clear regulative statements both for HEI sector with public and private performers of R&D. The preparation of consistent recommendations and manuals for the different actors of R&D would boost the efficiency of R&D management with commercialization effects.

The forced creation of a competitive state regulation system of NSRL might be developed also based on the analysis of precedents of scientific and education reformation. As Ukrainian government has chosen the alternative to get closer to European standards of quality, scholars should review the accomplished reforms of the scientific industry of European countries. In this case, it is possible to define

the common descriptions of NSRL and the application of quantitative methods of planning of labour in R&D. It should be added that not only the separated elements of the system ought to be analyzed but it is crucial to look through the whole amount of liaisons between imperative and optional components within the legislative support. The separated estimation has to be conducted for the certain country choice as to perform the decomposition of SR NSRL system and appropriate legislative fundamentals.

The expected consequence of NSRL approaches diffusion is the optimization of allocation of human resources in R&D [31]. Probable scenarios might include the reengineering of organizational structure of R&D management and the rotation of scientists among scientific institutions and HEI. From another side, the theoretical and methodological support has to be justified on the scientific level to provide all opportunities for the mobility of human resources in R&D maintaining the valuable intellectual capital of Ukrainian science.

As the reformation process in the sphere of scientific and researching labour would need the accumulation of financial resources for the development of policies of state regulation of scientific and researching labour, considering the current level of NSRL issue development, the researchers have to provide the critical analysis of reforming priorities. Experts are expected to define the scale of intervention in the regulatory system of each R&D sector, using the tools of multicriterial and statistical analysis. In this case, the investments of expert attempts and financial resources would be recompensed by innovative competitive products according to set priorities.

References

1. OECD. (2020, June). *The world economy on a tightrope*. OECD Economic Outlook. Retrieved from <http://www.oecd.org/economic-outlook/june-2020/>.
2. World Bank. (2020, June 8). *COVID-19 to Plunge Global Economy into Worst Recession since World War II*. Retrieved from <https://www.worldbank.org/en/news/press-release/2020/06/08/covid-19-to-plunge-global-economy-into-worst-recession-since-world-war-ii>.
3. Gopinath, G. (2019, October 15). *The World Economy: Synchronized Slowdown, Precarious Outlook*. Retrieved from <https://blogs.imf.org/2019/10/15/the-world-economy-synchronized-slowdown-precarious-outlook/>.
4. Trade Union of Education and Science Workers of Ukraine. (2020, March 27). *Sequestration of the 2020 budget: balanced decisions by the Government, Parliament, President*. URL: <https://pon.org.ua/novyny/7746-sekvestr-byudzhetu-2020-vivazhen-rshennya-uryadom-parlamentom-prezidentom.html> [in Ukrainian].
5. Iefymenko, T. (Ed.). (2018). *Current Problems of Financial Management: Global Trends and National Practice*. Kyiv: SESE "The Academy of Financial Management". Retrieved from https://afu.kiev.ua/getfile.php?page_id=1002&num=2 [in Ukrainian].
6. Yadranska, O. V. (2009). *State regulation of science in Ukraine* (PhD Thesis). Zaporizhzhia. Retrieved from http://irbis-nbuv.gov.ua/cgi-bin/irbis_nbuv/cgiirbis_64.exe?C21COM=2&I21DBN=ARD&P21DBN=ARD&Z21ID=&Image_file_name=DOC/2009/09yovrnu.zip&IMAGE_FILE_DOWNLOAD=1 [in Ukrainian].
7. Krasiuk, T. V. (2008). *Legal regulation of working hours and rest time of scientific and pedagogical workers of higher educational institutions of III and IV levels of accreditation* (PhD Thesis). Kharkiv. Retrieved from http://irbis-nbuv.gov.ua/cgi-bin/irbis_nbuv/cgiirbis_

64.exe?C21COM=S&I21DBN=ARD&P21DBN=ARD&S21FMT=fullwebr&S21ALL=%28%3C.%3E%3D%D0%BA%D1%80%D0%B0%D1%81%D1%8E%D0%BA%20%D1%82.%D0%B2.%3C.%3E%29&FT_REQUEST=&FT_PREFIX=&Z21ID=&S21STN=1&S21REF=10&S21CNR=20 [in Ukrainian].

8. Ilnytskyi, D. O. (2016). *Global competition in the scientific and educational space: intellectual and resource dimension* (Dr. Sc. Thesis). Retrieved from https://kneu.edu.ua/userfiles/d-26.006.02/2016/diss_dr_ILNYTSKYI.pdf [in Ukrainian].

9. Nekoliak, R. V. (2018). *State regulation of scientific and scientific and technical activities: organizational and legal aspect* (PhD Thesis). Kyiv. Retrieved from http://idpnan.org.ua/files/nekoliak-r.v.-derjavne-regulyuvannya-naukovoyi-i-naukovo-tehnichnoyi-diyalnosti-organizatsiyno-pravoviy-aspekt-_d_.pdf [in Ukrainian].

10. Mosondz, S. O., & Melnyk, R. S. (2019). State policy in the field of science as institute of scientific law of Ukraine. In: Albul, S. V., Dykyi, O. V., Dyntu, V., Fomenko, A. Ye., Kisil, Z. R., Konopelskyi, V. Ya. et al. *Legal scholarly discussions in the XXI century*. Lviv: Torun: Liha-Pres. DOI: 10.36059/978-966-397-121-6/210-227 [in Ukrainian].

11. Lopatinska, L. (2019). Systematization of the types of research work. *RFI Scientific Papers*, 1, 61–73. DOI: 10.33763/npndfi2019.01.061 [in Ukrainian].

12. Rheault, L. (2014). The impact of labour resources on business R&D. *Journal of Innovation Economics & Management*, 13, 205–229. DOI: 10.3917/jie.013.0205.

13. Schot, J., & Steinmueller, W. E. (2018). Three frames for innovation policy: R&D, systems of innovation and transformative change. *Research Policy*, 47 (9), 1554–1567. DOI: 10.1016/j.respol.2018.08.011.

14. Amoroso, S. (2015). Profits, R&D and labour: breaking the law of diminishing returns to labour. *IPTS Working Papers on Corporate R&D and Innovation*, 10. DOI: 10.2139/ssrn.2704080.

15. Popovych, O. S. (2019). The Urgency of Cardinal Measures on Rehabilitation of Research Staff in the Ukrainian R&D. *Science And Science of Science*, 1, 37–45. DOI: 10.15407/sofs2019.01.037 [in Ukrainian].

16. Bazhal, Iu. (2019). Innovations as a Crucial Factor of the Catch-up Economic Growth. *Scientific Papers NaUKMA. Economics*, 4 (1), 3–8. DOI: 10.18523/2519-4739.20194.1.3-8 [in Ukrainian].

17. Fedulova, L. (2010). Technological policy in the system of economic development strategy. *Economy and Forecasting*, 1, 20–38. Retrieved from http://nbuv.gov.ua/UJRN/econprog_2010_1_5 [in Ukrainian].

18. Pyschulina, O., Yurocko, T., Mischenko, M., & Zhalilo, Ya. (2018). *Human capital development: on the way to quality reforms*. Retrieved from https://razumkov.org.ua/uploads/article/2018_LUD_KAPITAL.pdf [in Ukrainian].

19. Verkhovna Rada of Ukraine. (1996). *Constitution of Ukraine* (Act No. 254k/96-VR, June 28). Retrieved from <https://zakon.rada.gov.ua/go/254%D0%BA/96-%D0%B2%D1%80> [in Ukrainian].

20. Verkhovna Rada of Ukraine. (1971). *Labor Code of Ukraine* (Act No. 322-VIII, December 10). Retrieved from <https://zakon.rada.gov.ua/go/322-08> [in Ukrainian].

21. Verkhovna Rada of Ukraine. (2015). *About scientific and scientific and technical activity* (Act No. 848-VIII, November 26). Retrieved from <https://zakon.rada.gov.ua/go/848-19> [in Ukrainian].

22. Verkhovna Rada of Ukraine. (2014). *About higher education* (Act No. 1556-VII, July 1). Retrieved from <https://zakon.rada.gov.ua/go/1556-18> [in Ukrainian].

23. Verkhovna Rada of Ukraine. (1996). *About vacations* (Act No. 504/96-VR, November 15). Retrieved from <https://zakon.rada.gov.ua/go/504/96-%D0%B2%D1%80> [in Ukrainian].
24. Lozovyi, V. S. (2016). *Reforming the scientific sphere as a factor in translating the economy of Ukraine into an innovative model of development*. Kyiv: National Institute for Strategic Studies. Retrieved from <https://niss.gov.ua/doslidzhennya/gumanitarniy-rozvitok/reformuvannya-naukovoi-sferi-yak-chinnik-perevedennya-ekonomiki> [in Ukrainian].
25. Lomonosova, O. E. (2018). Planning of work of scientific and pedagogical workers in the context of fulfilment of normative requirements to the level of their scientific and professional activity. *Innovative Economy*, 9-10, 17–26. Retrieved from http://nbuv.gov.ua/UJRN/inek_2018_9-10_4 [in Ukrainian].
26. Momot, E. O. (2018). Borders of Centralized and Local Regulation of Payment of the Work of Scientific and Pedagogical Workers. *Law and innovative society*, 2, 83–88. Retrieved from http://nbuv.gov.ua/UJRN/pric_2018_2_14.
27. Kolot, A. M., & Herasymenko, O. O. (2018). Innovative labour and its intellectualization as strategic vectors of the formation of the new economy. *Economics and Organization of Management*, 1 (29), 6–23. DOI: 10.31359/2309-9275-2018-11-2-83 [in Ukrainian].
28. Kراسиuk, T. V. (2016). Using of labor hours by academic staff of higher educational establishments and its norming in the context of Law of Ukraine “On higher education”. *Law and innovation*, 1, 192–197. Retrieved from http://nbuv.gov.ua/UJRN/apir_2016_1_29 [in Ukrainian].
29. Yasynska, N. I. (2016). Some aspects of public management of scientific activity of higher educational institutions in the conditions of reform. *Democratic governance*, 16-17. Retrieved from http://nbuv.gov.ua/UJRN/DeVr_2016_16-17_12 [in Ukrainian].
30. Pakhomova, A. O. (2015). Novelties of legal regulation of scientific activity in Ukraine. *Kherson State University Herald. Series Legal Sciences*, 3 (2), 131–134. Retrieved from [http://nbuv.gov.ua/UJRN/Nvkhdu_jur_2015_3\(2\)_36](http://nbuv.gov.ua/UJRN/Nvkhdu_jur_2015_3(2)_36) [in Ukrainian].
31. Todosiychuk, A. V. (2014). *Regulatory support and prospects for the development of Russian science*. Retrieved from <https://cyberleninka.ru/article/n/normativno-pravovoe-obespechenie-i-perspektivy-razvitiya-rossiyskoy-nauki> [in Ukrainian].

Список використаних джерел

1. The world economy on a tightrope. OECD Economic Outlook / OECD. 2020. June. URL: <http://www.oecd.org/economic-outlook/june-2020/>.
2. COVID-19 to Plunge Global Economy into Worst Recession since World War II / World Bank. 2020. June 8. URL: <https://www.worldbank.org/en/news/press-release/2020/06/08/covid-19-to-plunge-global-economy-into-worst-recession-since-world-war-ii>.
3. Gopinath G. The World Economy: Synchronized Slowdown, Precarious Outlook. 2019. October 15. URL: <https://blogs.imf.org/2019/10/15/the-world-economy-synchronized-slowdown-precarious-outlook/>.
4. Секвестр бюджету-2020: виважені рішення Урядом, Парламентом, Президентом. *Профспілка працівників освіти і науки України*. 2020. 27 берез. URL: <https://pon.org.ua/novyny/7746-sekvestr-byudzhetu-2020-vivazhen-rshennya-uryadom-parlamentom-prezidentom.html>.
5. Актуальні проблеми фінансового управління: глобальні тенденції і національна практика / за ред. Т. І. Єфименко ; ДНУ “Акад. фін. управління”. Київ, 2018. 496 с. URL: https://afu.kiev.ua/getfile.php?page_id=1002&num=2.
6. Ядранська О. В. Державне регулювання науки в Україні. : автореф. дис. ... канд. наук з держ. упр. : 25.00.02. Запоріжжя, 2009. 20 с. URL: <http://irbis-nbuv.gov.ua/cgi-bin/>

irbis_nbuv/cgiirbis_64.exe?C21COM=2&I21DBN=ARD&P21DBN=ARD&Z21ID=&Image_file_name=DOC/2009/09yovrnu.zip&IMAGE_FILE_DOWNLOAD=1.

7. Красюк Т. В. Правове регулювання робочого часу та часу відпочинку науково-педагогічних працівників вищих навчальних закладів III та IV рівнів акредитації: автореф. дис. ... канд. юрид. наук : 12.00.05. Харків, 2008. 20 с. URL: http://irbis-nbuv.gov.ua/cgi-bin/irbis_nbuv/cgiirbis_64.exe?C21COM=S&I21DBN=ARD&P21DBN=ARD&S21FMT=fullweb&S21ALL=%28%3C.%3EA%3D%D0%BA%D1%80%D0%B0%D1%81%D1%8E%D0%BA%20%D1%82.%D0%B2.%3C.%3E%29&FT_REQUEST=&FT_PREFIX=&Z21ID=&S21STN=1&S21REF=10&S21CNR=20.

8. Ільницький Д. О. Глобальна конкуренція в науково-освітньому просторі: інтелектуально-ресурсний вимір : дис. ... д-ра. екон. наук : 08.00.02. Київ, 2016. URL: https://kneu.edu.ua/userfiles/d-26.006.02/2016/diss_dr_ILNYTSKYI.pdf.

9. Неколяк Р. В. Державне регулювання наукової і науково-технічної діяльності: організаційно-правовий аспект : дис. ... канд. юрид. наук : 12.00.07. Київ, 2018. URL: http://idpnan.org.ua/files/nekolyak-r.v.-derzhavne-regulyuvannya-naukovoyi-i-naukovo-tehnichnoyi-diyalnosti-_organizatsiyno-pravoviy-aspekt_-_d_.pdf.

10. Mosondz S. O., Melnyk R. S. State policy in the field of science as institute of scientific law of Ukraine. *Legal scholarly discussions in the XXI century* / S. V. Albul, O. V. Dykyi, V. Dyntu, A. Ye. Fomenko et al. Lviv ; Toruń : Liha-Pres, 2019. 344 p. URL: <https://doi.org/10.36059/978-966-397-121-6/210-227>.

11. Лопатинська А. А. Систематизація видів робіт науково-дослідної праці. *Наукові праці НДФІ*. 2019. № 1. С. 61–73. URL: <https://doi.org/10.33763/npndfi2019.01.061>.

12. Rheault L. The impact of labour resources on business R&D. *Journal of Innovation Economics & Management*. 2014. No. 13. P. 205–229. URL: <https://doi.org/10.3917/jie.013.0205>.

13. Schot J., Steinmueller W. E. Three frames for innovation policy: R&D, systems of innovation and transformative change. *Research Policy*. 2018. Vol. 47, Iss. 9. P. 1554–1567. URL: <https://doi.org/10.1016/j.respol.2018.08.011>.

14. Amoroso S. Profits, R&D and labour: breaking the law of diminishing returns to labour. *IPTS Working Papers on Corporate R&D and Innovation*. 2015. No. 10. URL: <https://doi.org/10.2139/ssrn.2704080>.

15. Попович О. С. Невідкладність кардинальних заходів для відновлення кадрового потенціалу науки України. *Наука та наукознавство*. 2019. № 1. С. 37–45. URL: <https://doi.org/10.15407/sofs2019.01.037>.

16. Bazhal Iu. Інновації як вирішальний фактор наздоганяльного економічного зростання. *Наукові записки НаУКМА. Економічні науки*. 2019. Vol. 4, No. 1. P. 3–8. URL: <http://dx.doi.org/10.18523/2519-4739.20194.1.3-8>.

17. Федулова А. І. Технологічна політика в системі стратегії економічного розвитку. *Економіка і прогнозування*. 2010. № 1. С. 20–38. URL: http://nbuv.gov.ua/UJRN/econprog_2010_1_5.

18. Розвиток людського капіталу: на шляху до якісних реформ / О. Пищуліна, Т. Юрочко, М. Міщенко, Я. Жаліло ; Центра Разумкова. 2018. URL: https://razumkov.org.ua/uploads/article/2018_LUD_KAPITAL.pdf.

19. Конституція України від 28.06.1996 № 254к/96-ВР. URL: <https://zakon.rada.gov.ua/go/254%D0%BA/96-%D0%B2%D1%80>.

20. Кодекс законів про працю України від 10.12.1971 № 322-VIII. URL: <https://zakon.rada.gov.ua/go/322-08>.

21. Про наукову і науково-технічну діяльність : закон України від 26.11.2015 № 848-VIII. URL: <https://zakon.rada.gov.ua/go/848-19>.

22. Про вищу освіту : закон України від 01.07.2014 № 1556-VII. URL: <https://zakon.rada.gov.ua/go/1556-18>.
23. Про відпустки : закон України від 15.11.1996 № 504/96-ВР. URL: <https://zakon.rada.gov.ua/go/504/96-%D0%B2%D1%80>.
24. Лозовий В. С. Реформування наукової сфери як чинник переведення економіки України на інноваційну модель розвитку : аналіт. зап. / Нац. ін-т стратег. досліджень. 2016. URL: <https://niss.gov.ua/doslidzhennya/gumanitarniy-rozvitok/reformuvannya-naukovoi-sferi-yak-chinnik-perevedennya-ekonomiki>.
25. Ломоносова О. Е. Планування роботи науково-педагогічних працівників в контексті виконання нормативних вимог до рівня їх наукової та професійної активності. *Інноваційна економіка*. 2018. № 9-10. С. 17–26. URL: http://nbuv.gov.ua/UJRN/inek_2018_9-10_4.
26. Момот Є. О. Межі централізованого і локального регулювання оплати праці науково-педагогічних. *Право та інноваційне суспільство*. 2018. № 2. С. 83–88. URL: http://nbuv.gov.ua/UJRN/pric_2018_2_14.
27. Колот А. М., Герасименко О. О. Інноваційна праця та її інтелектуалізація як стратегічні вектори становлення нової економіки. *Економіка і організація управління*. 2018. № 1 (29). С. 6–23. URL: <https://doi.org/10.31359/2309-9275-2018-11-2-83>.
28. Красюк Т. В. Використання робочого часу науково-педагогічними працівниками вищих навчальних закладів та його нормування у контексті Закону України “Про вищу освіту”. *Право та інновації*. 2016. № 1. С. 192–197. URL: http://nbuv.gov.ua/UJRN/apir_2016_1_29.
29. Ясинська Н. І. Деякі аспекти державного управління науковою діяльністю вищих навчальних закладів в умовах реформування. *Демократичне врядування*. 2016. Вип. 16-17. URL: http://nbuv.gov.ua/UJRN/DeVr_2016_16-17_12.
30. Пахомова А. О. Новели правового регулювання наукової діяльності в Україні. *Науковий вісник Херсонського державного університету. Сер.: Юридичні науки*. 2015. Вип. 3 (2). С. 131–134. URL: [http://nbuv.gov.ua/UJRN/Nvkhdu_jur_2015_3\(2\)_36](http://nbuv.gov.ua/UJRN/Nvkhdu_jur_2015_3(2)_36).
31. Тодосийчук А. В. Нормативно-правовое обеспечение и перспективы развития Российской науки. 2014. URL: <https://cyberleninka.ru/article/n/normativno-pravovoe-obespechenie-i-perspektivy-razvitiya-rossiyskoy-nauki>.