







Enhancing hotel and restaurant business efficiency through digital technologies



Nataliia Oliinyk^a   | Mykhailo Podolskyi^a  | Volodymyr Velykochyy^b  | Oleksii Albeshchenko^c 
Svitlana Domashenko^d 

^aDepartment of Restaurant, Hotel and Tourism Business, Ukrainian Engineering Pedagogics Academy, Kharkiv, Ukraine.

^bFaculty of Tourism, Vasyl Stefanyk Precarpathian National University, Ivano-Frnsnkivsk, Ukraine.

^cDepartment of Economic Cybernetics and Mathematical Modeling, Mykolaiv National Agrarian University, Mykolaiv, Ukraine.

^dDepartment of Digital Technologies in Business and Economics, Faculty of Business Technologies and Economics, National University "Zaporizhzhia Polytechnic", Zaporizhzhia, Ukraine.

Abstract The significance of this research is deeply rooted in the rapid technological advancements of the modern era, which have the capacity to transform and enhance business operations within the hospitality industry. This study aims to assess the impact of digital technologies on the efficiency of hotel and restaurant businesses, highlighting their key benefits while identifying the challenges and risks associated with their implementation. To achieve these objectives, the study employed a comprehensive analysis of literature, alongside methods of generalization and systematization, to examine the role of digital technologies. The primary objective is to achieve an optimal balance among efficiency, adaptability, and service personalization while addressing the weaknesses and potential threats associated with the implementation of digital technologies in hotel and restaurant operations. The evaluation of their impact was conducted using an expert-driven approach based on SWOT analysis criteria. The Pearson correlation tool, as part of the JASP statistical program, was used to determine the degrees of influence of the criteria. A comprehensive analysis revealed that experts rate the strengths and opportunities of implementing digital technologies in the hospitality sector higher than the associated weaknesses and threats. Moreover, the high degree of interconnection between increasing the throughput of establishments and the personalisation of customer service, high dependence on technology and equipment, and personalisation in customer service, as well as the need for constant technology updates and changes in the internal culture of the organisation and staff skills, indicates the necessity for a systematic approach to the implementation of digital technologies in the activities of hotel and restaurant enterprises. The objective is to achieve an optimal balance between efficiency, adaptability, and service personalisation by taking into account the weaknesses and potential threats that may arise when digital technologies are implemented in the activities of hotel and restaurant enterprises.

Keywords: innovation technologies, hospitality enterprise, hospitality sector, personalisation, automation, competitiveness

1. Introduction

In the context of rapid technological progress, the hotel and restaurant business is undergoing significant changes and adaptations to meet the demands of the modern world. Digital transformation has become a core element of development strategies, focusing on enhancing service efficiency, optimizing management processes, and boosting competitiveness. Currently, one of the most significant trends is the incorporation of digital technologies to streamline the various stages of hotel and restaurant services. The implementation of a simplified booking process via websites and mobile applications ensures customer convenience and facilitates data collection and subsequent analysis. The utilisation of information pertaining to guests' preferences and choices enables hotel and restaurant personnel to devise bespoke offers and provide a personalised service. In the restaurant industry, digital transformation is also evidenced by the utilisation of technologies for the automation of orders and the processing of payments, which facilitates expedited service and reduces errors (Sharov, 2021). In the modern, innovative environment, digital technologies contribute to transforming approaches to the hotel and restaurant business, influencing consumer demand and shaping customer requests. The implementation of digital technologies in the hotel and restaurant industry has been demonstrated to increase the quality of service provided, attract new customers and ensure customer loyalty.

The objective of this scientific article is to provide a systematic overview of the impact of modern digital technologies on the efficiency of hotel and restaurant businesses. This research aims to identify the primary challenges associated with the implementation of digital innovations and to ascertain the pivotal benefits of digitalisation for enhancing the productivity and competitiveness of hotel and restaurant enterprises.



A substantial corpus of scientific literature is devoted to elucidating the essence of digital transformation in the hotel and restaurant business. To illustrate, Mashika (2023) posits that digital transformation entails the renewal of all aspects of the industry's activities through the implementation of modern technologies and digital innovations, including the utilisation of digital tools and platforms. Altaş (2022) defines digital transformation as the integration of the latest technological developments into the critical business processes of a hospitality establishment. Dora's (2024) research corroborates the advent of digitalisation in the tourism and hospitality sectors and underscores that the proliferation of innovative practices was precipitated by the imposition of quarantine restrictions during the global pandemic caused by the SARS-CoV-2 virus. Furthermore, Lazic et al. (2023) highlighted that local challenges, such as the war in Ukraine, have an impact on supply chains and the modification of business processes, influencing the selection of suppliers in the restaurant business. The contemporary approach to management entails the implementation of a quality management system as a means of attaining competitiveness and instilling confidence among consumers (Bayev et al., 2022).

Buryak and Tyukhtenko (2023) posit that contemporary technologies exert considerable influence on customer preferences within the restaurant industry. It is evident that there is a growing demand for fast digital services, with 70% of customers indicating a preference for ordering food. Additionally, 49% of the customers expected high-speed Wi-Fi, and 51% of the respondents expressed a desire to make preorders remotely. This highlights the necessity for the development of personalised service technologies. Moreover, 81% of the respondents searched for menus online, which highlights the importance of the online presence of hospitality establishments and the use of digital solutions for greater engagement and interaction with customers online. Additionally, 29% of the respondents use contactless payment systems such as Apple Pay and Google Pay, which also require the hotel and restaurant businesses to adapt continuously and implement new technologies to ensure convenience, personalisation, and security of services in the future. Furthermore, according to Edeh et al. (2022), one of the most effective strategies for enhancing discretionary behaviour in the workplace is the implementation of talent management.

In this context, Korzh and Onyshchuk (2020) highlight the necessity for the hotel and restaurant industry to proactively integrate contemporary digital technologies to align itself with the evolving expectations of the modern consumer. It is crucial to integrate online services, provide convenient online payment methods, and create service apartments. Furthermore, the deployment of sophisticated technologies, including artificial intelligence, virtual reality (VR), augmented reality (AR), voice assistants, blockchain, neural interfaces, biometrics, and facial recognition systems, enhances the efficiency and personalisation of services (Kish, 2023; Fostolovich, 2022; Berezina et al., 2019; Smereka, 2023; Banyeva & Velychko, 2022). Similar trends are observed in the work of Jasonos and McCormick (2017), who concentrate on utilising Big Data technologies, VR technologies, artificial intelligence, and robotics for hotel and restaurant enterprises.

Conversely, Oshchypok (2020) emphasises the efficacy of cloud computing and virtualisation, whereas Dzhyndzhoian et al. (2024) concentrate on the advantages of artificial intelligence, mobile technologies, and personalised visitor experiences. Moreover, Snehasis and Barsha (2023) reported that the advancement of human resource information systems (HRISs) enables the effective aggregation, storage, and preservation of data essential for the administration of human resources, particularly within the context of hospitality personnel. It is imperative to direct particular attention towards advanced digital solutions, such as the integration of network technologies (SMAC), which encompasses social, mobile, analytics, and cloud computing (Alt, 2018; Klochan et al., 2021; Hrosul et al., 2021).

Additionally, blockchain technology, extended reality (XR), and quantum computing (QC) (Alt, 2021; Zysman & Kenney, 2018) warrant consideration, as they not only promote digitalisation at the technological level but also encompass the applied level with restructured business processes and models. The impact of digital technologies on the efficiency of the hotel and restaurant business has been the subject of studies by Anser et al. (2020), Choi et al. (2020), Lenuwat & Boon-itt (2022), Mingotto et al. (2021), and Niziaieva et al. (2022). These studies indicate that the impact of digital technologies on the efficiency of the hotel and restaurant business mainly lies in improving operations and value chain management; accelerating service; reducing the possibility of errors; and enhancing financial performance, competitiveness, service quality, resource utilisation, flexibility and innovation, and consumer satisfaction levels. In the context of the dynamic and unpredictable nature of the business environment, strategic management is identified as an optimal approach to scenario formation for the development of tourism industry enterprises in Ukraine (Kvasnii et al., 2023).

2. Methods

To investigate the contemporary digital technologies deployed to optimise the efficiency of the hotel and restaurant industry and the prevailing issues within the hospitality sector, conventional scientific research techniques were deployed, including the analysis of literary sources, generalisation and systematisation. A SWOT analysis was conducted to identify the most significant factors influencing the development of the hotel and restaurant business in the context of the need for digitalisation changes. A weighted average was calculated for each evaluation criterion and overall analysis group on the basis of the expert evaluation method for 20 hospitality employees. To obtain the research results, a correlation analysis was conducted between the strengths and weaknesses and the threats and opportunities of using digital technologies. A correlation analysis was conducted via the statistical software JASP (Pearson's correlation tool) to calculate Pearson's correlation

coefficients. The results demonstrate the efficacy of leveraging digital technologies for personalisation and process automation in hospitality enterprises, contingent on the consideration of inherent weaknesses and potential threats.

3. Results and Discussion

The contemporary challenges and issues facing the hotel and restaurant industry require businesses to pursue innovative solutions to maintain competitiveness and meet the demands of modern consumers. The proliferation of digitalisation processes requires the incorporation of novel approaches at each stage of business operations. One of the most significant challenges facing the hotel industry is the prevalence of excessive competition, whereby the supply of accommodations and other services exceeds demand. This is particularly detrimental to SMEs, which often lack the resources to withstand such market pressures. To maintain market share and a stable flow of customers, it is necessary to improve service quality and develop unique services that go beyond the traditional concept of hospitality (Yankovska et al., 2023). Furthermore, the prevailing business climate is marked by ambiguity regarding the potential financial return on investment. The existing trends indicate that a return on investment can be expected within a period of five to six years. However, such circumstances have a detrimental effect on small-scale hotels and dining establishments. In the hotel and restaurant business, the degree of risk is not entirely predictable, which often results in unexpected challenges for business owners, such as changes in customer preferences or competitive choices (Smovzhenko et al., 2020; Saienko et al., 2020). The implementation of digital technologies can provide a practical solution to these issues, contributing to the enhancement of socioeconomic indicators and the assurance of sustainable development within the hotel and restaurant industry (Table 1).

Table 1 Digital technologies in the hospitality industry.

Technologies	Features
Artificial intelligence (AI)	It is used to analyse large amounts of data to improve the personalisation of guest service, forecast demand for services and optimise pricing.
Automation system (TIA)	It is used to automate routine operations, such as booking processing, access control and energy efficiency management.
Big Data	It is used to analyse visitor data, including their preferences and habits, which helps to improve marketing strategies and develop personalised offers.
Cloud storage	Provides secure storage and access to data, facilitates the sharing of information between hotel or restaurant departments and the introduction of new technologies without significant investment in local equipment.
Internet of Things (IoT)	It is used to collect data from sensor devices and interact with guests (e.g. room locks, climate control systems), which improves the comfort and safety of staying in a hotel or restaurant.
Interactive TV Systems	Hoist Technology has developed three types of interactive systems with various content: films, satellite channels and music. An important part is advertising services that inform staff about the guest's tastes, facilitating the choice of films, as well as the ability to order food and drinks through room service.
Energy Management System (Energy Management System)	The system allows customers to monitor and change the temperature and humidity in the room through a central computer. It also allows for efficient energy management and reduces costs for lighting, temperature and air conditioning.
Back-office management system for internal hotel services	It facilitates and enhances the work of hotel staff, reducing errors and improving customer service. The use of handheld personal computers by each employee provides access to data, making it easier to maintain inventory and interact with guests.
Radiofrequency identification (RFID)	The use of a radio frequency identification door lock allows customers to enter their room and other hotel areas using their mobile phone, saving time previously spent searching for a key.

Source: Alt (2021), Dzhyndzhoian et al. (2024), Polozhishnikova & Yalovegin (2021), Zysman & Kenney (2018), Bondarenko et al. (2022)

In addition to electronic management, innovations in the hospitality industry include the introduction of restaurant services. Contemporary hospitality establishments extend their scope beyond the mere organisation of kitchen operations and room distribution, offering patrons the opportunity for interactive engagement with the establishment. For example, the technology of an interactive menu with a screen built into the table, which allows visitors to order dishes and call servers, is becoming increasingly prevalent. Tablet screens on tables provide guests with the opportunity to read news and learn more about the restaurant while their order is being prepared. Additionally, touch screens in hotel lobbies allow guests to view the menus of all dining outlets, select the most suitable option, and precalculate their average bill (Reddy et al., 2022). Consequently, the automation of the restaurant business results in a discernible enhancement in service quality, a reduction in the complexity of staff work, and an optimisation of product accounting and dish calculation. However, innovations in this field are not limited to information technology. The open kitchen practice, which allows customers to observe the cooking

process, has been adapted to align with modern design standards and has become a crucial marketing tool for hotels to remain contemporary (Kamushkov et al., 2022; Khan et al., 2021).

Notably, one of the prevalent trends in the hospitality industry is the integration of multimedia technologies, particularly in the creation of electronic directories, brochures, and catalogues. In the contemporary era, hospitality establishments are utilising digital platforms to disseminate information through online directories and catalogues. These platforms facilitate virtual tours of diverse accommodation options, culinary offerings, conference facilities, and public spaces. Additionally, they provide comprehensive details about the hotel's structure and the range of services it offers, including any loyalty programmes or discounts. The utilisation of multimedia technologies guarantees the expeditious dissemination of information to prospective guests regarding the hotel, thereby facilitating the expeditious and accurate selection of the requisite hotel product. The advent of the quick response (QR) code, a two-dimensional barcode, has been particularly significant, offering boundless potential for online interaction between businesses and consumers. The QR code, which can be programmed to transmit a variety of information, represents a significant opportunity for innovation in the hotel and restaurant industry. It is a versatile tool for customer interaction that is capable of conveying both textual and graphical information (Yankovska et al., 2023).

A survey was conducted among 20 employees of hotel and restaurant establishments to investigate the impact of digital technologies on the efficiency of the hotel and restaurant business. The survey inquired about the opportunities and problems associated with using digital technologies in their work. As part of this analysis, a SWOT analysis of the effectiveness of digital technologies in the hospitality sector was constructed, and its indicators were evaluated on a scale from 0--10 points. The evaluation is distributed as follows: scores of 0--3 indicate a low degree of factor influence, scores of 4--7 indicate a medium degree of factor influence, and scores of 8--10 indicate a high degree of factor influence. The weighted average indicators are presented in Table 2, along with the overall evaluations by SWOT analysis groups, as illustrated in Figure 1.

Table 2 SWOT analysis of digital technology efficiency in the hospitality industry.

Strengths		Weaknesses	
Personalisation in customer service (S1)	8,00	High costs for technology implementation and support (W1)	4,70
Automation of routine operations (S2)	7,80	High dependence on machinery and equipment (W2)	5,65
Improving the efficiency of data exchange (S3)	7,10	The need for constant technology upgrades (W3)	7,05
Increased safety and comfort for customers (S4)	6,85	High level of staff training costs (W4)	6,55
Total	7,4375	Total	5,9875
Opportunities		Threats	
Expanding the customer base (O1)	7,15	Increased risk of leakage of personal customer information (T1)	5,55
Ensuring a stable competitive advantage (O2)	8,70	Dependence on an internet connection (T2)	7,40
Increasing the throughput capacity of facilities (O3)	7,80	The need for changes in the organisation's internal culture and staff skills (T3)	8,15
Ensuring business adaptability (O4)	8,50		
Total	8,0375	Total	7,0333

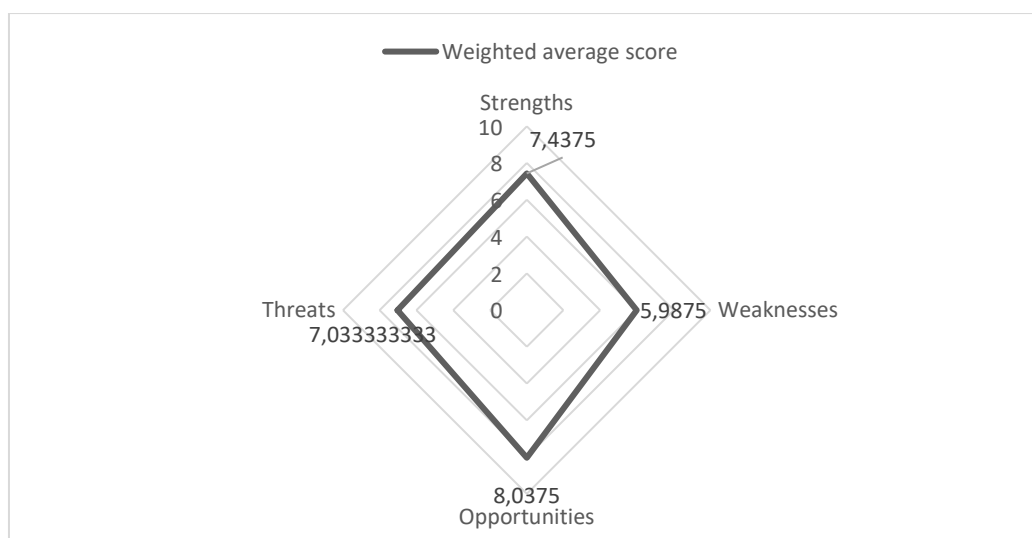


Figure 1 Results of the SWOT analysis summary indicator calculations.

The results of the calculation of the aggregate indicators of the SWOT analysis indicate that the utilisation of digital technologies in the hospitality sector is highly efficient, as evidenced by the high rating of the criteria. The personalisation of customer service (8.0), the automation of routine operations (7.25), the improvement of data exchange efficiency (7.1), and the weighted average rating of strengths (6.6) were also identified as key areas of strength. Furthermore, the indicators of the potential for industry development through digital technologies are high (8.04), including customer base expansion (7.2), ensuring a stable competitive advantage (8.7), increasing the capacity of establishments (7.8), and ensuring business adaptability (8.5).

In contrast, the weighted average rating for weaknesses is considerably lower (5.98). However, the need for constant technology updates and high training costs for staff require greater attention from enterprises when implementing digital solutions. In contrast, threats (7.03) have a relatively low rating, although their weighted average indicator is high, particularly in light of the need to address the potential issues of dependence on internet connectivity (7.4) and the necessity for organisational culture shifts and staff skill development (8.2).

To ascertain the impact of digital technologies on the efficiency of the hotel and restaurant business, it is essential to conduct a correlation analysis between the criteria previously identified during SWOT analysis. The correlation analysis between the strengths, weaknesses, threats and opportunities of the utilisation of digital technologies is conducted utilising the statistical software JASP (Pearson's correlation tool), with the calculation of Pearson's correlation coefficients. The results of the correlation analysis are presented in Table 3 for the reader's convenience.

Table 3 Correlation analysis between strengths, weaknesses, threats and opportunities of using digital technologies in the hotel and restaurant business.

		Pearson's Correlations							
Variable		S1	S2	S3	S4	W1	W2	W3	W4
O1	Pearson's r	0.192	-0.227	-0.095	0.167	-0.370	-0.501	-0.464	-0.049
	p value	0.418	0.335	0.691	0.482	0.108	0.025	0.040	0.838
O2	Pearson's r	0.390	-0.237	0.291	0.028	-0.021	-0.166	-0.511	-0.108
	p value	0.089	0.314	0.214	0.907	0.930	0.485	0.021	0.650
O3	Pearson's r	-0.574	0.267	-0.132	0.108	0.033	0.251	0.345	-0.145
	p value	0.008	0.255	0.578	0.650	0.889	0.286	0.137	0.543
O4	Pearson's r	-0.283	0.110	-0.401	-0.083	-0.098	0.077	0.257	0.315
	p value	0.227	0.645	0.080	0.727	0.680	0.747	0.275	0.177
T1	Pearson's r	0.256	0.002	0.295	-0.100	0.028	0.065	-0.117	-0.164
	p value	0.276	0.993	0.206	0.675	0.905	0.786	0.622	0.489
T2	Pearson's r	0.102	-0.283	0.060	-0.112	0.110	0.064	0.024	-0.044
	p value	0.668	0.227	0.802	0.638	0.645	0.790	0.921	0.852
T3	Pearson's r	-0.722	0.191	-0.005	0.106	0.320	0.259	0.520	0.065
	p value	< .001	0.421	0.984	0.657	0.168	0.270	0.019	0.785

*Notes: S1 – Personalisation in customer service; S2 – Automation of routine operations; S3 – Improving the efficiency of data exchange; S4 – Increasing safety and comfort for customers; W1 – High costs of implementing and maintaining technology; W2 – High dependence on machinery and equipment; W3 – Need for constant technology upgrades; W4 – High costs of staff training; O1 – Expanding the customer base; O2 – Ensuring a stable competitive advantage; O3 – Increasing the capacity of facilities; O4 – Ensuring business adaptability; T1 – Increased risk of leakage of personal information about customers; T2 – Dependence on the internet connection; T3 – Need for changes in the internal culture of the organisation and staff skills.

The results of the correlation analysis revealed the following interrelations between the criteria of the SWOT analysis: an increase in the capacity of establishments may complicate the personalisation of customer service ($r = -0.574$ at $p = 0.008$); increased data exchange efficiency has a high degree of correlation with ensuring business adaptability ($r = -0.401$ at $p = 0$). Additionally, a high dependence on technology and equipment hinders personalisation in customer service ($r = -0.501$ at $p = 0.025$). Additionally, the need for constant technology updates also leads to problems in personalisation in customer service ($r = -0.464$ at $p = 0.04$). The necessity for constant technology updates also necessitates changes in the internal culture of the organisation and staff skills ($r = -0.52$ at $p = 0.019$). Therefore, the analysis results indicate that achieving an optimal balance between efficiency, adaptability, and personalisation of service necessitates the implementation of a systematic approach to the introduction of digital technologies, taking into account the market, financial, and organisational characteristics of each enterprise. Furthermore, this approach should facilitate the identification of risks at an early stage of their manifestation.

4. Conclusion

The contemporary digital landscape encompasses a plethora of sophisticated technologies, including artificial intelligence (AI) for tailored service and demand forecasting, automation systems to streamline routine operations, Big Data for analysing customer preferences, cloud storage for secure data storage, the Internet of Things (IoT) for increased comfort,

interactive television systems, energy management and internal service systems, and radio frequency identification (RFID) technologies for convenient service use. The utilisation of these technologies serves to enhance the quality of service, augment managerial efficacy, and guarantee the sustainable growth of business enterprises. Furthermore, the hotel and restaurant industry is confronted with a number of challenges, including intense competition, uncertainty regarding the return on investment, and a considerable degree of risk associated with shifts in customer preferences and the competitive landscape.

The results of the SWOT analysis of the effectiveness of digital technology use and expert evaluations of the defined criteria indicate that strengths (7.44) and opportunities (8.04) are rated highly by experts and have a more significant impact on the decision to implement technologies. This is evidenced by the high ratings for personalised service (8.0), automation of routine operations (7.25), improved data exchange efficiency (7.1), customer base expansion (7.2), stable competitive advantage (8.7), and business adaptability (8.5). However, it is also important to consider potential weaknesses and threats, particularly in light of the rapid pace of technological advancement, the significant costs associated with training, and the reliance on internet connectivity.

To ascertain the impact of digital technologies on the efficiency of the hotel and restaurant business, a correlation analysis was conducted between the criteria of the SWOT analysis, indicating a high degree of interrelation between increased establishment capacity and personalised customer service ($r = -0.574$ at $p = 0.008$), high dependence on technology and equipment, and personalised customer service ($r = -0.501$ at $p = 0.025$), as well as the need for constant technology updates necessitating changes in organisational culture and staff skills ($r = -0.52$ at $p = 0.019$). The findings of the analysis emphasise the necessity of attaining an equilibrium between efficiency, adaptability and personalised service by contemplating the shortcomings and prospective threats when digital technologies are integrated into the operations of hotel and restaurant businesses.

Ethical Considerations

We confirm that we have obtained all the consent required by applicable law to publish any personal details of the research participants. We agree to provide Multidisciplinary Reviews with consent or evidence that such consent was obtained if requested.

Conflict of Interest

The authors declare that they have no conflicts of interest.

Funding

This research did not receive any financial support.

References

- Alt, R. (2018). Electronic Markets on digitalisation. *Electronic Markets*, 28(4), 397–402. <https://doi.org/10.1007/s12525-018-0320-7>
- Alt, R. (2021). Electronic Markets on the next convergence. *Electronic Markets*, 31(1), 1–9. <https://doi.org/10.1007/s12525-021-00471-6>
- Altaş, A. (2022). Digital Transformation in Restaurants. In *Mobile Computing and Technology Applications in Tourism and Hospitality* (pp. 1–23). IGI Global. <https://doi.org/10.4018/978-1-7998-6904-7.ch001>
- Anser, M. K., Yousaf, Z., Usman, M., & Yousaf, S. (2020). Towards strategic business performance of the hospitality sector: Nexus of ICT, E-marketing and organisational readiness. *Sustainability*, 12(4), 1346. <https://doi.org/10.3390/su12041346>
- Banyeva, I., & Velychko, O. (2022). Modern approaches to the organisation of the hotel and restaurant business. *Modern Economics*, 36, 6–11. [https://doi.org/10.31521/modecon.V36\(2022\)-01](https://doi.org/10.31521/modecon.V36(2022)-01)
- Bayev, V. V., Bakhov, I. S., Mirzodaieva, T. V., Rozmetova, O., & Boretskaya, N. (2022). Theoretical and methodological fundamentals of the modern paradigm of quality management in tourism. *Journal of Environmental Management and Tourism*, 13(2), 338–345. [https://doi.org/10.14505/jemt.v13.2\(58\).04](https://doi.org/10.14505/jemt.v13.2(58).04)
- Berezina, K., Ciftci, O., & Cobanoglu, C. (2019). Robots, Artificial Intelligence, and Service Automation in Restaurants. In Ivanov, S., Webster, C. (Ed.), *Robots, Artificial Intelligence, and Service Automation in Travel, Tourism and Hospitality* (pp. 185–219). Emerald Publishing Limited, Leeds. <https://doi.org/10.1108/978-1-78756-687-320191010>
- Bondarenko, S., Makeieva, O., Usachenko, O., Veklych, V., Arifkhodzhaieva, T., & LERNYK, S. (2022). The legal mechanisms for information security in the context of digitalisation. *Journal of Information Technology Management*, 14, 25–58. <https://doi.org/10.22059/jitm.2022.88868>
- Buryak, V. G., & Tyukhtenko, N. A. (2023). Digitalisation aspects of anti-crisis management of enterprises of the hotel and restaurant business. *Economic Synergy*, 1, 32–47. <https://doi.org/10.53920/ES-2023-1-3>
- Choi, Y., Choi, M., Oh, M., & Kim, S. (2020). Service robots in hotels: understanding the service quality perceptions of human-robot interaction. *Journal of Hospitality Marketing & Management*, 29(6), 613–635. <https://doi.org/10.1080/19368623.2020.1703871>
- Dora, S. J. (2024). Evolution of trends affecting the tourism industry: business challenges in the future. *Journal of Innovations in Business and Industry*, 2(3), 193–204. <https://doi.org/10.61552/JIBI.2024.03.008>
- Dzhyndzhoian, V., Khodak, O., & Yakovlieva-Melnyk, N. (2024). Innovative approaches to strategic management of analytical studies and forecasting of the activities of hotel and restaurant business enterprises. *E3S Web of Conferences*, 538, 02002. <https://doi.org/10.1051/e3sconf/202453802002>
- Edeh, F. O., Zayed, N. M., Perevozova, I., Kryshstal, H., & Nitsenko, V. (2022). Talent management in the hospitality sector: Predicting discretionary work behaviour. *Administrative Sciences*, 12(4). <https://doi.org/10.3390/admsci12040122>



- Fostolovich, V. A. (2022). Modern tools of the business management system in the field of hotel and restaurant business. *Investments: practice and experience*, 11-12, 18–25. <https://doi.org/10.32702/2306-6814.2022.11-12.18>
- Hrosul, V., Kovalenko, S., Saienko, V., Skomorovskyi, A., Kalienik, K., & Balatska, N. (2021). Research of logical contradictions in the conditions of cluster management of the enterprise. *Journal of Management Information and Decision Sciences*, 24(1), 1-4.
- Jasonos, M., & McCormick, R. (2017). *Technology integration for restaurants & hospitality industry in the year 2025*. Haaga-Helia University of Applied Sciences. <https://www.theseus.fi>. Accessed on September 19, 2024. Accessed on September 22, 2024.
- Kamushkov, O., Zhilko, O., & Nezveshchuk-Kogut, T. (2022). Technologies for automating the management system in restaurants. *Economy and society*, 43, 1–5. <https://doi.org/10.32782/2524-0072/2022-43-48>
- Khan, R.U., Saienko, V., & Tolchieva, H. (2021). Dependence of the company's reputation and the quality of customer relations. *Economic Studies journal*, 2, 159-176.
- Kish, G. (2023). Innovative technologies in the operation of hotel and restaurant enterprises. *Current issues in modern science*, 6(12), 65–77. [https://doi.org/10.52058/2786-6300-2023-6\(12\)-65-77](https://doi.org/10.52058/2786-6300-2023-6(12)-65-77)
- Klochan, V., Piliaiev, I., Sydorenko, T., Khomutenko, V., Solomko, A., & Tkachuk, A. (2021). Digital platforms as a tool for the transformation of strategic consulting in public administration. *Journal of Information Technology Management*, 13, 42–61. <https://doi.org/10.22059/JITM.2021.80736>
- Korz, N. V., & Onyshchuk, N. V. (2020). Impact of the COVID-19 pandemic on the hotel industry. *Economic space*, 156, 140–143. <https://doi.org/10.32782/2224-6282/156-25>
- Kvasnii, L., Moravska, O., Malyk, L., Shulzhyk, Y., Orlova, O., & Scherban, O. (2023). Scenarios of the Development of Enterprises of the Tourist Industry of Ukraine in the Conditions of the War and Post-War Period. *Financial and Credit Activity: Problems of Theory and Practice*, 2(49), 313–325. <https://doi.org/10.55643/fcaptp.2.49.2023.3999>
- Lazic, Z., Grujic, M., Skoric, V., & Milicevic S. (2023). Impact of global crisis on supply chain management quality: case studies. *Journal of Engineering, Management and Information Technology*, 1(3), 111–118. <https://doi.org/10.61552/JEMIT.2023.03.002>
- Lenuwat, P., & Boon-itt, S. (2022). Information technology management and service performance management capabilities: An empirical study of the service supply chain management process. *Journal of Advances in Management Research*, 19(1), 55–77. <https://doi.org/10.1108/JAMR-01-2021-0039>
- Mingotto, E., Montaguti, F., & Tamma, M. (2021). Challenges in re-designing operations and jobs to embody AI and robotics in services. Findings from a case in the hospitality industry. *Electronic Markets*, 31(3), 493–510. <https://doi.org/10.1007/s12525-020-00439-y>
- Niziaieva, V., Liganenko, M., Muntyan, I., Ohiienko, M., Goncharenko, M., & Nazarenko, O. (2022). Balancing interests in the field of tourism based on digital marketing tools. *Journal of Information Technology Management*, 14, 59–77. <https://doi.org/10.22059/jitm.2022.88875>
- Oshchypok, I. M. (2020). Specifics of hotel&restaurant enterprises functioning in the conditions of digital economy. *Herald of Lviv University of Trade and Economics. Economic Sciences*, 59, 83–89. <https://doi.org/10.36477/2522-1205-2020-59-11>
- Saienko, V., Mezentseva, I., Tolchieva, H., & Salkova, I. (2020). Efficiency of tourism operators' and tourism agents' activities in the market of tourist services of Ukraine. *Journal of Environmental Management and Tourism*, XI, Winter, 8(48), 1960-1966. DOI:10.14505/jemt.v11.8(48).08
- Sharov, S. V. (2021). Application of electronic systems in tourism and hotel and restaurant industry. In *Modern computer and information systems and technologies: materials of the II Ukrainian Scientific and Practical Internet Conference* (pp. 171–174). Melitopol, Ukraine. <http://elar.tsatu.edu.ua>. Accessed on September 20, 2024.
- Smereka, E. (2023). *Artificial intelligence for business: what tasks it can solve and in which industries it helps*. Mind. <https://mind.ua>. Accessed on September 22, 2024.
- Smovzhenko, T. S., Korkuna, O. I., Korkuna, I. I., & Tsilnyk, O. Ya. (2020). Risks of investment activity in tourism and hotel-restaurant business. *Regional economy*, 1, 154–159. <https://doi.org/10.36818/1562-0905-2020-1-16>
- Snehasis, D., & Barsha, B. S. (2023). Machine learning and AI based human resource management in kgi: an algorithm based crossover. *Journal of Engineering, Management and Information Technology*, 2(2), 69–76. <https://doi.org/10.61552/JEMIT.2024.02.003>
- Vijaya Vardan Reddy, S. P., Jagadeeswari, B., Soundariya, J., Jeevitha, M., & Deepika, Y. (2022). The Implementation of the Virtual Reality Technology in the Hotel Marketing Management using IoT. In *2022 International Conference on Augmented Intelligence and Sustainable Systems (ICAISS)* (pp. 1067–1072). IEEE. <https://doi.org/10.1109/ICAISS55157.2022.10011068>
- Yankovska, L. A., Semchuk, Zh. V., Pinda, Y. V., Semtsov, V. M., & Povovich, A. R., Slivinsky, R. M. (2023). Management system of market agents in hotel and restaurant business and tourism. *Academic Visions*, 23, 1–4. <https://doi.org/10.32782/2524-0072/2023-55-58>
- Zysman, J., & Kenney, M. (2018). The next phase in the digital revolution: Intelligent tools, platforms, growth, employment. *Communications of the ACM*, 61(2), 54–63. <https://doi.org/10.1145/3173550>