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## **METHODOLOGICAL TOOLKIT FOR RESEARCHING HUMAN CAPITAL DEVELOPMENT IN THE PUBLIC MANAGEMENT SYSTEM**

The article examines the methodological tools for human capital development in the public administration system. The purpose of the study is to substantiate and systematise the methodological tools for human capital development research by generalising modern methodological approaches and determining the possibilities for their comprehensive application. In the course of the study, general scientific, economic, statistical, comparative, and special methods of scientific knowledge were used. A classification of methods for researching human capital development was proposed, and a methodological toolkit was developed that enables their consistent application across the stages of scientific research. It is substantiated that the integration of theoretical, empirical, analytical, and applied methods ensures a comprehensive assessment of human capital development processes and enhances the scientific validity of management decisions in the public administration system. The practical significance of the results lies in the possibility of using the proposed methodological tools to conduct comprehensive research, assess the effectiveness of public policy, and improve public administration mechanisms.

**Keywords:** human capital; public administration; methodological tools; research methods; public policy; evaluation; management decisions.

**Introduction.** Human capital development is one of the priority areas of modern public administration, as it determines the state's ability to ensure sustainable socio-economic development, the effective

implementation of public policy, and the achievement of strategic goals of social development. In the context of modern transformation processes related to the European integration of Ukraine, post-war reconstruction, digital transformation and the need to increase the institutional capacity of public authorities, scientific support for the processes of formation, development and effective use of human capital becomes particularly relevant. In modern scientific literature, human capital is studied from the standpoint of economic theory, sociology, management, demography and other fields of knowledge. At the same time, in the field of public administration, methodological principles for a comprehensive study of human capital development remain insufficiently developed, leading to fragmentation in scientific approaches to assessing relevant processes and complicating the formation of an adequate analytical basis for management decision-making. Existing methods are mainly used in isolation, without proper integration into a single methodological toolkit adapted to the specifics of the public administration system.

Under such conditions, there is a need to systematise modern methods of research into human capital development, identify opportunities for their comprehensive application, and form a holistic methodological toolkit that will ensure the scientific validity of research, improve the quality of human capital development assessment processes, and facilitate effective decision-making in the field of public administration.

**Materials and methods.** The theoretical foundations of human capital research were shaped by economic theory and further developed in works that substantiate its role as a strategic resource for social development. The fundamental provisions of the theory of human capital, which have determined further directions of scientific research, are presented in G. Becker's work [1].

The methodological foundations for organising scientific research, selecting a research design, and combining quantitative and qualitative methods are highlighted in the works of J. Creswell and J. D. Creswell [3] and M. Saunders, F. Lewis, and A. Thornhill [7]. The approaches proposed by the authors constitute the modern methodological basis for complex research in the social sciences and public administration.

Modern research on human capital development is increasingly focused on the use of complex assessment methods and multi-criteria analysis. In particular, J. Brodny and M. Tutak [2] proposed a

methodological approach to the multi-criteria assessment of human capital development in European Union countries, based on integrating statistical indicators with modern methods of multidimensional analysis. At the same time, the issue of developing assessment tools in the public sector was examined in the study by G. Demo, A. K. R. Costa, and K. V. Koura [4], who established methodological principles for the development and validation of models to assess management practices.

The features of human capital research in the public administration system are highlighted in the work of M. Jacobsen, A.-K. Locke and F. Keppeler [5], where, based on a systematic review of scientific publications, modern trends in the development of human capital research methodology in the public sector were identified and promising directions for further scientific research were outlined. Important for the formation of the information and analytical base of research are also international analytical reports of the OECD [6], the World Bank [12] and the United Nations Development Program [13], which propose a system of indicators for assessing human capital and approaches to analysing its impact on the results of public policy.

In the Ukrainian scientific literature, certain aspects of the methodology for studying human capital are highlighted in the works of N. V. Kovalchuk, M. V. Voichuk, and I. O. Abramova [8], which substantiate a set of modern methods for studying the development of youth human capital in the context of European integration. The methodological principles for studying human capital in the public administration system are developed in the works of M. V. Voichuk [9; 10], which examine the economic principles of human capital formation and substantiate the feasibility of using a holistic approach as a methodological basis for its study. Practical aspects of applying modern methodological tools to assess the effectiveness of public policy are reflected in the study by I. Tsybalyuk and I. Nevar [11].

At the same time, recent analysis of modern scientific works shows that existing research is primarily focused on individual methods or areas of human capital assessment. In contrast, the issues of their systematisation, complex combination, and the formation of a holistic methodological toolkit for studying human capital development in the public administration system remain insufficiently developed. This necessitates further development of research methodological principles and the substantiation of integrated methodological tools adapted to the needs of modern public administration.

**The purpose of the article.** The purpose of the article is to substantiate and systematise methodological tools for researching human capital development in the public administration system, based on the generalisation of modern methodological approaches and the identification of possibilities for their comprehensive application to support the processes of forming and implementing public policy.

**Research results..** The analysis of scientific works shows that the study of human capital development in the public administration system is based on a wide range of general scientific, specialised, and interdisciplinary methods. At the same time, their application is mostly fragmentary and focuses on solving individual research problems. This necessitates the systematisation of existing methods and their integration into a holistic methodological toolkit that provides a comprehensive study of human capital development processes, takes into account the peculiarities of the public administration system and allows for the formation of a scientifically sound basis for making management decisions. The generalisation of the provisions of modern scientific research [1–13] made it possible to develop the structure of the methodological toolkit for studying human capital development in the public administration system (Table 1).

Table 1

**Classification of methods for researching human capital development in the public administration system**

| Group of methods                | Methods                                                                            | Purpose                                                              |
|---------------------------------|------------------------------------------------------------------------------------|----------------------------------------------------------------------|
| <i>General scientific</i>       | analysis, synthesis, induction, deduction, abstraction, generalization, comparison | Formation of theoretical and methodological foundations of the study |
| <i>Empirical</i>                | observation, document analysis, expert survey                                      | Obtaining and summarizing primary information                        |
| <i>Economic and statistical</i> | statistical analysis, dynamics analysis, index method, grouping                    | Assessing the current state and trends in human capital development  |
| <i>Analytical</i>               | correlation analysis, multi-criteria evaluation, comparative analysis              | Identifying factors and assessing relationships                      |
| <i>Applied</i>                  | SWOT analysis, scenario analysis, modeling, expert evaluation                      | Justifying management decisions and development directions           |

Source: formed by the authors based on [2–5; 7–10].

The generalisation of scientific approaches shows that none of the above groups of methods individually provides a comprehensive study of human capital development. Achieving the integrity of the study is possible only if they are applied consistently and in an interrelated manner in accordance with the logic of scientific research. This necessitates the development of an integrated methodological toolkit tailored to the specifics of the public administration system.

Table 2

**Sequence of application of methodological tools for researching human capital development in the public administration system**

| Stage                                     | Research task                            | Methods                             | Result                                                  |
|-------------------------------------------|------------------------------------------|-------------------------------------|---------------------------------------------------------|
| I. Conceptualization                      | Formation of the theoretical basis       | general scientific                  | Conceptual research model                               |
| II. Diagnostics                           | Assessment of the state of human capital | economic and statistical, empirical | Identification of trends and problems                   |
| III. Analytical evaluation                | Identification of patterns and factors   | analytical                          | A comprehensive assessment of human capital development |
| IV. Justification of management decisions | Development of recommendations           | applied                             | Proposals for improving public administration           |

*Source:* author's development.

The presented classification of methods (Table 1) and the proposed sequence of their application (Table 2) reflect a comprehensive approach to the study of human capital development in the public administration system. Unlike existing approaches, which mainly focus on individual methods or analytical tools, the proposed methodological toolkit ensures their logical integration in accordance with the stages of scientific research and the features of the formation of information and analytical support for public administration.

The development of human capital is a multidimensional process that encompasses demographic, educational, social, economic, institutional and managerial components. Consequently, its study requires the use of complementary methodological approaches that capture both the complexity of the object under investigation and the interrelationships among its structural elements. In the context of public administration, methodological support should ensure not only the collection and

processing of information but also the generation of scientifically grounded evidence for the formulation, implementation and evaluation of public policy.

The first stage of the study involves the formation of a conceptual basis, the definition of a conceptual and categorical apparatus and the theoretical substantiation of the subject area of study. At this stage, it is advisable to use general scientific methods of analysis, synthesis, generalisation, induction, deduction, and systematisation, which provide a holistic understanding of human capital and its role in the functioning of the public administration system [1; 3; 7; 10]. The application of these methods contributes to identifying conceptual relationships between human capital development and public policy objectives, clarifying the scientific content of key concepts, and establishing the theoretical framework for subsequent empirical analysis. In addition, comparative analysis enables the identification of differences between existing scientific approaches and facilitates the development of an integrated conceptual model suitable for public administration research.

The second stage is focused on assessing the current state of human capital development. Its information basis is official statistical data, international indicators and results of monitoring studies. The use of statistical, index, and comparative analyses allows for the determination of trends in human capital development, the identification of territorial and temporal differences, and the assessment of the effectiveness of public policy implementation in the relevant area [2; 6; 12; 13]. At this stage, it is important to ensure the comparability, reliability and representativeness of the collected information. The integration of national statistical data with internationally recognised indicators provides opportunities for comparative assessment of human capital development and facilitates the identification of priority areas requiring public intervention. Moreover, the use of quantitative indicators makes it possible to evaluate the dynamics of changes and monitor the effectiveness of implemented policy measures over time.

At the analytical stage, establishing relationships between human capital development and the effectiveness of public administration is of key importance. For this purpose, it is advisable to use economic and statistical methods, multi-criteria assessment, expert procedures and comparative analysis, which provide a comprehensive assessment of the impact of institutional, socio-economic and managerial factors on the processes under study. The use of these methods corresponds to modern international approaches to the study of human capital and the assessment of managerial

practices [2; 4; 5]. Particular attention should be paid to identifying factors that determine differences in human capital development across territories, population groups, and institutional environments. Multi-criteria assessment enables the integration of heterogeneous indicators into an integrated analytical framework, while expert evaluation complements quantitative analysis by considering contextual factors that cannot be adequately captured by statistical data alone.

The final stage aims to develop practical recommendations for improving the public management of human capital development. At this stage, the results of the preliminary analysis are integrated using methods of strategic analysis, scenario forecasting, modelling, and expert assessment, thereby creating a basis for the development of scientifically sound management decisions [5; 6; 8–11]. The practical orientation of this stage lies in translating analytical findings into policy recommendations to improve strategic planning, resource allocation, and institutional capacity. Scenario analysis and modelling also provide opportunities to evaluate alternative development trajectories and estimate the potential consequences of different public policy decisions under conditions of uncertainty.

The proposed methodological toolkit is characterised by its complexity, consistency, and adaptability to the specifics of research in public administration. Its application ensures the integration of theoretical, empirical, and analytical methods within a single research process, increases the validity of the assessment of human capital development, and creates a methodological basis for the development of effective public policy aimed at human capital development. The proposed approach may serve as a universal methodological framework for studies conducted at the national, regional and local levels, while remaining sufficiently flexible to accommodate the specific objectives of particular research projects. Furthermore, the systematic application of the proposed toolkit strengthens the evidence base of public administration research and supports the development of more effective mechanisms for managing human capital in accordance with the principles of sustainable development and good governance.

**Conclusions.** As a result of the research conducted, the feasibility of the comprehensive application of modern methods for researching human capital development in the public administration system was substantiated. It was established that existing scientific approaches are mainly focused on the use of individual general scientific, economic, and statistical methods, or

specialised methods, which do not provide a holistic study of human capital development processes and their relationship to the effectiveness of public administration.

Based on the generalisation of modern methodological approaches, methods for research on human capital development were systematised by functional purpose, and a methodological toolkit was formed that provides for their consistent application in accordance with the main stages of scientific research: conceptualisation, diagnostics, analytical assessment, and justification of management decisions. The proposed approach ensures the integration of theoretical, empirical, economic, statistical and applied methods within a single research process.

The practical significance of the proposed methodological toolkit lies in its potential to conduct comprehensive studies of human capital development, assess the effectiveness of public policy implementation, and prepare scientifically based recommendations for improving public administration mechanisms. The proposed approach can be adapted to research at the state, regional, and local levels and used as a methodological basis for developing a system of indicators to assess human capital development. Prospects for further research should be associated with the development of an integrated methodology for assessing human capital development in the public administration system, the definition of a system of indicators, and the testing of the proposed methodological toolkit using materials from territorial communities and regions of Ukraine.

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## **МЕТОДИЧНИЙ ІНСТРУМЕНТАРІЙ ДОСЛІДЖЕННЯ РОЗВИТКУ ЛЮДСЬКОГО КАПІТАЛУ В СИСТЕМІ ПУБЛІЧНОГО УПРАВЛІННЯ**

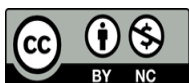
Розвиток людського капіталу є одним із ключових напрямів сучасного публічного управління, оскільки він визначає здатність держави забезпечувати ефективне формулювання та реалізацію державної політики, сталий соціально-економічний розвиток і підвищення якості життя населення. У сучасних умовах трансформації суспільних процесів, цифровізації, європейської інтеграції та післявоєнного відновлення України особливої актуальності набуває вдосконалення методичного забезпечення досліджень розвитку людського капіталу, здатного забезпечити комплексну оцінку відповідних процесів та наукове обґрунтування управлінських рішень. Метою статті є обґрунтування та систематизація методичного інструментарію для дослідження розвитку людського капіталу в системі публічного управління на основі узагальнення сучасних методологічних підходів і визначення можливостей їх комплексного застосування. Методологічною основою дослідження стали загальнонаукові методи аналізу, синтезу, індукції, дедукції, узагальнення та систематизації, а також економічні, статистичні, порівняльні, експертні та багатокритеріальні методи оцінювання. У статті систематизовано сучасні методи дослідження розвитку людського капіталу, запропоновано їх класифікацію за функціональним призначенням та розроблено методичний інструментарій, який



забезпечує послідовне застосування методів на основних етапах наукового дослідження: концептуалізація, діагностика, аналітична оцінка та обґрунтування управлінських рішень. Обґрунтовано, що комплексне поєднання загальнонаукових, емпіричних, економічних, статистичних, аналітичних та прикладних методів забезпечує цілісність дослідження процесів розвитку людського капіталу, підвищує достовірність результатів оцінки та формує доказову базу для прийняття ефективних управлінських рішень. Практичне значення результатів полягає в можливості використання запропонованого методичного інструментарію органами публічного управління, науковцями та закладами вищої освіти для проведення комплексних досліджень, оцінки ефективності публічної політики та розробки стратегічних напрямків розвитку людського капіталу на державному, регіональному та місцевому рівнях.

**Ключові слова:** людський капітал; державне управління; методологічний інструментарій; методи дослідження; державна політика; оцінка; управлінські рішення.

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