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Data Analyst and Data Scientist Professions: Demand, Requirements, and Labor Market Prospects

This article presents a comprehensive study of the current state, requirements, and development prospects of the data analyst and data scientist professions in the context of digital economic transformation and dynamic changes in the labor market. It is demonstrated that the rapid growth of data volumes, the proliferation of analytical platforms, and the active adoption of artificial intelligence and machine learning technologies are driving the increasing strategic importance of data professionals in managerial decision-making processes.

The empirical basis of the study is laid by analysis of job vacancies on the Work.ua platform (March 2026), enabling to assess the structure of demand, the level of competition, the requirements to applicants, and the salary characteristics. The findings reveal a structural imbalance between labor demand and supply, shown in the higher number of applicants relative to available vacancies, as well as a gap between salary expectations and actual employer offers.

The study systematizes the key competencies of data analysts and data scientists, including technical skills (SQL, Python, BI tools), analytical competencies (statistics, modeling), as well as communicational and managerial skills. It is demonstrated that the modern labor market increasingly demands multidisciplinary professionals capable of working across the full data lifecycle – from data collection to the implementation of business solutions.

Special emphasis is placed on the transformation of professional roles, reflected in the blurring of boundaries between business analysts, data analysts, and data scientists, as well as the growing importance of hybrid positions. The analysis revealed a clear trend of transition from descriptive analytics to predictive and prescriptive analytics, significantly enhancing the strategic value of analytical activities.

The practical significance of the research lies in potential applications of its findings in improving academic programs, developing professional standards, and setting human capital development strategies in the digital economy context.

Key words: *data analyst, data scientist, labor market, digital transformation, competencies, big data, business analytics, salaries, vacancies, data-driven decision-making.*

Introduction. The present-day context of the digital-based economic transformation sees the growing strategic importance of data analyst and data scientist professions in the development of organizations in various industries. The increasing volumes of data, computerization of business process, and introduction of analytical tools push up the demand for specialists able to transform data into valuable management decisions. Functions of data handling, e.g., using Power BI, SQL, Python, DAX, Power Query, and building of analytical models and reports are included in the vacancies of business analysts. This confirms the trend to convergence of roles, with classical business analyses gradually transforming into the data-driven approach.

The data-driven approach refers to a management concept by which decision-making relies primarily on regular collection, processing and analysis of data rather than on intuition or subjective experience. This approach involves the employment of analytical tools, statistical methods, and digital technologies, to discover patterns, predict results or optimize business processes. Within the data-driven model, data constitute a strategic resource of an organization, with management decisions becoming more informed, accurate, and efficient. A remarkable feature of the labor market is that employers, apart from analysis, articulate the demand for competencies in forecasting, modelling, and computerization of processes.

Analysts are more and more often engaged in shaping strategic decisions and digital transformations, with the growing need for specialists capable to deal with large data arrays and sophisticated analytical tools.

Hence, a study into professions of data analyst and data scientist is relevant for the context of change in the labor market, digitalization of business and the increasing role of analytics in decision-making.

Literature review. The recent research literature definitely confirms that data analyst and data scientist professions are core components of the digital transformation of the economy. In the researchers' spotlight are issues of the increasing role of data as a strategic resource, the changing requirements to specialists of analytical profile, and the restructuring of competencies under the impact of big data, artificial intelligence, and digital platforms.

Basic theories of business analytics are considered an interdisciplinary domain combining methods of statistics, informatics, management, and information technologies. According to H. Min [1], J. R. Evans [2], and M. Schmitt [3], business analytics is a process of transforming data into applied insights to support strategic, tactical, and operational decisions.

Special emphasis in modern research is placed on the big data concept. According to [4; 5], the increasing data volume necessitates prompt and accurate decision-making, thus reinforcing the significance of data specialists in business. Data analysts and data scientists become principal intermediaries between data arrays and management decisions.

An important area of research pertains to competencies of such specialists. P. Meredith et al. [6], A. De Mauro et al. [7], and M. Fox et al. [8] demonstrate that employers across the world keep demanding a mix of technical (SQL, Python, Business Intelligence tools) and analytical (statistics, modelling, interpretation of data) competencies, as well as soft skills (communication, critical thinking, teamwork). This confirms a global standardization of the demands to data analyst and data scientist professions.

Special emphasis is placed by researches on the role of business analysts as intermediaries between business and technologies. It is stressed that these specialists, apart from data analysis, transform data into strategic decisions, thus encouraging innovations and organizational change [9; 10]. This context also raises importance of managerial and project competencies, especially in agile environments (Ndlela & Tanne [11]).

The theory of human capital (Deming & Silliman [12]; Kryscynski et al. [13]; Kulikowski [14]) affirms that the central factors of efficiency on the labor market are not only formal education, but also well-developed cognitive, analytical, and adaptive skills. This clearly explains a heavy demand for data specialists in the contemporary knowledge-based economy.

Empirical studies of vacancies show that the most demanded tools are SQL, Excel, Python, Power BI, Tableau, as well as project management platforms (Jira, Confluence) [6; 7]. This confirms a pivot of the labor market to technologically saturated and interdisciplinary roles.

A notable contribution to the current specialized literature is a study by A. Kowalska-Styczeń and K. Juszczyk [15], which, based on analysis of 1480 vacancies and using NLP and sentiment analysis, shows that employers have gradually been changing the approach to framing the requirements. It was found that junior positions placed emphasis on language and communication proficiency, whereas senior level required the abilities of leadership, project management, and in-depth analytics. Also, it was demonstrated that the majority of vacancies had neutral or positive tone reflecting the strategy of creating an attractive employer brand in the competitive environment.

According to Ukrainian researchers, e.g., O. Chernina [16], advanced business intelligence (BI) systems (Power BI, Tableau, QlikView) are key tools for management decision-making, business process optimization, and enhancing business competitiveness. Yet, introduction of analytical technologies in Ukraine has to face a series of challenges, e.g., inadequate digital literacy, shortage of skilled staff, and limited investment in IT infrastructures. Also, emphasis is placed on the need to develop education in the field of data analytics, and to launch government support to digital transformation.

The literature review confirms that the labor market for data analysts and data scientists is dynamic, globalized, and competitive. Its main tendency is the increasing demand for multidisciplinary competencies and the enhancing requirements to a mix of technical and soft skills, which determines future prospects of these professions. The aforementioned context accentuates the importance of regular studies of real vacancies as the most robust source of information about the actual requirements of employers, the scope of demand and important trends on the labor market. An analysis of the vacancy market of business analysts in Ukraine is necessary for several reasons:

First, the Ukrainian labor market in data analytics is undergoing the phase of rapid formation and integration into the global digital space. It means that international trends are not always fully reflected in the local practice, which necessitates research into the national context.

Second, Ukraine features a structural gap between academic programs and real requirements of employers. An analysis of vacancies helps reveal this gap and determine what technical, analytical and soft skills need to be incorporated in academic programs, to enhance the competitiveness of graduates.

Third, given the shortage of skilled staff in IT and data science, monitoring of the vacancy market enables to assess the real scope of demand for specialists, to determine the most demanded tools (SQL, Python, Power BI, Tableau, etc.), and to predict future trends in this profession.

Fourth, an analysis of vacancies is an important tool for setting public and corporate policies on digital transformation. Its results can be useful in elaborating educational standards, retraining programs, and human capital development strategies.

A study into the vacancy market of business analysts in Ukraine has, therefore, not only theoretical, but also practical significance, because it allows for combining theoretical approaches to analysis of the digital economy with real needs of the labor market. This will help enhance the efficiency of professional training, reduce the shortage of staff, and increase the competitiveness of Ukrainian specialists in the global digital environment.

The article's purpose is to set out the results of a comprehensive study of data analyst and data scientist professions amidst transforming labor market, including the scopes of demand for them, key competencies and professional requirements, structural imbalances between demand and supply of labor force. Special emphasis is placed on analysis of trends in data professions in the digitalized economy, integration of analytical functions into business processes, and the increasing role of data-driven approaches in decision-making.

Methods of research. The methodological framework of this research is a systemic integration of general scientific and special methods allowing for a comprehensive analysis of the labor market in data analytics. Dialectical and logic methods help reveal the essence of data analyst and data scientist professions, to substantiate their role in the contemporary digital economy, and to determine mainstream transformations of the professional requirements. Econometric methods were used for a quantitative analysis of the demand-supply structure: in estimating the vacancy-applicant ratio; analysis of the salary; determining the industrial and institutional structure of the market; revealing the imbalances between expectations and offers. The method of comparative analysis was used to confront salary expectations of applicants and actual offers of employers, which enabled to reveal structural inconsistencies on the labor market. The content analysis was used to systematize the requirements to applicants, to determine key competencies (technical, analytical, communicative, and managerial), and to explore the functional coverage of the professions. The tabular approach was used to sum up the results and improve visualization of the research; it allowed for structural presentation of the main labor-market characteristics, competency models, and functional responsibilities of the specialists. Altogether, the above methods ensured the comprehensiveness of research, the reliability of results, and evidence-based conclusions about the current performance and prospects of data analysts and data scientist professions.

Results and discussion. The empirical base of research is data from Work.ua platform as of December 2025. The analysis builds on 125 vacancies (41% of the total 304), which ensures a representativeness of results. All the vacancies with indicated salary (49 vacancies) were included in the sample. An important aspect is the quantitative imbalance between demand and supply. The comparison of 1900 resumes with 304 vacancies revealed the ratio of nearly six applicants per vacancy. It gives evidence of a tough competition among applicants and oversaturation of the market in junior- and middle-level segments.

A summary table of quantitative characteristics was built by the research findings, showing a structured model of the current labor market for data analysts and data scientists, shaping by the impact of economy's digitalization, industry specifics, and organizational parameters of employers (Table 1, author's development on the basis of [17]). Apart from giving insight into main statistical indicators, its analysis reveals in-depth patterns of the demand for data specialists.

The primary attention should be turned to the industrial structure of demand, showing the prevalence of high-tech and financial sectors. The largest share of vacancies accounts for IT sector (19%), which confirms their role as a main driver of the digital transformation and an enabler of the demand for data specialists. However, a significant share of trade (17%) signals a rapid introduction of analytics in marketing processes, management of consumer behavior, and optimization of sales. The financial sector (14%) has been traditionally focused on data-driven approaches, entailing a heavy demand for analysts for risk assessment, forecasting and asset management.

Other industries have also been employing analytics to a wider extent. The food provision (9%) demonstrates the increasing use of data for optimization of logistics processes and management of demand, whereas Human Resources (8%) reflects the expansion of people analytics and digitalization of staff management. Special emphasis should be placed on the defense sector (7%), giving evidence of the enhanced role of analytical tools in security and strategic planning. However, a large share of "other" activities (33%) confirms that data analyst profession is becoming universal, going well beyond the traditional industries and turning into an integral part in various economic activities.

The next important aspect is the structure of demand by company size. The analysis shows that a major share of vacancies (53%) accounts for large companies with more than 250 employees. This gives evidence of the strict formalization of business processes, the existence of sophisticated information systems, and the systemic implementation of analytical decisions. Yet, a notable share of small (24%) and medium (23%) enterprises indicates that the demand for data specialists is not confined to the corporate sector, being created in the environment of flexible organizations, startups, and rapidly scaling companies.

We should logically proceed with examining the types of employment, in order to assess peculiar features of work schedule in this employment segment. The utter dominance of full-time employment (100%)

Table 1

Empirical characteristics of segmentation of the labor market for data analysts and data scientists

Segmentation criterion	Indicator	Share/ Level	Analytical interpretation
Activity	Information Technologies	19%	High-tech demand, confirming the dominance of the digital economy and the need in data specialists in the technological sector
	Trade	17%	Focus on marketing and consumer analytics, intensive use of BI decisions for optimization of sales
	Finance	14%	Heavy reliance on data-driven decisions, forecasting analytics, and risk assessment
	Food provision	9%	Using analytics for optimization of supply and demand chains
	Human Resources	8%	Development of people analytics and automation of recruiting
	Defense	7%	The increasing role of data analytics in security-related and strategic decisions
	Other	33%	The diversifying demand, showing that business analyst profession is proliferating across industries
Staffing, persons	Below 50	24%	Flexible organizational structure, rapid decision-making, high adaptability to changes
	50–250	23%	Optimal balance of resources and management efficiency, intensive implementation of analytical decisions
	250+	53%	Prevalence of large companies with standardized processes, highly formalized analytics, and systemic use of BI
Type of employment	Full-time	100%	Full-time employment shows the strategic importance of the profession and its integration into key business processes
	Remote	35%	A large share of remote employment reflects digitalization of the labor market and well-established project work in global teams
Salary, UAH	Average	50,000	An indication of a stable basic salary level for specialists with modest experiences
	Minimal	17,000	It corresponds with the junior level and entry in the profession with basic competencies
	Typical	40,000 –100,000	The middle-level range, with the key role assigned to technical and analytical skills
	Maximal	178,000	The senior level requiring strategic responsibility and management of sophisticated analytical systems

underscores the strategic nature of data analyst and data scientist professions that are integrated in the core business processes of companies. However, a large share of remote work (35% of the companies offering full-time employment) reflects global trends to digitalization of work, expansion of distance collaboration formats, and integration of Ukrainian specialists into international projects.

The salary level allows us to assess the economic attractiveness of the profession. The average salary approaches to 50,000 UAH, which corresponds to the positions with average qualification levels but 72% higher than the average salary in Ukraine. The minimal level (17,000 UAH), typical for junior specialists, is indicative of the phase of entry in the profession. Yet, the typical range (40,000–100,000 UAH) reflects a considerable variation of incomes depending on the competencies, experiences, and industry. The maximal salary (178,000 UAH) is due to senior specialists with well-developed analytical, technical, and managerial skills, involved in strategic data management.

A comprehensive assessment of the balance in the labor market of business analysts was made by comparing two key indicators: salary expectations of applicants, put in resumes, and effective offers of employers, shown in vacancies. This approach allowed us to identify structural imbalances between demand and supply of workforce, and to assess the real situation on the market. The analysis gives evidence of the strong variations between expectations of applicants and offers of employers. Thus, the average salary indicated in the resume amounts to 60,000 UAH, whereas the one fixed in the vacancies equals 50,000 UAH, as mentioned above. Hence, the difference is nearly 10,000 UAH, or about 20%, showing that the

applicants' expectations exceed the real capabilities of the market.

By analyzing the vacancy titles in business and data analytics, we could see not only the formal diversity of positions, but also radical transformations in the content of this profession under the digital economy. The results show that the labor market is moving further away from a unified understanding the business analyst's role, creating a multidimensional system of specializations. It should be noted that the category of classical business analyst is still dominant, remaining the basic and most widespread one. This gives evidence of the persisting traditional role of business analyst as an intermediary between business and technologies, responsible for formalization of requirements, analysis of business processes and support of decision-making. However, a numerical superiority of this category does not imply its homogeneity but rather reflects a wide range of the functions incorporated within one title.

A logical continuation is the System / IT Business Analyst group, demonstrating the enhanced technological component of the profession. The emergence of such roles signals the shifting emphasis from a merely business-oriented analysis to its deeper integration with IT systems, data architecture, and software design. This confirms the tendency to technologization of the profession and the increasing knowledge-related requirements in the IT domain.

Of special interest in this context is the Data / BI Analyst category reflecting the transition to data-driven management models. Although this group is quantitatively inferior to the classical categories, its importance is strategic, because it represents integration of business analytics with data science, especially big data handing, analytical modelling, and visualization of results.

The further analysis demonstrates that the roles are industry-specific. While marketing analysts focus on analyses of consumer behavior and efficiency of marketing campaigns, financial analysts engage in budgeting, forecasting, and financial planning. This suggests the deepening functional differentiation of the profession depending on the application. No less important is the group of ERP/CRM analysts, showing the demand for specialists capable of operating corporate information systems. Apart from analytical skills, these roles imply understanding of business processes in the context of automation and integration of data. The Process / Lean Analyst category, in its turn, places emphasis on optimization of business processes, efficiency enhancement, and implementation of lean production. This shows that classical management functions have been preserved as part of the analytical work.

Special interest is drawn to hybrid roles, a combination of Product Owner and Business Analyst in particular. Their emergence signals that the profession evolves towards integrating analytical and management functions, which is especially important in agile environments. Apart from analytical competencies, these positions require the ability to take product-related decisions and interact with stakeholders at strategic level.

At the structure's bottom is the category of consulting roles, which, in spite of the smallest share, reflects a high-level expertise and focus on external projects, transformative initiatives, and strategic analysis. Hence, the results allow for the general conclusion that the current labor market demonstrates an ample diversification of business analysts' roles, giving evidence that this profession is transforming from a homogenous specialty into a cluster of interlinked roles. It means that the notion "business analyst" is no more univocal, and covers a wide range of functional, industrial and technological specializations. Accordingly, specialists seeking for successful professional careers need to foster both the essential analytical competencies and specialized knowledge depending on a chosen area: technical, data-oriented, industrial or managerial.

The current functional role of data analyst and data scientist features high complexity and integration into business processes of an organization. Summing up the results of our analysis, we can argue that these specialists' efforts are logically aligned with the full cycle of data handing: from primary collection of data to their implementation of management decisions. This approach reflects the data lifecycle concept (collection → processing →analysis → interpretation → implementation), which have effectively become the standard of the modern data-driven economy.

It is important to emphasize that the role of analyst nowadays is far removed from the conventional analysis. The specialist is actively engaged in setting requirements, decision-making, business-process transformations, which shows that his function is turning from ancillary into strategic. Its first phase is collection and preparation of data, involving search, aggregation, and refining of information obtained from various sources. This function is predominantly operative, but it shapes further analysis and heavily contributes to the quality of final results.

Its logical continuation is analysis of data and discovering the patterns, constituting the backbone of professional work of data analyst. This phase involves in-depth processing of information, identifying trends and ratios, and assessing the efficiency of business processes. It is here that data transform into knowledge with practical value for an organization.

The next phase, visualization and reporting, ensures that analytical conclusions are transmitted to practical utilization. Created dashboards, reports and KPI monitoring systems allow for presenting results in a form intelligible for managers, which helps enhance significantly the decision-making efficiency. The importance of requirement setting and documenting increases in parallel with analytical functions, demonstrating its integration in business analysis. Descriptions of assignments, specifications, and requirements, helping align business and technical

teams, constitute an important component in the project management. Further expansion of the functional role makes the analyst involved in shaping and implementing decisions, where he interacts with engineers and data-science teams. This phase is integrative in nature and shows the transition from analytical to applied activities, when analytical results are implemented as digital products or systems.

Special emphasis is placed on forecasting and modelling, which is a distinctive feature of data scientist. Modelling, using machine learning methods, and testing hypotheses help explain past events and predict future trends, which considerably enhances the strategic value of analytics. No less important is the communication component ensuring effective interactions with stakeholders. Interviewing, presentations of results and involvement in decision-making make technical analysis linked to business objectives, turning the analyst into a core contributor in the management process.

The concluding phase is optimization of business processes, which involves identifying inefficiencies, elaborating recommendations, and contributing in the digital transformation. An important phase of the implementation of analytical decisions is their testing, particularly in User Acceptance Testing (UAT) format, to verify the compliance of developed products or systems with business requirements. It is at this level that the data specialist fulfills his strategic function, acting as a driver of change in an organization.

A summary table of responsibilities (Table 2, author's development on the basis of [17]) shows a systemic structure of these functions, with each group of responsibilities having a clear functional purpose, from operative (data collection) to strategic (optimization and transformation). This hierarchy underscores the profession's evolution: from fulfilling isolated analytical assignments to comprehensive management of data as a strategic resource.

Table 2

A systematization of professional responsibilities of data analysts and data scientists in the business environment

Group of responsibilities	Specific actions	Relevant role	Significance	Function
Data collection	Data search, refining, and integration	Data Analyst	High	Operational
Data analysis	Identifying trends and patterns	Data Analyst	Critical	Analytical
Visualization	Dashboards, reports, KPI	Data Analyst	High	Interpretational
Documenting	Technical assignments, specifications, requirements	Data Analyst	Medium	Formalizational
Decision-making	Collaboration with designers	Data Analyst / Data Scientist	High	Integrative
Modelling	ML, forecasting, A/B testing	Data Scientist	High	Prognostic
Communication	Interactions with stakeholders	Data Analyst / Data Scientist	Critical	Managerial
Optimization of processes, testing of decisions	Automation, improvement, UAT	Data Analyst / Data Scientist	High	Strategic

Hence, the data analyst / data scientist nowadays is not only a technical specialist, but also a multifunctional expert combining analytical, technological, and managerial roles. This functional multidimensionality entails heavy demand for them and their primary importance in fostering competitive advantages of organizations on the current labor market.

Besides that, the current labor market of analysts features the increasing requirements to professional training of applicants, stemming from complicating business processes and the rapid digitalization of economy. Our analysis of vacancies allows us to outline the main criteria shaping the typical profile of a specialist in data analytics and data science.

A significant criterion is the practical experience, which, for the most part, varies from one to five years. This range shows that employers seek for middle- and senior-level applicants capable to perform analytical assignments individually, and to participate in decision-making. The practical experience is considered as key to the ability for effective handling of real business situations.

No less important is the education level of applicants. The overwhelming majority of employers give preference to specialists with high-education diplomas, a requirement that may be either obligatory or desirable. It stems from the need for fundamental knowledge in mathematics, statistics, economics, and information technologies laying the basis for analytical work. An essential role is assigned to the English-language proficiency, which, as a rule, has to be not lower than the average (B1 та B2). This requirement stems from the global nature of IT market, the need to handle international documentation, and to participate in international projects.

The profile of data analyst and data scientist forms at the junction of three core components: (i) technical competencies (hard skills); (ii) analytical and methodological competencies; (iii) business and communicational competencies (soft + business skills). The vacancies show a clear trend: rather than narrowly specialized staff, employers expect all-purpose analysts capable to handle the full cycle of data – from collection to decision-making (Table 3, author's development on the basis of [17].

Table 3

A summary of core competencies and professional requirements to data analysts

Competency	Skills	Tools / technologies	Importance	Nature of requirement
Data processing	Analysis of big data arrays, data refining	Excel,		
Power Query	High	Basic		
BI and visualization	Building dashboards, reports	Power BI, Tableau, Looker	High	Obligatory
Software design	Automation, analytics	Python	Medium / high	Desirable/obligatory (Data Scientist)
Databases	Inquiries, structural analysis	SQL	High	Obligatory
Data engineering	Building pipelines, ETL	Airflow, API, ETL	Medium	The increasing necessity
Analytical thinking	Revealing patterns, modelling	–	Critical	Key competency
Business analysis	Analysis of processes, setting up requirements	BPMN, UML	High	Obligatory
Documenting	Description of requirements, specifications	SRS, BRD, User Stories	Medium	Standard
Communication	Work with stakeholders	–	High	Critically important
Strategic thinking	Support of management decisions	–	High	The increasing role

First and foremost, it should be noted that data processing and handling databases are the competencies on which the analyst profession builds. Analysis of large data arrays, data refining and transformation, with employing tools like Excel, Power Query or SQL, are the skills indispensable for the analytical work. These are competencies with a stably high importance, deemed by employers as an obligatory requirement for entry in the profession.

The next logical phase is visualization and interpretation of data, realized by BI tools (Power BI, Tableau, Looker). Nowadays a mere analysis of data is not sufficient: the ability to transform them into intelligible analytical products (dashboards, reports) with immediate impact on the managerial decision-making is becoming a key one. Hence, visualization is a link between technical analysis and business context. Software design is also important here, especially Python language allowing for automation of analytical processes and enhancing data capabilities. Although this competency may be differential for data analyst (from desirable to obligatory), it is critical for Data Scientist, because it opens access to machine learning methods, statistical modelling, and big data handling.

At the same time, there is a growing significance of data-engineering competencies encompassing building data pipelines, ETL processes, and integration of various information sources. Although these skills are regarded as supplementary now, their role is rapidly increasing due to the more sophisticated data infrastructures and adoption of complex analytical systems by companies.

Apart from technical skills, a central role is assigned to analytical thinking classified in Table 3 as a critical competency. The ability to reveal patterns, build models and formulate informed conclusions turns a set of tools into an effective toolkit for decision-making. When this competency is lacking, even excellent technical training will not ensure the professional efficiency. Yet, as a data specialist works not in isolation, but within a business environment, his competencies of business analysis are important. The ability to analyze business processes, to set requirements, and to use notations (BPMN, UML) helps integrate analytical results in the practical operation of an organization. Here the important role is assigned to documenting that makes knowledge formalized and ensure effective interactions between project participants.

Special emphasis should be placed on communicational competencies deemed as critically important. Contacts with stakeholders, presentations of analytical results, and coordination of decisions constitute an integral part of the professional activities, confirming that the role of analyst is shifting to consultant and intermediary between data and business.

This model ends with strategic thinking, which importance has been growing. Data analysts and data scientists are more and more often involved in managerial decision-making, business forecasting, and digital transformation of organizations. This signals the transition from operational-level analytics to strategic one. Hence, Table 3 shows not a mere nomenclature of competencies, but a hierarchically structured system of requirements, where essential technical skills are supplemented with analytical talents, business insight, and strategic vision. This complexity frames a modern image of data specialist and determines high demand for him on the labor market.

Conclusions and recommendations. The labor market in data analytics stands out for high dynamics, technological focus, and the increasing demand for multidisciplinary competencies. The revealed tendencies confirm that data analyst and data scientist professions have steady development prospects and play a central role in competitiveness enhancement in modern organizations.

Apart from heavy demand for data analysts, the modern labor market faces a number of controversies and problems:

1. Blurred professional boundaries. The analysis of vacancies shows that employers often combine the requirements to business analysts, data analysts, and even data scientists in a single position. They may simultaneously require business analysis and work with stakeholders; technical skills (SQL, Python); visualization and modelling tools. This complicates setting clear-cut professional standards, professional training, and applicants' positioning on the labor market.

2. Imbalance between requirements and experiences. Many vacancies require one-to-two-year work experience in parallel with a wide range of tools and competencies. This creates an entry barrier for novices, and a shortage of skilled staff.

3. Strict requirements to multidisciplinarity. Specialists are supposed to combine analytical thinking, technical skills (BI, software design), business insight, and communicational competencies. This makes professional training much more complicated, and tighten non-stop-learning requirements.

4. Uneven salary level. The analysis shows that the salary level strongly varies by company size, industry or functional complexity. This suggests that unified standards for competency evaluation are lacking, and that companies have different maturity of analytical functions.

5. Rapidly evolving requirements. The labor market demonstrates transition from descriptive analysis to forecasting ad prescriptive analytics, from local assignments to integrated data-based decisions (AI, RPA, ML). This poses the problem of continual knowledge updating, and the risk that the skills will soon become irrelevant.

The obtained results and outlined problems led us to propose key areas of potential research and development:

1. Formalizing professional standards for data specialists. It would require elaborating definitive models of competencies and standards for data analyst and data scientist professions with accounting to levels (junior, middle, senior) and industry specifics.

2. Harmonizing academic programs with labor market requirements, involving analysis of the gap between academic training and real employers' demands, to elaborate adaptive training programs focused on practical skills.

3. Modelling of the labor market in data analytics, including creation of econometric models for forecasting demand for and supply of data specialists with accounting for technological trends (AI, ML, Big Data).

4. The digital transformation's impact on the structure of professions, which would require analysis of the changing analysts' roles amidst automation, introduction of artificial intelligence, and shaping no-code / low-code decisions.

5. The dynamics of salary and its underlying factors, including in-depth analysis of the impact of industry, experience, technological stack, and company size on the salary level of data specialists.

6. Developing multidisciplinary competencies, including analysis of effective models for creating T-shaped and π-shaped specialists capable to combine technical, analytical, business competencies.

7. Integrating the Ukrainian market into the global context. An important area is a comparative analysis of the Ukrainian and international labor market, to determine competitive advantages and barriers in integrating Ukrainian specialists into global projects.

8. The role of data specialists in strategic management of organizations. It requires further studies of the changing role of the analyst from an operational staffer into a strategic business partner.

References

1. Min, H. (2016). *Global Business Analytics Models: Concepts And Applications In Predictive, Healthcare, Supply Chain, And Finance Analytics.* New York: FT Press Analytics. Retrieved from https://www.scribd.com/document/939084554/Global-business-analytics-models-concepts-and-applications-in-predictive-healthcare-supply-chain-and-finance-analytics-by-Min-Hokey

2. Evans, J. R. (2016). *Business analytics: Methods, models and decisions.* (2nd ed.). London: Pearson Education Limited. Retrieved from https://books.google.com.ua/books/about/Business_Analytics.html?id=ZlsDoQEACAAJ&redir_esc=y

3. Schmitt, M. (2023). Deep learning in business analytics: A clash of expectations and reality. *International Journal of Information Management Data Insights, 3 (1).* https://doi.org/10.1016/j.jjimei.2022.100146

4. Chahal, H., Jyoti, J., & Wirtz, J. (2019). Business analytics: Concept and applications. *Understanding the role of business analytics.* (Chapter 1, pp. 1–8). Springer. DOI: 10.1007/978-981-13-1334-9_1

5. Popoola, O. A., Adama, H. E., Okeke, Ch. D., & Akinoso, A. E. (2024). The strategic value of business analysts in enhancing organizational efficiency and operations. *International Journal of Management & Entrepreneurship Research, 6 (4),* 1288–1303. DOI:10.51594/ijmer.v6i4.1059

6. Meredith, P., Summons, P. F., Park, M., & Cheek, B. (2019). What do Employers expect from Business Analysts and is it captured by the "Business Analysis Body of Knowledge" (BABOK)? *Proceedings of the Australasian Conference on Information Systems,* 880–889. Retrieved from https://acis2019.io/pdfs/ACIS2019_PaperFIN_175.pdf

7. De Mauro, A., Greco, M., Grimaldi, M., & Ritala, P. (2018). Human resources for Big Data professions: A systematic classification of job roles and required skill sets. *Information Processing & Management, 54 (5),* 807–817. https://doi.org/10.1016/j.ipm.2017.05.004

8. Fox, M., Breese, J. L., & Vaidyanathan, G. (2021). Competency evaluation for careers in business intelligence analysis. *Issues in Information Systems, 22 (4),* 157–167. Retrieved from https://iacis.org/iis/2021/4_iis_2021_168-179.pdf

9. Daraojimba, E. C., Nwasike, Ch. N., Adegbite, A. O., Ezeigweneme, Ch. A., & Gidiagba, J. O. (2024). Comprehensive review of agile methodologies in project management. *Computer Science & IT Research Journal, 5 (1),* 190–218. DOI: 10.51594/csitrj.v5i1.717

10. Farayola, O. A., Abdul, A. A., Irabor, B. O., & Okeleke, E. Ch. (2023). Innovative business models driven by AI technologies: A review. *Computer Science & IT Research Journal, 4 (2),* 85–110. DOI: 10.51594/csitrj.v4i2.608

11. Ndlela, M., & Tanner, M. (2022). Business analysts' contributions to agile software development teams. *Information Technology & People, 36 (112).* DOI: 10.1108/ITP-08-2021-0656

12. Deming, D., & Silliman, M. I. (2024). Skills and human capital in the labor market. Handbook of Labor Economics. National Bureau of Economic Research. *Working Paper, 32908.* Retrieved from https://www.nber.org/system/files/working_papers/w32908/w32908.pdf

13. Kryscynski, D., Reeves, C., Stice-Lusvardi, R., Ulrich, M., & Russell, G. (2017). Analytical abilities and the performance of HR professionals. *Human Resource Management, 57 (3),* 715–738. https://doi.org/10.1002/hrm.21854

14. Kulikowski, K. (2024). Defining analytical skills for human resources analytics: A call for standardization. *Journal of Entrepreneurship, Management and Innovation, 20 (4),* 88–103. DOI: 10.7341/20242045

15. Kowalska-Styczeń, A., & Juszczyk, K. (2025). Employer expectations of business analysts: NLP-based analysis of job advertisements. *Journal of Innovation & Knowledge, 11.* DOI: 10.1016/j.jik.2025.100859

16. Chernin, O. Ya. (2025). Vplyv instrumentiv biznes-analityky na rozvytok tsyfrovoi ekonomiky Ukrainy [The impact of business intelligence tools on the development of the digital economy of Ukraine]. *Ekonomika ta suspilstvo – Economy and Society, 72,* 133–136. DOI: https://doi.org/10.32782/2524-0072/2025-72-40 [in Ukrainian].

17. Work.ua. (n. d.). *Statystyka zarplat v Ukraini* [Salary statistics in Ukraine]. Retrieved 10 December 2025 from https://www.work.ua/stat/ [in Ukrainian].

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Професії Data-Analyst та Data Scientist: затребуваність, вимоги та перспективи на ринку праці

У статті здійснено комплексне дослідження сучасного стану, вимог і перспектив розвитку професій Data-Analyst та Data Scientist в умовах цифрової трансформації економіки та динамічних змін ринку праці. Обґрунтовано, що зростання обсягів даних, поширення аналітичних платформ, а також активне впровадження технологій штучного інтелекту та машинного навчання зумовлюють підвищення стратегічної ролі data-фахівців у процесах прийняття управлінських рішень.

Емпіричну базу дослідження сформовано на основі аналізу вакансій платформи Work.ua (грудень 2025 р.), що дозволило оцінити структуру попиту, рівень конкуренції, вимоги до кандидатів та особливості оплати праці. Встановлено наявність дисбалансу між попитом і пропозицією, що проявляється у перевищенні кількості кандидатів над вакансіями, а також у розриві між зарплатними очікуваннями та реальними пропозиціями роботодавців.

Систематизовано ключові компетентності Data-аналітиків і Data Scientist, які охоплюють технічні (SQL, Python, BI-інструменти), аналітичні (статистика, моделювання), комунікаційні та управлінські навички. До-

ведено, що сучасний ринок праці формує запит на мультидисциплінарних фахівців, здатних працювати з повним циклом даних – від їхнього збирання до впровадження бізнес-рішень. Особливу увагу приділено трансформації професійних ролей, що проявляється у розмиванні меж між бізнес-аналітиками, Data-Analyst та Data Scientist, а також у зростанні значення гібридних позицій. Виявлено тенденцію переходу від описової до прогнозної та prescriptive-аналітики, що підвищує стратегічну цінність аналітичної діяльності.

Практична значущість дослідження полягає у можливості використання отриманих результатів для вдосконалення освітніх програм, формування професійних стандартів, а також розробки стратегій розвитку людського капіталу в умовах цифрової економіки.

Ключові слова: *Data-Analyst, Data Scientist, ринок праці, цифрова трансформація, компетентності, Big Data, бізнес-аналітика, заробітна плата, вакансії, data-driven рішення.*

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