

Nefedova N., Sokolovskiy V., Prykhodko Z., Shahero A. The impact of digitalization on hotel logistics to enhance tourist service quality. *Journal of Education, Health and Sport*. 2026;90:76250. eISSN 2391-8306.

<https://dx.doi.org/10.12775/JEHS.2026.90.76250>

<https://apcz.umk.pl/JEHS/article/view/76250>

<https://zenodo.org/records/22936145>

The journal has had 40 points in Minister of Science and Higher Education of Poland parametric evaluation. Annex to the announcement of the Minister of Education and Science of 05.01.2024 No. 32318. Has a Journal's Unique Identifier: 201159. Scientific disciplines assigned: Physical culture sciences (Field of medical and health sciences); Health Sciences (Field of medical and health sciences). Punkty Ministerialne 40 punktów. Załącznik do komunikatu Ministra Nauki i Szkolnictwa Wyższego z dnia 05.01.2024 Lp. 32318. Posiada Unikatowy Identyfikator Czasopisma: 201159. Przypisane dyscypliny naukowe: Nauki o kulturze fizycznej (Dziedzina nauk medycznych i nauk o zdrowiu); Nauki o zdrowiu (Dziedzina nauk medycznych i nauk o zdrowiu). © The Authors 2026; This article is published with open access at Licensee Open Journal Systems of Nicolaus Copernicus University in Torun, Poland Open Access. This article is distributed under the terms of the Creative Commons Attribution Noncommercial License which permits any noncommercial use, distribution, and reproduction in any medium, provided the original author (s) and source are credited. This is an open access article licensed under the terms of the Creative Commons Attribution Non commercial license Share alike. (<http://creativecommons.org/licenses/by-nc-sa/4.0/>) which permits unrestricted, non commercial use, distribution and reproduction in any medium, provided the work is properly cited. The authors declare that there is no conflict of interests regarding the publication of this paper. Received: 07.04.2026. Revised: 10.04.2026. Accepted: 20.04.2026. Published: 30.04.2026.

UDC 359.09

THE IMPACT OF DIGITALIZATION ON HOTEL LOGISTICS TO ENHANCE TOURIST SERVICE QUALITY

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Abstract

This article examines the impact of digitalization on logistics within hotel tourist services, focusing on the improvement of service delivery and the optimization of modern hotel business processes. It analyzes key areas of hotel service digitalization through the enhancement of logistical flows—specifically service, material, and information flows. The study explores the benefits of digital technologies and tools for optimizing logistics processes, increasing the operational efficiency of hospitality enterprises, minimizing hotel costs, implementing revenue management, and boosting customer loyalty. It identifies the advantages and risks associated with digitalization in the operations of tourism and hospitality businesses. Furthermore, the article substantiates strategies for improving hotel logistics through digital tools to ensure high-quality service for tourists.

Keywords: tourism logistics; digitalization; tourist service; hotel services; service logistics; hotel logistics flows; hotel communications; tourism.

ВПЛИВ ДІДЖИТАЛІЗАЦІЇ НА ЛОГІСТИЧНЕ ЗАБЕЗПЕЧЕННЯ ГОТЕЛЬНИХ

ПІДПРИЄМСТВ ДЛЯ ПІДВИЩЕННЯ ЯКОСТІ ОБСЛУГОВУВАННЯ ТУРИСТІВ

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Анотація. У статті досліджено вплив діджиталізації на логістику обслуговування туристів в готелі у контексті вдосконалення туристичного сервісу та оптимізації бізнес-процесів сучасного готелю. Проаналізовано ключові напрями діджиталізації готельного сервісу через вдосконалення логістичних потоків, зокрема сервісних, матеріальних та інформаційних потоків. Розглянуто переваги цифрових технологій та інструментів для оптимізації логістичних процесів, підвищення ефективності роботи підприємств гостинності, мінімізації витрати готелю, запровадження Revenue-менеджменту та підвищення лояльності клієнтів. Визначено переваги та ризики діджиталізації, в практиці функціонування підприємств сфери туризму і гостинності. Обґрунтовано напрями вдосконалення логістичного забезпечення діяльності готелю Digital-інструментами для якісного обслуговування туристів.

Ключові слова: логістика туризму; діджиталізація; туристичне обслуговування; готельні сервіси; сервісна логістика; логістичні потоки в готелі; комунікації в готелі; туризм.

Introduction. The modern development of the tourism and hospitality sector is inextricably linked to processes of intensive digitalization, which encompass a vast array of operational areas for industry enterprises, reflecting the evolution of consumer expectations regarding service standards in the current era. According to Statista data from 2020, the level of confidence among tourism and hotel companies worldwide regarding the achievement of their digital goals was not particularly high; specifically, only 26 percent of survey respondents stated they were "completely confident" in their company's ability to meet these digital objectives [Statista, 2026]. However, the prolonged crisis in the tourism industry caused by the COVID-19 pandemic necessitated decisive and radical business transformations. Within just a few years, the accumulated global experience of tourism enterprises in overcoming the pandemic's aftermath demonstrated that the digitalization of

society had led to fundamental changes in business processes and a transformation of the entire tourism market structure.

Research Results and Discussion. Digitalization involves the use of digital technologies and innovations to enhance the efficiency and productivity of logistics processes [Ptashchenko, Sokhatska]. Digitalization has also extended to the tourism and hospitality sector, enabling the emergence of phenomena such as virtual tourism and 3D tours, as well as the rapid development of online platforms tailored to the needs of the tourism and hotel industries [Holovchuk Yu. O., Khudoba O. M., Bodnar, 2023]. It has become an established trend in the industry's development; specifically, it fundamentally alters the logistics of guest services in hotels, transforming outdated linear processes into a modern, integrated, flexible, automated, and customer-centric system. The digitalization of the economy drives the improvement of existing tourism enterprises and the emergence of new types, stimulates innovation, boosts labor productivity, modifies business processes, simplifies communication, and enhances service quality; its impact on organizational, managerial, marketing, and financial-economic processes is reflected in the increased use of various ERP and CRM solutions by tourism companies [Sokolovskyi, Shchoholieva, 2024]. Research indicates that implementing a cloud-based property management system can increase operational efficiency by up to 30% [Fahmi Amirulloh Anwar, Dian Deliana, Suyamto, 2024].

Amidst the war, logistics support for the tourism business is shifting from a supplementary function to a key element that ensures industry resilience and determines the operations of tourism enterprises [Kovalchuk, Koriuhin, 2026]. A primary focus of the transformation in hotel services is enhancing the quality of guest care through the logistical optimization of service, material, and information flows; this approach also enables hotels to minimize costs, implement an integrated revenue management system, and increase customer loyalty. Today, innovation in the logistics business processes of tourism enterprises is viewed through the lens of utilizing artificial intelligence, the Internet of Things, and augmented and virtual reality technologies. Within the framework of service logistics, hotel digitalization primarily drives the transformation of standard hospitality operational processes, enables contactless guest service, and creates a digital environment that mirrors the guest's everyday life. A digital approach reduces guest check-in time to as little as one minute through the use of smartphones, self-service kiosks, or scanners and POS terminals at the reception desk. Linking most routine hotel services to the guest's smartphone minimizes interactions with staff while streamlining service procedures and reducing the time required to complete them. Virtual assistants, AI-driven tools, chatbots, and digital concierges accelerate service delivery

and optimize staff workloads. Beyond improving internal service workflows, digitalizing this aspect of hotel logistics boosts sales of supplementary and ancillary services and fosters greater guest loyalty.

In their study, Wanjiao Yang and Fanghua Nie found that mobile technologies, online booking systems, self-service kiosks, smart room technologies, and digital concierge services directly impact the optimization of customer interactions—a crucial factor in reducing the number of dissatisfied guests. The rapid pace at which new technologies are entering our daily lives is striking, inevitably influencing trends in the hotel industry. One such trend is the guest demand for living spaces designed according to "smart home" principles; consequently, many hotels are focusing their efforts on transforming their interiors to meet these consumer expectations. Smart room features and equipment sought by travelers include wireless device charging, voice search, smart digital controls, tablet-based monitoring, smart mirrors, and video chat with the concierge. Modern hotels are prioritizing the improvement of internal logistics and the management of staff and services by equipping all departments with the necessary digital tools to ensure instantaneous coordination. Most of these tools aim to automate hotel operations and reduce the time required to exchange information regarding operational processes and hospitality service cycles through the implementation of automated management systems. A prime example of housekeeping automation is the automatic assignment of tasks to room attendants following a guest's checkout; once attendants mark the cleaning as complete on their devices, the room's availability for a new guest is instantly confirmed. Similarly, automated management systems improve task dispatching by promptly relaying various guest requests—automatically routing them to the nearest available staff member via CRM, internal apps, messaging platforms, and the like.

Digitalization in the hospitality sector also significantly impacts the psychological well-being of industry employees; the implementation of digital hotel management systems, CRM platforms, chatbots, and automated routine processes reduces operational workloads, allowing staff to focus on the interpersonal aspects of service, thereby enhancing their sense of professional competence and the meaningfulness of their work [Littikh M. S., Morozova-Larina O. I., 2025].

The transformation of logistics flows in modern hotels focuses largely on optimizing and more effectively managing information flows. The increasing volume of information handled by tourism enterprises necessitates a shift from traditional operational models to more progressive, digitally driven approaches, thereby boosting the efficiency of various business processes [Sokolovskyi, Shchoholieva, 2024].

Managing information flows, as well as orders and bookings, represents a crucial area for improving logistics within the hotel and tourism industry. The integration of services within a unified digital ecosystem is emerging as a significant trend [Hutsal, L., Stoliar, V., & Shorobura, I., 2025]. Digital systems have virtually eliminated paper-based routines and automated coordination both among internal hotel departments (facilitating interaction between the front office and back office) and with the external environment through the development of integrated CRM, ERP, and PMS systems.

Modern Property Management Systems (PMS) manage centralized room inventory and status, guest profiles and preferences, and real-time finances almost autonomously. The hotel's internal booking software connects to the central reservation system, enabling the automatic calculation of rates, dispatch of confirmations, creation of guest records, and generation of various reports [Smirnov, Liubitseva]. Such integration of a hotel's PMS or ERP primarily ensures the synchronization of sales channels and sales management; this allows for the instant updating of room availability data across public booking platforms (GDS, Booking, Expedia, Trip.com Group, Airbnb, HRS, etc.) and partner tour operator or chain booking services, thereby eliminating or minimizing the risk of overbooking.

Modern automated management and logistics systems also enable the processing of large datasets for analytics (Big Data), facilitating better demand forecasting and revenue management—particularly through dynamic pricing—as well as the advance preparation of resources for the peak season.

R.L. Lupak also highlights the priority of expanding digital channels and communication methods, which enhances the hotel's accessibility and ensures rapid, personalized communication with guests [Lupak, 2025].

Another "classic" component of hotel logistics is warehouse logistics and inventory management; beyond the basic logistical support required for hotel operations, this function aims to improve operational efficiency through technological innovations, minimize losses, and optimize procurement. Typically, most innovative solutions in this sector revolve around IoT (Internet of Things) and smart warehouses. POS terminals, scanners, and sensors are used to monitor product expiration dates in restaurant kitchens and automatically generate supplier orders when stock levels hit critical minimums. In-room sensor systems detect which beverages a guest has taken, automatically add them to the bill, and signal the warehouse to replenish stock, among other functions.

Conclusions. Overall, digitalization opens up new opportunities for developing logistics operations and ensuring market competitiveness; however, it also demands

significant effort and investment in technology and personnel. Furthermore, digitalization brings new challenges, such as protection against cyberattacks, heightened data security requirements, the need for highly qualified staff, and the transformation of business models [Ptashchenko, Sokhatska]. Storing guests' personal data and payment details necessitates substantial investment in cybersecurity measures. Among other challenges, it is worth noting that excessive automation can strip a hotel of its unique atmosphere of hospitality and personal warmth.

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