JEL Classification: M12

UDC 330.322.5

DOI: 10.30857/2415-3206.2024.2.9

THEORETICAL AND METHODOLOGICAL APPROACHES TO ASSESSING THE FORMATION OF INNOVATIVE DEVELOPMENT OF HUMAN POTENTIAL OF SMALL AND MEDIUM BUSINESSES

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THE PURPOSE OF THIS ARTICLE is a study of the features of the formation and assessment of innovative development of human potential in the activities of small and medium-sized businesses.

RESEARCH METHODS. In the process of writing the article, general scientific and special research methods were used on the problem of formation and innovative development of human potential in SMB, including: system-structural approach; competency-based approach; integral-index approach.

PRESENTATION OF THE MAIN RESEARCH MATERIAL. The article clarifies the essence of the concept of "human potential", which is understood as a set of knowledge, skills and competencies of employees that are accumulated throughout life and used to increase labor productivity and income. It is proven that human potential is one of the factors of increasing competitiveness and sustainable development of SMB. The level of innovative development of human potential of SMB involves the implementation of an assessment, which is carried out on the basis of the choice of a system of indicators and methods that reflect the contribution of personnel to the generation, adaptation and implementation of innovations. The main indicators of assessing the innovative development of human potential of SMB are summarized, which include: personnel innovation coefficient; human capital ROI; Human Capital ROI; competency index; personnel indicators of the Balanced Scorecard. The main theoretical and methodological approaches to assessing the formation of innovative development of human potential of SMB are systematized, which include the following: system-structural approach; competency-based approach; integral-index approach. Assessment of the innovative development of human potential of SMB using the system-structural approach defines human potential as a multi-level hierarchical structure consisting of interconnected elements, each of which plays a key role in ensuring the innovative development of the enterprise. According to the competency approach, the assessment of the innovative development of human potential is based on the concept that the effectiveness of employees is determined not only by the level of their education or experience, but primarily by the presence of key competencies that ensure their ability to realize innovative potential. According to the integral-index approach, a generalized index of the innovative development of human potential is formed. An algorithm for a comprehensive assessment of the innovative development of human potential of small and medium-sized businesses has been developed, which is based on a combination of the advantages of the system-structural approach; competency-based approach; integral-index approach.

CONCLUSIONS FROM THE CONDUCTED RESEARCH. In modern conditions, human potential is a key resource for ensuring sustainable innovative development of small and medium-sized businesses in the context of economic transformation, increased global competition, and digitalization of production and economic processes. The effectiveness of its activities requires a comprehensive assessment with the calculation of a number of indicators.

KEYWORDS: human potential; small and medium-sized businesses; innovative development of human potential; system-structural approach; competency-based approach; integral-index approach.

NUMBER OF REFERENCES	NUMBER OF FIGURES	NUMBER OF TABLES
20	2	5

JEL Classification: M12

УДК 330.322.5

DOI: 10.30857/2415-3206.2024.2.9

ТЕОРЕТИКО-МЕТОДИЧНІ ПІДХОДИ ДО ОЦІНКИ ФОРМУВАННЯ ІННОВАЦІЙНОГО РОЗВИТКУ ЛЮДСЬКОГО ПОТЕНЦІАЛУ МАЛОГО І СЕРЕДНЬОГО БІЗНЕСУ

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МЕТОЮ ДАНОЇ СТАТТІ є дослідження особливостей формування та оцінки інноваційного розвитку людського потенціалу в діяльності підприємств малого та середнього бізнесу.

МЕТОДИ ДОСЛІДЖЕННЯ. В процесі написання статті використано загальнонаукові та спеціальні методи дослідження з проблеми формування та інноваційного розвитку людського потенціалу на підприємствах МСБ, серед яких: системно-структурний підхід; компетентністний підхід; інтегрально-індексний підхід.

ВИКЛАД ОСНОВНОГО МАТЕРІАЛУ ДОСЛІДЖЕННЯ. В статті з'ясовано сутність поняття «людський потенціал», під яким розуміють сукупність знань, навичок і компетенцій працівників, що накопичуються протягом життя і використовуються для підвищення продуктивності праці та доходів. Доведено, що людський потенціал є одним з чинників підвищення конкурентоспроможності та сталого розвитку МСБ. Рівень інноваційного розвитку людського потенціалу підприємств МСБ передбачає здійснення оцінювання, яке проводиться на основі вибору системи показників та методів, що відображають вклад персоналу у генерування, адаптацію й впровадження інновацій. Узагальнено основні показники оцінювання інноваційного розвитку людського потенціалу МСБ, до яких віднесено: коефіцієнт інноваційності персоналу; ROI людського капіталу; Human Capital ROI; індекс компетенцій; показники персоналу Збалансованої системи показників. Систематизовано основні теоретико-методичні підходи до оцінки формування інноваційного розвитку людського потенціалу МСБ, до яких віднесено такі: системно-структурний підхід; компетентністний підхід; інтегрально-індексний підхід. Оцінка інноваційного розвитку людського потенціалу МСБ за системно-структурним підходом визначає людський потенціал як багаторівневу ієрархічну структуру, що складається з взаємопов'язаних елементів, кожен з яких відіграє ключову роль у забезпеченні інноваційного розвитку підприємства. За компетентнісним підходом оцінка інноваційного розвитку людського потенціалу ґрунтується на концепції, що ефективність працівників визначається не лише рівнем їхньої освіти чи досвіду, а передусім наявністю ключових компетентностей, які забезпечують їхню здатність до реалізації інноваційного потенціалу. За інтегрально-індексним підходом формується узагальнений індекс інноваційного розвитку людського потенціалу. Розроблено алгоритм комплексного оцінювання інноваційного розвитку людського потенціалу малого і середнього бізнесу, який базується на поєднанні переваг системно-структурного підходу; компетентністного підходу; інтегрально-індексного підходу.

ВИСНОВКИ З ПРОВЕДЕНОГО ДОСЛІДЖЕННЯ. В сучасних умовах людський потенціал виступає ключовим ресурсом забезпечення сталого інноваційного розвитку малого і середнього бізнесу в умовах трансформації економіки, посилення глобальної конкуренції та цифровізації виробничо-господарських процесів. Ефективність його діяльності потребує комплексного оцінювання з розрахунком низки показників.

КЛЮЧОВІ СЛОВА: людський потенціал; малий та середній бізнес; інноваційний розвиток людського потенціалу; системно-структурний підхід; компетентністний підхід; інтегрально-індексний підхід.

Statement of the problem. In the context of increasing global competition and rapid scientific and technological progress, the innovative development of human potential is becoming a key factor in ensuring the competitiveness and sustainable development of small and medium-sized businesses (SMB), which is "based on intellectual capital and innovations, the complexity of production processes, the development of information infrastructure, and the increase in the level of knowledge-intensiveness of manufactured products" (Zabashta, 2024). Human capital, as a carrier of knowledge, skills, creativity, and entrepreneurial initiative, is becoming a strategic resource for adapting SMB to dynamic changes in the external environment, implementing innovative solutions, smart technologies, and forming new business models. However, in conditions of limited financial, material, and human resources, SMB face numerous challenges in the field of personnel development, which requires a comprehensive assessment and implementation of modern effective theoretical and methodological approaches to the formation of innovative development of the human potential of employees. This, in turn, requires theoretical justification and practical development of effective tools for assessing and managing the innovative development of human potential, taking into account the specifics of SMB.

Analysis of recent publications on the problem. The problem of the formation and development of human potential of enterprises is studied in the works of such domestic scientists as: Ya. Antipenko, R. Botvinov, L. Bublyk, M. Gaba, N. Demchyshak, S. Duga, O. Dulyaba, A. Zhydyk, N. Kovtun, Yu. Kovtun, M. Kucher, L. Lisovska, R. Loik, N. Nebaba, M. Nochka, O. Pidvalna, O. Polishchuk, O. Popov, S. Strilets, Yu. Tovt, A. Yurchyk and many others. Despite the significant scientific achievements on the formation and development of human potential of enterprises, further in-depth research is required to develop methodological support for the processes of assessing human potential, to form modern approaches and methods for assessing its innovative development in the digital economy, as well as the need to integrate innovative, educational and managerial practices in managing human potential in SMB.

Statement of the main results and rationale. Small and medium-sized businesses (SMB) are an important component of the Ukrainian economy, where human potential is a key resource for ensuring competitiveness and innovative growth. The evolutionary development of the economy and the transition to a digital economy "is based on intellectual capital and innovations, the complexity of production processes, the development of information infrastructure, and an increase in the level of knowledge-intensiveness of manufactured products" (Zabashta, 2024). Simultaneously with the development and implementation of new technologies in the activities of SMB,

transformational changes and the development of enterprise personnel must take place. In conditions of martial law, the emphasis on innovative personnel development becomes especially relevant. Thus, the national indicator, the Human Development Index (HDI), indicates a high level of human potential in the country (HDI of Ukraine is 0.734) (United Nations Development Programme, 2024), but also indicates the need for its constant increase through education, healthcare, and income growth. At the same time, the innovative component of the human potential of SMB is determined not only by formal education or professional skills, but also by creativity, motivation, and the ability to generate new ideas (Duga, 2024).

Human capital is traditionally considered as a set of knowledge, skills and competencies of employees that accumulate throughout life and are used to increase labor productivity and income. High-quality human capital also includes motivation, innovative potential, ability to learn and adapt. That is, the innovative potential of personnel is their ability to generate new ideas, implement technological and organizational innovations. The quality of human capital includes such components as motivation, creativity, innovation and adaptability of employees, which form the basis for the effective use of intellectual resources in the organization (Duga, 2024).

Innovative development of SMB is determined by the synergistic interaction of human and production potential. Small and medium-sized enterprises, due to their flexibility, can introduce innovations faster, but this requires adequate management decisions and support from the state. Thus, state policy provides for tools to stimulate innovation in SMB, from state grants and tax breaks to cluster programs and business incubators. The state policy for the development of human capital should be based on priority measures to reform the healthcare system, create an innovative environment in the education system, optimize the structure of vocational training of labor resources in accordance with the needs of the innovative economy; create new programs for the formation of a continuous education system and regular advanced training of human capital, social support, and create a safe living environment (Tereshchenko, 2019). Assessing the impact of such policies on the formation of innovative human potential requires the use of scientifically sound methods that take into account the specific realities of the Ukrainian business environment (the economy's dependence on raw materials, war, European integration, digitalization, etc.).

Assessment of the innovative development of human potential of SMB is carried out on the basis of the selection of a system of indicators and methods that reflect the contribution of personnel to the generation, adaptation and implementation of innovations. Among the main indicators used are the following:

1. Personnel innovation coefficient (PI) – an indicator that reflects the share of employees involved in innovation activities, which is calculated as the ratio of the number of employees participating in the development and implementation of innovation projects to the total number of employees of the enterprise:

$$К_{інн} = Р_{інн}/Р_{заг}, \quad (1)$$

where $Р_{інн}$ – number of employees working on innovation projects;
$Р_{заг}$ – total number of personnel.

This coefficient assesses the level of innovative activity of the enterprise's human resources.

2. Human capital ROI is an indicator of the profitability of investments in human capital, which allows you to assess the economic return on investments in training, selection, adaptation and retention of personnel. The formula for human capital ROI is given below in the form of a ratio of profit to costs:

$$ROI_{лк} = (\text{Income} – \text{Expenses}) / \text{Income}. \quad (2)$$

The balance between these indicators allows us to analyze how much investment in people (training, advanced training, talent acquisition) pays off in additional profits for the company (Pidvalna & Antipenko, 2025).

This approach is widely used to quantify the economic efficiency of HR projects. As noted in studies (Pidvalna & Antipenko, 2025), ROI in the field of human resources management takes into account not only direct financial effects (for example, savings through automation of routine functions), but also indirect benefits from increased productivity and reduced staff turnover.

3. Human Capital ROI (HCROI) – a specialized model that determines the ratio of a company's net profit to total personnel costs. The calculation formula is as follows:

$$\text{HCROI} = \text{Net profit} / \text{Total personnel expenses}. \quad (3)$$

This indicator allows you to assess how effectively the company uses its intellectual and labor potential. A high HCROI means that for every dollar spent on personnel, there is a significant profit. For example, companies with a high HCROI are 2.5 times more likely to show revenue growth compared to competitors, which indicates the importance of investing in human resources development.

4. Competency Index (CI) – is assessed through an average score that reflects the level of employee qualification. The higher this score, the more qualified personnel work at the enterprise:

$$Iк = 1/n \sum_{i=1}^{n} Bi, \quad (4)$$

where Vi – score for each competency criterion;
n – number of assessment criteria.

5. Balanced Scorecard (BSC) – an approach to assessing the quality of human capital management, which includes financial and non-financial metrics from several perspectives. When implementing BSC, indicators of training and development, internal processes, staff motivation and financial results are considered. This methodology allows quantitatively linking investments in personnel with the overall efficiency of the enterprise (Duga, 2024).

Scientists propose to assess the formation of innovative development of human potential of SMB using the following approaches: integrated approach; innovation approach; educational approach; cost-based approach; income-based approach; indirect income approach; human development index approach (Demchyshak & Loik, 2024; Nochka, 2022; Khovrah, 2015).

Among the main theoretical and methodological approaches to assessing the formation of innovative development of human potential of small and medium-sized businesses are the following:

1. System-structural approach to assessing the innovative development of human potential of small and medium-sized businesses - considers human potential as a multi-level hierarchical structure consisting of interconnected elements, each of which plays a key role in ensuring the innovative development of the enterprise. This approach allows you to assess not only the availability of human resources, but also the quality, functional integrity and interaction of the components that form the innovative potential of the personnel of small and medium-sized businesses. This structure is conventionally divided into three levels: basic, medium and higher, which correspond to different aspects of personnel development (Table 1).

Table 1

Levels of personnel development according to the system-structural approach

Level	Elements	Indicators for evaluation
Base	Level of formal education: the availability of diplomas of higher, pre-university or vocational education; Qualification compliance: the extent to which vocational education meets the needs of the enterprise; Vocational training and retraining: taking courses, certificates, technical training.	1. Percentage of employees with higher education. 2. Percentage of employees with technical or specialized training. 3. Number of certifications per employee.

End Table 1

Level	Elements	Indicators for evaluation
Average	Available skills: technical, managerial, digital; Formed professional competencies: creativity in solving problems; communication skills; ability to work in a team; independence and initiative; practical experience in innovative or crisis environments.	1. Average length of service in the field of activity. 2. Assessment of the level of competencies based on the results of certification. 3. Number of projects in which the employee participated. 4. Number of trainings and workshops completed over the past year.
Higher	Innovative activity: initiating changes, participating in innovations, presenting ideas. Creativity: the ability to generate non-standard solutions. Digital literacy: fluency in digital tools, programs, platforms; initiative in implementing new technologies, as well as readiness for independent learning in a digital environment.	1. Percentage of employees participating in innovation projects. 2. Number of submitted innovation proposals. 3. Level of mastery of digital technologies (assessment, testing). 4. Availability of original developments, startup ideas.

Source: systematized by the authors.

From Table 1 it is clear that at the basic level the readiness of personnel to master innovative knowledge is assessed – the ability to perceive new technologies and methods, which is the basis for the formation of innovative capacity. The average level is the "functional core" of human potential, which reflects the professional maturity of the employee and his ability to effectively implement innovative tasks. The higher level is decisive in the context of assessing the innovative development of human potential, which characterizes the innovative elite of the enterprise, which is the driver of change and adaptation to the challenges of the modern economy.

Thus, the system-structural approach allows for a comprehensive assessment of human potential in terms of its readiness for innovative activity, which involves a multi-level analysis – from basic educational characteristics to a complex system of innovative competencies and digital creativity. Such a structure creates the basis for planning personnel development, the formation of mentoring programs, digital training and innovative motivation. The implementation of this approach in SMB provides more accurate management of human capital as a strategic resource for development.

2. Competency approach – is based on the concept that the effectiveness of employees is determined not only by the level of their education or experience, but primarily by the presence of key competencies that ensure their ability to

realize their innovative potential. This approach is relevant in the context of economic transformation, when the nature of work is changing, the requirements for digital skills, adaptability, creativity and the ability to continuous professional development are increasing. Among the main characteristics of the competency approach are: focus on practical skills and behavioral indicators; assessment of the real ability to act in certain situations; a holistic vision of the employee as a participant in innovation processes; formation of a competency map for a specific position or field of activity.

Key employee competencies for innovative development in SMB are given in Table 2.

Table 2

Key employee competencies for innovative development in small and medium-sized businesses

Competencies	Signs	Evaluation methodology
Cognitive competencies (reflect the intellectual potential of the employee)	1. Ability to perceive, analyze and interpret information. 2. Critical and systemic thinking skills. 3. Ability to quickly adapt to new knowledge and technologies. 4. Ability to learn throughout life (lifelong learning).	1. Survey on the frequency of participation in courses, certifications, self-education. 2. Logical thinking tests.
Communicative competences (team interaction)	1. Ability to communicate effectively. 2. Presentation and advocacy skills. 3. Ability to listen, argue, and persuade. 4. Tolerance for criticism and openness to feedback.	1. Observation of behavior in group tasks. 2. 360° assessment. 3. Participation in projects with cross-functional teams.
Digital competences (ICT proficiency)	1. Ability to use office and industry programs. 2. Knowledge of the basics of cybersecurity, cloud solutions, CRM systems. 3. Ability to work with large amounts of data, analytical platforms. 4. Use of digital tools for communication, management, control.	1. IT literacy testing. 2. Practical cases. 3. Digital portfolio.
Innovation and design competencies (ability to create and implement innovative ideas)	1. Ability to formulate problems and find creative solutions. 2. Participation in the development of new products, technologies, business models. 3. Ability to work with uncertainty and risks. 4. Skills in applying project management tools.	1 Analysis of involvement in innovative projects. 2. Initiative management, case interviews. 3. Expert assessment of participation in hackathons, business incubators, startups.

Source: grouped by the authors according to (Kucher, Zhydyk, Tovt & Strylets, 2024; Polishchuk, Kovtun & Kovtun, 2023; Popov, Botvinov & Nebaba, 2024; Tyagunova & Tyagunova, 2023; Fedorchuk & Sukhovirskyi, 2024).

From Table 2, it is clear that the main advantages of using a competency approach are that it:

– allows you to identify the hidden potential of employees, and not only their formal qualifications;

– contributes to the personalization of personnel development – the creation of individual training plans;

– provides a systemic basis for HR solutions – hiring, performance appraisal, motivation;

– stimulates an innovative culture in SMB, as it forms a behavioral model of openness to change.

Therefore, the competency approach is not just a means of measuring the qualities of an employee, but a tool for strategic human capital management that contributes to the formation of an enterprise's innovative capacity. In the context of SMB, where resources are limited and flexibility is critical, it is competencies that become the basis for the formation of competitive advantages.

3. Integral-index approach – is used to form a generalized index of innovative development of human potential. The integral-index approach is one of the most widespread and methodologically sound methods of quantitative assessment of complex socio-economic phenomena, in particular, the innovative development of human potential in small and medium-sized businesses. The integral-index approach consists in forming a generalized quantitative indicator that reflects the level of development of human potential, taking into account the innovative component.

The conceptual basis of the integral-index approach is that human potential is a multidimensional phenomenon consisting of various characteristics of employees, such as: educational level, professional mobility, involvement in innovative processes, ability to learn, initiative, creativity, etc. Each of these characteristics can be represented as a partial indicator. Thus, the integral-index approach allows:

– bring all indicators to a single measurement scale (standardize);

– determine the relative weight of each indicator;

– calculate the overall index of innovative development of human potential.

The main stages of implementing the integral-index approach are:

Step 1. Defining a set of indicators (parameters). It is recommended to identify several groups of indicators that cover key aspects (Table 3).

Step 2. Standardization of indicators. Indicators should be reduced to a dimensionless scale, for example, by normalization:

$$x_i^{cm} = \frac{x - \min(x)}{\max(x) - \min(x)}, \quad (5)$$

where x_i^{cm} – standardized value of the i-th indicator; x_i – actual value of the indicator; $\min(x), \max(x)$ – respectively the minimum and maximum values in the data set.

Table 3

Key indicators in the process of implementing the integral-index approach

Group	Indicators
Educational level	Share of employees with higher education, with innovative specialization.
Professional activity	Number of initiatives/ideas per employee.
Training and advanced training	Number of hours of training per year, participation in trainings.
Innovative inclusion	Share of employees involved in R&D or startups.
Cognitive competence characteristics	Level of creative thinking, self-assessment of readiness for change.

Source: summarized by the authors.

Step 3. Determination of weight coefficients. They can be determined:

– by the expert method (through a survey of specialists);

– by the analytical method (based on variance analysis or the principal components method);

– evenly (all weights are the same if there is no reason for their differentiation).

Step 4. Calculation of the integral index.

The integral indicator of innovative development of human potential is calculated by the formula:

$$I_{ІРЛП} = \sum_{i=1}^{n} \omega_i \cdot x_i^{cm}, \quad (6)$$

were $I_{ІРЛП}$ – integral index of innovative development of human potential; x_i^{cm} – standardized indicator values; ω_i – standardized indicator values; n – number of indicators.

Step 5. Interpretation of results. The index value can be interpreted on the scale:

0–0.3 – low level of innovative development;

0.3–0.6 – medium level;

0.6–1.0 – high level.

Thus, it can be noted that the main advantages of the integral-index approach are that it: provides a quantitative assessment of the state of human potential; allows you to compare different enterprises or periods in dynamics; is the basis for strategic planning of personnel policy; allows you to identify imbalances in the development of individual components.

Assessment of the innovative development of human potential of small and medium-sized businesses requires carefully selected tools that allow not only to record the current state, but also to identify potential growth opportunities. An effective toolkit should combine quantitative and qualitative indicators, take into account the dynamics, level of innovative activity and adaptability of personnel to changes. The toolkit for assessing the innovative development of human potential of small and medium-sized businesses is given in Table 4.

Table 4

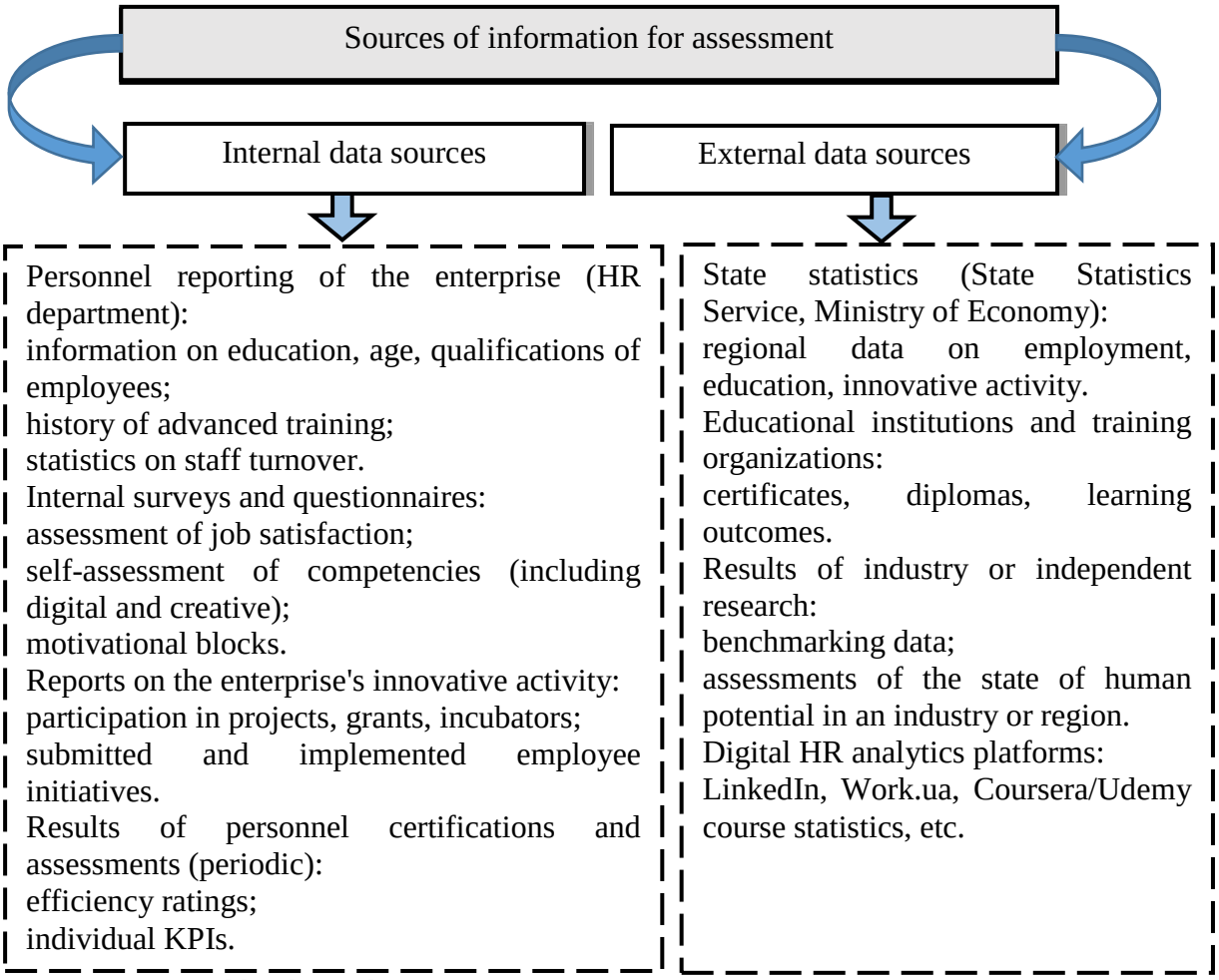
Toolkit for assessing the innovative development of human potential of SMB

Evaluation indicators	Ingredients
Evaluation indicators	Share of employees with higher education (%).
	Share of employees with innovation-oriented education (STEM, IT, engineering).
	Availability of academic degrees among employees.
Professional qualification block	Average length of service in the profession (years).
	Share of employees who have been certified or attested in the last year.
	Number of employees who have improved their skills in the last 12 months.
Innovation block	Share of employees involved in the development of new products/services (%).
	Number of innovative ideas initiated by staff (average per employee).
	Share of employees involved in design or R&D activities.
Motivational and value block	Employee satisfaction index with their professional activities (on a scale).
	Internal Innovation Culture Index (survey).
	Employee satisfaction index with their professional activities (on a scale).
Digital block	Share of employees with digital competencies (according to internal or external certification).
	Number of employees using digital tools in their daily activities.
	Level of ICT literacy of staff (based on testing or questionnaire results).
Creative and communicative block	Number of team projects in which employees participated.
	Frequency of participation in internal/external events (hackathons, idea competitions, etc.).
	Assessment of openness to collaboration and interdisciplinary interaction (based on surveys).

Source: grouped by authors (Dulyaba & Yurchik, 2024; Karpenko & Karpenko, 2025; Lisovska, Gaba & Bublyk, 2024; Pustovhar, 2022; Savchuk, 2018; Sakhnenko, 2020; Pospielova, Marukhlenko & Rudenko, 2024].

From Table 4 it is clear that the assessment indicators can be standardized for comparison between enterprises or over time. It is recommended to use both absolute and relative values to obtain detailed information.

The reliability and representativeness of the assessment of human potential depends on the quality of the primary data. Within the framework of an integrated approach, it is advisable to use both internal and external sources (Fig. 1).



Source: proposed by the authors.

Fig. 1. **Basic sources of information for assessing the level of innovative development of human potential in SMB**

Therefore, a correctly selected set of indicators and a combination of various sources of information allow obtaining an objective and full assessment of the level of innovative development of human potential in SMB. It is also important to ensure regular data collection and transparency of interpretation of results in order to form effective management decisions.

The process of assessing the formation of innovative development of human potential in small and medium-sized businesses should be implemented in stages, with strict adherence to the logic of the study: from setting goals to forming conclusions and management decisions. Each stage has its own methodological specifics and set of tools.

Stage 1. Setting assessment goals. The first step is to clearly define the purpose of the study and set tasks that will identify problem areas or prospects for the development of human potential. It is important to formulate the expected result of the assessment (Table 5).

Table 5

Expected assessment result from Stage 1

Main types of goals	Basic actions
Analysis of the current state of innovative personnel development.	1. Identification of key competencies to be assessed (innovative activity, creativity, digital skills, etc.). 2. Formation of a system of indicators or a competency matrix for quantitative assessment.
Identifying weaknesses in the structure of competencies, motivation levels, and digital literacy.	
Formation of a personnel development plan, training programs, personnel rotations.	
Benchmarking – comparison with similar enterprises in an industry or region.	

Source: suggested by the authors.

Stage 2. Data collection. At this stage, primary and secondary information necessary for further analysis is accumulated. It is advisable to use a combination of methods – both quantitative and qualitative. Here, the main methods of data collection are:

– personnel questionnaires – conducted to obtain information about self-assessment of competencies, readiness for change, level of motivation, innovative activity;

– analysis of the educational and qualification structure – the level of education, specialization, completion of advanced training courses, certificates are studied;

– conducting interviews and expert assessments – in-depth interviewing of key employees, managers or external consultants to clarify qualitative characteristics.

At this stage, it is important to ensure the representativeness of the personnel sample and the confidentiality of the survey.

Stage 3. Norming and calculations. The collected data is subject to mathematical processing, in particular standardization, calculation of indices and composite indicators, which allows moving from "raw" data to comparable analytical results:

– indicator normalization – bringing data to a single scale for further combination;

– calculation of generalized indices/ratings – for example, the index of innovative human potential, the index of digital competence, the index of motivational potential;

– comparative analysis – carried out between divisions, staff levels, as well as with past periods or industry benchmarks.

Stage 4. Visualization and interpretation. The final stage is the interpretation of the calculated indicators, their visual presentation and the formation of conclusions and management recommendations, which allows transforming the data set into analytical conclusions understandable to managers. The main results will be:

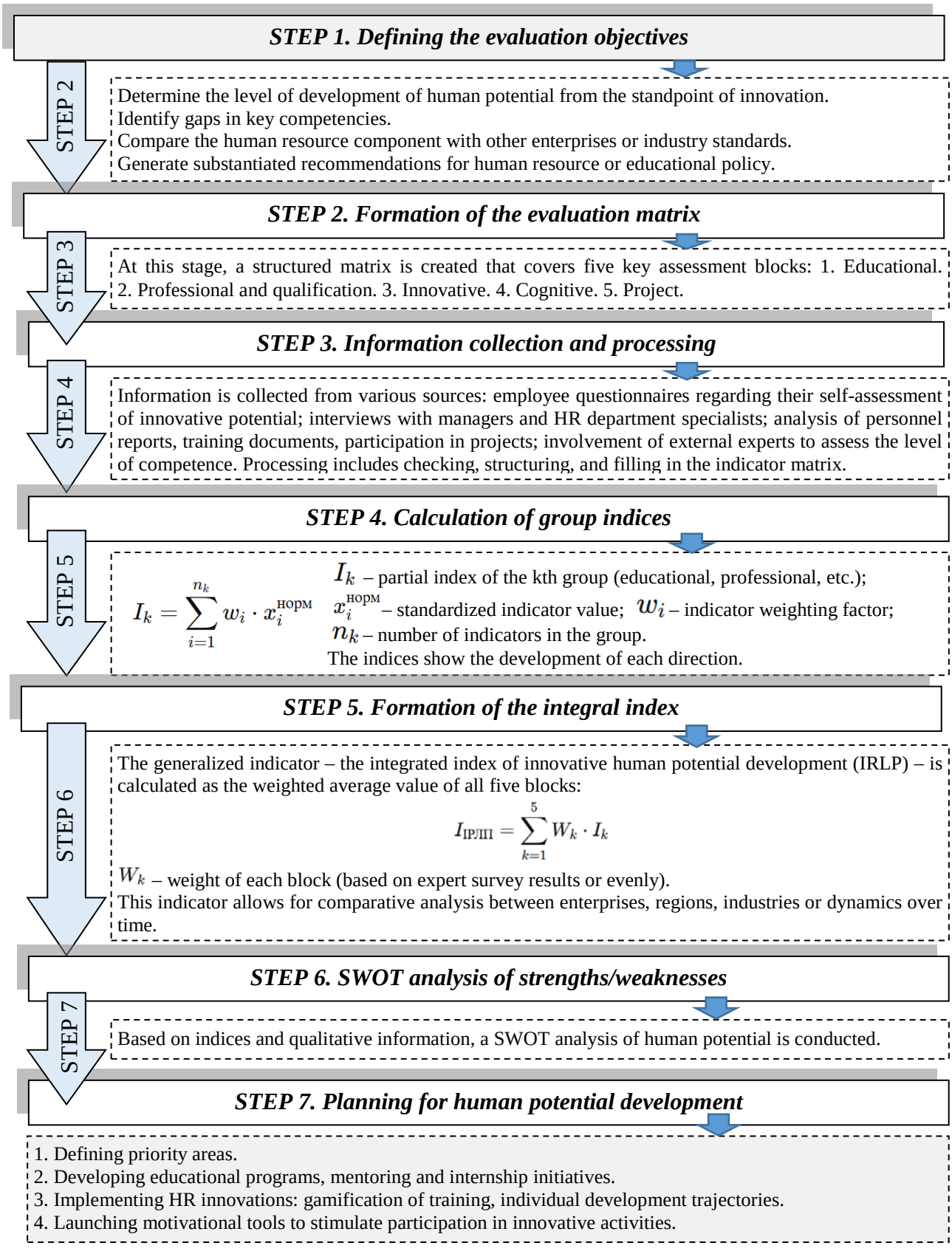
1. The current profile of the enterprise's human potential is formulated.
2. Critical areas that require immediate intervention are identified.
3. Proposed areas of development – training programs, motivational measures, rotations, strategic personnel initiatives.

Thus, the staged nature of the assessment allows ensuring the logic of the analytical process (from setting goals to forming substantiated recommendations), which in turn minimizes subjectivity, improves the quality of management decisions and contributes to the strategic development of SME human capital in an innovative dimension.

A comprehensive assessment of the innovative development of human potential in SMB requires not only a clear staged approach, but also a systemic logic that combines quantitative and qualitative components. The algorithm proposed below (Fig. 2) is an author's methodology based on a combination of system-index, competency-based and expert approaches, covering eight consecutive steps, each of which has its own methodological value.

This algorithm will help to conduct a systematic and comprehensive assessment, take into account not only factors, but also the motivational component, compare indicators over time and between enterprises and focus on making practical decisions.

Thus, we have determined that the assessment of the formation of innovative development of human potential of SMB is a complex but extremely important process, the implementation of which contributes to increasing the competitiveness of enterprises, adaptation to digital challenges and creating the foundations for sustainable innovative growth. A rational combination of quantitative and qualitative assessment methods, the use of integral indices, SWOT analyses, expert assessments allows not only to record the current state, but also to form strategies for long-term personnel development, where in conditions of rapid change, human potential is the main investment of the enterprise, and its innovative component is a determining factor for future success.



Source: author's development.

Fig. 2. **Algorithm for comprehensive assessment**

Conclusions and prospects for further research. In conclusion, it should be noted that human potential is a key resource for ensuring sustainable innovative development of small and medium-sized businesses in the context of economic transformation, increased global competition and digitalization of production and economic processes. However, for effective management of this resource, it is necessary not only to form it qualitatively, but also to constantly monitor and evaluate it from the standpoint of innovative capacity. It was found that the innovative component of human potential includes not only the educational and qualification characteristics of personnel, but also the ability to think creatively, openness to change, participation in the development and implementation of innovations, possession of digital skills, as well as motivation for self-realization in the context of constant updating of knowledge. This approach allows us to take a new look at the formation of the personnel strategy of enterprises, focused not only on meeting current needs, but also on the formation of a future personnel core of an innovative type.

In the future, the effective application of methodological approaches to assessing the innovative development of human potential should become the basis for the formation of strategic personnel management based on the principles of flexibility, adaptability, and orientation towards continuous learning and development. It is this approach that will allow small and medium-sized enterprises not only to maintain their competitive positions, but also to play an active role in the development of the country's innovative economy.

REFERENCES:

Zabashta, E. (2024). Teoretychni aspekty formuvannia sutnosti innovatsiinoho pidpryiemnytstva ta yoho rozvytku [Theoretical aspects of the formation of the essence of innovative entrepreneurship and its development]. *Ekonomika ta suspilstvo = Economy and Society*, Vol. 61. DOI: https://doi.org/10.32782/2524-0072/2024-61-90 [in Ukrainian].

Duga, S. (2024). Teoretyko-metodychni pidkhody do otsinky yakosti liudskoho kapitalu: suchasnyi aspekt [Theoretical and methodological approaches to assessing the quality of human capital: a modern aspect]. *Ekonomika ta suspilstvo = Economy and Society*, Vol. 68. DOI: https://doi.org/10.32782/2524-0072/2024-68-9 [in Ukrainian].

Demchyshak, N. B. & Loik, R. V. (2024). Pidkhody do upravlinnia konkurentospromozhnistiu liudskoho kapitalu v umovakh intelektualizatsii ekonomiky ta intehratsii osvity, nauky i biznesu [Approaches to managing the competitiveness of human capital in the conditions of intellectualization of the economy and integration of education, science and business]. *Efektyvna ekonomika = Effective economy*, Vol. 12 (2024). URL: https://nayka.com.ua/index.php/ee/article/view/5329 [in Ukrainian].

Dulyaba, O. & Yurchik A. (2024). Doslidzhennia sutnosti na zmistu liudskoho potentsialu [Research on the essence of the content of human potential]. *Ekonomika ta suspilstvo = Economy and Society*, Vol. 68. DOI: https://doi.org/10.32782/2524-0072/2024-68-107 [in Ukrainian].

Karpenko, A. & Karpenko, N. (2025). Formuvannia ta motyvatsiia innovatsiinoho liderstva v innovatsiinykh ekosystemakh [Formation and motivation of innovative leadership in innovation ecosystems]. *Upravlinnia zminamy ta innovatsii = Change management and innovation*, Vol. 14, P. 25–33. DOI: https://doi.org/10.32782/CMI/2025-14-4 [in Ukrainian].

Kucher, M., Zhydyk A., Tovt Yu. & Strylets S. (2024). Innovatsiina diialnist malykh ta serednikh pidpryiemstv: suchasni realii [Innovative activity of small and medium-sized enterprises:

modern realities]. *Herald of Khmelnytskyi National University. Economic Sciences*, Vol. 332 (4), P. 285–288. DOI: https://doi.org/10.31891/2307-5740-2024-332-42 [in Ukrainian].

Lisovska, L., Gaba, M. & Bublyk, L. (2024). Rol ta znachennia liudskoho rozvytku ta rozvytku liudskoho potentsialu v systemi natsionalnoho bahatstva [The role and significance of human development and human potential development in the system of national wealth]. *Ekonomika ta suspilstvo = Economy and Society*, Vol. (65). DOI: https://doi.org/10.32782/2524-0072/2024-65-145 [in Ukrainian].

Nochka, M. (2022). Pidkhody do otsinky liudskoho kapitalu [Approaches to human capital assessment]. *Bulletin of Sumy National Agrarian University*, Vol. 1 (87). P. 51–57. DOI: https://doi.org/10.32845/bsnau.2021.1.8 [in Ukrainian].

Pidvalna, O. G. & Antipenko, Ya. D. (2025). Metodyka doslidzhen ekonomiko-innovatsiinykh tekhnolohii upravlinnia personalom [Methodology for research into economic and innovative technologies of personnel management]. *Efektyvna ekonomika = Effective economy*, Vol. 4. DOI: http://doi.org/10.32702/2307-2105.2025.4.19 [in Ukrainian].

Polishchuk, O., Kovtun, N. & Kovtun, Y. (2023). Didzhytalizatsiia ta emotsiine vyhorannia pratsivnykiv u konteksti sotsialnoi nezvynachenosti na rynku pratsi [Digitalization and emotional burnout of employees in the context of social instability in the labor market]. *Visnyk Zhytomyrskoho derzhavnoho universytetu imeni Ivana Franka = Bulletin of the Ivan Franko Zhytomyr State University*, Vol. 1. URL: http://philosophy.visnyk.zu.edu.ua/ article/view/282763 [in Ukrainian].

Popov, O., Botvinov, R. & Nebaba, N. (2024). Metodychne zabezpechennia prohnozuvannia ta planuvannia aktyvizatsii innovatsiinoho rozvytku maloho ta serednoho pidpryiemnytstva [Methodological support for forecasting and planning the activation of innovative development of small and medium-sized enterprises]. *Herald of Khmelnytskyi National University. Economic Sciences*, Vol. 326 (1), P. 474–478. DOI: https://doi.org/10.31891/2307-5740-2024-326-76 [in Ukrainian].

Pustovhar, S. (2022). Tendentsii rozvytku pidpryiemnytstva v Ukraini v umovakh industrii 4.0 [Trends in the development of entrepreneurship in Ukraine in the context of industry 4.0]. *Ekonomika ta suspilstvo = Economy and society*, Vol. 39. DOI: https://doi.org/10.32782/2524-0072/2022-39-15 [in Ukrainian].

Savchuk, N. P. (2018). Vyklyk ta tendentsii rozvytku u rozvytku pidpryiemnytskoho potentsialu sub'iektiv maloho ta serednoho biznesu [Challenge and development trends in the development of entrepreneurial potential of small and medium-sized businesses]. *Visnyk Kyivskoho natsionalnoho universytetu tekhnolohii ta dyzainu. Seriia: Ekonomichni nauky = Bulletin of the Kyiv National University of Technologies and Design. Series: Economic Sciences*, Vol. 5 (127). URL: https://jrnl.knutd.edu.ua/index.php/bknutde/article/view/226 [in Ukrainian].

Sakhnenko, O. I. (2020). Upravlinnia rozvytkom liudskoho potentsialu pidpryiemstva [Managing the development of human potential of an enterprise]. *Efektyvna ekonomika = Effective economy*, 2020, Vol. 5. URL: http://www.economy.nayka.com.ua/?op=1&z=7903 [in Ukrainian].

Tyagunova, N. & Tyagunova, Z. (2023). Tsyfrovi kompetentnosti yak determinanty rozvytku pidpryiemnytskoi diialnosti [Digital competencies as determinants of entrepreneurial activity development]. *Transformatsiina ekonomika = Transformational Economics*, Vol. 2 (02), P. 57–61. DOI: https://doi.org/10.32782/2786-8141/2023-2-11 [in Ukrainian].

UNDP (2024). Ukraine still a country with high Human Development Index, new UNDP report says. URL: https://www.undp.org/ukraine/press-releases/ukraine-still-country-high-human-development-index-new-undp-report-says.

Khovrah, O. M. (2015). Analiz metodychnykh pidkhodiv do otsinky liudskoho kapitalu pidpryiemstv [Analysis of methodological approaches to the assessment of human capital of enterprises]. *Zbirnyk naukovykh prats Ukrainskoho derzhavnoho universytetu zaliznychnoho transportu = Collection of scientific works of the Ukrainian State University of Railway Transport*, Vol. 152. URL: http://csw.kart.edu.ua/article/view/65200 [in Ukrainian].

Pospielova, T., Marukhlenko O. & Rudenko, V. (2024). Tsyfrova transformatsiia publichnoho upravlinnia: vplyv na parametry liudskoho rozvytku v umovakh suchasnykh suspilnykh transformatsii

v Ukraini [Digital transformation of public administration: impact on human development parameters in the context of modern social transformations in Ukraine]. *Yevropeiskyi naukovyi zhurnal Ekonomichnykh ta Finansovykh innovatsii = European Scientific Journal of Economic and Financial Innovations*, Vol. 2 (14), P. 522–531. DOI: https://doi.org/10.32750/2024-0246 [in Ukrainian].

Tereshchenko, D. (2019). Derzhavne rehuliuvannia formuvannia ta rozvytku liudskoho kapitalu v umovakh innovatsiinoi ekonomiky: teoretychni aspekt [State regulation of formation and development of human capital under the conditions of innovative economy: theoretical aspects]. *Teoriia ta praktyka derzhavnoho upravlinnia = Theory and Practice of Public Administration*, No. 4 (67), P. 115–122. DOI: https://doi.org/10.34213/tp.19.04.15 [in Ukrainian].

Fedorchuk, O. & Sukhovirskyi, O. (2024). Tsyfrovi kompetentsii menedzheriv iiurystiv: yikh znachennia ta perspektyvy v umovakh sohodennia [Digital Competencies of Managers and Lawyers: Their Significance and Prospects in the Current Context]. *Pedahohichnyi dyskurs = Pedagogical Discourse*, Vol. 36. P. 56–64. DOI: https://doi.org/10.31475/ped.dys.2024.36.08 [in Ukrainian].

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HOW TO CITE THIS ARTICLE
Shatska, Z., Biriukov, Ye. (2024). Theoretical and methodological approaches to assessing the formation of innovative development of human potential of small and medium businesses. *Management*, 2(40): 113–130. https://doi.org/10.30857/2415-3206.2024.2.9.