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MODERN APPROACHES TO PROVIDING TRANSPORT AND LOGISTICS SERVICES IN TOURIST CLUSTERS

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СУЧАСНІ ПІДХОДИ ДО НАДАННЯ ТРАНСПОРТНО-ЛОГІСТИЧНИХ ПОСЛУГ В ТУРИСТИЧНИХ КЛАСТЕРАХ

The article is aimed at characterizing modern approaches to providing transport and logistics services in tourist clusters. Systemic studies of tourist clusters focus on the efforts of entities providing transport and logistics services to apply specific approaches that address the current needs of tourism industry enterprises. Among such approaches are: providing transport and logistics services through integrated mobile applications; offering transport and logistics services through electronic platforms for service exchange; delivering transport and logistics services through the use of green transport and logistics solutions; providing transport and logistics services through multimodal transport solutions. The research findings demonstrate that modern approaches to providing transport and logistics services in tourist clusters contribute to the development and optimization of tourism industries, increased customer satisfaction, and the creation of a sustainable environment for tourism. It has been established that the key factors synthesizing improvements in the provision of transport and logistics services are efficiency and convenience, stability and cooperation, enhanced service quality, and user experience. The factor of efficiency and convenience is shaped through multimodality (which involves the overall integration of different modes of transport, allowing tourists to conveniently move within the cluster using optimal routes and transportation), and integrated mobile applications (providing access to information and booking options through a single mobile application, facilitating planning and service utilization). The factor of stability and cooperation is shaped through green logistics (which involves the use of environmentally friendly transport solutions and green technologies contributing to emissions reduction and improved environmental sustainability), and collaboration among suppliers (which refers to the cooperation of various service providers in the tourist cluster, allowing for enhanced coordination and external interaction). The factor of enhancing service quality and user experience is formed through all approaches to providing transport and logistics services due to their focus on addressing the current needs of tourism industry enterprises in the tourism cluster through personalization and feedback.

Стаття спрямована на характеристику сучасних підходів до надання транспортно-логістичних послуг в туристичних кластерах. Системні дослідження туристичних кластерів звергають увагу на прагнення суб'єктів, що надають транспортно-логістичні послуги, до використання специфічних підходів з метою задоволення актуальних потреб підприємств в галузі туризму. Серед таких підходів: надання транспортно-логістичних послуг через інтегровані мобільні додатки; надання транспортно-логістичних послуг через електронні платформи для обміну послугами; надання транспортно-логістичних послуг через використання зелених транспортних та логістичних рішень; надання транспортно-логістичних послуг через мультимодальні транспортні рішення. За результатами дослідження доведено, що сучасні підходи до надання транспортно-логістичних послуг в туристичних кластерах сприяють розвитку та оптимізації туристичних індустрій, підвищенню задоволення клієнтів та створенню сталого середовища для туризму. Доведено, що основними факторами, що синтезують покращення процесів надання транспортно-логістичних послуг, є ефективність та зручність, сталість та співпраця, підвищення якості послуг та досвіду користувача. Фактор ефективності та зручності формується через мультимодальність (під якою розуміється загальна інтеграція різних видів транспорту, що дозволяє туристам зручно переміщатися в середині кластера, використовуючи оптимальні маршрути та транспортні засоби) та інтегровані мобільні додатки (що забезпечу-

ють доступ до інформації та можливості бронювання через єдиний мобільний додаток). Фактор сталості та співпраці формується через зелену логістику (під якою розуміється використання екологічно чистих транспортних рішень та зелених технологій, що сприяють зменшенню викидів та покращенню екологічної сталості), співпрацю між постачальниками послуг у туристичному кластері (що дозволяє покращити координацію та забезпечити зовнішню взаємодію). Фактор підвищення якості послуг та користувацького досвіду формується за всіма підходами до надання транспортно-логістичних послуг через їхню спрямованість на задоволення актуальних потреб підприємств індустрії туризму в кластері туризму. Це досягається завдяки персоналізації та зворотному зв'язку.

Key words: multimodality; integrated mobile applications; green logistics; cluster; optimal routes; transportation.

Ключові слова: мультимодальність; інтегровані мобільні додатки; зелена логістика; кластер; оптимальні маршрути; транспортні засоби.

TARGET SETTING

Tourist clusters are quite complex formations, the functioning of which depends not only on the development and success of the tourism industry but also on the internal state of transport and logistics services. In particular, transport and logistics services play a crucial role in ensuring transport accessibility (interpreted through indicators of ease and convenience of access to interesting tourist places using various modes of transport), creating opportunities for efficient tourist movement (through the establishment and development of conditions that enhance the convenience, speed, and reliability of public and private transportation, as well as infrastructure for travelers), and optimizing logistical processes (improving and effectively managing all stages of supply and service for tourists) within the cluster. In line with the outlined significance, the formation of a tourist cluster is accompanied by processes of transformation in the provision of transport and logistics services, aimed at improving the quality and accessibility of transportation services to meet the needs and expectations of tourists. The functioning of the cluster involves ongoing processes of change in the provision of transport and logistics services, driven by the prioritization of environmental sustainability, continuous improvement of the integration level of different modes of transport, and the development and expansion of new tourist routes. The identified features require systematic research into modern approaches to providing transport and logistics services in tourist clusters.

ANALYSIS OF RESEARCH AND PUBLICATIONS

Theoretical and applied aspects of providing transport and logistics services in tourist clusters have been explored by scholars such as Maslygan O.O., Gobyk-Markovych N.M., Todyerishko E.V., Mashthaler O., Hutsul T., Maslygan O., Cheban Yu., Tsimbalistova O., Pidhirna V.N. and Yemchuk T.V., Tserklevych V., Diehl A., Blauta A., and Diehl M.

Despite the extensive flow of publications and many theoretical and methodological developments available today, approaches to providing transport and logistics services in tourist clusters are not sufficiently studied.

THE WORDING OF THE PURPOSES OF ARTICLE (PROBLEM)

The purpose of the article is to characterize modern approaches to providing transport and logistics services in tourist clusters.

THE PAPER'S MAIN BODY WITH FULL REASONING OF ACADEMIC RESULTS

Systemic studies of tourist clusters focus on the efforts of entities providing transport and logistics services to apply specific approaches that address the current needs of businesses in the tourism industry. Among such approaches are providing transport and logistics services through integrated mobile applications; offering transport and logistics services through electronic platforms for service exchange; delivering transport and logistics services using green transport and logistics solutions; and providing transport and logistics services through multimodal transport solutions (see Figure 1). Note that each of the identified approaches is chosen based on their specific orientation, aiming to provide the most appropriate response to the current needs of businesses in the tourism industry within the tourism cluster.

The approach involving the provision of transport and logistics services through integrated mobile applications is based on consolidating information about transportation, hotels, restaurants, and other services, allowing tourists to conveniently manage their trip. The main features of this approach, catering to the current needs of businesses in the tourism industry within the tourism cluster, include real-time information, online booking and payment, service integration, user interaction and convenience, resource optimization, analytics and reporting, integration

with other services, as well as analytics and reporting (see Table 1).

An advantage of the approach is that integrated mobile applications become a key tool for providing transport and logistics services in tourist clusters, optimizing, and enhancing them according to the requests and expectations of tourists. This is since such applications inherently provide convenience, speed, and personalization in the use of transport and logistics services for users, making them popular among travelers. Obviously, this approach is based on ensuring the efficiency and convenience of providing transport and logistics services in tourist clusters.

The approach involving the provision of transport and logistics services through electronic platforms is based on the exchange of information among service providers regarding the nature of services and potential collaboration directions. The key features of this approach, addressing the current needs of businesses in the tourism industry within the tourism cluster, include effective coordination and collaboration, expanded service offerings, flexible and personalized solutions, improved service quality, and customer satisfaction (see Table 2).

The advantage of the approach is that the use of electronic platforms for service exchange in the transport and logistics sector of tourist clusters allows for the creation of flexible, efficient, and personalized solutions, contributing to the improvement of services and ensuring customer satisfaction [3]. Certainly, this approach is based on ensuring the efficiency and convenience of providing transport and logistics services in tourist clusters.

The approach that involves providing transport and logistics services using green transport and logistics solutions is based on utilizing technologies, energy sources, and routes that contribute to reducing the environmental impact of tourist travel.

Approaches are selected based on their orientation to provide a response to the current needs of businesses in the tourism industry within the tourism cluster.

Providing transport and logistics services through integrated mobile applications.	Providing transport and logistics services through electronic platforms for service exchange.	Providing transport and logistics services through the use of green transport and logistics solutions.	Providing transport and logistics services through multimodal transport solutions.
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Figure 1. Systematization of approaches to address the current needs of businesses in the tourism industry within the tourism cluster

Source: formed based on [2; 4–6].

Table 1. Key aspects of implementing the approach involving the provision of transport and logistics services through Integrated mobile applications

Aspect of the approach	Opportunities from application	Advantages of the approach
Real-time information	Mobile applications provide users with real-time information on schedules, delays, transportation options, and other data.	Route and travel planning
Online booking and payment	Mobile applications allow tourists to easily and quickly book various types of transportation, hotels, excursions, and other services, simplifying the trip planning process.	Convenience and accessibility
Information consolidation	Mobile applications consolidate information on different means of transportation, schedules, prices, and other important parameters, making it easier to choose the optimal route or mode of transportation.	Service integration
User communication	Mobile applications enable real-time interaction with users, providing necessary updates and notifications about changes in schedules, transportation issues, and other useful information.	User interaction and convenience
Efficient transportation utilization	Through the integration of mobile applications, transportation companies can optimize schedules and routes, reducing congestion and improving productivity.	Resource optimization
Data collection and analysis	Mobile applications can provide analytical data that helps businesses understand customer demand and behavior, facilitating strategic decision-making.	Analytics and reporting
Partnership relations	Applications can interact with other tourist services and partners, such as restaurants or museums, to create a comprehensive experience for tourists.	Integration with other services

Source: formed based on [1; 4; 6].

Table 2. Main aspects of applying the approach involving the provision of transport and logistics services through Integrated mobile applications

Aspect of the approach	Opportunities from application	Advantages of the approach
Effective coordination and collaboration	Electronic platforms for service exchange allow various providers of transport and logistics services to exchange information.	Effective coordination among various supply chain participants
Expansion of service offerings	Service exchange platforms enable providers to expand their customer base and service volumes by gaining access to new markets and partnering with other companies in the tourism sector.	Increased revenue and competitiveness
Flexible and personalized solutions	Electronic platforms allow the creation of flexible and personalized solutions for different clients. Providers can adapt their services according to the unique needs and expectations of tourists.	Personalized travel experiences
Improvement of service quality	Through information exchange on electronic platforms, providers can better understand the needs of their clients and respond more quickly to changes in market demands.	Enhanced service quality and customer satisfaction
Analytics and reporting	Electronic platforms provide the opportunity for detailed analytics regarding the use of services, interaction with clients, and the efficiency of processes.	Data acquisition for refining strategies and decisions

Source: formed based on [3; 6].

The key features of this approach that address the current needs of tourism industry enterprises in the tourism cluster include a focus on electric vehicles and hybrid transportation systems, emphasis on renewable energy sources, route optimization, adherence to ecological standards and certification, development of charging infrastructure, and simulation of public transportation use (Table 3).

The advantage of this approach is that green transport and logistics solutions in tourism are recognized as a key element of sustainable development, and their implementation can lead to a reduction in the environmental impact of the tourism industry [5–6]. This approach is based on ensuring sustainability and collaboration in providing transport and logistics services in tourist clusters.

The approach involving the provision of transport and logistics services through multimodal transport solutions is based on transportation systems that integrate various modes of transport (road, rail, aviation, maritime). The key features of this approach, addressing the current needs of tourism industry enterprises in the tourism cluster, include the integration of transport vehicles, integrated platforms and applications, cluster transport hubs, electronic tickets and payments, analytics for network and route optimization, collaboration among various service providers, and simulation of public transport usage (Table 4).

The advantage of this approach is that multimodal transport solutions allow for the creation of a more efficient and sustainable transportation system that considers the needs and preferences of users [2; 3]. It also promotes the optimization of using various modes of transportation within tourist clusters. This approach is based on ensuring the efficiency and convenience of providing transport and logistics services in tourist clusters, as well as fostering collaboration among cluster participants (which involves the cooperation of various service providers within the tourist cluster, improving coordination and facilitating external interaction [2; 3; 5]).

The factor of enhancing service quality and user experience is shaped by all approaches to providing transport and logistics services due to their focus on addressing the current needs of tourism industry enterprises in the tourism cluster through personalization and feedback.

Table 3. Key aspects of implementing an approach that encompasses the provision of transport and logistics services using green transport and logistics solutions

Aspect of the approach	Opportunities from application	Advantages of the approach
Electric transport vehicles	The use of electric vehicles, electric buses, and other electric transport vehicles significantly reduces the emissions of harmful substances and carbon dioxide.	Promoting increased environmental cleanliness and cost-effectiveness of travel.
Hybrid transport systems	The utilization of hybrid transport systems, which combine electric and traditional (usually gasoline or diesel) propulsion, can reduce fuel consumption and emissions, especially in urban transportation conditions.	
Renewable energy sources	The use of renewable energy sources, such as solar panels or wind turbines, to provide electrical power for transportation systems.	Reducing dependence on unstable energy sources and lowering emissions.
Route optimization	Utilizing analytical tools and geolocation technologies to optimize routes, reducing travel time and fuel consumption.	
Charging infrastructure	The expansion of the charging station network for electric vehicles in tourist clusters enhances the convenience and attractiveness of using electric transport.	
Environmental standards and certification	The implementation of environmental standards and certification for transportation companies encourages them to adopt more environmentally friendly technologies and services*	Adopting more environmentally friendly technologies and services.
Promotion of public transport usage	Supporting and promoting the use of public transportation through convenient and economically attractive fares, improving service quality, and developing efficient urban and intercity transportation networks.	

Note / *This may include emissions requirements, the use of renewable energy sources, and other environmental criteria.

Source: formed based on [5–6].

Table 4. The key aspects of implementing an approach that involves providing transport and logistics services through multimodal transport solutions

Aspect of the approach	Opportunities from application	Advantages of the approach
Integration of transport vehicles	Multimodal solutions allow passengers to use various modes of transportation (car, train, aviation, maritime, etc.) during a single journey.	Ensures the convenience and efficiency of transportation from point A to point B. Simplifies the planning, booking, and payment of multimodal journeys.
Integrated platforms and applications	Modern technologies enable the creation of integrated mobile applications and platforms that consolidate information about different modes of transportation, schedules, prices, and routes	
Cluster transport hubs	The development of transport hubs, where convenient transitions between different modes of transportation are facilitated, is a crucial component of multimodal transport solutions.	
Electronic tickets and payments	The use of a single electronic ticket and electronic payment systems simplifies the payment process and the utilization of various modes of transportation, reducing the need for multiple individual tickets.	
Analytics for network and route optimization	The use of analytics and artificial intelligence for continuous analysis and optimization of multimodal networks and routes ensures support for efficiency and competitiveness.	Enhancing the efficiency and competitiveness of the tourist product and transport-logistics services.
Collaboration among different service providers	Successful implementation of multimodal solutions involves collaboration among various transportation operators, technology companies, and other system participants to create synergy and optimization.	
Promotion of public transport usage	See Table 3.	Adopting more environmentally friendly technologies and services.

Note: / * This may include intermodal cluster hubs, transfer facilities, and other conveniences for passengers within the cluster.

Source: formed based on [2; 3; 5].

**CONCLUSIONS FROM THIS STUDY
AND PROSPECTS FOR FURTHER
EXPLORATION IN THIS AREA**

In accordance with the above, it is evident that modern approaches to providing transport and logistics services in tourist clusters contribute to the development and optimization of tourism industries, the enhancement of customer satisfaction, and the creation of a sustainable environment for tourism. It can be concluded that:

1. The key factors synthesizing improvements in the provision of transport and logistics services are efficiency and convenience, sustainability and collaboration, and the enhancement of service quality and user experience.

2. The factor of efficiency and convenience is shaped through multimodality (which involves the comprehensive integration of various modes of transport, allowing tourists to conveniently move within the cluster using optimal routes and transportation modes) and integrated mobile applications (providing access to information and booking options through a single mobile app, facilitating planning and service utilization).

3. The factor of sustainability and collaboration is shaped through green logistics (involving the use of environmentally friendly transport solutions and green technologies to reduce emissions and enhance ecological sustainability) and collaboration among providers (involving cooperation among various service providers within the tourist cluster to improve coordination and facilitate external interaction).

4. The factor of enhancing service quality and user experience is shaped by all approaches to providing transport and logistics services due to their focus on addressing the current needs of tourism industry enterprises in the tourism cluster through personalization (involving the use of user data to provide personalized recommendations and services, enhancing the quality and individuality of journeys) and feedback (enabling the ability to leave reviews and receive feedback, allowing companies to improve their services and cater to customer needs).

In this context, the prospects for further research lie in the development of methodological approaches to creating an efficient and sustainable infrastructure that meets the needs of modern travelers and promotes sustainable tourism development.

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