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MOTIVATION OF HOUSING AND COMMUNAL SERVICES EMPLOYEES IN THE PERIOD OF INDUSTRY 4.0 DEVELOPMENT IN THE VUCA WORLD

The article considers problems and ways of solving the adaptation and development of personnel policy in the conditions of the fourth-generation industrial revolution, which requires the development of innovative forms and methods of management of human resources with the necessary competencies for effective activity in the VUCA conditions. The article presents the results of the analysis of the impact of the fourth industrial revolution on the nature and content of industrial workers' labor, which necessitates the improvement of organizational and economic mechanisms of personnel management on a wide range of issues, one of the most relevant among which is employee motivation, or rather its innovation-oriented development, aimed at enhancing productive innovation activities at the modern level of Industry 4.0. The results of the research let proposing the toolkit of innovation-oriented motivation of employees of housing and communal services enterprises that can be used for the development of instrumental modules of mechanisms of attraction and motivation of professionals having the necessary qualification level in the sphere of innovations.

Keywords: motivation, high-tech enterprises, Industry 4.0, VUCA-world.

1. INTRODUCTION

It is not hard to see that the VUCA world is linked to the 4th industrial revolution, but it affects not only economies or national interests but also people, each one of us. Today's world is characterized by instability, uncertainty, complexity, and ambiguity. It has come to be known as the VUCA world and is characterized by rapid change, unpredictability, considerable difficulty in determining the future based on the past, a diversity of evidence, causes and influencing factors, and multidimensional situational conditions. In these

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volatile times, human resources are critical. Only those companies that use their human resources to their fullest potential will stay afloat.

Today's world is changing faster, and changes are affecting different areas of businesses. This shows that personnel must gain knowledge in different areas. Achieving success requires changes in the development of not only new personnel skills but also new and more attractive career heights. Along with this, organizations need to focus on leadership development, structural issues, cultural diversity, technology, and employee experience enrichment with new and more interesting ways of working. Given the pace of change and the constant need to adapt, it's no surprise that CEOs of large companies have identified building the organization of the future as the most important challenge of the coming decades.

Back in the 1990s, the U.S. military coined the term VUCA, an acronym for Volatility, Uncertainty, Complexity, and Ambiguity (Kelly, 2022). With it, they tried to explain the new conditions of warfare in the unpredictable modern world without rules. Then the term was picked up by businessmen and strategic consultants as they sought to explain why it was no longer possible to plan, predict and maintain the former stability of the corporate world. Recently it has become finally clear that it is useless to wait out this uncertainty, but it is necessary to adapt to it. And this requires a radical change in the processes and tools of human resource management. Under the conditions of increased uncertainty, the personnel service (department of organizational development, management, etc.) must finally stop being associated with stability, control, and long-term planning. In the organizations of housing and communal services, which are better able to survive and develop in conditions of uncertainty, the human resources departments are the most agile, innovative, and technically savvy.

The availability of labor resources and the efficiency of their use have a direct impact on the efficiency of production activities, economic indicators of the organization, financial stability, competitiveness, and market position. In the sphere of housing and communal services the problem of labor efficiency is much more acute than in the industrial sectors, and in the Ukrainian economy. Even though many organizations of housing and communal services took a course on modernization of the material base and reorganization of the management system, without solving personnel problems, successful reform of the industry is impossible. The system of housing and communal services needs to cope with the problem of lack of qualified personnel, to solve the issue with motivation and incentives for working personnel, to introduce more modern methods of personnel management, which would consider the specifics of the organizations in the industry in the period of industry 4.0 development in the VUCA world.

Theoretical and empirical methods: analysis, synthesis, generalization, comparison.

Relevance of the topic. The importance of personnel in the sphere of housing and communal services is indisputable, as it is the quality of services provided, as well as the degree of satisfaction of the population, depends on the personnel.

The main problems of employees in the sphere of housing and communal services are:

- low professional training;
- lack of motivation among the staff of the housing and communal services enterprises;
- lack of labor resources.

The purpose of this study is to identify the peculiarities of the development of human resources policy of housing and communal services in the period of development of industry 4.0 in the VUCA world.

2. STATEMENT OF THE PROBLEM

Until now in scientific circles, the problem of studying the world experience of motivation of employees of housing and communal services and adaptation of the personnel of enterprises to the current economic and political conditions in Ukraine remains relevant. At the present time, the personnel problems are not given proper attention. To solve these problems, it is necessary to use non-standard approaches. And one of these approaches is the motivation of housing and communal services employees in the period of development of industry 4.0 in the VUCA world. Issues of management of employees of housing and communal services, and regulation of relations between employees of housing and communal enterprises have long been studied by Ukrainian and foreign scientists, among which should be noted (Rosenberger, 2021; Werkmann-Karcher, Rietiker, 2020; Kelly, 2022; Dolgalova, Yeshchenko, Faselko, Mykhalchenko, Udovychenko, 2020; Loop, 2016; Lazear, 2016).

3. MAIN RESULTS

In the study of personnel processes in the organization of housing and communal services, being in crisis conditions, today it is accepted to allocate such main tasks, as the definition of development of a progressive system of personnel management; revealing of so-called "problem areas", that is the phenomena, slowing down successful development of the enterprise; estimation of adaptive possibilities of collective and its readiness for changes. Additionally, quantitative statistical data are collected: personnel costs, statistical data on the characteristics of the total labor force at the enterprise; labor productivity indicators, etc. A revolution is taking place before our eyes concerning everything related to human resources management: organizational structure, processes, tools, and, most importantly, human resources managers themselves. These revolutionary demands allow organizations to build skills to get out of their discomfort zone and build leadership skills in a VUCA world.

Today's human resources managers are fast and efficient project managers, salespeople, and engineers. Increasingly, companies are now outsourcing routine administrative and supervisory functions (paperwork, payroll, and payroll) to other departments (e.g., legal, accounting, clerical, and internal control). All this is done to maximize the speed of HR teams, relieving them of unnecessary burdens. First in the queue of processes to be overhauled is performance management. In the VUCA world, key target indicators become obsolete within a month, so it makes no sense for managers to wait until the end of the year to routinely discuss with an employee whether they have achieved their goals.

One way out is to switch to shorter cycles of goal setting and evaluation: a quarter, a month, or even a week. There is another way, which at first glance seems counterintuitive: reduce the weight of the bonus in the total income of employees, i.e., move from managing the monetary unit to managing the word (to regular feedback and a productive corporate culture). Then employees will worry less about "things have changed again" and can focus on the tasks at hand. Many utility companies are currently reviewing their approaches to performance management (König, Stahl, Wiegand, 2016).

The classical competence system has proven to be too rigid and fragile, and therefore an unreliable foundation for building a human resource management function in the face of increased market activity. Key employees should have the widest range of competencies: understanding of the business, effective and persuasive communication, and the ability to manage complex situations.

Another way is to reformulate the classic set of competencies into a more modern set (e.g., trainability, adaptability, and ability to act in situations of uncertainty). The top-level positions will require an external talent pool. Learning and development, like adaptation, turn into a speed game. It is difficult to plan the necessary competences, so part of the training will inevitably happen “just in case”. Learning in today's volatile and unpredictable world will have to happen every day, not several times a year in training (Milner, 2021).

For the convenience of diagnostic assessment of the state of personnel management, the system is conditionally subdivided into strategic and operational levels. At the strategic level, the activity of the top management of the housing and utilities enterprise in building a strategy for the formation and use of labor potential, as well as its compliance with the current situational conditions, compliance of the organizational structure with the goals and objectives of the enterprise, characteristics of organizational culture, the level of competence of strategic managers, the nature of relations between the administration and the personnel (conducted by interviewing key managers, studying business plans and reports on the results of activity) At an operational level it is estimated efficiency of work with human resources; presence or absence of necessary components of a personnel management system, their adequacy to the purposes of the enterprise, correctness of their performance. Here such components, as conformity of personnel policy, personnel planning, principles of selection and employment, adaptation, stimulation of labor, evaluation, and training, rotation, organization of work, career planning, and dismissal of employees are examined.

The actual problem of the modern Ukrainian economy is the formation of a new “direction”, providing a steadily positive dynamics in the direction of the economy of innovative development. One of the fundamental factors in creating such an innovative “direction” is the innovation of labor collectives, the mass, and magnitude of which will form the appropriate effect, determined mainly by the intellectual resources of workers, namely, their effective and purposeful formation, development and use in innovative processes. In this regard, the need to search for adequate managerial approaches, allowing to development of the necessary management systems and mechanisms required in the conditions of implementation of promising directions of innovation development of the domestic economy is actualized. One of the priority directions, in this case, becomes the motivation of employees. The fact is that in modern socio-economic conditions, determined by the powerful influence of the technological factor (the fourth industrial revolution (Eden, 2020), there are significant changes in the ideas about the sources of competitive advantage. Among the main such sources are considered technological innovations, both in production and management (Maruyama, 2021).

The intensification of innovative development of housing and utilities enterprises is reflected in the nature and content of employees' labor activity, posing fundamentally new tasks to personnel management services (Loop, 2016). It becomes more rational to influence the executives indirectly, replacing the traditional administration with the implementation of alternative management styles, which primarily involve the recognition of personal professional merits of specific highly qualified specialists, transparency of the results of labor activity, and the possibility of providing information for self-assessment.

As a result, the heads of many enterprises of housing and communal services of an innovative type strive to increase the percentage of non-material incentives for the work of their employees.

In general, in the process of historical development, the system of labor relations in the form of interrelated elements “subject of labor” – “labor process” – “object of labor” constantly underwent and continues to undergo consistent and logically determined transformations. The relationship between these elements is currently undergoing particularly significant changes (Kelly, 2022), formed under the influence of the modern stage of technological development (the fifth, and sixth technological stages), generating not only industry of a new type – Industry 4.0, but also has much broader consequences in the form of the formation of society also a new type – Society 4.0.

The employee, as a subject of labor, has consistently passed the way through the change of his role in labor relations on the chain from a worker to a non-alternative source of innovative development. The last circumstance defines the necessity of the introduction of principally new forms of labor relations in housing and communal companies, bringing organizational conditions of labor force used in correspondence with world tendencies based on consideration of interests of both workers and employers in innovative development on the level of the modern fourth industrial revolution. The labor activity of a modern worker acquires more and more pronounced specificity, which should be considered when introducing new forms of motivation. The peculiarities of modern labor include the change of traditional boundaries of labor activity and strengthening of the role of individual qualities of workers, and their competences because of the development of both divisions of labor and labor cooperation at a new level.

Accordingly, all new forms of production-labor relations are gradually spreading in the modern labor market. Their formation occurs in line with the development of innovative business and is characterized by certain specialized approaches to the motivation of workers. One of the predominant among which becomes the level of employees' remuneration depending on their qualification level in the sphere of innovations, i.e., on this basis the appropriate level of remuneration for labor results are established. The priorities which predetermine innovation-oriented orientation of personnel motivation improvement are actualized (Figure 1), focused on formation, development, and effective use of qualification level of employees of intellectual-innovative labor and increase of intrafirm innovative activity on this basis, transformed into innovative capital of enterprise (Figure 2).

The most relevant result of human resource management in the period of industry 4.0. becomes the qualitative development of personnel, aimed at innovative results, integrated into the qualification level of innovative sphere employees. Generalization and systematization of approaches (Dolgaleva, 2018) to the definition and content of the concept of “motivation” allowed to clarify and define the concept of “innovation-oriented motivation”, more relevant in modern socio-economic conditions (active innovative transformations, determined by the formation and development of industry 4.0).

Innovation-oriented motivation is proposed to be understood as a purposeful and dynamic process of motivating employees to innovative activities to achieve the goals and objectives of the organization in the innovative development. As the main result and target of innovation-oriented motivation of employees, it is proposed to consider the innovative activity and formed qualification level of employees, aimed at mastering certain ways, techniques, and actions necessary in the innovation process.

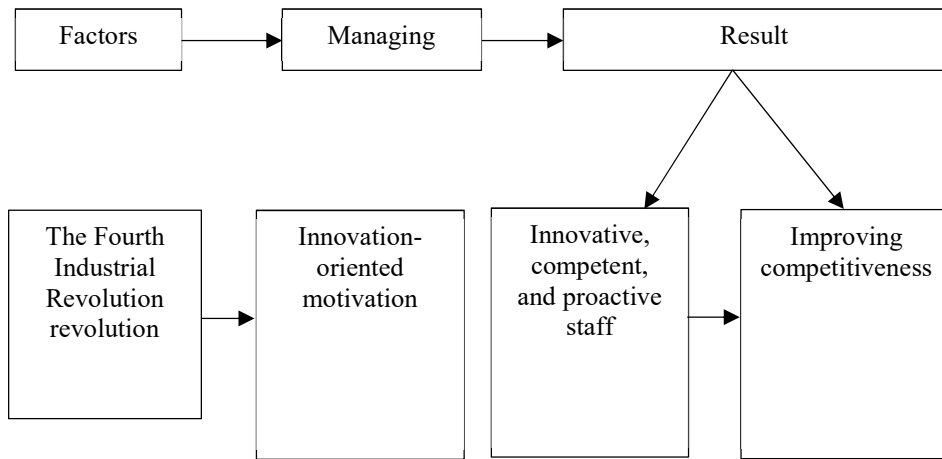


Figure 1. Innovation-oriented focus on improving employee motivation (Authors' personal contribution)

Source: Authors' own work.

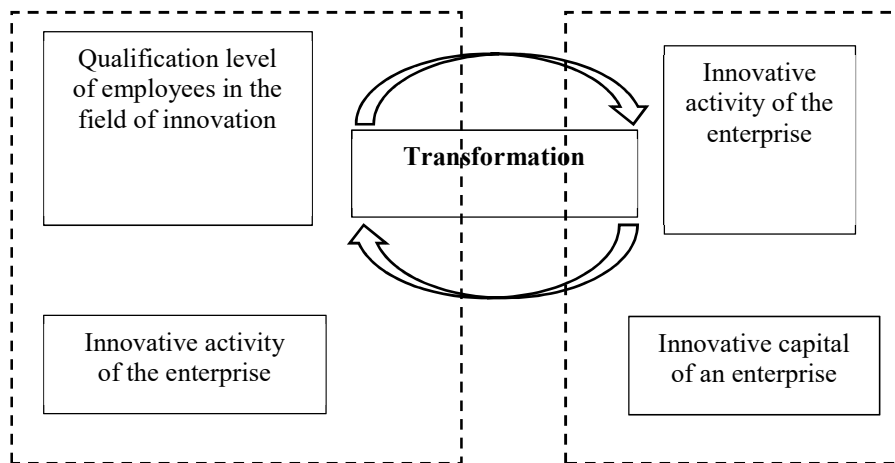


Figure 2. Economic importance of employee motivation focused on innovative results (Authors' personal contribution)

Source: Authors' own work.

The complex task of forming and development of qualification level of employees in the sphere of innovations is the establishment of optimal points of intersection between the qualification level of employees and innovative processes at the enterprise. Motivational mechanisms can play an essential role in solving this problem, aimed, first, at organizing the process of reproduction of highly skilled and innovative employees, and second, at maintaining this process at the level that corresponds to the needs of the enterprise in innovative development.

Thus, the formation and development of qualification and competence levels of employees in the sphere of innovation assume the presence of an adequate intrafirm mechanism, providing regular managerial actions, aimed at attraction, and motivating of employees of the required quality level.

This mechanism should be formed, first, considering the need to create a development platform based on the synthesis of technological and managerial competencies of personnel to support and develop a strategic portfolio of innovations of the enterprise (Khetagurova, Khetagurova, Dzukaeva, 2018).

To use the innovative potential of employees more fully, determined by their qualification level in the field of innovation, activation, and effectiveness of innovative activity of the enterprise can be applied various tools of motivational nature, for example:

1. material and moral encouragement of not only innovation but also innovation associated with the commercialization of the results of intellectual work through the creation of innovative products and their commercial implementation;
2. ensuring the maintenance of effective communication with colleagues both within and outside the firm;
3. recognition of the intellectual contribution of innovators and developers in the innovative development of the enterprise;
4. provision of possibility of career development of employees with a high level of formed competences, necessary for increasing the efficiency of innovative processes.

In total it is possible to allocate the following features of motivation of the personnel at the enterprises of innovative type in the conditions of activization of innovative processes within industry 4.0:

1. Motivation system should be formed in terms of the motivation of creative activity and creativity of employees in the sphere of innovations: employees should be provided with such conditions, under which they will be able to fully realize their personal innovative potential in the interests of economic development of the enterprise.
2. One of the essential motives inducing employees to unlock their innovation potential is "feeling their place" in an industrial company, namely, awareness of their importance and involvement in the development of the innovative activity of the enterprise.
3. The value of intangible incentives in modern industrial enterprises increases significantly, among them the provision of career development opportunities is actualized.

Motivational measures to stimulate the innovative activity of employees can be diverse for different participants of the innovation process (Table 1) (Sarris, 2019). Organizational support of any process is a set of subprocesses and actions leading to the improvement of interrelationships of elements of this process to obtain an effective result that meets certain program requirements and targets.

The process of personnel management of modern enterprises in the interests of innovative development requires the improvement of organizational support for employee motivation, aimed at the formation and development of qualification and competence levels of personnel in the field of innovation.

Table 1. Motivational measures to stimulate personnel to develop and implement innovations at high-tech enterprise

Group of participants in the innovation process	The purpose of motivation	The content of the activities that provide:	
		moral incentive	material incentive
Employees of research and development departments (creation of innovations - intellectual work).	Provide creative activity in intellectual work.	Participation in scientific and technical events (conferences, seminars, congresses). Publication of research results in scientific publications. Patenting of inventions, and utility models. Publication of monographs in foreign publishing houses.	Bonus payments are based on the results of research and development work. Subsidies for participation in scientific and technical events, publications of results of intellectual work, and patenting.
Engineering and technical employees and workers of production units involved in the implementation of innovations (creation of innovations - innovation activities).	Ensure innovative activity in innovative activities.	Preparing employees for innovation (removing barriers to "non-acceptance"), organizing and conduct of training sessions, questioning, developing of special measures to prepare employees for innovation.	Additional bonus payments for the development of measures to prepare employees for innovation.
Production personnel who are not directly involved in innovation processes.	Prevent opportunities for resistance to change (creative destruction).	Timely familiarization and moral preparation for changes aimed at innovative results.	Material encouragement to prepare a program to prevent resistance to change.

Source: Authors' own work.

Organizational support of innovation-oriented motivation of employees should not be localized exclusively within the HR service, it should penetrate "all pores" of the enterprise in the presence of an effectively functioning center of coordination and distribution of employees' resources in the field of innovation (Werkmann-Karcher, Rietiker, 2020).

The proposed set of organizational-economic and moral-psychological methods and tools of innovation-oriented motivation of employees with qualification levels in the sphere of innovations is shown and disclosed in table 2.

As the final target function of the innovation-oriented motivation of employees, it is possible to designate the effect of innovation, assuming (Ilyinskaya, Titova, 2012) the achievement of the effect of active influence of personality (labor collective) on change of public (economic and other) institutions with awareness of the moral responsibility for the initiated changes. And this effect becomes a determining factor in the deep transformation of existing or the emergence of new economic institutions.

Table 2. Tools for innovation-oriented motivation of employees

Tools	Contents of tools
1. Organizational and economic methods	
1.1. Remuneration	<p>1. Regulation of all payments, benefits, and privileges provided to the key employees for the sphere of innovation. Payment of remuneration to employees should be carried out in accordance with the adopted compensation policy of the enterprise. The level of remuneration should create sufficient motivation for the effective work of the personnel, allowing to attract and retain competent and qualified specialists on priority kinds of economic activity of the enterprise developed on the innovation basis.</p> <p>It is necessary to avoid the greater, than it is necessary, level of remuneration, and an unreasonably big gap between levels of remuneration of managers and other categories of employees.</p> <p>2. Implementation of a long-term motivation program for key employees, the elements of which may include the following.</p> <p>2.1. Current bonus payments to employees based on monthly performance results, for the proper performance of job duties according to the company's innovative development criteria.</p> <p>2.2 One-time incentive payments to employees, motivating for operative and qualitative implementation of innovative projects, especially urgent assignments, related to them; increased efficiency and labor effectiveness in the intellectual-innovative sphere; proposal of new approaches to the solution of tasks, initiative, persistence, resources saving, implementation of especially important and complicated tasks of innovative nature.</p> <p>2.3. One-time material aid of social orientation for different purposes (registration of marriage, birth of a child, death of close relatives, other emergency situations).</p> <p>2.4. "Golden parachute" – the amount of compensation paid in case of early termination of the powers of senior employees at the initiative of the company and in the absence of dishonest actions on the part of these employees.</p>
1.2. Professional development of employees	<p>Organization and conduct of innovation-oriented retraining and advanced training:</p> <ul style="list-style-type: none"> • establishment of requirements for the employee holding a certain position, with their reflection in the job description or work instruction; • analysis and assessment of knowledge, skills, and abilities of employees, their professional suitability and competence in the field of innovations; • identifying the need for training and retraining of newly hired employees; • training of employees transferred to new positions and areas; • periodic professional development for all categories of employees; • training of workers for the second and combined professions. <p>The enterprise establishes the required level of qualification and competence of personnel, provides training or retraining of employees, evaluates the effectiveness of conducted activities, and ensures that employees are aware of their contribution to the achievement of the enterprise's goals in the field of innovation. Professional development of employees should be aimed primarily at ensuring their competitiveness through improvement of professional competence; preparation of an internal candidate pool from among employees to fill managerial positions; cultivation of employees' desire for self-improvement and professional growth.</p>

Table 2 (cont.). Tools for innovation-oriented motivation of employees

Tools	Contents of tools
1. Organizational and economic methods	
1.3. Formation and maintenance of qualification and competence level of employees in the field of innovation.	<ol style="list-style-type: none"> 1. Maintaining relations with external sources of attracting qualified personnel and selection for vacant positions on the criterion of innovative competence. 2. Planning the business career of employees in accordance with the innovation strategy of the company and formation of a personnel reserve of the innovation sphere, including a reserve of managers. 3. Creation and maintenance of an information data bank of highly qualified personnel, as well as informational and technical support of the process of formation and development of qualification and competence level of employees in the innovation sphere. 4. Search for funding sources for the formation and development of qualification and competence levels of employees in the field of innovations.
1.4. Improvement of working conditions for innovation workers.	<ol style="list-style-type: none"> 1. Normalization and tariffication of the labor process of the personnel of the innovation sphere. 2. Improvement of indicators and methods of evaluation of the results of intellectual and innovative activity. 3. Involvement of highly qualified and competent in the field of innovations specialists in enterprise management.
2. Moral and psychological methods	
Creating conditions for the social protection of employees, creating a favorable social and psychological climate, as well as creating a positive image of the enterprise in the economic environment (its external and internal levels).	<ol style="list-style-type: none"> 1. Provision of employees with free medical care under voluntary health insurance contracts. 2. Introduction of a system of partial compensation of employees' food costs. 3. Incentive payments: for anniversaries; based on the results of work in the reporting period; for vacations. 4. Organization of communication of veterans and pensioners with the enterprise: organization of festive events, and social assistance. 5. Social and psychological diagnostics of personnel and candidates. 6. Maintaining a favorable moral and psychological climate in the work collective. 7. Formation and management of organizational culture in the field of innovation management and innovative economy. 8. Application of various forms of moral encouragement of innovative employees, aimed at establishing and supporting their status at the enterprise.

Source: Authors' own work.

At the theoretical level, this effect has been substantiated by various positions. Its philosophical, psychological, sociological, anthropological, and economic justifications are known. In particular, the economic foundations of innovation are argued within the scientific school of Hays D. (Hays, 2021), whose approach reveals the innovative essence of entrepreneurship and the conditionality of innovative development of socio-economic systems by the activity of entrepreneurial activity, aimed at creating a new combination of production factors, generating new goods, markets, methods of production, sources of

involvement of production factors, structural changes at the enterprise and branch level. Entrepreneurship of this kind is innovative in its subject and sphere of activity, and therefore, has a specific resource base, formed by the intellectual resources of employees (at individual and collective levels). In this regard, the need to develop not only managerial approaches but also tools for their implementation, allowing to increase the labor efficiency of employees of innovatively active industrial enterprises becomes more acute.

4. CONCLUSIONS

As a rule, at present, the motivation of employees focused on the innovative result, contributing to the formation and development of their qualification level in the field of innovation, is not sufficiently systematic. This managerial aspect is present at best in the management of large, advanced companies, but as part of other functions of personnel management or intellectual resources of the enterprise. At the same time in the Ukrainian practice of management today, there is a lack of competent employees, trained for the specifics of innovation activities, who understand the logic of the innovation process at the modern level of industry 4.0. The subjects-practitioners of the Ukrainian economy have an increasing need for intra-firm organization of motivation of formation and development of qualification level of employees in innovation, which leads to the practical importance of the proposed tools to attract, motivate, and retain persons with the necessary qualification level in the field of innovation.

If at the present level of development of management science in the field of personnel, human resources, and intellectual capabilities of employees in the theory and methodology there is a predominance of traditional approaches to management, not quite effective in conditions of active innovative transformations. Existing, as a result, unresolved issues at the level of theory and methodology of HR management, due to the intensification of innovative processes in the economy, affect the practical impossibility of ensuring effective personnel management in the new economic conditions. This article is devoted to filling the identified gaps at the theoretical and practical levels. The results of the study are useful and necessary for the formation and development of a theoretical and methodological basis for improving the organization of personnel management of innovatively active enterprises. It can be used in the development of tools, methods, systems, as well as mechanisms of management of innovation-oriented motivation of employees, allowing to maximize the effect of innovation, which is necessary to ensure sustainable innovative development of economic entities of the national economy.

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REFERENCES

- Dolgalova, O. (2018). *The scientific basis for the sustainable development of the regional economy*. "Financial and credit activity: problems of theory and practice", Vol. 1, No. 24.
- Dolgalova, O., Yeshchenko, M., Fasolko, T., Mykhalchenko, H., Udovychenko, I. (2020). *Legal provision of the state administration of the ecological component of sustainable socio-economic development*. "Management Theory and Studies for Rural Business and Infrastructure Development". Kaunas, Lithuania: Vytautas Magnus University. Vol. 42, No. 4. DOI: 10.15544/mts.2020.42.
- Eden, C. (2020). *Cognitive mapping*. "Eur. J. of Operational Res.", Vol. 36, No. 1–13.
- Hays, D. (2021). *Cognitive Structures*, New Haven: HRAF Press.
- Ilyinskaya, E.M., Titova, M.N. (2012). *Systemic and institutional characteristics of Werkmann-Karcher B., Rietiker J. (2020). "Innovative development of economy. Innovations"*, No. 9(167).
- Kelly, G.A. (2022). *The psychology of personal constructs. A theory of personality*. 750 First Street NE. Washington. "American Psychological Association", Vol. 1.
- Khetagurova, I.Y., Khetagurova, T.G., Dzukaeva, D.M. (2018). *Personnel policy in the framework of the new technological mode "Industry 4.0" and "Society 5.0"*. "Economics and Entrepreneurship", No. 2(91).
- König, C., Stahl, M., Wiegand, E. (2016). *Human Resources*. Wiesbaden: Springer Fachmedien.
- Lazear, E. (2016). *Personal Economics in Practice Edward P.* New Jersey: Lazear. John Wiley and Sons Ltd.
- Loop, M. (2016). *Managing Humans: Biting and Humorous Tales of a Software Engineering Manager*. New York: Apress.
- Maruyama, M. (2021). *Interwoven and Interactive Heterogeneity in 21st Century*. "Technological forecasting and social change", Vol. 45, No. 1.
- Milner, B. (2021) *Innovational development: economy, intellectual resources, knowledge management*. Moscow: INFRA-M.
- Rosenberger, B. (2021). *Modernes Personalmanagement: Strategisch – operativ – systemisch*. Wiesbaden: Springer Gabler.
- Sarris, V. (2019). *Max Wertheimer: Productive thinking*. Frankfurt am Main, Springer Spektrum.
- Werker, S. (2020). *Valuation and cognitive perception of real options: Simulation-based and experimental analyses in the context of the energy industry ("Business Research in Accounting", Vol. 18)*. Wiesbaden, Peter Lang GmbH, Internationaler Verlag der Wissenschaften; New Edition.
- Werkmann-Karcher, B., Rietiker, J. (2020). *Angewandte Psychologie für das Human Resources Management*. Wiesbaden: Springer-Verlag GmbH.