



**POZDÍJ 1.
EKONÓMKA TA MENEDZMENT
1.FEJEZET.
GAZDÁLKODÁS ÉS MENEDZSMENT
CHAPTER 1.
ECONOMICS AND MANAGEMENT**

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**HR ANALYTICS AS A TOOL FOR DEVELOPING MANAGERIAL
COMPETENCIES IN THE PERSONNEL MANAGEMENT SYSTEM IN WAR
CONDITIONS**

Анотація. В умовах воєнного стану система управління персоналом функціонує за підвищеної невизначеності, що зумовлює зростання вимог до обґрунтованості управлінських рішень, якості управління та здатності організацій підтримувати безперервність діяльності. За таких обставин особливого значення набуває використання аналітично обґрунтованих



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даних у процесах розвитку управлінського персоналу. Метою дослідження є обґрунтування ролі HR-аналітики у розвитку управлінських компетентностей у системі управління персоналом в умовах воєнного стану.

У статті досліджено роль HR-аналітики як засобу аналітичного забезпечення розвитку управлінських компетентностей, проаналізовано зміст і еволюцію HR-аналітики та визначено її місце в сучасному менеджменті. Розглянуто рівні HR-аналітики, зокрема описовий, діагностичний, прогностичний і прескриптивний, а також обґрунтовано їх взаємозв'язок у межах аналітичного циклу управління персоналом. Проаналізовано управлінські компетентності як об'єкт аналітичного забезпечення, визначено їх структуру, багатовимірний характер і особливості формування з урахуванням умов воєнного стану, підвищеного рівня ризику та обмеженості ресурсів.

У ході дослідження розглянуто аналітичні методи оцінювання управлінських компетентностей, включаючи індикаторний, багатокритеріальний, експертний і порівняльний аналіз, які забезпечують науково обґрунтоване визначення рівня управлінського потенціалу та створюють підґрунтя для підготовки індивідуалізованих програм розвитку управлінського персоналу. Виявлено можливості поєднання HR-аналітики зі SMART-освітніми технологіями та цифровими платформами навчання, що дозволяє забезпечити персоналізований характер розвитку управлінських компетентностей, узгодженість навчальних заходів з реальними потребами організації і безперервність професійного зростання управлінців.

Обґрунтовано, що використання аналітичних даних на етапах планування, реалізації та оцінювання навчання сприяє підвищенню обґрунтованості управлінських рішень і підтриманню керованості процесів розвитку персоналу за умов обмежених ресурсів. Зроблено висновок, що HR-аналітика формує аналітичну основу розвитку управлінських компетентностей і розширює можливості управління персоналом в умовах воєнного стану, забезпечуючи узгодженість рішень у сфері розвитку управлінського персоналу та підвищення якості управління в цілому.

Ключові слова: HR-аналітика, управлінські компетентності, HR-менеджмент, HR-системи, SMART-освітні технології, цифрові технології, лідерство.

JEL Classification: M12, M53, C80

Absztrakt. A hadiállapot körülményei között a humánerőforrás-menedzsment fokozott bizonytalanság mellett működik, ami növeli az elvárásokat a vezetői döntések megalapozottságával, a menedzsmentminőséggel és a szervezetek működésfolytonosságát fenntartó képességével szemben. E feltételek között kiemelt jelentőségűvé válik az analitikailag megalapozott adatok alkalmazása a vezetői állomány fejlesztési folyamataiban. A kutatás célja a HR-analitika szerepének megalapozása a vezetői kompetenciák fejlesztésében a személyügyi menedzsment rendszerén belül, hadiállapoti környezetben.

A tanulmány a HR-analitika szerepét vizsgálja mint a vezetői kompetenciák fejlesztésének analitikai támogatását biztosító eszközt; elemzi a HR-analitika tartalmát és fejlődési ívét, valamint meghatározza helyét a korszerű menedzsmentben. Bemutatja a HR-analitika szintjeit – a leíró, a diagnosztikus, a prognosztikus és a preskriptív megközelítéseket –, továbbá indokolja azok összefüggésrendszerét a személyügyi menedzsment analitikai ciklusán belül. A tanulmány a vezetői kompetenciákat az analitikai megalapozás tárgyaként értelmezi: feltárja szerkezetüket, multidimenziális jellegüket, valamint a kialakulás sajátosságait hadiállapoti környezetben, emelkedett kockázatszint és erőforrás-korlátok mellett.

A kutatás keretében áttekintésre kerülnek a vezetői kompetenciák értékelésének analitikai módszerei, beleértve az indikátoralapú, a többkritériumos, a szakértői és az összehasonlító elemzést, amelyek lehetővé teszik a vezetői potenciál szintjének tudományosan megalapozott meghatározását, és megbízható alapot teremtenek az egyénre szabott vezetőfejlesztési programok kidolgozásához. A tanulmány azonosítja a HR-analitika SMART oktatástechnológiákkal és digitális tanulási



platformokkal történő integrálásának lehetőségeit is, amely elősegíti a vezetői kompetenciák fejlesztésének személyre szabott jellegét, a képzési beavatkozások szervezeti igényekhez való illeszkedését, valamint a vezetők folyamatos szakmai fejlődésének biztosítását.

Indokolt, hogy az analitikai adatok alkalmazása a képzés tervezési, megvalósítási és értékelési szakaszaiban hozzájárul a vezetői döntések megalapozottságának növeléséhez, valamint – korlátozott erőforrások mellett – a személyzetfejlesztési folyamatok kontrollálhatóságának fenntartásához. A tanulmány arra a következtetésre jut, hogy a HR-analitika a vezetői kompetenciák fejlesztésének analitikai alapját képezi, és hadiállapot környezetben érdemben bővíti a humán erőforrás-menedzsment lehetőségeit azáltal, hogy biztosítja a vezetői állomány fejlesztésével kapcsolatos döntések koherenciáját, valamint összességében javítja a menedzsment minőségét.

Kulcsszavak: HR-analitika; vezetői kompetenciák; HR-menedzsment; HR-rendszerek; SMART oktatástechnológiák; digitális technológiák; vezetés.

Abstract. Under martial law, the personnel management system operates under increased uncertainty, which leads to higher demands on the soundness of management decisions, the quality of management, and the ability of organisations to maintain business continuity. In such circumstances, the use of analytically sound data in the development of management personnel becomes particularly important. The purpose of the study is to substantiate the role of HR analytics in the development of managerial competencies in the personnel management system under martial law.

The article examines the role of HR analytics as a tool for the analytical support of managerial competency development, analyzes the content and evolution of HR analytics, and determines its place in modern management. Four levels of HR analytics are distinguished – descriptive, diagnostic, predictive, and prescriptive – and their interrelationships within the analytical cycle of personnel management are substantiated. Management competencies are analysed as an object of analytical support, their structure, multidimensional nature, and peculiarities of formation are determined, taking into account the conditions of martial law, increased risk, and limited resources.

The research considers analytical methods for assessing managerial competencies, including indicator-based, multi-criteria, expert, and comparative analysis, which enable a scientifically grounded assessment of managerial potential and create a foundation for developing individualized programs for managerial staff development. The possibilities of integrating HR analytics with SMART educational technologies and digital learning platforms are identified, enabling a personalized approach to the development of managerial competencies, the alignment of training activities with the actual needs of organizations, and the continuity of managers' professional development.

It has been substantiated that the use of analytical data at the stages of planning, implementation, and evaluation of training contributes to improving the soundness of managerial decisions and maintaining the manageability of personnel development processes under conditions of limited resources. It is concluded that HR analytics forms the analytical basis for the development of managerial competencies and expands the possibilities of personnel management under martial law conditions, ensuring the consistency of decisions in the field of managerial staff development and improving the overall quality of management in general.

Keywords: HR analytics, managerial competencies, HR management, HR systems, SMART educational technologies, digital technologies, leadership.

Problem description. In the context of modern geopolitical transformations, the personnel management system is undergoing radical changes, necessitating a rethinking of the appropriateness of certain approaches to human resources management. In addition, the introduction of martial law raises the issue of preserving the labour potential of domestic organisations, maintaining employee motivation, ensuring their psychological balance and continuity of activity, and also leads to



increased demands for the validity of management decisions. In this context, HR analytics is becoming particularly important as a means of scientifically sound personnel management based on the systematic processing of data, which makes it possible to reduce the influence of subjective factors in conditions of increased uncertainty.

The relevance of applying HR analytics in a state of martial law is linked to the increasing complexity of social and labour processes and the need to respond promptly to changes in the operating conditions of organisations. Martial law has a significant impact on the structure of employment, labour mobility, staff turnover, working conditions, and the forms of interaction between employees and management. In such circumstances, intuitive or fragmentary management decisions lose their relevance, which necessitates the use of analytical tools to assess personnel risks, determine staff potential, and justify long-term human capital development goals.

Literature review. The scientific literature pays considerable attention to the role of HR analytics in the personnel management system, particularly its impact on managerial decision-making, employee productivity, digital transformation of HR processes, and competency development. Recent international studies consider HR analytics as a tool for improving the validity of managerial decisions [1], enabling personalised human resource management through the use of artificial intelligence [3], and enhancing employee productivity in the digital environment of Society 5.0 [6]. At the same time, contemporary research emphasises the transition from descriptive use of HR data to evidence-based implementation of people analytics in management practice [2], as well as the growing role of HR analytics in supporting organisational value creation in the context of digital transformation [5].

In addition, the systematisation of HR analytics research directions demonstrates the expansion of its functional scope beyond operational HR processes towards competency development and strategic personnel planning [4]. The connection between HR analytics and learning and development systems is also increasingly addressed in the literature, particularly through the integration of people analytics into human resource development frameworks [7].

Domestic scholars have also actively explored the use of HR analytics in personnel management systems, including its role in personnel controlling [8], risk management [9], digitalisation of HR processes [10], forecasting employee development [11], supporting managerial decision-making [12], shaping HR systems [16], and developing modern analytical models [14]. Certain aspects of HR analytics as a management tool have also been addressed in studies [13], [17], [18].

Despite the significant body of research, most studies focus on general issues such as HR digitalisation, improving the effectiveness of personnel decisions, or staff development. Although recent international works underline the growing analytical support of HR development processes [2; 7], the problem of forming a comprehensive system for using HR analytics to develop managerial competencies specifically under martial law conditions remains insufficiently explored. In particular, further justification is needed regarding the use of analytical approaches in conditions of



increased uncertainty, resource constraints, and crisis management situations. This research gap determines the relevance and direction of the present study.

Goal of the article (task setting). The aim of the study is to determine the role of HR analytics in the development of managerial competencies in conditions of martial law, as well as to substantiate the possibilities of combining analytical methods with digital educational platforms and SMART educational technologies in order to ensure the ability of managerial personnel to maintain effective professional activity in conditions of increased uncertainty.

Results and discussions. HR analytics, as a relatively new field in modern management, is based on a combination of personnel management, economic analysis and information technology. Its emergence is linked to the transition from an administrative and accounting model of personnel management to human capital management, in which employees are viewed not as performers of specific functions, but as bearers of knowledge, professional skills and organisational values. In this context, HR analytics serves as a scientifically sound basis for management decisions based on systematic, verified and relevant information.

The essence of HR analytics is the purposeful collection, processing and interpretation of quantitative and qualitative information about personnel in order to improve the quality of human resource management. Unlike traditional HR reporting, which reflects personnel processes mainly in a retrospective dimension, HR analytics focuses on identifying cause-and-effect relationships between management influences and personnel performance indicators [13, p. 101]. It allows combining information about labour productivity, level of professional training, motivational characteristics, training and career development into a single analytical system that forms the basis for a long-term vision of the role of personnel in achieving the organisation's goals [8].

The emergence of HR analytics is closely linked to changes in management concepts and the development of information technology. At the initial stage, personnel management was mainly of an accounting nature and focused on maintaining personnel records, controlling the number of employees and the wage fund [14]. Under such conditions, the analytical component was limited to the use of basic statistical indicators, which did not provide a complete understanding of the course of social and labour processes.

Further development of management, in particular the spread of a process-based and systematic approach to management, led to the expansion of the analytical functions of HR departments [12, pp. 153-154]. In management practice, tools for comparative analysis, personnel performance evaluation and human resource cost analysis began to be used. During this period, HR analytics plays a supporting role in management decision-making, but is not yet considered an independent element of management support.

A new stage in the development of HR analytics is associated with the digitalisation of management processes and the emergence of information and analytical systems. The automation of HR functions and the introduction of HRIS, ERP platforms and corporate databases have created the conditions for processing



large amounts of information and using it in multidimensional analysis [11, p. 9]. In such circumstances, HR analytics is moving from a supporting role to an important component of management support, enabling the identification of personnel needs, the assessment of the impact of human capital on financial performance, and the justification of long-term planning for the development of the organisation [17, p. 22].

The current stage of development of HR analytics is characterised by its combination with knowledge management, the competency concept and data-driven management. Analytical models are increasingly focused on the formation of management scenarios and recommendations, which indicates a transition from descriptive and diagnostic levels to predictive and prescriptive levels of analytical work and an increase in its significance for management activities.

The content and functional scope of HR analytics is implemented through a system of levels that vary in depth of analysis and nature of management conclusions [10; 17]. The basic level is descriptive HR analytics, which focuses on recording and summarising factual data about personnel. It provides an overview of the current state of the personnel sphere, including the number of employees, staff turnover, employment structure and labour productivity indicators. This level performs an informational function and creates a basis for further in-depth analysis.

The next level is represented by diagnostic HR analytics aimed at identifying the causes and factors that lead to certain personnel phenomena. Its purpose is to explain deviations from planned indicators, identify factors affecting staff turnover and work performance, and establish a link between management decisions and employee behaviour. This level of analytics is important for refining HR policy and improving the soundness of management decisions.

A higher level of HR analytics is represented by predictive analytics, which focuses on forecasting future changes in the field of personnel management. The use of statistical models and analytical scenarios makes it possible to predict personnel risks, changes in management competency requirements, and the possible consequences of management decisions in the medium and long term, which expands the possibilities of management planning.

The most complex and at the same time most significant level is prescriptive HR analytics, which goes beyond forecasting and focuses on preparing recommendations for appropriate management decisions. At this level, alternative options for HR development are modelled and decisions are justified, taking into account available resources and constraints, which ensures the transition from analytical knowledge to the practical implementation of management decisions.

The interrelationship between all four levels of HR analytics described above in the personnel management system is illustrated in Fig. 1.

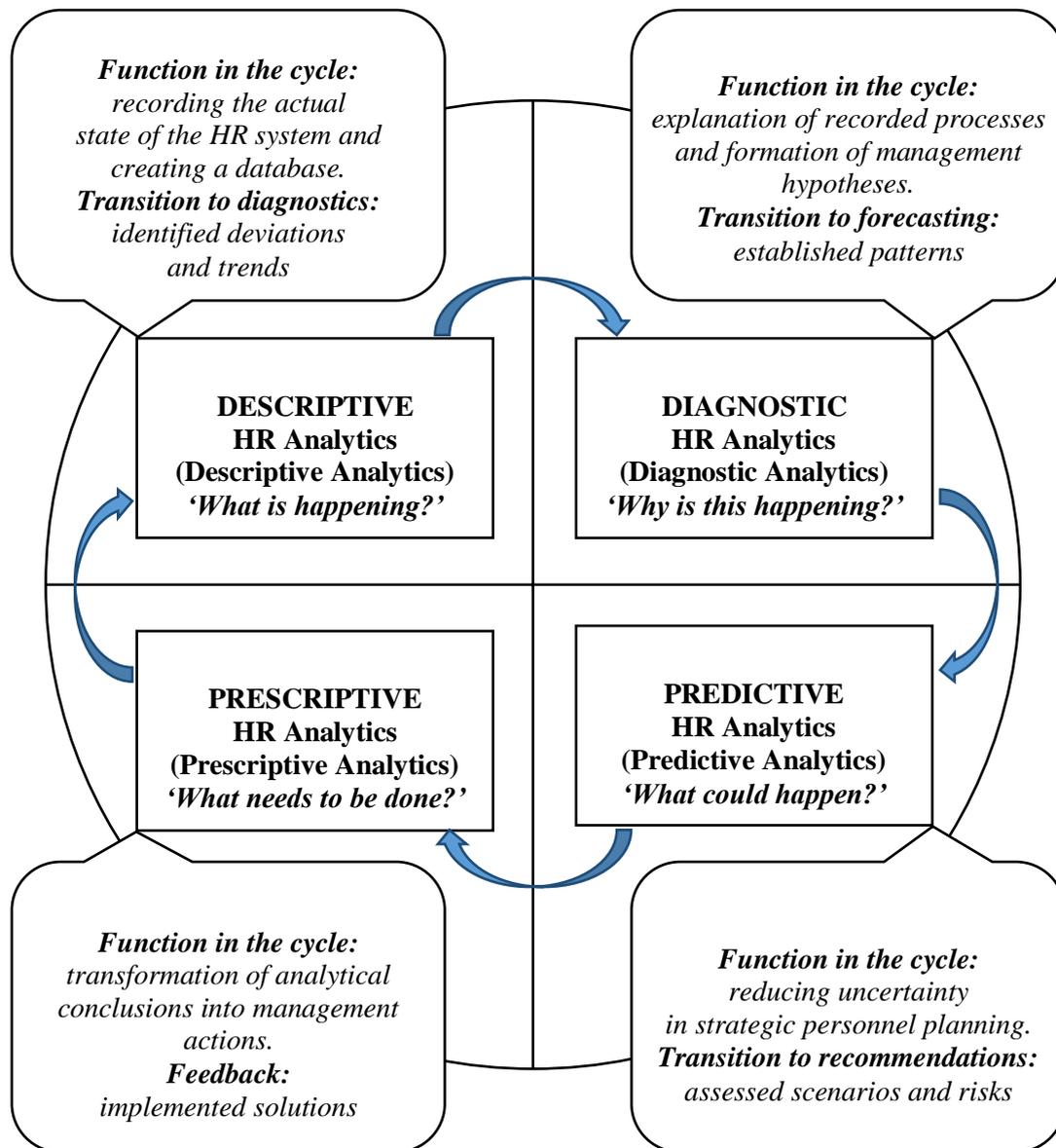


Fig. 1. The interconnection between descriptive, diagnostic, prognostic and prescriptive HR analytics in the personnel management system

Source: author's work

In modern management, it is becoming increasingly important to view personnel as a source of integrated knowledge, skills, behavioural characteristics and value orientations that directly influence the organisation's activities. The competency-based concept makes it possible to combine the organisation's development goals with the individual characteristics of employees, forming a holistic vision of human capital management. In the personnel management system, it was developed as a response to the limitations of traditional qualification models, which focused primarily on formal indicators of education, experience and professional skills.



Within the competency-based concept, managerial competencies are seen as a system-forming element of human resource management, since the quality of management decisions, the coordination of activities and the organisation's ability to respond to change depend on the level of their development. Management competencies are not limited to a set of professional knowledge, but include a combination of cognitive, social, emotional and behavioural characteristics that enable management personnel to act in various organisational situations, creating the conditions for their analytical measurement and targeted development [11].

Management competencies of personnel should be interpreted as an integrated set of individual characteristics of a manager that determine his or her ability to formulate goals, make decisions, organise the activities of other employees and ensure the achievement of specific development targets of the organisation. Unlike individual skills and abilities, competencies are relatively stable and manifest themselves through behavioural patterns that can be identified, assessed and compared. It is this property that determines the expediency of using managerial competencies as an object of analytical support for HR management.

The structure of managerial competencies is multidimensional and hierarchical, which necessitates their systematisation. An important place is occupied by the cognitive component, which includes managerial knowledge, analytical thinking and the ability to see long-term development. It provides an understanding of complex organisational processes and forms the basis for sound managerial decisions. The functional and professional component covers the ability to plan, organise, coordinate and control the activities of staff. The social and communication component reflects the manager's ability to interact effectively with employees and partners and includes communication, persuasion, negotiation and conflict resolution skills.

The emotional-regulatory component characterises the ability of management personnel to control their own emotional state, maintain psychological balance and make informed decisions in conditions of tension, uncertainty and increased risk. The analytical and long-term components reflect a manager's ability to work with information, summarise it, assess possible developments and make decisions taking into account the organisation's prospects.

The innovative and digital components characterise a manager's ability to use modern technological solutions in management activities and work with analytical systems and digital platforms, which contributes to more informed decisions and better management quality. The leadership component determines a manager's ability to motivate a team, build trust, effectively delegate authority, and create conditions for staff development. The intercultural component reflects a manager's ability to interact with representatives of different cultural environments and work in international teams, taking into account socio-cultural differences.

The ethical and socially responsible components characterise a manager's ability to adhere to professional ethics, current legislation and the principles of social responsibility. They are related to decision-making that takes moral and social factors into account and builds trust in the organisation among employees and partners. An

important place is occupied by the value-motivational component, which determines managerial responsibility, focus on achieving set goals, and readiness for continuous professional development [2; 11].

Taking into account the conditions of martial law, it is advisable to separately highlight anti-crisis and resilient management competencies.

The anti-crisis component reflects the manager's ability to identify crisis phenomena in a timely manner, assess their possible consequences, and make management decisions aimed at reducing losses and maintaining the organisation's manageability. It includes the ability to work in conditions of resource scarcity and increased risk, as well as to maintain business continuity.

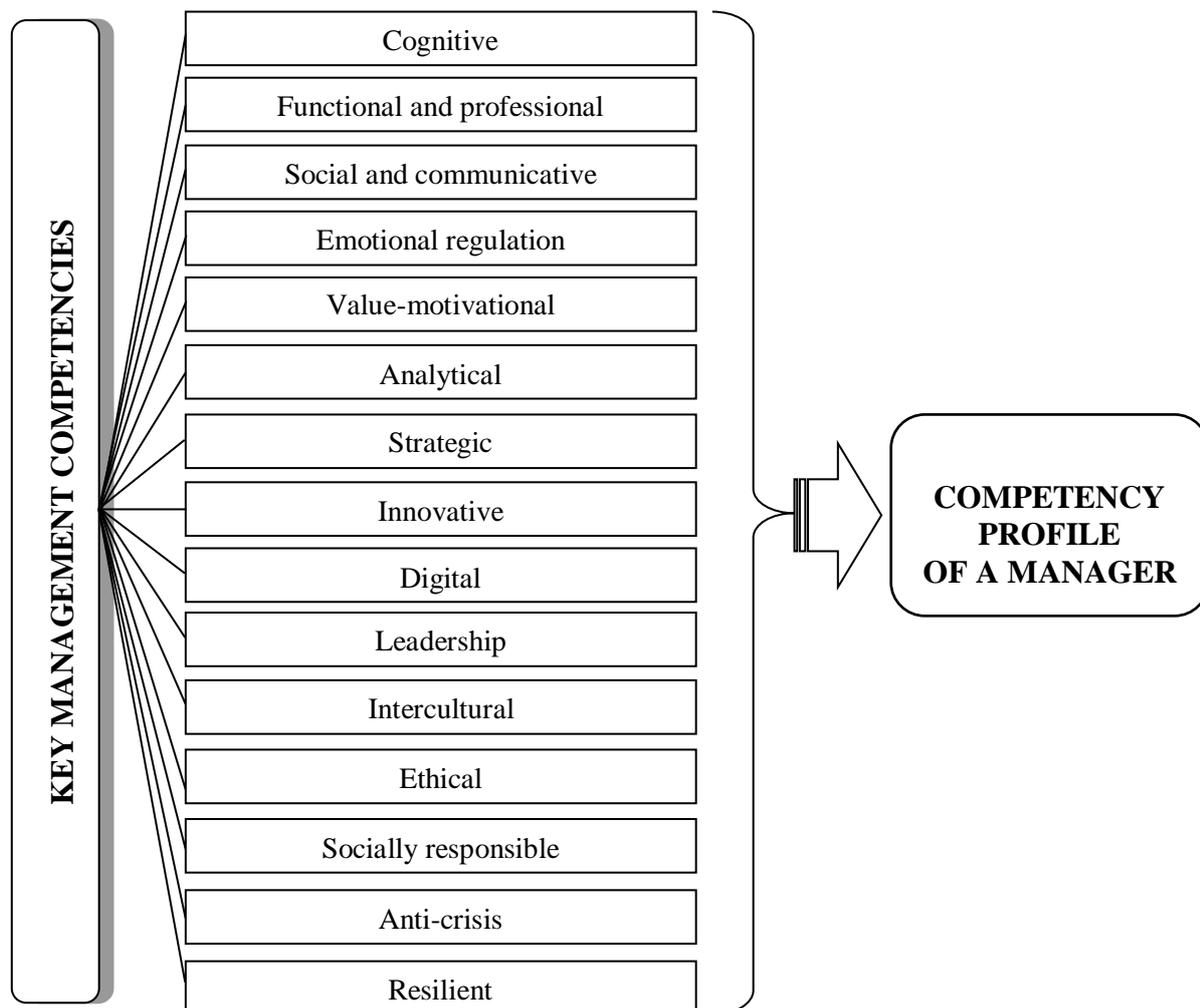


Fig. 2. Structural model of key managerial competencies in the analytical support system for HR management

Source: author's work

The resilience component characterises a manager's ability to maintain professional capacity and psychological balance in prolonged stressful conditions,



restore management processes after shocks and maintain staff performance. It is aimed not only at overcoming the consequences of a crisis, but also at strengthening the organisation's ability to develop in conditions of constant instability.

The state of war in Ukraine significantly changes the conditions in which organisations operate, increasing uncertainty, risks and resource constraints, which necessitates a review of traditional management models and a focus on competencies that can ensure manageability and continuity of operations [9, p. 36].

Considering management competencies as an object of analytical support for HR management involves their operationalisation, i.e. the transition from generalised characteristics to measurable indicators. Analytical support makes it possible to organise competencies by management levels, types of activities and degree of importance, as well as to identify discrepancies between the existing and required levels of their development, creating a basis for the preparation of well-founded management personnel development programmes.

The structural model of managerial competencies in the analytical support system of HR management is presented in Fig. 2.

Table 1 also presents general characteristics, basic subcomponents and indicators for assessing managerial competencies.

It should be emphasised that analytical methods for assessing managerial competencies play an important role in forming a scientifically sound basis for developing the managerial potential of organisations. The assessment procedure is the starting point of the analytical cycle, since without an objective measurement of the level of competence development, it is impossible to plan the development of management personnel or analyse the consequences of management decisions. In this regard, analytical assessment methods perform the function of analytical diagnostics, ensuring the transition from the declarative use of the competency concept to its practical application [18, p. 182].

One of the basic assessment methods is indicator analysis, which involves the formation of a system of indicators that reflect the manifestation of managerial competencies in professional activity. Such indicators can characterise the soundness of managerial decisions, the quality of communications, the stability of managerial behaviour, or the level of employee participation in the performance of managerial tasks. The use of indicator analysis makes it possible to streamline the assessment procedure and ensure the comparability of the results obtained over time or between individual groups of management personnel.

Expert assessment plays an important role in the system of analytical methods, which, in combination with quantitative analytical procedures, acquires the necessary scientific validity. Within the framework of HR analytics, expert judgements are not used in isolation, but as information data subject to further quantitative processing, generalisation and verification. This makes it possible to reduce the influence of subjective factors and transform qualitative assessments into structured analytical information suitable for making informed management decisions.



Table 1

**Characteristics, components and indicators for assessing
 key management competencies**

Management competence	General characteristics	Main components	Key assessment indicators
Cognitive	Reflects the intellectual abilities of a manager and their ability to comprehend, analyse and solve management problems	<ul style="list-style-type: none"> – analytical thinking; – systematic thinking; – problem-oriented thinking; – forecasting; – creativity. 	<ul style="list-style-type: none"> – quality of management decisions; – speed of information analysis; – soundness of conclusions..
Functional-professional	Characterises the level of professional knowledge and skills required to perform management functions	<ul style="list-style-type: none"> – knowledge of the industry; – management technologies; – work organisation; – resource management; – performance monitoring. 	<ul style="list-style-type: none"> – achievement of planned targets; – quality of performance; – compliance with standards.
Social-communicative	Determines the ability to interact effectively with staff and stakeholders	<ul style="list-style-type: none"> – communication; – negotiation; – persuasion; – conflict management; – teamwork. 	<ul style="list-style-type: none"> – level of trust within the team; – communication effectiveness; – number of conflicts.
Emotional-regulatory	Characterises the ability to control emotions and remain effective in stressful situations	<ul style="list-style-type: none"> – self-regulation; – stress resistance; – emotional intelligence; – psychological adaptation.. 	<ul style="list-style-type: none"> – behaviour in crisis situations; – stability of decisions; – emotional climate.
Value-motivational	Reflects the system of values, motives and internal attitudes of a manager	<ul style="list-style-type: none"> – focus on results; – responsibility; – self-discipline; – motivation for development. 	<ul style="list-style-type: none"> – level of involvement; – initiative; – consistency of professional behaviour.
Analytical	Determines the ability to work with data and information to support management decisions	<ul style="list-style-type: none"> – data collection; – interpretation of indicators; – HR analytics; – performance evaluation. 	<ul style="list-style-type: none"> – use of data in decisions; – accuracy of forecasts; – quality of analytical reports.
Strategic	Characterises the ability to form long-term goals and directions for development	<ul style="list-style-type: none"> – strategic vision; – scenario planning; – risk management; – systematic approach. 	<ul style="list-style-type: none"> – presence of a strategy; – achievement of strategic goals; – consistency of decisions.
Innovative	Reflects the readiness and ability to implement new approaches and solutions	<ul style="list-style-type: none"> – initiating change; – innovation management; – creativity; – flexibility. 	<ul style="list-style-type: none"> – number of innovations; – effectiveness of change; – adaptability of processes.
Digital	Characterises the level of proficiency in digital management tools	<ul style="list-style-type: none"> – digital literacy; – HRIS; – process automation; – working with platforms. 	<ul style="list-style-type: none"> – level of process digitalisation; – use of HR tools; – data processing speed.
Leadership	Defines the ability to influence staff and direct their activities	<ul style="list-style-type: none"> – motivational leadership; – delegation; – mentoring; – change management. 	<ul style="list-style-type: none"> – level of staff engagement; – staff turnover; – team effectiveness.
Intercultural	Characterises the ability to work in a multicultural environment	<ul style="list-style-type: none"> – intercultural communication; – tolerance; – adaptation of management style. 	<ul style="list-style-type: none"> – effectiveness of international cooperation; – absence of cultural conflicts.
Ethical	Reflects compliance with moral norms and	<ul style="list-style-type: none"> – ethical decisions; – integrity; 	<ul style="list-style-type: none"> – level of trust; – compliance with ethical



Management competence	General characteristics	Main components	Key assessment indicators
	management principles	– transparency; – fairness.	standards; – reputation indicators.
Socially Responsible	Characterises the focus on the social consequences of management decisions	– corporate culture; – sustainable development; – care for staff; – occupational safety.	– social programmes; – level of staff loyalty; – employers' image.
Anti-crisis	Defines the ability to act effectively in crises and emergencies	– crisis diagnostics; – operational decisions; – risk management; – anti-crisis communications.	– speed of response; – minimisation of losses; – stability of operations.
Resilient	Characterises the ability to ensure stability and recovery after crises	– adaptability; – psychological stability; – process recovery; – learning from crises.	– pace of recovery; – staff stability; – long-term effectiveness.

Source: author's work

A common method of assessing managerial competencies is multi-criteria analysis, which combines heterogeneous indicators into a single assessment model. The use of weighting coefficients makes it possible to take into account the different significance of individual competencies depending on the level of management or the specifics of the activity. This method contributes to the formation of a generalised assessment of management potential and creates a basis for ranking management personnel according to their level of competency development.

A separate group consists of comparative analysis methods, in particular, the comparison of actual indicators of management competency development with internal standards or external benchmarks. Within the framework of HR analytics, comparative analysis makes it possible to identify significant discrepancies between the current and desired levels of competencies, which are a necessary prerequisite for the formation of management personnel development programmes.

Modern methods of analytical assessment are increasingly based on the use of digital data and automated analysis systems. Information about management activities obtained from HR information systems, performance evaluation systems, and digital interaction platforms creates opportunities for building analytical models that reflect the real behavioural characteristics of managers. Under such conditions, analytical assessment moves from episodic procedures to continuous monitoring of the level of management competency development.

Special attention should be given to the integration of HR analytics with SMART learning technologies and digital learning platforms in the development of managerial competencies. Under current conditions, such integration enables the transition from episodic training activities to a more systematic formation of managerial potential. A determining factor in this process is the transformation of analytical data into targeted learning trajectories.

SMART technologies in personnel management are viewed as data-driven digital learning tools that allow individual characteristics of competency development to be taken into account. Their application involves the use of HR analytics results to design



learning solutions and staff development programmes [16].

Digital learning platforms (LMS, LXP and similar solutions), when combined with HR analytics, create a unified environment for personnel development management. Within this environment, data on competency levels and performance outcomes are integrated with learning content, enabling the formation of individual development trajectories for managers [10].

At the same time, the application of HR analytics under martial law is associated with certain limitations. Instability of personnel data caused by changes in workforce composition and working conditions may affect the accuracy of analytical conclusions. In addition, rapidly changing organisational conditions complicate forecasting of competency development and increase the likelihood of calculation errors [9].

Additional challenges arise from the use of personnel data in crisis conditions, which may influence the level of trust and the psychological state of managers. There is also a risk of excessive reliance on quantitative indicators, potentially reducing attention to behavioural characteristics of personnel.

Despite these limitations, the combination of HR analytics and digital learning technologies supports the continuous development of managerial competencies and facilitates the use of remote learning formats under complex organisational conditions.

Conclusions and prospects for further research. The study substantiates the role of HR analytics in the personnel management system as a basis for decision-making regarding the development of managerial staff. It demonstrates the possibility of moving from a general description of competencies to their measurement through indicators, comparison over time, and the use of obtained data in development planning.

The novelty of the obtained results lies in considering HR analytics as a means of developing managerial competencies under martial law conditions, as well as in defining the structure of managerial competencies taking into account increased uncertainty in organisational functioning. The study also proposes an approach to combining HR analytics with digital learning platforms and SMART learning technologies as a basis for the individualised development of managerial personnel.

It is shown that managerial competencies can be treated as an object of analytical support in HR management when represented through a system of measurable indicators. The combination of quantitative and qualitative assessment procedures enables a more consistent understanding of managerial potential and reduces the influence of subjective judgements.

The integration of HR analytics with digital learning platforms creates the conditions for moving from one-off training activities to data-based individual development of managers. Under martial law, such integration supports the use of remote and asynchronous learning formats and contributes to the continued development of managerial personnel under conditions of increased uncertainty.

Prospects for further research are associated with improving the methodological support for assessing managerial competencies, taking into account managerial roles and levels of management, as well as developing algorithms for using HR analytics



results in digital learning platforms. Another promising area is the empirical study of the impact of different data-driven digital learning formats on the development of managerial competencies.

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Список використаних джерел

1. Chaudhary D. The Impact of HR Analytics on HR Decision-Making. *International Journal of Scientific Research in Engineering and Management*. 2025. Vol. 09. P. 1–9. DOI: <https://doi.org/10.55041/IJSREM49374>
2. Falletta S.V. In search of HR analytics implementation: Evidence-based HR and people analytics. *Journal of Organizational Effectiveness: People and Performance*. 2023. Vol. 10. No. 3. DOI: <https://doi.org/10.1108/JOEPP-10-2022-0303>
3. Huang X., Yang F., Zheng J., Feng C., Zhang L. Personalized human resource management via HR analytics and artificial intelligence: Theory and implications. *Asia Pacific Management Review*. 2023. Vol. 28. P. 598–610. DOI: <https://doi.org/10.1016/j.apmr.2023.04.004>
4. Margherita A. Human resources analytics: A systematization of research topics and directions for future research. *Human Resource Management Review*. 2021. Vol. 31. No. 2. DOI: <https://doi.org/10.1016/j.hrmr.2020.100795>
5. Minbaeva D. HR analytics in the era of digital transformation: The value creation perspective. *Human Resource Management Review*. 2022. Vol. 32. No. 2. DOI: <https://doi.org/10.1016/j.hrmr.2021.100850>
6. Samsudin A., Kurniasih M., Ikaningtiyas M., Farida S., Widowati D., Prabowo B., Shafie N. The Influence of Digital HR Analytics and Digital Competence on Employee Productivity in the Society 5.0 Era. *International Journal of Research and Innovation in Social Science*. 2025. Vol. 9. P. 6566–6578. DOI: <https://doi.org/10.47772/IJRIS.2025.910000536>
7. Yoon, S. W., Han, S., & Chae, C. People Analytics and Human Resource Development: A Systematic Review and Future Research Agenda. *Human Resource Development Review*. 2024. Vol. 23. Issue. 1. DOI: <https://doi.org/10.1177/15344843231209362>
8. Данілкова А., Шелест Є., Мантур-Чубата О., Зелена М. Роль HR-аналітики у системі контролінгу персоналу та HR-менеджменту підприємства в сучасних бізнес-процесах. *Вісник Хмельницького національного університету*. 2022. № 2. Том 2. С. 281-285. DOI: [https://doi.org/10.31891/2307-5740-2022-304-2\(2\)-44](https://doi.org/10.31891/2307-5740-2022-304-2(2)-44)
9. Кифяк В.І., Кіндзерський В.В., Олійник О.Б. HR-аналітика як інструмент управління ризиками в бізнесі: системний мультирівневий підхід. *Науковий вісник Чернівецького національного університету імені Юрія Федьковича. Серія Економіка*. 2024. Вип. 1. С. 35-41. DOI: <https://doi.org/10.32782/ecovis/2024-1-6>
10. Кобець Д. HR-аналітика і Big Data як інструменти цифрового менеджменту людських ресурсів. *Вісник Хмельницького національного університету*. 2024. Т. 330. № 3. С. 184-189. DOI: <https://doi.org/10.31891/2307-5740-2024-330-27>
11. Костишина Т.А., Семикіна А.В., Костишина А.І. HR-аналітика як інструмент прогнозування розвитку особистісного потенціалу співробітників. *Центральноукраїнський науковий вісник. Економічні науки*. 2025. Вип. 13(46).1. С. 7-19. DOI: [https://doi.org/10.32515/2663-1636.2025.13\(46\).1.7-19](https://doi.org/10.32515/2663-1636.2025.13(46).1.7-19)



12. Костишина Т.А., Тужилкіна О.В., Костишина А.І. Прийняття ефективних управлінських рішень на підставі HR-аналітики. *Міжнародний науковий журнал «Грааль науки»*. 2024. № 39. С. 147-155. DOI: <https://doi.org/10.36074/grail-of-science.10.05.2024.018>
13. Коцур А., Островерхов В., Прохоровська С., Барська Ю. HR-аналітика у системі управління сучасним підприємством. *Регіональні аспекти розвитку продуктивних сил України*. 2021. Вип. 26. С. 93-103. DOI: <https://doi.org/10.35774/rarpsu2021.26.093>
14. Носаль О.М. П'ятикрокова модель HR-аналітики. *Економіка та суспільство*. 2025. Вип. 74. URL: <https://economyandsociety.in.ua/index.php/journal/article/view/6059/5999>
15. Пучкова С.І. HR-аналітика як сучасний підхід до прийняття кадрових рішень в бізнесі. *Ефективна економіка*. 2022. № 10. DOI: <http://doi.org/10.32702/2307-2105.2022.10.32>
16. Саркісян Н.А., Гарафонова О.І. Вплив SMART HRM на ефективність HR-системи підприємства в цифровій економіці. *Економічний простір*. 2025. № 200. С. 96-101. URL: <http://economicspace.pgasa.dp.ua/article/view/328409/318234>
17. Шаульська Л.В., Кримова М.О. HR-аналітика як інструмент управління бізнесом в новій економіці. *Збірник наукових праць Таврійського державного агротехнологічного університету імені Дмитра Моторного (економічні науки)*. 2020. № 1(41). С. 20-26. URL: https://drive.google.com/file/d/1Os-3WP19dw-ER5_LTTvQf-msI59RJjuK/view?usp=sharing
18. Щербина О.В., Шкуренко М.І. HR-аналітика: переваги та виклики. *Стратегічні імперативи сучасного менеджменту: збірник матеріалів VI Міжнародної науково-практичної конференції (Київ, 21 жовтня 2022 року)*. Київ: КНЕУ, 2022. С. 179-183. URL: <https://ir.kneu.edu.ua/server/api/core/bitstreams/e16de03b-5afd-45e3-8990-b55cb2fec541/content>

References

1. Chaudhary, D. (2025). The impact of HR analytics on HR decision-making. *International Journal of Scientific Research in Engineering and Management*, 9, 1–9. <https://doi.org/10.55041/IJSREM49374>
2. Falletta, S. V. (2023). In search of HR analytics implementation: Evidence-based HR and people analytics. *Journal of Organizational Effectiveness: People and Performance*, 10(3). <https://doi.org/10.1108/JOEPP-10-2022-0303>
3. Huang, X., Yang, F., Zheng, J., Feng, C., & Zhang, L. (2023). Personalized human resource management via HR analytics and artificial intelligence: Theory and implications. *Asia Pacific Management Review*, 28, 598–610. <https://doi.org/10.1016/j.apmr.2023.04.004>
4. Margherita, A. (2021). Human resources analytics: A systematization of research topics and directions for future research. *Human Resource Management Review*, 31(2). <https://doi.org/10.1016/j.hrmr.2020.100795>
5. Minbaeva, D. (2022). HR analytics in the era of digital transformation: The value creation perspective. *Human Resource Management Review*, 32(2). <https://doi.org/10.1016/j.hrmr.2021.100850>
6. Samsudin, A., Kurniasih, M., Ikaningtiyas, M., Farida, S., Widowati, D., Prabowo, B., & Shafie, N. (2025). The influence of digital HR analytics and digital competence on employee productivity in the Society 5.0 era. *International Journal of Research and Innovation in Social Science*, 9, 6566–6578. <https://doi.org/10.47772/IJRISS.2025.910000536>
7. Yoon, S. W., Han, S., & Chae, C. (2024). People analytics and human resource development: A systematic review and future research agenda. *Human Resource Development Review*, 23(1). <https://doi.org/10.1177/15344843231209362>
8. Danilkova, A., Shelest, Ye., Mantur-Chubata, O., & Zelena, M. (2022). The role of HR analytics in the system of personnel control and HR management of the enterprise in modern business processes. *Bulletin of Khmelnytskyi National University*, 2(2), 281–285.



- [https://doi.org/10.31891/2307-5740-2022-304-2\(2\)-44](https://doi.org/10.31891/2307-5740-2022-304-2(2)-44) [in Ukrainian].
9. Kyfiak, V. I., Kindzerskyi, V. V., & Oliinyk, O. B. (2024). HR analytics as a risk management tool in business: a systemic multilevel approach. *Scientific Bulletin of Yuriy Fedkovych Chernivtsi National University. Economics Series*, 1, 35–41. <https://doi.org/10.32782/ecovis/2024-1-6> [in Ukrainian].
 10. Kobets, D. (2024). HR analytics and Big Data as tools of digital human resources management. *Bulletin of Khmelnytskyi National University*, 330(3), 184–189. <https://doi.org/10.31891/2307-5740-2024-330-27> [in Ukrainian].
 11. Kostyshyna, T. A., Semykina, A. V., & Kostyshyna, A. I. (2025). HR analytics as a tool for predicting the development of personal potential of employees. *Central Ukrainian Scientific Bulletin. Economic Sciences*, 13(46).1, 7–19. [https://doi.org/10.32515/2663-1636.2025.13\(46\).1.7-19](https://doi.org/10.32515/2663-1636.2025.13(46).1.7-19) [in Ukrainian].
 12. Kostyshyna, T. A., Tuzhylkina, O. V., & Kostyshyna, A. I. (2024). Making effective management decisions based on HR analytics. *International Scientific Journal "Grail of Science"*, 39, 147–155. <https://doi.org/10.36074/grail-of-science.10.05.2024.018> [in Ukrainian].
 13. Kotsur, A., Ostroverkhov, V., Prokhorovska, S., & Barska, Yu. (2021). HR analytics in the management system of a modern enterprise. *Regional Aspects of the Development of Ukraine's Productive Forces*, 26, 93–103. <https://doi.org/10.35774/rarrpsu2021.26.093> [in Ukrainian].
 14. Nosal, O. M. (2025). Five-step model of HR analytics. *Economy and Society*, 74. <https://economyandsociety.in.ua/index.php/journal/article/view/6059/5999> [in Ukrainian].
 15. Puchkova, S. I. (2022). HR analytics as a modern approach to making personnel decisions in business. *Effective economy*, 10. <http://doi.org/10.32702/2307-2105.2022.10.32> [in Ukrainian].
 16. Sarkisian, N. A., & Garafonova, O. I. (2025). The impact of SMART HRM on the effectiveness of the enterprise's HR system in the digital economy. *Economic Space*, 200, 96–101. <http://economicspace.pgasa.dp.ua/article/view/328409/318234> [in Ukrainian].
 17. Shaulska, L. V., & Krymova, M. O. (2020). HR analytics as a business management tool in the new economy. *Collection of Scientific Papers of the Dmytro Motorny Tavria State Agro-Technological University (Economic Sciences)*, 1(41), 20–26. https://drive.google.com/file/d/1Os-3WPI9dw-ER5_LTTvQf-msI59RJjuK/view?usp=sharing [in Ukrainian].
 18. Shcherbyna, O. V., & Shkurenko, M. I. (2022). HR Analytics: Benefits and Challenges. *Strategic Imperatives of Modern Management: VI International Scientific and Practical Conference* (Kyiv, October 21, 2022). Kyiv: KNEU, 179–183. <https://ir.kneu.edu.ua/server/api/core/bitstreams/e16de03b-5afd-45e3-8990-b55cb2fec541/content> [in Ukrainian].

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