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DEVELOPMENT OF AN ALGORITHM FOR ASSESSING THE FAIR VALUE OF NON-CURRENT ASSETS FOR HIGHER EDUCATION INSTITUTIONS

pages 6–11

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The object of research is the algorithm for assessing the fair value of non-current assets for higher education institutions.

The research problem, which is solved in the course of the work, is the lack of a clear algorithm for assessing the fair value of non-current assets of higher education institutions. There is also no methodological support for assessing the fair value of non-current assets taking into account the industry specifics of higher education institutions.

The work has developed an algorithm for assessing the fair value of non-current assets of higher education institutions, which includes two directions: assessing the fair value of non-current assets independently for higher education institutions; assessment with the help of an assessment entity. The algorithm for assessing the fair value of non-current assets independently by higher education institutions is identified as the main direction, which involves the implementation of the following actions:

- creation of an assessment commission;
- approval of the head's order for the assessment;
- the presence of an active market;
- the possibility of identifying the object;
- the presence of methodological support for calculating fair value.

The methods of assessing the fair value of non-current assets were investigated, among which: market, cost and income. The market method of assessing the fair value of non-current assets, which is the easiest to apply, was determined as the recommended one for higher education institutions. Its advantages and disadvantages were summarized, among the advantages the market factor of supply and demand for similar objects was highlighted. The structure of the Methodological Provisions for assessing the fair value of non-current assets (NA) was developed according to the following points:

- general provisions;
- criteria for allocating groups of NA subject to assessment;
- criteria for identifying NA;
- the presence of active market conditions;
- methods of assessing fair value;
- requirements for drawing up an Act on the valuation of non-current assets.

Keywords: valuation of non-current assets, valuation algorithm, fair value, initial recognition, revaluation, higher education institutions.

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MODELING OF FINANCIAL PERFORMANCE OF URBAN ELECTRIC TRANSPORT ENTERPRISES IN THE WAR AND POST-WAR PERIODS

pages 12–20

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The object of research is the financial indicators of urban electric transport enterprises. The problem of modeling of the main financial indicators of the activities of urban electric transport enterprises of Ukraine in the war and post-war period is considered. Their research and analysis are a necessary condition for a general and comprehensive assessment of the effectiveness of the functioning and financial capacity of enterprises in the industry. This will allow assessing the profitability level and will allow predicting the ability of enterprises to fulfill their main duties – to transport passengers within cities, as well as adequately respond to the variability of external and internal factors of influence. The input data used were performance indicators (namely, income and expenses) of enterprises that are part of the Ukrelectrotrans Corporation and are located in large cities of Ukraine – Kyiv, Odesa, Dnipro and Zaporizhzhia. The profit of the specified enterprises was modeled and their forecast values in the future period were determined. A conceptual approach was formed to forecast profit, which includes 6 main stages, which are sequentially described in this work. The trend for determining the profit of enterprises with the best result according to the criterion of reliability of approximation is presented, and the results of modeling of the forecast values of enterprise profits for 2025–2026 are also presented. However, the obtained forecast values indicate a deterioration in the financial indicators of the studied enterprises due to a number of variable internal and external factors. Namely: military operations, objective economic difficulties, a decrease in demand for transport services, the absence of changes in tariff policy, imperfect and outdated methods of enterprise management, insufficient support from the state and local governments, and an almost complete lack of investment in the industry. A number of recommendations are offered to the heads of transport enterprises to ensure the effective use of financial resources for the restoration and further development of urban transport systems in Ukrainian cities. However, the question of how universal these recommendations can be for all urban electric transport enterprises without taking into account the specifics of each city of Ukraine remains debatable. It is important that the proposed measures be adapted to the real conditions, capabilities and needs of each specific enterprise.

Keywords: urban electric transport, transport infrastructure, financial indicators, profit, development strategy, urban transport system.

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THE IMPACT OF LABOR RESOURCES ON THE ECONOMIC SECURITY OF AN ENTERPRISE IN THE SUSTAINABLE DEVELOPMENT CONCEPT

pages 21–31

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The functioning and development of enterprises largely depends on economic security, which consists of many functional components. The object of the study is the personnel security of the enterprise, and the paper itself is focused on identifying its factors that determine the level of labor safety. Analysis and assessment should become an important component of developing a labor safety strategy in the context of sustainable development. Currently, there are various methods that allow analyzing labor resources and their condition, but their use does not always make it possible to determine the level of sufficiency of characteristics; uncertainty arises that prevents a more objective assessment of situations. The study shows the problems of personnel security, considers and analyzes its components, and proposes an analysis method based on the fuzzy set method, which allows calculating the impact of each component with a greater degree of reliability. Using the fuzzy set method, an assessment of the personnel security of Joint Stock Company "National Nuclear Energy Generating Company "Energoatom" (JSC NNEGC Energoatom, Kyiv, Ukraine) for five years (2018–2022) was carried out, which made it possible to conduct a more objective analysis. Qualitative assessment of the impact of such indicators as average wages; frequency of injuries; level of saturation with specialists; level of professional training of employees; average age of employees; the share of young specialists is given. Starting from 2020, as the analysis showed, there has been a decrease in the level of personnel security indicator. The reason for the decrease in the level of personnel security of the enterprise was the decrease in the level of specialists in the total number of employees, especially young specialists, as well as the deterioration of the dynamics of employee training. The paper proposes measures to increase the level of personnel security of JSC NNEGC Energoatom.

Keywords: economic security, enterprise, personnel, labor resources, sustainable development, fuzzy set method.

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THE TRANSFORMATIVE IMPACT OF LARGE LANGUAGE MODELS IN HEALTHCARE

pages 32–42

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Over the past decade, we have witnessed rapid technological advances in healthcare. The main signs of this are the provision of higher quality medical services, lower costs, and improved access to preventive measures. Modern digitalization is represented by various tools in the healthcare system. Support and further development in these areas is the key to, firstly, creating appropriate living conditions, secondly, increasing the age limit for the population, and thirdly, developing a healthy nation around the world. The object of this work is Large Language Models (LLMs), namely, the streamlining of actions for their application in the healthcare system, which is a driving factor for modern changes and improvement of this area of life support in general. This study presents the material on the application of artificial intelligence in the healthcare system through a comprehensive review of medical scientific literature, summarizing the practical application of large language models, and analyzing the main advantages and disadvantages of the current state of digitalization in the industry. By using the methods of observation, generalization, systematization and comparison, the authors have achieved results in determining the significance of the use of large language models. It is also determined that the introduction of artificial intelligence has positive results, but needs to be improved. The formalized and specific comparisons of the diagnoses made by a doctor and artificial intelligence do not coincide with the chosen treatment history, which indicates an imbalance and can potentially harm the patient. The results show the need to improve large language models. In general, this applies to issues such as training of medical staff, identification of implementation methods, systematization of management tools, and expansion of information system databases (including protection of patients' personal data).

Keywords: healthcare, large language models, artificial intelligence, software medical product, medical data analysis.

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ANALYSIS OF THE PROJECT OF A MARKETING CAMPAIGN TO PROMOTE ROBOTIC SOLUTIONS USING RANDOM FOREST CLASSIFICATION

pages 43–50

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The object of research is marketing strategies for promotion in social networks, which are the basis for achieving the basic requirements of brands: audience commitment, brand loyalty, awareness, positioning, conversion and reputation. Because of this, a significant number of modern companies that manufacture robotic complexes are considering the possibility of implementing such strategies using a project approach.

The work is aimed at analyzing data and evaluating marketing campaigns for the promotion of robotic solutions, carried out using Random Forest classification, in order to identify patterns and increase the effectiveness of such campaigns. The analysis was conducted on the example of three advertising campaigns. The analysis showed how the criteria taken into account when displaying advertisements on social networks, namely the age category of a person, gender, interest group of a person (according to the public profile of the social network), the number of ad impressions affect the number of clicks on the corresponding advertisement. As well as the total number of people who became interested in the product after seeing the advertisement, the total number of people who bought

the product after watching the advertisement. The essence of the results obtained is that the study showed the possibility of assessing the effectiveness of marketing campaigns at the early stages, the measurability of performance indicators in terms of audience reach, level of interaction and conversion into reverse actions. The results of the study reflect the complex relationship between the conversion indicators of advertising campaigns and the main criteria for their implementation, emphasizing the importance of a project approach and the use of machine learning for building marketing campaigns. The study focuses on practical aspects. From a practical point of view, mastering the basic metrics of data mining, segmentation, the ability to use A/B testing and the use of machine learning methods, in particular the Random Forest classification algorithm, allows to increase the effectiveness of campaigns. And also reduce the risks of losing money due to incorrect conclusions regarding the segmentation of target audiences. The results of the study can become the basis for the formation of new strategies for conducting marketing campaigns when promoting robotic systems, adjusting existing ones, capable of effectively and flexibly adapting depending on the target audience and the dynamics of working with it.

Keywords: project management, digital marketing, machine learning, robotics complex, competitiveness.

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REGIONAL CLUSTERING OF FEC ENTERPRISES TO STRENGTHEN THE COUNTRY'S ECONOMIC SECURITY

pages 51–61

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The object of this work is the process of strengthening the economic security of enterprises of the fuel and energy complex of Ukraine. The work considers the issue of dividing business entities of different forms of ownership into clusters according to their territorial affiliation and features of functioning. A characteristic feature of the territorial organization of the energy complex of Ukraine is not the isolated location of its production facilities, but the functioning of most of them in energy systems and close interconnection. As a result of the proposed methods of cluster analysis, similarity, correlation and Euclidean distance, a division into territorial clusters was carried out according to the studied industry. The results obtained are presented in a matrix representation, which helped to adjust possible cluster similarities and determine them due to territorial proximity and results of financial activity. Further research is devoted to determining the changes in indicators over the past five years regarding such characteristics as: economic growth of the cluster, interconnection with other clusters, financial stability of the cluster and socio-economic development. This helped to generalize the analyzed data and identify the weaknesses and strengths of energy enterprises. It was determined that the leaders among the positive generalized results are the Black Sea cluster (34.88/1) and the Capital (30.34/2) cluster and Podilskyi (27.91/3). And the negative ones are the Central (25.15/9), Prydniprovskyi (26.09/8) and TO Donetsk (27.26/7). The results obtained are explained by the diversity of financial results of companies over a five-year period, as well as the constant change in factors of external influence on critical infrastructure facilities. The proposed measures for dividing enterprises into clusters are aimed at further maintaining the existing level of economic security. They are also aimed at protecting all

sources of energy generation by enterprises and further prospects for renewal and/or reconstruction in the chain of energy services from production to the end consumer, which should become a priority area of development for the country.

Keywords: energy enterprises, energy clusters, regional development, economic security, energy systems, regional management.

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DEVELOPMENT OF PRODUCTIVE FORCES AND REGIONAL ECONOMY

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ASSESSMENT OF THE GLOBAL ARTIFICIAL INTELLIGENCE MARKET IN HEALTHCARE

pages 62–70

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Recently, there has been a significant increase in the use of artificial intelligence in healthcare, an increased trust of healthcare providers in artificial intelligence, and the interest of investors in the development of healthcare solutions based on artificial intelligence. The vast majority of providers of medical services and technologies, as well as of biomedical companies, are using artificial intelligence which confirms the great demand in the field of health care. The increased adoption of artificial intelligence techniques in medical applications has led to the focus of key market participants on new products and technical connections to expand commercial production.

The object of research is the world market of artificial intelligence in healthcare. Factors influencing the market positively and negatively have been identified. The general characteristics are given, as well as key points of the state and development of the market. The market is segmented by geographic regions, applications, therapeutic area support, market components, technologies, and usage. According to the segmentation of the world artificial intelligence market in health care by geographical regions, the largest market share belonged to the segment of the North American region (45 %); by application – to clinical trials segment (22.7 %); by the support of therapeutic areas – to radiology segment (75 %); by artificial intelligence components – to software segment (41 %); by technologies – to machine learning segment (33.1 %); by use – to medical imaging and diagnostics segment (27.1 %).

The main strategic trends and directions of further development of the market of artificial intelligence in health care are provided. The dynamics of the market in terms of growth factors, market opportunities, limitations, and challenges are considered. Important factors inhibiting the development of the artificial intelligence market in the field of health care are the lack of qualified specialists and ineffective cooperation between the public and private sectors.

Data on competitive tech giants and artificial intelligence healthcare powerhouses are provided.

Keywords: artificial intelligence, health care, market characteristics, market segmentation, market dynamics.

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THE ROLE OF INNOVATION IN ECONOMY STRENGTHENING OF AZERBAIJAN IN THE CONDITIONS OF TRANSITION TO INDUSTRY 5.0: ON THE EXAMPLE OF A COMPARATIVE ANALYSIS OF INDICATORS OF SOME EURASIAN COUNTRIES

pages 71–81

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The object of the study is innovative transformations in the context of Azerbaijan's transition to Industry 5.0. Innovative development not only strengthens the national economy, but also creates preconditions for the entry of competitive industrial products and services into world markets in the context of the transition to Industry 5.0. Innovative transformations are possible only with investments from both the state and industrial enterprises' own funds, as well as by attracting foreign capital. In this regard, the article examines the indicators of both Azerbaijan innovative development and Azerbaijan investment indicators in comparison with similar indicators of a number of Eurasian countries in the context of the transition to Industry 5.0.

The authors used both innovation development indices and statistical indicators of industry in other Eurasian countries to determine Azerbaijan's innovation capabilities in the context of the transition to Industry 5.0. The article also examines internal and external factors influencing innovation development in Azerbaijan and investment attractiveness in the republic. The study showed that large innovation and investment projects in the liberated lands attract foreign investors from both near and far abroad. Particularly noteworthy are investments from the Organization of Turkic Countries (OTC) – from Turkey, Kazakhstan, Uzbekistan, Kyrgyzstan. They are actively involved in the creation of smart cities, industrial facilities, transport infrastructure and telecommunications, as well as tourist facilities. Innovative development of Azerbaijan depends on the strategy of implementation of innovative investment projects. This strategy includes improvement of produced science-intensive products and services; and development of high technologies, especially information technologies. These areas include the creation and management of two artificial satellites of Azerbaijan, the petrochemical industry, the mechanical engineering industry. As well as the information technology sector, the ICT sector, pharmaceuticals and cosmetics industry based on the use of unique plants (saffron, medicinal oils from walnuts, hazelnuts, juices from unripe grapes, fig leaves) in the process of transition to Industry 5.0.

Keywords: innovative transformations, innovative investment projects, Eurasian countries, Azerbaijan innovative development, transition to Industry 5.0.

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