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TOWARDS A SUSTAINABLE SUPPLY CHAIN: CONTRIBUTION TO HOSPITAL WASTE MANAGEMENT IN AN ALGERIAN HOSPITAL

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The object of research is medical waste management. Healthcare activities protect health, cure patients and save lives. However, they generate waste that is harmful to public health and the environment. As a result, the management of this healthcare waste is becoming increasingly important in the field of public health and the environment. One of the most problematic places is, poor management of these issues that can put healthcare workers, medical waste workers, patients and their families, and the entire population at risk. On the other hand, poor treatment or inadequate disposal of this waste can also cause risks. From now on, the rational elimination of this pollution is one of the essential conditions for respecting hygiene rules, not only inside establishments, but also in the general environment. In this unfavorable context, we are trying through this contribution to achieve adequate management using reverse logistics practices with the main objective of resolving healthcare waste management problems while taking into account the reality of things in situ. For this purpose, an approach guided by data, carried out directly in the field, by direct contact with the different categories of health personnel interviewed, through findings, observations, audits, questionnaire and knowledge of the causes was used. This approach is based on the audit of compliance with the supply chain in the management of hospital waste in the different departments of the Constantine University Hospital (Algeria). As a result of the research it is shown that the situation is very poor given that the logistics chain is completely faulty or no step is respected. Thus, the least respected stage is storage, where no service exceeds 25 %, this is due to the fact that no clinic has an intermediate waste storage area. And the most respected is treatment stage that does not exceed 75 %. This allowed to detect the inadequacies recorded at the level of the study establishment, and even improvements are suggested for sustainable management of healthcare waste at the level of Algerian health establishments.

Keywords: healthcare waste management, public health, priority preventive actions, reverse logistics, risk management.

- 1. Medical waste management manual (2011). International Committee of the Red Cross (ICRC). Geneva.
- 2. Ahcene, A., Rachid, C., Rabeh, K. (2022). Attitude and cultural level of the health staff on hospital waste management system: a case study of UHC Constantine-Algeria. International Journal of Environment and Waste Management, 30 (3), 252. doi: https://doi.org/10.1504/ ijewm.2022.10053291
- 3. Vaught, L. (2018). Medical waste disposal and the importance of color coding. Available at: https://www.medsharps.com/medicalwastedisposal-and-the-importance-of-color-coding
- 4. Taleb, M., Bouzerara, R., Chaib, R. (2022). Contribution to the Evaluation of the Influence of the Health Epidemic on the Quality of Life at Work (QWL): a Case Study. Polish Journal of Environmental Studies, 31 (6), 5229-5239. doi: https://doi.org/10.15244/pjoes/150018
- 5. Chaib, R., Akni, A. (2020). Hospital waste: effects on public health and environment. International Journal of Environment and Waste Management, 26 (3), 349-361. doi: https://doi.org/10.1504/ijewm. 2020.10028734
- 6. Govindan, K., Nosrati-Abarghooee, S., Nasiri, M. M., Jolai, F. (2022). Green reverse logistics network design for medical waste management: A circular economy transition through case approach. Journal of Environmental Management, 322, 115888. doi: https://doi.org/ 10.1016/j.jenvman.2022.115888
- 7. Kargar, S., Pourmehdi, M., Paydar, M. M. (2020). Reverse logistics network design for medical waste management in the epidemic outbreak of the novel coronavirus (COVID-19). Science of the Total Environment, 746, 141183. doi: https://doi.org/10.1016/ j.scitotenv.2020.141183
- 8. Luo, X., Liao, W. (2022). Collaborative Reverse Logistics Network for Infectious Medical Waste Management during the COVID-19 Outbreak. International Journal of Environmental Research and Public Health, 19 (15), 9735. doi: https://doi.org/10.3390/ijerph19159735
- 9. Khan, M. T., Shah, I. A., Ihsanullah, I., Naushad, Mu., Ali, S., Shah, S. H. A., Mohammad, A. W. (2021). Hospital wastewater as a source of environmental contamination: An overview of management practices, environmental risks, and treatment processes. Journal of Water Process Engineering, 41, 101990. doi: https://doi.org/ 10.1016/j.jwpe.2021.101990
- Odonkor, S. T., Mahami, T. (2020). Healthcare waste management in Ghanaian hospitals: Associated public health and environmental challenges. Waste Management & Research, 38 (8), 831-839. doi: https://doi.org/10.1177/0734242x20914748
- 2. Ali, M., Wang, W., Chaudhry, N., Geng, Y. (2017). Hospital waste management in developing countries: A mini review. Waste Management & Research: The Journal for a Sustainable Circular Economy, 35 (6), 581-592. doi: https://doi.org/10.1177/0734242x17691344
- Mol, M. P. G., Zolnikov, T. R., Neves, A. C., dos Santos, G. R., Tolentino, J. L. L., de Vasconcelos Barros, R. T., Heller, L. (2022). Healthcare waste generation in hospitals per continent: a systematic review. Environmental Science and Pollution Research, 29 (28), 42466-42475. doi: https://doi.org/10.1007/s11356-022-19995-1
- Janik-Karpinska, E., Brancaleoni, R., Niemcewicz, M., Wojtas, W., Foco, M., Podogrocki, M., Bijak, M. (2023). Healthcare Waste -A Serious Problem for Global Health. Healthcare, 11 (2), 242. doi: https://doi.org/10.3390/healthcare11020242

- Parida, V. K., Sikarwar, D., Majumder, A., Gupta, A. K. (2022). An assessment of hospital wastewater and biomedical waste generation, existing legislations, risk assessment, treatment processes, and scenario during COVID-19. *Journal of Environmental Management*, 308, 114609. doi: https://doi.org/10.1016/j.jenvman.2022.114609
- National Health Care Waste Management Plan PNGDSM 2010-2014, E4375 (2010). World Health Organization.
- Andeobu, L. (2023). Medical Waste and Its Management. The Palgrave Handbook of Global Sustainability. Cham: Springer International Publishing, 761–789. doi: https://doi.org/10.1007/978-3-031-01949-4_53
- Sanito, R. C., Bernuy-Zumaeta, M., You, S.-J., Wang, Y.-F. (2022).
 A review on vitrification technologies of hazardous waste. *Journal of Environmental Management*, 316, 115243. doi: https://doi.org/10.1016/j.jenvman.2022.115243
- Samant, M., Pandey, S. C., Pandey, A. (2018). Impact of hazardous waste material on environment and their management strategies.
 Microbial biotechnology in environmental monitoring and cleanup.
 IGI Global, 175–192. doi: https://doi.org/10.4018/978-1-5225-3126-5.ch011
- Limiter les risques, c'est possible, les déchets dangereux des ménages (2008). ADEME, 6288.
- Guidelines for establishing national waste management strategies:
 Moving from Challenges to Opportunities (2013). United Nations Environment Programme.
- Hammadi, N. (2009). Enquête sur la gestion des déchets hospitaliers:
 La bombe à retardement. Liberté.
- Das, A. K., Islam, Md. N., Billah, Md. M., Sarker, A. (2021). COVID-19 pandemic and healthcare solid waste management strategy A minireview. Science of The Total Environment, 778, 146220. doi: https://doi.org/10.1016/j.scitotenv.2021.146220
- 14. Ranjbari, M., Shams Esfandabadi, Z., Shevchenko, T., Chassagnon-Haned, N., Peng, W., Tabatabaei, M., Aghbashlo, M. (2022). Mapping healthcare waste management research: Past evolution, current challenges, and future perspectives towards a circular economy transition. *Journal of Hazardous Materials*, 422, 126724. doi: https://doi.org/10.1016/j.jhazmat.2021.126724
- 15. Ansari, M., Ehrampoush, M. H., Farzadkia, M., Ahmadi, E. (2019). Dynamic assessment of economic and environmental performance index and generation, composition, environmental and human health risks of hospital solid waste in developing countries; A state of the art of review. *Environment International*, 132, 105073. doi: https://doi.org/10.1016/j.envint.2019.105073
- Mustafa, M., Lahu, A. (2022). Hospital waste and their impact on environmental pollution and human health. *International Journal of Ecosystems and Ecology Science (IJEES)*, 12 (4), 143–150. doi: https://doi.org/10.31407/ijees12.417
- Singh, N., Ogunseitan, O. A., Tang, Y. (2021). Medical waste: Current challenges and future opportunities for sustainable management.
 Critical Reviews in Environmental Science and Technology, 52 (11), 2000–2022. doi: https://doi.org/10.1080/10643389.2021.1885325
- Zamparas, M., Kapsalis, V. C., Kyriakopoulos, G. L., Aravossis, K. G., Kanteraki, A. E., Vantarakis, A., Kalavrouziotis, I. K. (2019). Medical waste management and environmental assessment in the Rio University Hospital, Western Greece. *Sustainable Chemistry and Pharmacy*, 13, 100163. doi: https://doi.org/10.1016/j.scp.2019.100163
- Benard, R., Dulle, F. (2017). Application of ICT tools in communicating information and knowledge to artisanal fishermen communities in Zan-

- zibar. Knowledge Management & E-Learning: An International Journal, 9 (2), 239–253. doi: https://doi.org/10.34105/j.kmel.2017.09.014
- **20.** Jensen, M. B., Johnson, B., Lorenz, E., Lundvall, B. Å. (2007). Forms of knowledge and modes of innovation. *Research Policy*, *36* (5), 680–693. doi: https://doi.org/10.1016/j.respol.2007.01.006
- Berkenkotter, C., Huckin, T. N. (2016). Genre knowledge in disciplinary communication: Cognition/culture/power. Routledge, 208. doi: https://doi.org/10.4324/9781315538747
- 22. Paletz, S. B. F., Peng, K. (2009). Problem Finding and Contradiction: Examining the Relationship Between Naive Dialectical Thinking, Ethnicity, and Creativity. *Creativity Research Journal*, 21 (2-3), 139–151. doi: https://doi.org/10.1080/10400410902858683
- **23**. Kincheloe, J. L., Mclaren, P., Steinberg, S. R. (2011). *Critical pedagogy and qualitative research*. The SAGE handbook of qualitative research.

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DEVELOPMENT OF MANAGERIAL ECONOMICS AS A COMPONENT OF ECONOMIC THEORY

pages 15-20

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The object of research is managerial economics, which is considered as a component of economic theory. The scientific problem is that there are such concepts as management and managerial economics, which are tangential and somewhat overlapping. Managerial economics is included in the structure of the economic system as a separate component. It is also proven that managerial economics is a systemic entity and has the following levels: global, macro-, meso-, micro- and nano-. The study defined these levels and outlined the use of the global (international) and macro levels. Analysis of these categories is necessary for understanding the governance and governance conditions of global and national economies. The essence of the obtained results is that the existing system of managing international relations is inflexible and difficult to solve the global problems of humanity. And the management of national economies must correspond to the strategic development plans of a particular nation. These obtained results can be explained by the immobility of management structures and the need to revise the global economic order. At the state level, there should be levers for regulating economic relations.

It was noted in the work that society is a set of people united at a certain stage of historical development by one or another economic relations that determine all other social relations. The economic life of society consists of various phenomena and processes, the essence of which must be sought in social production. The concept of «managerial economics» is often used to characterize the regulation of social production. There are different approaches to defining the content of managerial economics. First, managerial economy is considered as regulation by a set of industries and types of material production. Secondly, a system of regulation of productive forces and production relations is usually associated with managerial economics. Thirdly, managerial economics regulates the conditions for achieving equilibrium and cyclicality of social production.

Keywords: managerial economics, system of managerial economics, international relations, macro level of economic relations.

References

- Maiier, D. M., Raukh, D. E.; Filipenko, A. (Ed.) (2003). Osnovni problemy ekonoimky rozvytku. Kyiv: Vyd-vo «Lybid», 684.
- Bykova, V. H. (2008). Otsinka upravlinnia ta finansovo-ekonomichnym potentsialom pidpryiemstv zahalnoderzhavnoho znachennia. Dnipropetrovsk: Nauka i osvita, 108.
- Verkhohliadova, N. I., Ivannikova, N. A., Lavrinchenko, O. V. (2007). Upravlinnia trudovym potentsialom pidpryjemstv 6 monohrafiia. Dnipropetrovsk: Porohy, 284.
- Hlovkova, L. S. (2009). Sukupnyi ekonomichnyi potentsial korporatsii: formuvannia ta rozvytok. Zaporizhzhzia: Vyd-vo KPU, 340.
- Hryhoriava, L. V. (2011). Formuvannia struktury marketynhovoho potentsialu pidpryiemstv lehkoi promyslovosti. Ternopil: TzOV «Ternohraf», 344.
- Hudzynskyi, O. D., Sudomyr, S. M., Hurenko, T. O. (2010). Upravlinnia formuvanniam konkurentospromozhnoho potentsialu pidpryiemstva (teoretyko-metodolohichnyi aspekt). Kyiv: IPZ DSZU, 212.
- Shubalyi, O. (2023). Transformatsiia pryntsypiv povedinkovoi ta upravlinskoi ekonomiky v umovakh viiny, yevrointehratsii ta adaptatsii zmin klamatu. *Eknonomichnyi forum*, 1 (3), 40–47. doi: https:// doi.org/10.36910/6775-2308-8559-2023-3-5
- 8. Kravchenko, M., Holiuk, V. (2022). Management decisions making: essence and current development trends. *Economy and Society*, 40, 37–40. doi: https://doi.org/10.32782/2524-0072/2022-40-37
- Fahrurrozi, M. (2021). Managerial Economics in Managerial Decision Making. Turkish Online Journal of Qualitative Inquiry, 12 (5/11), 69–77
- Samuelson, I., Marks, G., Zagorsky, J. (2021). Managerial Economics. Hoboken: Wiley, 365.
- Storoianska, I. Z., Benovska, L. Ya. (2022). Povedinkovi faktory u pryiniatti finansovo-ekonomichnykh rishen subiektamy ekonomiky v umovakh nevyznachenosti. Finansy Ukrainy, 6, 112–128.
- 26. Bitiuk, I. (2023). National economic interests: principles of management diagnostics of the economic security of the country in the conditions of the information economy. *Entrepreneurship and Trade*, 38, 13–18. doi: https://doi.org/10.32782/2522-1256-2023-38-02
- **27**. Khmarska, I., Kucheriava, K., Klimova, I. (2022). Features of the post-war recovery of the economy of Ukraine. *Economy and Society*, 42. doi: https://doi.org/10.32782/2524-0072/2022-42-31
- Koliadenko, C. B. (2023). National Economic Interests of Ukraine: Concepts of Changes in the Information Economy and Activation of Regional Cluster Formation. Problems of Modern Transformations. Series: Economics and Management, 9, 23–31. doi: https:// doi.org/10.54929/2786-5738-2023-9-03-08
- 29. Finahina, O., Buriak, E., Zaporozhets, O. (2021). Klastrena polityka Ukrainy: tsilovi interesy rehioniv ta rozvytok upravlinskoho seredovyshcha. Zbirnyk naukovykh prats Cherkaskoho derzhavnoho tekhnolohichnoho universytetu. Seriia Ekonomichni nauky, 62 (1), 70–79.

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MODELING THE DESIGN OF MARKETING RESEARCH OF THE BRANDS' SOCIAL RESPONSIBILITY

pages 21-24

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The object of the research is the brands' social responsibility. The process of marketing research on the brands' social responsibility is considered. The phenomenon of brands' social responsibility has been studied and the need for a detailed study of its directions has been proven. The influence of socially responsible actions of brands on increasing their level of awareness and loyalty is substantiated. Trends in the development of brands' social responsibility at the current stage have been determined. It has been established that the brands' social responsibility is related to environmental initiatives, social justice, ethical responsibility, sponsorship and charity, economic responsibility, and the implementation of innovations. The directions of brands' social responsibility are characterized on the example of companies Johnson & Johnson, Google and Coca-Cola, which are primarily related to environmental initiatives. The most popular areas of brands' social responsibility have been established by means of a survey, which gives grounds for asserting the priority of environmental initiatives, sponsorship and charity. Attention is focused on the role of marketing research in the brands' social responsibility. The main types of marketing research design are characterized - exploratory, evaluative and reproducible. A structural model of marketing research on the brands' social responsibility is proposed. This model takes into account all stages of the process of researching the brands' social responsibility – from the conditions for the implementation of social initiatives to the formation of the strategy of brands' social responsibility. The practical value of the proposed model of marketing research on the brands' social responsibility will allow to study social initiatives more deeply and in detail and choose the most priority ones. This, in turn, will create prerequisites for increasing brand loyalty and forming an effective communication strategy.

Keywords: marketing research, brand social responsibility, communication strategy, company image, consumer behavior.

- Top-10 sotsial'no vidpovidal'nykh kompaniy (2023). Available at: https://farmak.ua/publication/top-10-soczialno-vidpovidalnih-kompanij/
- Sawant, N., Naik, S. (2022). Impact of Corporate Social Responsibility Activities Communicating About a Brand. *International Journal for Research in Applied Science and Engineering Technology*, 10 (12), 1645–1653. doi: https://doi.org/10.22214/ijraset.2022.48310
- Sornaganesh, V. (2022). Social Responsibility of Corporate in Boosting Brand Image of an Organisation. *Technoarete Journal on Accounting and Finance*, 1 (1), 16–19. doi: https://doi.org/10.36647/tjaf/01.01.a004
- Tan, P. L., Rasoolimanesh, S. M., Manickam, G. (2022). How corporate social responsibility affects brand equity and loyalty? A comparison between private and public universities. *Heliyon*, 8 (4), e09266. doi: https://doi.org/10.1016/j.heliyon.2022.e09266
- Araújo, J., Pereira, I. V., Santos, J. D. (2023). The Effect of Corporate Social Responsibility on Brand Image and Brand Equity and Its Impact on Consumer Satisfaction. *Administrative Sciences*, 13 (5), 118. doi: https://doi.org/10.3390/admsci13050118
- **6.** Fatma, M., Khan, I. (2023). Corporate Social Responsibility and Brand Advocacy among Consumers: The Mediating Role of Brand

- Trust. Sustainability, 15 (3), 2777. doi: https://doi.org/10.3390/su15032777
- Fisenko, T., Baliun, O. (2022). Social responsibility of brands in Ukraine (on the basis of sports events organizing). Printing Horizon, 1 (11), 155–179. doi: https://doi.org/10.20535/2522-1078. 2022.1(11).261724
- 8. Yevtushenko, V. (2021). Diagnostic technique of social responsibility of ukrainian companies. *Actual Problems of Economics*, 4 (238), 49–69. doi: https://doi.org/10.32752/1993-6788-2021-1-238-49-69
- Grohmann, B., Bodur, H. O. (2014). Brand Social Responsibility: Conceptualization, Measurement, and Outcomes. *Journal of Business Ethics*, 131 (2), 375–399. doi: https://doi.org/10.1007/s10551-014-2279-4
- Zvonar, V. P. (2018). Sotsialna vidpovidalnist yak sotsioekonomichnyi fenomen: teoriia ta ukrainski realii. Kyiv: Instytut demohrafii ta sotsialnykh doslidzhen imeni M. V. Ptukhy NAN Ukrainy, 288.
- Kuzmin, O., Stanasyuk, N., Ugolkova, O. (2021). Social responsibility of business: concepts, typology and formation factors. *Management and Entrepreneurship in Ukraine: The Stages of Formation and Problems of Development*, 2 (6), 56–64. doi: https://doi.org/10.23939/smeu2021.02.056
- **32**. Chervinska, N. (2022). *Building a Purpose-Driven Brand: Top Strate-gies and Insights*. Available at: https://blog.depositphotos.com/ua/yak-rozvyvaty-sotsialno-vidpovidalnyj-brend.html
- **33**. Pylypiuk, S. (2019). *Yak i navishcho brendy staiut sotsialno vid-povidalnymy*. Available at: https://www.redbull.com/ua-uk/social-responsibility-proshak
- **34.** 16 Brands Doing Corporate Social Responsibility Successfully (2024). *Digital Marketing Institute*. Available at: https://digitalmarketinginstitute.com/blog/corporate-16-brands-doing-corporate-social-responsibility-successfully
- **35**. Pamplona, F. (2022). *Typy doslidnytskoho dyzainu: ohliad.* Available at: https://mindthegraph.com/blog/uk/типи-дослідницького-проектування/
- **36.** *Typy dyzain doslidzhen, yaki varto znaty kozhnomu dyzaineru* (2022). Available at: https://wezom.com.ua/ua/blog/tipy-dizajn-issledovanij-kotorye-sleduet-znat-kazhdomu-dizajneru
- 37. Yahelska, K., Vasylyshyna, L., Shkurov, Y. (2023). Development of information and communication technologies to study consumer behavior in the process of brand management. *Eastern-European Journal of Enterprise Technologies*, 3 (13 (123)), 34–41. doi: https://doi.org/10.15587/1729-4061.2023.279615
- Chervinska, L., Chervinska, T., Kalina, I., Koval, M., Shulyar, N., Chernyshov, O. (2023). Social responsibility of business in times of war. Financial and Credit Activity Problems of Theory and Practice, 6 (53), 405–416. doi: https://doi.org/10.55643/fcaptp.6.53.2023.4187

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DETERMINATION OF THE IMPACT OF INNOVATIVE TECHNOLOGIES IN THE SYSTEM OF STRATEGIC MANAGEMENT OF CORPORATE SOCIAL RESPONSIBILITY

pages 25-32

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The object of research is the process of using innovative technologies in the system of strategic management of social responsibility of enterprises. The main problem solved during the research was the need for a more effective integration of the principles of social responsibility in the business strategy, which will help enterprises to adapt to the global challenges and demands of modern society. The study of new technological approaches in this area allowed to identify the most effective tools for increasing transparency, responsibility and sustainable development of companies. As a result of the conducted research, the content of the concept «innovative technologies in the system of strategic management of social responsibility of enterprises» was clarified, which is proposed to be understood as a modern approach to the integration of technological innovations into strategic management, aimed at improving the social indicators of the enterprise. These technologies are found to include a wide range of tools such as Big Data, Artificial Intelligence (AI), Internet of Things (IoT), Blockchain, and others that help businesses effectively implement and monitor social programs and initiatives. It is substantiated that the use of innovative digital technologies in the system of strategic management of social responsibility of enterprises opens wide opportunities and generates significant advantages. Namely, increasing transparency and openness; optimization of resources and costs; increasing internal efficiency; strengthening of reputation and brand; automation of enterprise processes; innovativeness and competitive advantages; stimulating innovation. A model for determining the relationship between the level of profitability of enterprises by type: large, medium, and small enterprises and by the number of employees and their labor costs is proposed, which allows to establish the required number of employees for each type of enterprise. This enables the enterprise to function effectively, reducing labor costs, but not reducing the positive impact on supporting the social sector of the population, creating jobs and remaining a socially responsible enterprise. The possibility of using the latest digital technologies in the social responsibility management of enterprises is summarized.

Keywords: social responsibility, strategic management, innovative technologies, information technologies, digitalization of strategic management.

- Filippova, S. V. (2017). Social responsibility in the management strategy of a domestic enterprise: problematic issues of mechanism integration. *Economics: time realities*, 2 (30), 5–17.
- **2.** Antokhov, A. A. (2018). Innovative strategies of social responsibility of business. *Investytsiyi: praktyka ta dosvid, 18,* 6–10.

- Khaminich, S. (2023). Innovative management methods in the socially-oriented system of the enterprise. Eastern Europe: Economy, Business and Management, 2 (39), 53–60. doi: https://doi.org/ 10.32782/easterneurope.39-9
- Kamishnikova, E. (2019). Essence and structure of organizational provision of strategic corporate social responsibility management. Problems and prospects of economics and management, 4 (20), 61–69.
- Pavlyuk, T. I., Havlyuk, E. I. (2023). Sotsialna vidpovidalnist yak skladova stratehii rozvytku biznesu na pidpryiemstvakh Ukrainy. Collection of scientific papers «SCIENTIA». Scientific method: reality and future trends of researching, 56–58.
- Nicole, S. J., Lada, S., Ansar, R., Abdul Adis, A.-A., Fook, L. M., Chekima, B. (2022). Corporate Social Responsibility and Strategic Management: A Bibliometric Analysis. Sustainability, 14 (17), 10526. doi: https://doi.org/10.3390/su141710526
- Arefieva, O., Poberezhna, Z., Petrovska, S., Arefiev, S., Kopcha, Y. (2024). Devising approaches to modeling enterprise business processes under conditions of modern digital technologies. *Eastern-European Journal of Enterprise Technologies*, 1 (13 (127)), 69–79. doi: https://doi.org/10.15587/1729-4061.2024.298143
- **8.** Heikkurinen, P. (2018). Strategic corporate responsibility: a theory review and synthesis. *Journal of Global Responsibility*, *9* (4), 388–414. doi: https://doi.org/10.1108/jgr-06-2018-0020
- 9. Poberezhna, Z. (2024). Formation of a system for optimizing business processes of aviation enterprises based on their automation. Proceedings of the 2nd International Workshop on Advances in Civil Aviation Systems Development. ACASD 2024. Lecture Notes in Net-

- works and Systems, Vol. 992. Cham: Springer, 325–338. doi: https://doi.org/10.1007/978-3-031-60196-5 24
- 39. Filyppova, S., Filippov, V. (2020). Social responsibility in strategic enterprise management: key tasks of integration according to the imperatives of sustainable development. *Economics of the Transport Complex*, 35, 177–202. doi: https://doi.org/10.30977/etk.2225-2304.2020.35.0.177
- 40. Martyniuk, O. (2020). The impact of digital technologies on the development of business social responsibility. *Economics: Time Realities*, 4 (50), 78–86. doi: https://doi.org/10.15276/etr.04.2020.11
- Kamishnikova, E. V. (2014). Strategic approach to managing corporate social responsibility of the enterprise. *Teoretychni i praktychni aspekty ekonomiky ta intelektualnoi vlasnosti*, 1 (10), 81–85.
- **42.** Lingur, L. (2020). Integrated approaches of csr information system formation for small and medium business enterprises. *Economy and Society*, 22. doi: https://doi.org/10.32782/2524-0072/2020-22-38
- **43**. Tiahunova, N., Tiahunova, Z. (2020). The influence of digital transformation of business on social responsibility of trade enterprises. *Problems of systemic approach in the economy, 4* (78), 177–183. doi: https://doi.org/10.32782/2520-2200/2020-4-24
- 44. Smerichevskyi, S., Mykhalchenko, O., Poberezhna, Z., Kryvovyazyuk, I. (2023). Devising a systematic approach to the implementation of innovative technologies to provide the stability of transportation enterprises. *Eastern-European Journal of Enterprise Technologies*, 3 (13 (123)), 6–18. doi: https://doi.org/10.15587/1729-4061.2023.279100
- State Statistics Service of Ukraine. Available at: https://www.ukrstat. gov.ua/

ECONOMIC CYBERNETICS

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THE USE OF ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING IN E-COMMERCE MARKETING

pages 33-38

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The object of this research is the use of artificial intelligence (AI) and machine learning (ML) in e-commerce marketing strategies. Traditional e-commerce marketing approaches often lack a personalized customer experience and find it difficult to adapt to changing consumer behavior. The integration of artificial intelligence and machine learning offers a solution to these problems, enabling real-time marketing initiatives and data analysis.

Studies have shown that the use of artificial intelligence and machine learning in e-commerce marketing has led to improved customer relationship management, increased operational efficiency, and more customer-centric advertising strategies. In addition, technologies such as visual search, virtual personal shoppers, and real-time product targeting have changed the e-commerce landscape by providing interactive and personalized shopping experiences. Artificial intelligence and machine learning algorithms analyze vast amounts of customer data to

identify patterns, preferences and trends, enabling e-commerce businesses to conduct targeted marketing campaigns and optimize product offerings. Using advanced technologies, companies can streamline operations, increase customer satisfaction and stay ahead of the competition in the digital marketplace. This data suggests that integrating artificial intelligence and machine learning into e-commerce marketing strategies can benefit businesses by improving customer engagement, increasing sales, and gaining a competitive advantage. However, a successful implementation requires access to quality data, a robust AI infrastructure, and ongoing monitoring and optimization to ensure effectiveness and relevance in a dynamic marketplace.

Keywords: artificial intelligence, machine learning, e-commerce marketing, personalized customer experience.

- Fedorko, R. et al. (2022). Artificial Intelligence and Machine Learning in the Context of E-commerce: A literature Review. Prešov: University of Presov.
- Kalia, P. (2021). Artificial Intelligence in E-Commerce. A Business Process Analysis. *In Artificial Intelligence*. CRC Press. doi: https://doi.org/10.1201/9781003095910-2
- **3.** Li, J. (2022). E-Commerce Fraud Detection Model by Computer Artificial Intelligence Data Mining. *Computational Intelligence and Neuroscience*, 2022, 1–9. doi: https://doi.org/10.1155/2022/8783783
- Singh, R. (2021). A Study of Artificial Intelligence and E-Commerce Ecosystem – A Customer's Perspective. *International journal of re*search in engineering, science and management, 4 (2), 78–87. Available at: https://journal.ijresm.com/index.php/ijresm/article/view/507

- Micu, A., Geru, M., Capatina, A., Constantin, A., Rusu, R., Panait, A. A. (2019). Leveraging e-Commerce Performance through Machine Learning Algorithms. *Annals of Dunarea de Jos University of Galati. Fascicle I. Economics and Applied Informatics*, 25 (2), 162–171. doi: https://doi.org/10.35219/eai1584040947
- Sangeetha, K. (2023). A Study on Artificial Intelligence in Ecommerce Industry. *International Journal of Creative Research Thoughts*, 11 (10), 135–167.
- Soni, D. V. (2020). Emerging roles of Artificial Intelligence in ecommerce. International Journal of Trend in Scientific Research and Development, 4 (5), 223–225.
- 8. Khrais, L. T. (2020). Role of Artificial Intelligence in Shaping Consumer Demand in E-Commerce. *Future Internet*, 12 (12), 226. doi: https://doi.org/10.3390/fi12120226
- Kar, R., Haldar, R. (2016). Applying Chatbots to the Internet of Things: Opportunities and Architectural Elements. International Journal of Advanced Computer Science and Applications, 7 (11), 147–154. doi: https://doi.org/10.14569/ijacsa. 2016.071119
- Dhavare, U., Kulkarni, U. (2015). Natural Language Processing using Artifical Intelligence. *International Journal of Emerging Trends and Technology in Computer Science*, 4 (2).
- Gupta, S., Borkar, D., De Mello, C., Patil, S. (2015). An ECommerce website based Chatbot. *International Journal of Computer Science and Information Technology*, 6 (2), 1483–1485.
- Pannu, A. (2015). Artificial Intelligence and its Application in Different Areas. Internal Journal of Engineering and Innovation Technology, 4 (10).

DEVELOPMENT OF PRODUCTIVE FORCES AND REGIONAL ECONOMY

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SCIENCE PARKS: ANALYSIS OF INTERNATIONAL EXPERIENCE AND DEVELOPMENT PROSPECTS IN UKRAINE

pages 39-46

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The object of the research is the issues related to the creation of science parks in Ukraine at a new level in the process of its post-war reconstruction. In this paper, the main focus is on the analysis of the very concept of «science park» and the experience of some international ones, which are most suitable for the domestic plans for the transformation of the Ukrainian economy and its social infrastructure. Also researched the initiative of the Kharkiv city government to create the so-called «science quarter», which would absorb all the best that exists in the world in the field of science parks, and would have its own «highlight». As a result of this study, it was established that the creation and functioning of science parks is an important component of the modern world economy, which should be given serious attention in the process of post-war transformation of the Ukrainian economy. Moreover, the process of developing a strategy for the construction of such science parks should be started now, without waiting for the end of the war. A good example of this is the start of work on the project to create a science park in Kharkiv called

«Science Quarter» as part of the development of a city recovery plan with the help of specialists from various international organizations, universities, banks and funds. The article analyses the activities of some similar science parks in Poland, which can be used as a guide in this process, and provides recommendations for the improvement and enhancement of certain basic elements of the future Kharkiv science park. As a result, it was concluded that thanks to the hard work of the city authorities with the support of international institutions, active work is being done to develop a city reconstruction strategy at a fundamentally new level in Kharkiv, within which a significant place is given to the implementation of the «Science Quarter» project. The success of the latter will depend not only on the experienced team of specialists implementing this project and the receipt of the necessary funding, but also, first of all, on the success of our defenders in repelling russian aggression.

Keywords: post-war reconstruction of the country, science parks, «Science Quarter», Kharkiv science park.

- Liashenko, V. I., Zemliankin, A. I., Pidorycheva, I. Yu., Berezhna, T. F. (2012). Perspektyvy rozvytku naukovykh parkiv yak elementiv infrastruktury innovatsiinoho pidpryiemnytstva v Ukraini. Visnyk ekonomichnoi nauky Ukrainy, 1 (21), 89–109.
- Petryshyn, H. P., Solan, S. B. (2013). Naukovi parky: funktsionalnotekhnichni ta terytorialno-prostorovi napriamy rozvytku. Visnyk Natsionalnoho universytetu «Lvivska politekhnika». Seriia: Arkhitektura, 757, 239–247. Available at: http://nbuv.gov.ua/UJRN/VNULPARX_2013_757_40
- Pidorycheva, I. Yu. (2017). Naukovi parky: svitova praktyka ta realii pravovoho rehuliuvannia yikh diialnosti v Ukraini. Problemy ta perspektyvy rozvytku naukovykh parkiv Ukrainy. Kyiv, 66–71.
- Cherniuk, V. (2016). Naukovi parky v Ukraini stan ta problemy diialnosti. Teoriia i praktyka intelektualnoi vlasnosti, 1, 68–75.
- Chudaeva, I. B. (2011). Scientific parks: essence, functions and prospects of creation. Naukovyi visnyk NLTU Ukrainy, 21.1, 352–361.
- 6. Pro naukovi parky (2009). Zakon Ukrainy No. 1563-IKh. 25.06.2009. Available at: https://zakon.rada.gov.ua/laws/show/1563-17#Text Last accessed: 11.02.2024
- Liashenko, V., Pidorycheva, I., Buravchenko, S., Stetsenko, O. (2021). Developing Science Parks: Global Experience and Possible Guidelines for the Donbas Region's Innovative Economic Recovery.

- Economic Herald of the Donbas, 2 (64), 4–26. doi: https://doi.org/ 10.12958/1817-3772-2021-2(64)-4-26
- **8.** Prysvitla, O. (2022). The role of science parks in the formation of the national innovation system. *State and Regions. Series: Economics and Business*, *1* (124), 46–49. doi: https://doi.org/10.32840/1814-1161/2022-1-7
- Shulikin, D. (2021). Naukovi parky: chy ne vyiniaty palytsi z kolis? Svit, 33-34. Available at: https://svit.kpi.ua/2021/09/13/%D0%BD%D0%B0%D1%83%D0%BA%D0%BE%D0%B2%D1%96-%D0%BF%D0%BF%D0%B0%D1%80%D0%BA%D0%B8-%D0%B8-%D0%B8-%D0%B5-%D0%B2%D0%B8%D0%B9%D0%B8-%D0%B8
- Naukovyi kvartal. Kharkiv Investment Agency. Available at: https://kharkivinvest.org/uk/project/science-neighbourhood/ Last accessed: 27 02 2024

- Kulish, P. (2024). Biuro Normana Fostera prezentuvalo plan rozvytku naukovykh parkiv u Kharkovi. Hvara media. Available at: https://gwaramedia.com/biuro-normana-fostera-prezentuvalo-plan-rozvytku-naukovykh-parkiv-u-kharkovi/ Last accessed: 23.02.2024
- Ihor Terekhov proviv onlain-zustrich z fakhivtsiamy komandy Fostera (2024). Ofitsiinyi sait Kharkivskoi miskoi rady, miskoho holovy, vykonavchoho komitetu. Available at: https://www.city.kharkiv.ua/uk/news/igor-terekhov-proviv-onlayn-zustrich-z-fakhivtsyami-komandi-fostera--55380.html Last accessed: 22.02.2024
- «Kharkiv: Restart» prezentatsiia mista dlia investoriv (2023).
 Ofitsiinyi sait Kharkivskoi miskoi rady, miskoho holovy, vykonavchoho komitetu. Available at: https://www.city.kharkiv.ua/uk/news/-54670.
 html Last accessed: 27.02.2024
- Kharkiv IT Cluster zavitav do Ukrainskoi inzhenerno-pedahohichnoi akademii (2024). Ofitsiinyi sait Kharkiv IT Cluster. Available at: https://it-kharkiv.com/kharkiv-it-cluster-zavitav-do-ukrayinskoyiinzhenerno-pedagogichnoyi-akademiyi/ Last accessed: 08.03.2024