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THE DEVELOPMENT OF ANALYSIS METHODOLOGY OF FINANCIAL RISKS OF PROJECTS IN IT SPHERE

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The object of research is methodology for analysis of the financial risks of IT projects related to organizations' compliance with the General Data Protection Regulation (GDPR).

In this article, the authors assess the financial risks of two projects that can be considered and analyzed by organizational management to bring existing software and processes into compliance with the aforementioned GDPR requirements. The first project considered by the organization involves the development of appropriate software for users' personal data storage, protection and processing by a dedicated internal team of specialists, with the possibility of further commercialization of the developed product by selling a ready-to-use software and services package to partners and other clients. The second solution considered is a project in which the responsibility for personal data processing, storage and protection is transferred to a third party, and the organization purchases a ready-to-use package of software and related services from them.

The results of the financial risk analysis of these projects indicate that the in-house software development project is less risky and more reasonable in the long-term perspective. This is due to the fact that it provides a 231 times lower probability of exceeding the planned budget benchmark compared to the alternative project.

The risk analysis model described in the article can be used to assess financial risks of projects not only within the IT industry but also, after certain adaptations, in other business entities.

Keywords: risk analysis, general data protection regulation (GDPR), IT project, Monte-Carlo method, financial analysis.

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DETERMINING THE INVESTMENT ATTRACTIVENESS OF THE BIOHACKING AND BIOINNOVATION MARKET BASED ON MARKET TRENDS IN THE PHARMACEUTICAL BUSINESS

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The object of the study was the process of venture investment in biohacking as a component of the pharmaceutical business, which embodies the development of the specified market. Since research requires significant capital investments, it is worth studying in detail and carefully the issues of financial investments and obtaining income from the specified processes. This work proposes a comprehensive economic analysis of the biohacking industry as a modern investment tool. The consistency of the high growth forecast with the main statistical risks inherent in biotechnology enterprises was described and analyzed. The basis for the hypothesis was the methodology for analyzing the development of the biohacking investment market. The analysis is based on the success rates of clinical trials and the development of FDA medical products from phase I to approval. The results are based on an assessment of the capital market of biotechnology companies in the world after IPOs since 2020. The results confirmed the hypothesis of rapid market growth with a compound annual rate of 19.09% from 2025 to 2034 (forecast). However, there is a rather low overall clinical success rate, about 9.06% between phase I and final drug approval, considering the highest percentage of research outflow between phases II and III (only 31% success). The best value was obtained for rare diseases (about 25.0%), the worst for oncology research (5.1%). The results indicate that most of the investments (about 56%) end in loss. As a result, it was determined that biohacking is currently a high-risk and at the same time highly productive direction, which has a radically different nature of investment. That is why investment should be based on careful, substantiated, reliable data analysis and assessment of the clinical portfolio, considering diversified risks.

Keywords: biohacking, investment analysis, clinical trials, biotechnology IPOs, risk management, longevity economy.

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DEVELOPMENT OF AN INTEGRATED ENTREPRENEURSHIP MODEL BASED ON THE PRINCIPLES OF CIRCULAR AND SHARING ECONOMY: THEORETICAL SUBSTITUTION AND PRACTICAL ANALYSIS

pages 34–44

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The object of research is the process of formation and development of modern entrepreneurship in the context of the transition from a linear model to a circular and sharing economy, which are currently focused on the principles of sustainable development.

The paper analyzes the current state and prospects for the development of entrepreneurship, which operates on the principles of closed production cycles, extending the life cycle of products and reusing raw materials and materials. An integrated model of entrepreneurship based on the principles of a circular and sharing economy is proposed. The theoretical and practical essence of these economic models is considered, the principles of their construction are further developed, and significant differences from the traditional provisions of a linear economy are formed. It is substantiated that the gradual transition from a linear economic model of management to circular and sharing models of the economy is dictated by the presence of environmental challenges, as well as the limitation of natural resources. Trends in the field of sharing business, which are based on the joint use of resources by the asset owner and other consumers, are studied. The global experience of implementing these approaches has been analyzed and summarized, and the prospects for their development have been considered. It has been determined that over the past 10 years, the use of the circular economy concept in the world has increased 15 times (from 0.8% to 12% of enterprises), and the concept of the sharing economy has increased 10 times (from 0.2% to 2%). The research results confirm the integration of theoretical and practical provisions of the circular and sharing economy into global business models. This contributes to increasing the efficiency of resource use, increases the level of competitiveness of enterprises, and creates stable social and environmental benefits. Practical recommendations for Ukrainian entrepreneurs are proposed, the use of which will help adapt modern business to global trends in resource conservation within the framework of European integration and post-war economic recovery.

Keywords: entrepreneurship, circular and sharing business, sustainable development, integrated business model, information potential, renewable energy.

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ECONOMIC CYBERNETICS

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DEVELOPMENT OF METHODS FOR RISK-ORIENTED ANALYTICAL ASSESSMENT OF FINANCIAL PERFORMANCE OF WINE-PRODUCING ENTERPRISES

pages 45–52

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The object of research is the process of forming a comprehensive risk-oriented system for analyzing the financial performance of wine-producing enterprises. The development of this methodology will ensure systematic identification, quantitative assessment and integration of risks at all stages of the value chain. Existing approaches limit the ability to form a risk profile for operations and justify effective management decisions in conditions of instability. Traditional methods of analytical assessment do not allow for the multidimensionality of risk factors and the complex nature of their impact on changes in efficiency to be reflected. The use of an integrated risk criterion ensures more accurate forecasting of financial performance trends, increasing the effectiveness of the management control system. The developed methodology for assessing the financial performance risk of viticulture and winemaking enterprises based on normalized indicators and integral criteria made it possible to outline the risk dynamics and key parameters of uncertainty. The assessment was carried out in terms of grape varieties and enterprises on a five-level scale, with 2019 identified as the most critical year. The highest risk is in Cabernet 2024 and Rkatsiteli 2024; Alibernet 2024 has the lowest risk; Merlot 2024 has an average risk. The integrated assessment of average risk forms a unified information model that supports strategic decisions and enhances competitiveness. The applied nature of the study is determined by its focus on supporting management decisions in the financial and

economic management of grape and wine-producing enterprises. The integrated risk assessment methodology ensures the identification and quantitative measurement of risks at all stages of the value chain, which allows identifying critical factors of financial performance and justifying the optimization of production and cost parameters.

Keywords: analytical assessment, management accounting, grape production, wineries, risks assessment, financial results.

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IDENTIFICATION AND THEORETICAL JUSTIFICATION OF THE CORE PRECONDITIONS FOR THE DEVELOPMENT OF DIGITAL FINANCIAL ECOSYSTEMS

pages 53–62

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The object of research is the process of forming digital financial ecosystems in the context of the transformation of the global financial architecture. The

problem is the gaps in the forming digital financial ecosystems during the transformation of the global financial architecture under the influence of technological innovations. This is due to the introduction of blockchain technologies, smart contracts, intelligent agents (based on the introduction of artificial intelligence systems), multi-protocol financial technologies, the lack of unified standards and regulatory norms. A systems approach, structural-functional, comparative and institutional analysis, as well as trend analysis methods serve as the methodological basis of this research, implemented on the basis of statistical data from the Statista database and McKinsey & Company reports. Based on the generalization of quantitative and comparative assessments, the main trends in the transformation of the global financial architecture have been identified and analyzed. Institutional changes in the financial market based on the introduction of decentralized financial technologies (DeFi) and the implementation of the ISO 20022 regulatory standard are systematized. Key barriers to the transformation of modern financial architecture are identified, and directions for overcoming them are highlighted based on the development of hybrid financial solutions, international unification of standards and regulatory norms. The concept of forming a hybrid financial architecture (CeDeFi) and digital financial ecosystems is substantiated, which combines the advantages of decentralization and innovation with the reliability of the traditional financial system. The practical significance of research lies in the possibility of using its results to form effective strategies for the development of digital financial ecosystems, improve regulatory policy and make management decisions by financial institutions and fintech companies.

Keywords: digital financial ecosystems, financial architecture, financial technologies, hybrid financial architecture.

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DEVELOPMENT OF THE REAL ESTATE DATA PROCESSING MODEL BASED ON MODERN GEOAI APPROACHES

pages 63–70

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The object of the research is geographic information systems (GIS) used in the real estate market. Currently, a significant problem in analyzing market information is the absence of a geographic component when evaluating property costs. This deficiency leads to a simplified understanding of market processes, reduces assessment accuracy, and complicates forecasting methods. During the research, system analysis and geostatistics methods were used to transform data from a discrete to a continuous form. Adding a spatial component to property information and updating data online allows for identifying pattern chains and creating forecast scenarios in the shortest possible time. A generalized scheme for processing large data sets was developed in combination with the GeoAI algorithm flowchart. This allows for developing a full-fledged model of a geographic information system with an adaptive artificial intelligence function, enabling users to rapidly process information for making investment decisions. The article analyzes modern GIS with artificial intelligence functions used to solve various global real estate problems. The proposed a scheme for processing large data sets with GeoAI, reflecting the general structure of interaction between GIS, input/output data arrays, and a neural network used for analyzing and predicting spatial processes. Practical calculations have shown that by using GeoAI, the time for processing large data sets is reduced by more than 10 times.

Keywords: geographic information system, artificial intelligence, real estate, developer, stakeholder, machine learning.

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DEVELOPMENT OF PRODUCTIVE FORCES AND REGIONAL ECONOMY

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DEFINING DIRECTIONS FOR IMPROVING PUBLIC PROCUREMENT OF INNOVATION IN THE EUROPEAN UNION

pages 71–78

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The object of research is the system of regulatory methods for identifying public procurement in the European Union, as one of the ways to stimulate innovation circulation. The research is aimed at solving the issue of improving the design of this support tool to the updated requirements of the European Union. The directions, methods and methods of improving the institution of public procurement are studied in order to bring it into line with real needs.

The study of the processes of regulating public procurement of innovations in the European Union has established their inconsistency with the real needs of participants in innovation circulation. It is proven that these inconsistencies negatively affect the level of support and scaling of innovation processes. The need to improve the regulatory approach to implementing public procurement of innovations in the European Union is substantiated.

The introduction of a new procedure for public procurement of innovations – public financial grant support – is proposed. The need to soften the requirements for the mandatory presence of an intellectual property right in the innovation is proven. The need to expand the circle of participants in the procedure for public procurement of innovations is substantiated. The need to amend Directive 2014/24/EU of the European Parliament and of the Council of February 26, 2014, the Horizon Europe Framework Programme; European Innovation Act is identified.

The research is aimed at developing general theoretical principles for improving the regulation of public procurement of innovations in the European Union. The results of this research can be used to improve the official rules for the

dissemination and circulation of innovations, the formation of relevant decisions of government bodies, state innovation policy and the basis for further scientific research on the specified issues.

Keywords: public procurement of innovations, regulation of innovations, innovative procurement, stimulation of innovations.

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SUBSTANTIATION OF STRATEGIC MANAGEMENT DECISION DIRECTIONS FOR ENSURING SOCIO-ECONOMIC SECURITY IN THE GLOBAL ECONOMY

pages 79–88

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The research object is Ukraine's socio-economic security system. The research problematic is related to the necessity of selecting effective strategic decisions under conditions of increasing risks and limited institutional resources.

The research is devoted to identifying directions for strategic management decisions to strengthen the state's socio-economic security during the period of global economic and social transformations. Specifically, institutional decisions aimed at increasing investment attractiveness, regulating migration processes, and liberalizing foreign economic activity are analyzed.

The methodological foundation of the research comprised regression analysis using an additive algorithm for aggregating indicators to assess the subsystems of economic security and social welfare, and a multiplicative aggregation algorithm for forming an integral indicator of socio-economic security. Identification of structural breaks of exogenous nature and empirical verification of the integral indicator's sensitivity to macroeconomic factors were performed by introducing a binary variable following the analytical approach of time series analysis with a fixed break point.

Based on the results of multi-criteria analysis, a strong moderate positive relationship was established between the level of socio-economic security and strategic decisions aimed at enhancing the state's investment attractiveness (correlation coefficient $r = 0.638$), and a moderate strong positive relationship with strategic decisions aimed at liberalizing foreign economic activity ($r = 0.737$). The obtained results are explained by the dominant influence of institutional and economic factors on the formation of national resilience in the pre-war period and the limited role of migration processes in the short-term dynamics of macroeconomic indicators. The integration of quantitative assessment of socio-economic security with analysis of strategic management decisions enabled justification of priority directions for state policy.

The theoretical significance of research is determined by the development of an approach to assessing the state's socio-economic security that combines integral diagnostics of its condition with analysis of the impact of strategic management decisions through a system of relevant macroeconomic indicators. The practical significance is determined by the identification of strategic guidelines for state policy aimed at strengthening socio-economic security through coordinated use of instruments for investment stimulation, regulation of migration processes, and development of foreign economic cooperation.

Keywords: socio-economic security, strategic management decisions, investment attractiveness, foreign economic activity, structural break, global economy.

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ESTIMATION OF THE WORLD BEEKEEPING MARKET

pages 89–97

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The object of research is the world beekeeping market, the ecological role and physicochemical properties of the quality of honey and beekeeping products.

The problem of generalizing and systematizing the results of research on the global beekeeping market is solved. It is determined that the key factors of market growth are the demand for organic and natural sweeteners in the food industry and beverage production, the excellent natural healing properties of honey and beekeeping products, and the environmental benefits of organic farming.

It is shown that significant global challenges to market development are the reduction of the bee population due to the use of pesticides and the loss of habitat.

It was determined that in 2024, the North American segment was the leader by geographical regions with a revenue share of 40.1%, by product type – the honey segment (88.2%), by application – the food and beverage segment (39.9%), by end user – the food industry segment (54.9%), by sales channels – the super-market and hypermarket segment (34.7%), by funding distribution – the bee disease prevention segment (29.9%).

It was determined that in 2023, the beehive segment dominated by equipment segments (48.1%), by geographical regions – the Asia-Pacific segment (33.1%).

The physicochemical qualities of honey were studied. The mass fraction of water in the studied samples (Kyiv region, Zhytomyr region, Chernihiv region, Republic of Moldova) of honey ranged from 17.5% to 19.8%, diastase number – from 15.54 to 38.59 Gothe units, electrical conductivity – from 0.349 Ms/cm to 0.611 Ms/cm, reducing sugar content – from 78.56% to 80.7%, which meets quality standards. Generalization and systematization of data on the world beekeeping market and experimental determination of the physicochemical properties of honey and beekeeping products made it possible to obtain new data on the research topic for use in the beekeeping industry in Ukraine.

Keywords: beekeeping, world market, market segmentation, ecological role, honey, physicochemical indicators.

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THE IMPACT OF GEOPOLITICAL RISKS ON THE FINANCIAL STABILITY OF THE AGRICULTURAL SECTOR: A COMPARATIVE ANALYSIS OF UKRAINE AND THE COUNTRIES OF THE EUROPEAN UNION

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The object of the research is the financial resilience of the agricultural sector in Ukraine and selected European Union (EU) countries under geopolitical and macroeconomic risks generating uncertainty in agribusiness. The problem addressed in the article lies in the absence of a unified methodological approach to the quantitative assessment of agricultural financial resilience under geopolitical risks, as well as limited comparability of results between Ukraine and EU countries. The findings indicate a statistically significant negative impact of geopolitical risks, currency volatility, and debt burden on the financial resilience of the agricultural sector. A persistent structural gap between Ukraine and EU countries has been identified: the average integral financial resilience index for Ukraine is approximately 0.38, compared to about 0.54 in EU countries. The patterns revealed in the study are explained by external risks affecting Ukraine's agricultural sector. In contrast, higher financial resilience in EU countries is driven by a stable macroeconomic environment, diversified export structure, and institutional support mechanisms for agribusiness. A distinctive feature of the results is the integration of a balanced panel dataset with calculation of an integral financial resilience index based on normalized financial and institutional indicators. The practical application of the proposed index covers agricultural enterprises and financial management systems within the sector. The results are applicable under geopolitical risk conditions to assess financial resilience, evaluate risk impacts, and support informed managerial decisions.

Keywords: financial stability, agribusiness, geopolitical risks, financial controlling, credit management, financial engineering.

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