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MODERN MODEL OF TRANSFORMATION IN TOURISM AND RECREATION SPHERE AND ITS LOGISTICAL NETWORKS

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СУЧАСНА МОДЕЛЬ ТРАНСФОРМАЦІЇ СФЕРИ ТУРИЗМУ ТА РЕКРЕАЦІЇ ТА ЇЇ ЛОГІСТИЧНИХ МЕРЕЖ

The modern development of the tourism and recreation sector is accompanied by deep transformational processes, which can be considered significant changes in the structure, functioning, and industry management approaches. These processes are driven by the rapid development of technological innovations, the evolution of consumer behavior patterns, and pressing ecological and social challenges. One of the key aspects of these changes is also the optimization of logistics networks. Thus, the article aims to provide an overall description of the modern transformation model in the tourism and recreation sector and its logistics networks. The study emphasizes that the contemporary model of transformation in the tourism and recreation sector and its logistics networks is a comprehensive approach to changes in the tourism industry aimed at improving its structure, management, and functioning through the implementation of innovative technologies, resource optimization, and adaptation to contemporary challenges. In the study, it has been determined that the contemporary transformation model in the tourism and recreation sector (along with its logistics networks) represents a holistic approach to modernizing the industry. It aims to enhance its structure, management, and operations by implementing innovative technologies, optimizing resources, and adapting to contemporary challenges. It has been proven that digitalization and the implementation of smart technologies are the primary triggers for transforming the tourism and recreation sector and its logistics networks. At the same time, the priority of sustainable development is a necessary condition for adjusting the active transformations

in the tourism and recreation sector, as well as its logistics networks, taking into account the need to preserve natural resources, improve the quality of life for local communities, and ensure balanced economic growth. For the transformations in tourism enterprises' flexibility, it is essential to combine the elements of flexibility and adaptability in their operations. It can be achieved by utilizing modern service and management models, monitoring market changes, and implementing customized development strategies. The acceleration of transformations in the tourism and recreation sector, as well as its logistics networks, occurs through a focus on personalization and new formats of leisure.

Сучасний розвиток сфери туризму та рекреації супроводжується трансформаційними процесами, які можна розглядати як суттєві зміни в структурі, функціонуванні та підходах до управління. Ці процеси зумовлені стрімким розвитком технологічних інновацій, еволюцією поведінкових моделей споживачів та актуальними екологічними та соціальними викликами. Одним із ключових аспектів зазначених змін є також оптимізація логістичних мереж. Відтак, метою статті є загальний опис сучасної моделі трансформації сфери туризму та рекреації, а також її логістичних мереж. У межах дослідження наголошується, що сучасна модель трансформації сфери туризму та рекреації та її логістичних мереж є комплексним підходом до змін у туристичній галузі, спрямованим на вдосконалення її структури, управління та функціонування через впровадження інноваційних технологій, оптимізацію ресурсів та адаптацію до сучасних викликів. У межах дослідження констатовано, що сучасна модель трансформації сфери туризму та рекреації, а також її логістичних мереж, є комплексним підходом до модернізації галузі. Вона спрямована на вдосконалення її структури, управління та функціонування. Доведено, що діджиталізація та впровадження смарт-технологій є основним тригером трансформації сфери туризму та рекреації, а також її логістичних мереж через використання операцій, що інтегровані з засобами штучного інтелекту, Інтернетуречей, великих даних та автоматизації. При цьому пріоритет сталого розвитку є необхідною умовою для коригування активних трансформацій сфери туризму та рекреації, а також її логістичних мереж, враховуючи потреби щодо збереження природних ресурсів, покращення якості життя місцевих громад і забезпечення збалансованого економічного зростання. Для підвищення гнучкості трансформацій важливе синтезування властивостей гнучкості та адаптивності у діяльності туристичних підприємств через застосування сучасних сервісних та управлінських моделей, моніторинг змін ринку та використання індивідуалізованих стратегій розвитку. Для пришвидшення трансформацій сфери туризму та рекреації та її логістичних мереж важлива підтримка фокусу на персоналізацію та нові формати відпочинку.

Key words: innovative technologies, resource optimization, development strategies, management model, service model.

Ключові слова: інноваційні технології, оптимізація ресурсів, стратегії розвитку, управлінська модель, сервісна модель.

PROBLEM STATEMENT

The modern development of the tourism and recreation sector is accompanied by deep transformational processes, which can be seen as significant changes in structure, functioning, and industry management approaches. These processes are driven by the rapid development of technological innovations, the evolution of consumer behavior patterns, and pressing ecological and social challenges. One of the key aspects of these changes is also the optimization of logistics networks, which has an important role in enhancing mobility, reducing the environmental impact of supply operations, and improving the quality of tourist services.

Systematic research of these processes allows for the identification of the main development vectors of the tourism industry and the formation of effective strategies for its further growth.

ANALYSIS OF RESEARCH AND PUBLICATIONS

The study of contemporary changes in the tourism and recreation sector, as well as the development of their logistics networks, has been addressed by scholars such as Holovnya O. M., Stavskaya Y. V. [2], Mazur T. M., and Korol Y. I. [3]. They have proposed a comprehensive approach to solving scientific and practical tasks related to the formation and development of territorial tourism and recreation systems. This approach is based on the integration of urban concepts with the principles of tourism logistics, which allows for more effective planning of the spatial organization of tourist flows and optimization of infrastructure connections.

However, despite existing scientific developments, contemporary models of transformation in the tourism and recreation sector, particularly their logistics networks,

Table 1. Elements of transforming the tourism and recreation sector and its logistics networks through digitalization and smart technologies

Components of transformation	Features of the impact of transformations on the tourism and recreation sector	Examples of transformation
Implementation of artificial intelligence in processes and operations	It allows the processing of large volumes of data received from tourists by predicting customer behavior, optimizing service prices, and automating the handling of inquiries and bookings.	<u>The use of smart hotels and intelligent tourism platforms, which integrate various digital solutions to enhance efficiency and comfort for both tourists and service providers.</u> The use of smart logistics networks with automatic tracking and processing of deliveries, improving the management of tourism-related goods and services.
Implementation of mobile applications and online services for booking and navigation	It simplifies the travel planning process for tourists, enabling them to book hotels, tickets, tours, or transport rentals directly through smartphones.	
Transition to augmented and virtual reality technologies	It creates new opportunities for interacting with tourism content, offering a unique tourism experience.	
Application of blockchain technology	It guarantees transparency, security, and irreversibility of transactions, which is vital for tourism services, particularly regarding international payments and bookings, thus enhancing user trust.	

Source: compiled based on [1; 4–5].

remain insufficiently studied. Given the dynamic socio-economic changes, the impact of globalization processes, and the rapid development of digital technologies, there is a need for a deeper analysis of the trends and factors that determine the further evolution of the tourism and recreation system.

FORMULATION OF THE ARTICLE'S OBJECTIVES

The article aims to provide a general description of the contemporary model of transformation in the tourism and recreation sector and its logistics networks.

THE PAPER MAIN BODY

The study emphasizes that the contemporary model of transformation in the tourism and recreation sector and its logistics networks is a comprehensive approach to changes in the tourism industry aimed at improving its structure, management, and functioning through the implementation of innovative technologies, optimization of resources, and adaptation to modern challenges.

The core components of this model include specific transformations aimed at:

1. Digitalization and smart technologies implemented through the introduction of digital solutions and intelligent systems in the tourism and recreation sector to enhance efficiency, safety, and comfort in various areas of travel organization, logistics, and management activities..

2. A focus on sustainable development through finding a balance between the economic, environmental, and social aspects of tourism and recreation enterprises, which contributes to the preservation of natural resources, improvement of the local population's quality of life, and enhancement of the efficiency of tourist flows.

3. Enhancing the flexibility and adaptability of operations through the implementation of new management models for tourism and recreation enterprises and their logistics networks, as well as the use of analytical

data to forecast market changes and develop individualized development strategies.

4. A focus on personalization and new formats of leisure through the creation of individualized tourism products and services tailored to the needs and interests of specific tourist groups, consumer behavior analytics, and new leisure formats.

It should be noted that all the transformations mentioned do not function in isolation, but act as interconnected groups that interact with each other, forming a unified system. This system ensures the development, adaptability, and sustainability of the tourism and recreation sector in the face of contemporary challenges. Indeed, we have identified the following [2; 5]:

1. Group 1: Transformation of the tourism and recreation sector. This direction involves profound changes in the principles of organizing leisure, as well as in the demands and expectations of modern tourists. Key aspects of this transformation include new leisure formats focused on personalization, innovations in logistics, and the active implementation of technologies.

2. Group 2: Transformation of tourist logistics networks. This direction involves improving the processes of organizing and managing the movement of tourists, goods, and services, as well as integrating the latest technologies and approaches.

Let's take a closer look at each of the outlined transformations within the mentioned groups.

Thus, the components of the transformation of the tourism and recreation sector and its logistics networks based on digitalization and smart technologies include the use of artificial intelligence for data analysis and process automation, the implementation of mobile applications and online services for booking and navigation, the application of augmented and virtual reality technologies to create unique tourist experiences, and the use of blockchain technologies to enhance transaction security, as clearly shown in Table 1.

Table 2. Elements of transforming the tourism and recreation sector and its logistics networks based on a focus on sustainable development

Components of transformation	Features of the impact of transformations on the tourism and recreation sector	Examples of transformation
Use of renewable energy sources	Reducing reliance on traditional energy sources helps lower greenhouse gas emissions and protect the environment.	Solar panels at resorts Wind turbines on islands
Implementation of waste-free technologies	Use technologies that allow for recycling all waste, reducing waste generation, and optimizing resource use. It helps reduce pressure on ecosystems and improve the image of tourism companies.	Zero Waste hotels Waste-free restaurant concepts
Development of ecotourism	Tourism promotion focuses on interaction with nature and aims to preserve ecosystems. It encourages the development of small eco-friendly hotels, eco-tourism routes, and activities that conserve natural resources while simultaneously creating economic opportunities for local communities.	Galápagos Islands National Park (Ecuador)
Increasing the responsibility of tourism and logistics companies	The increasing environmental responsibility of companies must consider their ecological footprint in their operations. The implementation of environmental standards, such as green hotel certification and sustainable management of tourist flows, takes into account their environmental impact.	Tourism companies with environmental certification. Eco-friendly transport
Minimization of the environmental impact of the industry	The implementation of technologies to reduce pollution and enhance energy efficiency in infrastructure, along with the creation and maintenance of nature reserves, national parks, and other natural heritage sites.	Capri Island, Italy Green hotels

Source: compiled based on [1—2; 5].

Digitalization and the implementation of smart technologies are key drivers that initiate transformations in the tourism and recreation sector, along with its logistics networks. A key approach for implementing digitalization and smart technologies in the tourism and recreation sector is the adoption of smart hotels and intelligent tourism platforms. These systems integrate various digital solutions to improve efficiency and comfort for both travelers and service providers. For example, the YOTEL hotel chain (in Tokyo, New York, and other cities) automates booking and check-in processes through online platforms, significantly reducing the time spent on arrival procedures and improving guest comfort.

The components of the transformation of the tourism and recreation sector and its logistics networks based on sustainable development include the use of renewable energy sources, the implementation of waste-free technologies, the development of ecotourism, and the increase in the responsibility of tourism and logistics companies, all of which contribute to minimizing the environmental impact of the industry, as clearly shown in Table 2.

It's evident that prioritizing sustainable development is a necessary condition for adjusting the active transformations in the tourism and recreation sector, as well as its logistics networks, taking into account the needs for preserving natural resources, improving the quality of life for local communities, and ensuring balan-

ced economic growth. Among specific examples of transformation elements based on sustainable development in the tourism and recreation sector, there are recreational complexes such as Club Med in France and The Greenbrier in the USA, which have installed solar panels to power their facilities, significantly reducing electricity consumption from non-renewable sources. As for logistics networks, an example is "green" tourist routes (such as nature reserves and natural areas [5]) that have minimal impact on nature while promoting the economic and cultural heritage of local communities development.

The components of the transformation of the tourism and recreation sector and its logistics networks based on increasing their flexibility and adaptability include the development of smart transportation systems, multimodal logistics, and automated processes for managing tourist flows, as clearly shown in Table 3.

The enhancement of the flexibility of transformations occurs through the synthesis of flexibility and adaptability in the operations of tourism businesses. This is achieved by applying modern service and management models, monitoring market changes, and implementing individualized development strategies. Through such transformations, modern logistics networks adapt to new challenges, including changes in global demand, crises (pandemics, natural disasters [6]), and urbanization processes [2—3]. Examples of transformation components include the creation of integrated

Table 3. Elements of transforming the tourism and recreation sector and its logistics networks based on increasing their flexibility and adaptability

Components of transformation	Features of the impact of transformations on the tourism and recreation sector	Examples of transformation
Smart transportation systems	Utilizing technologies to enhance transportation management, monitor road conditions, forecast traffic, and improve tourist navigation.	Implementation of smart vehicles that optimize routes based on real-time data.
Multimodal logistics	Different modes of transport interaction (buses, trains, bicycles, electric scooters) ensure seamless and efficient movement of tourists between various locations.	Creation of integrated multimodal transport networks in European countries.
Automated processes for managing tourist flows	Artificial intelligence and Big data are used for demand forecasting, managing tourist flows, and automating booking and service processes.	Introduction of mobile applications for managing tourist flows in large cities.

Source: compiled based on [2–3; 6].

multimodal transport networks in European countries. In the Netherlands, for instance, a system has been developed where trains, buses, and bicycles function as a unified integrated transportation chain. For example, through a single mobile app or electronic ticket, tourists can use one booking to combine train, bus, and bicycle travel.

The components of the transformation of the tourism and recreation sector and its logistics networks, focusing on personalization and new leisure formats, include the development of niche tourism areas such as medical tourism, gastronomic travel, digital nomadism, and active forms of recreation, which stimulate market diversification, as evidenced by the data in Table 4.

It is clear from the data that medical tourism logistics require specialized transportation solutions for patients,

medical escorts, and equipment, along with coordination of visa and insurance matters. The development of a transport fleet with specialized conditions is extremely important.

The logistics networks of gastronomic tourism must account for the delivery of exotic ingredients (e.g., the import of fresh products such as truffles, seafood, or spices with a limited shelf life [4–5]) as well as the organization of tours to local food producers, where synergy between transportation, local suppliers, and guides is essential. Key aspects include organizing the "cold chain" to preserve product quality during transportation, complying with sanitary and customs regulations for food transportation, developing routes to local wineries, farms, cheese dairies, coffee plantations, and other producers, and coordinating transportation

Table 4. Elements of transforming the tourism and recreation sector and its logistics networks based on personalization and new recreation formats focus

Components of transformation	Features of the impact of transformations on the tourism and recreation sector	Examples of transformation
Development of medical tourism	Development of travel for treatment, prevention, and wellness (involves the creation of specialized clinics and spa centers to support this sector).	Turkey (treatment and post-surgery recovery), Thailand (spa services and dentistry).
Development of gastronomic tourism	Development of travel for tourists seeking unique culinary experiences (includes the establishment of tasting venues, restaurants, and the organization of culinary masterclasses and festivals).	France (tours of wine-producing regions), Italy (gastronomic tours of Tuscan farms).
Development of digital nomadism	Development of travel for digital nomads (involves creating areas with high-speed internet access, specialized workspaces, and services tailored to such travelers).	Estonia (digital nomad program), Georgia (licensed coworking spaces for freelancers).
Development of active recreation forms	Development of active tourism (includes the establishment of marked trails for hiking, cycling, rock climbing, and other outdoor sports).	Switzerland (mountaineering, hiking in the Alps), Canada (wilderness travel and skiing).

Source: compiled based on [1; 4–5].

for tourists between tasting locations and master classes.

The logistics networks for digital nomadism development should be focused on ensuring uninterrupted access to Internet resources through specialized transportation solutions for organizing mobile workspaces, such as mobile offices or work areas in hotels, coworking spaces, etc. Additionally, an important aspect is equipping mobile offices with specialized vehicles, such as comfortable buses or vans with work zones, power generators, and satellite internet. For example, mobile offices in the Netherlands are actively used for temporary stays and for startups that want to maintain flexibility and mobility.

Logistics networks for active recreation should be developed considering the specific needs of tourists participating in various outdoor activities. This includes transporting sports equipment, organizing transport routes to extreme locations, and providing tourist buses along with other infrastructure for group trips. The most crucial aspect is ensuring proper conditions for transporting large-sized equipment (such as bicycles, skis, snowboards, kayaks, etc.) in public and tourist transport by allocating dedicated compartments or trailers.

The acceleration of transformations in the tourism and recreation sector, as well as its logistics networks, occurs through a focus on personalization and new formats of leisure. Thanks to such transformations, tourism and recreation are evolving into new forms, focusing on the individual needs of travelers and creating conditions for a wide range of leisure activities.

Conclusions. In the study, it has been determined that the contemporary transformation model in the tourism and recreation sector (along with its logistics networks) represents a holistic approach to modernizing the industry. It aims to enhance its structure, management, and operations by implementing innovative technologies, optimizing resources, and adapting to contemporary challenges. In this context, it has been proven that:

1. Digitalization and the implementation of smart technologies are key drivers of transformation in the tourism and recreation sector, along with their logistics networks, through operations that integrate artificial intelligence, the Internet of Things, big data, and automation tools.

2. The priority of sustainable development is essential for adjusting the active transformations in the tourism and recreation sector, along with its logistics networks. It is important to preserve natural resources, enhance the quality of life for local communities, and ensure balanced economic growth.

3. The enhancement of transformation flexibility requires the synthesis of flexibility and adaptability in the operations of tourism enterprises. This can be achieved through modern service and management models, market change monitoring, and implementing individualized development strategies.

4. The acceleration of transformations in the tourism and recreation sector (along with its logistics networks) is driven by a focus on personalization and

innovative leisure formats, specifically through diversifying tourist products and enhancing the uniqueness of offerings.

The prospects for further research focus on a deeper analysis of the integration practices of cutting-edge technologies, service, and management models in the tourism and recreation sector, as well as in its tourism networks.

Література:

1. Бартошук О.В. Моделі розвитку індустрії туризму (зарубіжний досвід). Держава і регіони. Серія: Економіка та підприємництво. 2011. № 2. С. 62—68.

2. Головня О.М., Ставська Ю.В. Сучасні трансформації розвитку сфери туризму та індустрії гостинності: монографія. Вінниця.: ДРУК, 2021. 220 с.

3. Мазур Т. М., Король Є.І. Роль туристичної логістики у формуванні та розвитку територіальної організації туризму (на прикладі Буського, Бродівського та Золочівського районів Львівської області). Вісник Національного університету "Львівська політехніка". Архітектура. 2015. № 836. С. 151—156.

4. Services sphere cluster management: virtualization and methodological aspects: монографія / authors team: Mashika Hanna, Zelic Victoria, Kiziun Alla, Maslyhan Roman et al. — Odesa: KUPRIENKO SV, 2023 — 131 с.

5. Садова Н.В. Вплив цифровізації на розвиток туристичної індустрії. Ефективна економіка. 2019. № 9. URL: <http://www.economy.nayka.com.ua/?op=1&z=7267>. DOI: 10.32702/2307-2105-2019.9.43

6. Стрижак О.О. Трансформації індустрії туризму в умовах цифрової економіки. Економіка та управління АПК, 2021, № 2. С. 41—49.

References:

1. Bartoshchuk, O.V. (2011), "Models of tourism industry development (foreign experience)", *Derzhava i rehiony. Seriya: Ekonomika ta pidpryemnytstvo*, vol. 2, pp. 62—68.

2. Holovnya, O.M. and Stavs'ka, YU.V. (2021), *Suchasni transformatsiyi rozvytku sfery turyzmu ta industriyi hostynnosti [Modern transformations in the development of the tourism and hospitality industry]*, DRUK, Vinnytsia, Ukraine.

3. Mazur, T.M. and Korol, E.I. (2015), "The role of tourism logistics in the formation and development of the territorial organization of tourism (on the example of Busk, Brody and Zolochiv districts of Lviv region)", *Visnyk Natsional'noho universytetu "L'vivs'ka politekhnikha". Arkhitektura*, vol. 836, pp. 151—156.

4. Mashika, H., Zelic, V., Kiziun, A., Maslyhan, R. et al. (2023), *Services sphere cluster management: virtualization and methodological aspects*, KUPRIENKO SV. Odesa, Ukraine.

5. Sadova, N.V. (2019), "The impact of digitalization on the development of the tourism industry", *Efektivna ekonomika*, vol. 9, available at: <http://www.economy.nayka.com.ua/?op=1&z=7267>. (Accessed 15 Dec 2024).

6. Stryzhak, O.O. (2021), "Transformations of the tourism industry in the digital economy", *Ekonomika ta upravlinnya APK*, vol. 2, pp. 41—49.

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