CONTEMPORARY FEATURES OF INNOVATION IN TOURISM PRODUCTS

Tinatin Gogolishvili
PhD Candidate in Business Administration
Batumi Shota Rustaveli State University
Email: tinatin.gogolishvili@bsu.edu.ge
ORCID: https://orcid.org/0000-0003-4977-0084

Abstract. Nowadays, the tourist product is a multi-component service, which provides a wide range of opportunities for the implementation of innovations, especially given the current pace of technological progress.

The main goal of this study was to analyze the specific features of modern relations related to innovations in the tourist product. The synthesis of the latest theoretical and practical achievements showed that artificial intelligence is of particular importance in the process of implementing innovations in almost all elements of the tourist product. The changes that are taking place in the markets of tourist services, modern technological services, labor and relevant education were discussed. Attention was also paid to the processes of replacing human resources with modern technologies in tourism.

The study found that in the final phase of the life cycle of a tourist product based on technologies, the level of service improvement no longer affects the quality of the impression received by the consumer. At the same time, the increase in the scale of innovations in the tourism product leads to the formation of two radically different segments in the tourism services market. One category of travelers chooses services based on digital technologies and artificial intelligence, while the second category prefers to travel without any intervention of modern technologies. The latter is their reaction to the current pace of introducing new technologies in tourism. Thus, innovations in the field of tourism create new markets and respond to diverse consumer demands.

Keywords : Tourist product. Modern technologies. Innovations. Artificial intelligence.

* * *

Introduction. The modern pace and characteristics of technological progress create completely new conditions in tourism. There are wide opportunities for implementing innovations in the tourism product. Through virtual reality, artificial intelligence, communication systems and other means of technological progress, companies operating in the tourism industry manage to establish their own position in the competitive market and maintain a consumer segment. The object of this study is the system of specific relationships within the modern tourism sector, through which new developments are created and implemented in various elements of the tourism product's value chain. The subject of the study is the characteristics, features that distinguish the relationships related to innovation in the tourism product.

The opinion that the increasing role of modern technologies in the tourism sector reduces the degree of personalization of tourism services, creates a trend of job reduction in some elements of tourism services, but increases the demand for labor force employed in the field of information technologies, is the working hypothesis of this paper.

The aim of the research was to study the specific characteristics of modern relations related to innovations in the tourism product. Accordingly, several tasks were solved in the research process: 1) theoretical understanding of relations related to innovations in the tourism product; 2) identification of

modern characteristics of innovations in the tourism product; 3) identification of the directions of influence of the characteristics of modern innovative relations in the tourism product on the field. The latest theoretical and practical achievements, official press releases and reports served as the basis for the implementation of the research tasks, the formulation of the main findings and conclusions of this study.

Literature Review. Researchers in the field focus on such features of innovation in tourism products as collaboration, entrepreneurial characteristics, networking, technological development, environment, sustainability-oriented innovations, intellectualization, robotization, the role of artificial intelligence, virtual and augmented reality, the Internet of Things, cloud computing, non-technological and "hidden" innovations, etc.

Cardoso, Sohn, Ferraso, and Júnior talk about the importance of open innovation in the dynamic field of tourism (Cardoso, Lisboa Sohn, Ferraso, & Júnior, 2024). This study emphasizes the multi-component nature of the innovation process in tourism - in the modern tourism industry, it is impossible to develop and implement innovations within the framework of a single company.

Ergashev and Jabborova consider the growth of innovation processes as a vital element for the transformation of economic systems and gaining competitive advantage (Ergashev & Jabborova, 2021). The study focuses on virtual tours, virtual travel. Omerzel identifies the following main factors of innovation in tourism: entrepreneurial characteristics, network, technological development and environment (Omerzel, 2015). The study lists several characteristics of innovation, in contrast to Cardoso, Son, Ferraso and Junior, who mainly focus on the collaboration factor. Tüzünkan focuses on smart tourism. It discusses such features of modern tourism as artificial intelligence, cloud computing and the Internet of Things and indicates the reduction of the human factor in services (Tüzünkan, 2017). Sardak, Dzhyndzhoian, and Samoilenko discuss the interaction of global processes on tourism innovations, such as intellectualization, informatization, cooperation, the formation of a global tourism market, the liberalization of national tourism markets, increased competition, and the spread of transnationalization (Sardak, Dzhyndzhoian, & Samoilenko, 2016). Ilieva and Todorova in their article discuss the importance of sustainable management principles, especially for the tourism industry, as it depends on environmental, economic, and socio-cultural aspects (Ilieva & Todorova, 2023). The study highlights one important characteristic of innovation in tourism - sustainability. Archi, Benbba, Kabil, and Denis David discuss the role of digital technologists in the development of sustainable tourism (Archi, Benbba, Kabil, & Dávid, 2023). There is also an interesting study on digital technologies (Gutierriz, Ferreira, & Fernandes, 2023).

Sustacha, Banos-Pino, and Valle confirm a positive relationship between smart technology and tourism experience. In addition, they point to a negative relationship between privacy and security issues (Sustacha, Banos-Pino, & Valle, 2023). Camisóna and Monfort-Mir (2012) talk about the importance of non-technological innovations. Focusing on non-technological innovations is very important, because it complements the picture of modern tourism innovation with another factor. Irawan (2023) talks about the importance of artificial intelligence in the tourism industry, highlighting the many directions of application of artificial intelligence in the industry. The author argues that through artificial intelligence, tourism service providers are provided with certain advantages, including increased productivity and operational efficiency, the creation of personalized experiences, the promotion of environmentally friendly travel, etc. The author discusses this issue from a broad perspective. The reports of the World Travel & Tourism Council on the development of artificial intelligence (World Travel & Tourism Council, Introduction to Arificial Intelligence (AI) Technology, 2024) and its role (World Travel & Tourism Council, Artificial intelligence in action: use cases and impacts of AI in society, business and travel & tourism, 2024) present conclusions about the special importance of the role of artificial intelligence in various elements of the tourism product.

Gidumal, Secin, O'Connor, and Buhalis argue that the use of AI in tourism is essential, both as a prerequisite for organizational and technological integration and synergy, as it allows companies to co-create value and respond to individual customer segments (Gidumal,, Secin, O'Connor, & Buhalis, 2023). Jayamani, Priya, and Sangeetha's research revealed that immersive technologies have a significant impact on the pre-trip planning phase by creating opportunities for virtual exploration; augmented reality applications allow tourists to navigate unfamiliar places, and artificial intelligence, through personalization and recommendations, ensures the best possible traveler experience (Jayamani, Priya, & Sangeetha, 2024). Majan, Mishra, Tiwari, and Vemuri discuss how AI is changing marketing in the tourism industry, reducing costs and improving service quality (Majan, Mishra, Tiwari, & Vemuri, 2024). Pratisto, Thompson, and Potdar explore the role of immersive technologies in the tourism industry. The study also presents the challenges of using immersive technologies (Pratisto, Thompson, & Potdar, 2022). The authors expand their knowledge on the use of augmented and virtual reality in tourism based on an analysis of contemporary articles. Çolak's study showed that 15 new job positions will emerge through AI and that its integration in the tourism industry can achieve certain advantages for employees (ÇOLAK, 2023). Henriques, de Almeida, and Quiterio Ramos aim to provide information on how artificial intelligence can be used to improve the customer experience in various aspects of tourism operations and services, both online and offline (Henriques, de Almeida, & Ramos, 2024). Gidumal discusses how AI is widely used in almost all areas of tourism and travel, including apps, smart travel agents, chat-bots, bots, recommendation systems, voice assistants, and translation applications (Gidumal, 2020). The author analyzes three main challenges related to the use of AI in the study: how consumers accept it, what is its impact on the tourism and travel economy, and how it affects the workforce or employment. Hao and Chon's study details the impact of technological developments on travel from the World War II era to the present and forecasts their impact until 2050 (Chon & Hao, 2024). Gurjar's study highlights the significant impact of artificial intelligence on the tourism industry, especially in enhancing customer experience management. The focus is on the use of artificial intelligence in the hotel industry (Gurjar, 2024). Abd El-Kafy, Eissawy, and Hasanein consider the tourism and hospitality industry as one of the first to adopt new technologies, including robotics and artificial intelligence. 319 tourists were interviewed. As a result of the study, it was determined that the use of artificial intelligence has many advantages (Abd El-Kafy, Eissawy, & Hasanein, 2022). A report prepared by researchers at the University of South Australia Business School for the Australian Regional Institute also identifies artificial intelligence as a key element of the impact of technology and innovation on the Australian tourism industry (Hallak, et al., 2020).

The OECD Tourism Committee Work Programme Report on Preparing the Workforce for a Digital Future highlights the following activities: Coordinated policy collaboration between ministries and stakeholders to digitalize tourism and develop skills; Support the transformation potential of higher education institutions; Upskill the existing workforce; Facilitate digitalization initiatives for SMEs to improve efficiency; Effectively support workers displaced or at risk of displacement due to the digitalization of tourism; Creating value chain linkages to secure digital transformation practitioners, based on industry clusters or local coalitions, with the aim of stronger digital security and risk management; Greater support for funding youth learning projects to provide new knowledge related to digital technologies, as well as training on existing ones. (OECD, Preparing the Tourism Workforce for the Digital Future, 2021). The OECD report on 4 key megatrends for 2050 talks about growing visitor demand, sustainable tourism growth, technology inclusion and travel mobility. (OECD, Analyzing Megatrends to Better Shape the Future of Tourism, 2018).

The analysis of the findings of the academic community on the modern characteristics of tourism reveals a key trend that underlies all other technological innovations in the industry - the increasing role of artificial intelligence. Three main elements arising from artificial intelligence are distinguished:

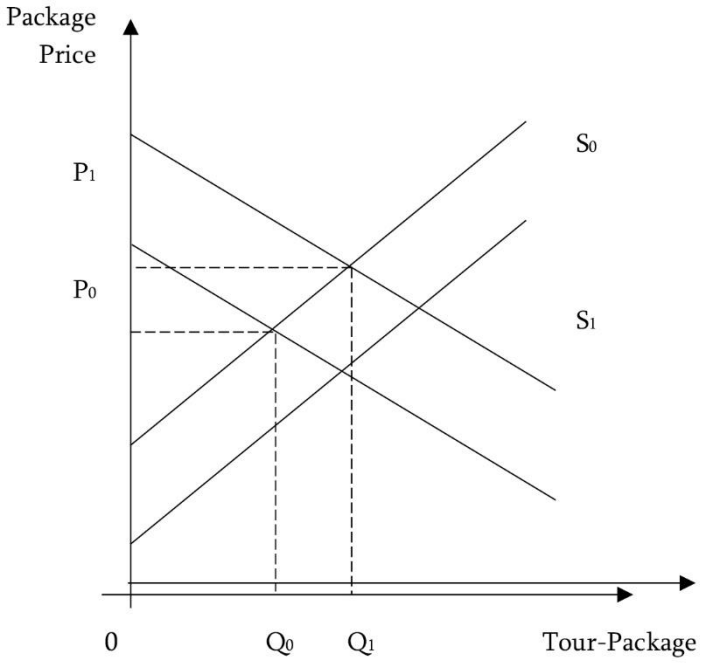
assistance/recommendations; enhancement of impressions; simplification of production operations. Three key results are distinguished from the main socio-economic results: changes in the labor market; changes in marketing activities; changes in decision-making processes.

Short and long-term socio-economic changes as a result of the increase in the scale of innovations in the tourism product

The impact of modern technologies on the tourism product market occurs simultaneously by affecting both the demand and supply sides. With the help of tools created in the market of artificial intelligence and IT technologies, the quality of the customer experience increases, and the number of formalities decreases. Accordingly, the demand for the tourism product increases, as travel becomes more valuable, this is reflected in the shift of the demand curve from D_0 to D_1 (Diagram 1). At the same time, the degree of personalization of services decreases to some extent.

Tourism product market

Diagram 1.

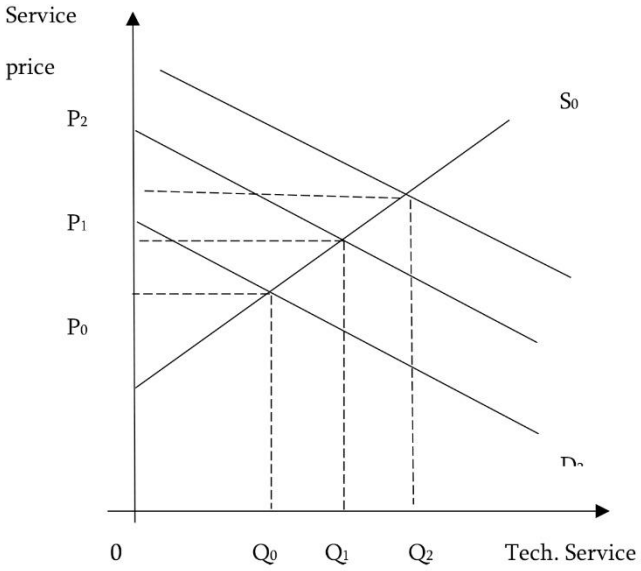


Source: Created by the author based on the analysis of the literature

At the same time, due to the reduction of errors, the speed of operations and the increase in quality, the overall production efficiency increases, which is reflected in the increase in the supply of tourist packages (the supply curve shifts from S_0 to S_1). As a result, the market for tourist products experiences two effects of increasing demand (the equilibrium volume of production shifts from Q_0 to Q_1). Changes in the tourist product market are transmitted to the market for various types of technological services (for the purposes of the study, various types of services related to modern technologies were generalized under the name "technological services market"), on which two effects of increasing demand are manifested (Diagram 2). These effects are shown by the transition of the demand curve from D_0 to D_1, and then to D_2, with a simultaneous increase in the equilibrium quantity and equilibrium price (to the levels Q_2 and P_2, respectively).

Technological services market

Diagram 2.

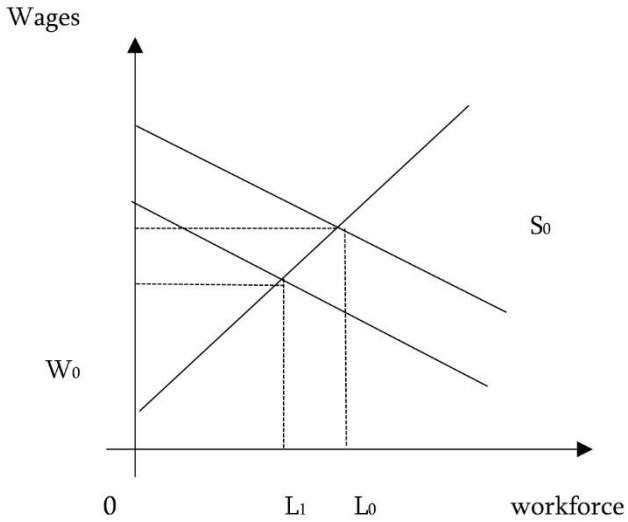


Source: Created by the author based on the analysis of the literature

Changes in the tourism product market are also reflected in the corresponding segment of the labor market (Diagram 3). The increase in the importance of modern technologies in the tourism product, the decrease in the degree of product personalization reduces the demand for labor (the demand curve shifts from D_0 to D_1), the equilibrium quantity and equilibrium wage (to L_1 and W_1 levels, respectively) and the motivation of those seeking employment in a particular sector.

Labor market employed in tourism services

Diagram 3.



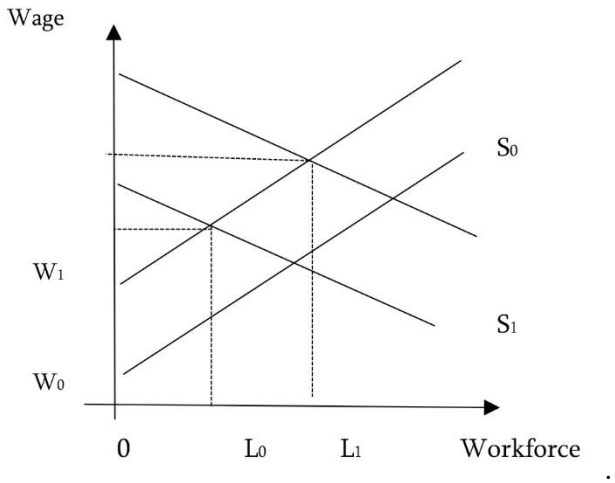
Source: Created by the author based on the analysis of the literature

Changes are also taking place in the segment of the labor market that provides employment in various sectors of technological services (Diagram 4). On the one hand, the increase in the role of modern technologies in the tourism product leads to an increase in demand for technological services from

companies employed in tourism, and therefore, directly or indirectly, an increase in demand for the corresponding labor force (a shift of the demand curve from D_0 to D_1), at the same time, a greater number of people seeking employment in the given segment is recorded in the market, which is reflected in an increase in supply (a shift of the supply curve from S_0 to S_1). Overall, there are two effects of increasing the equilibrium quantity (a shift of the equilibrium volume of employment from L_0 to L_1).

Labor force market employed in technological services

Diagram 4

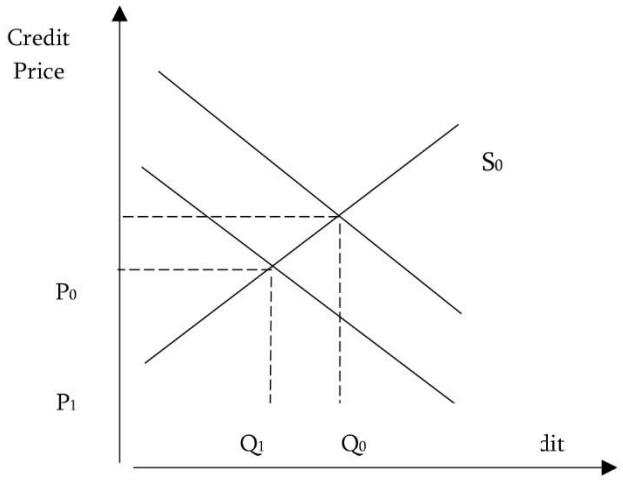


Source: Created by the author based on the analysis of the literature

The third stage of changes concerns the education sector. Diagram 5. presents the changes in the education services market in the tourism sector (for generalization, the relationship between the number of educational credits earned during the period of stay in an educational institution and the price of one educational credit is presented).

Education in Tourism

Diagram 5.



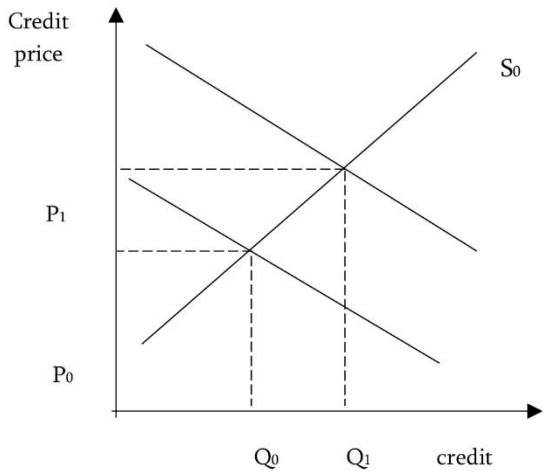
Source: Created by the author based on the analysis of the literature

Changes in the labor market employed in tourism services, as already noted, reduce the motivation to search for work in this market, and therefore reduce the demand for education in the tourism sector (shift of the demand curve from D_0 to D_1).

The opposite process is developing in the field of education related to technological services (Diagram 6). Changes in the relevant segment of the labor market increase the number of people wishing to receive education in this field, which is reflected in the increase in demand for this type of education (shift of the demand curve from D_0 to D_1).

IT Education

Diagram 6.



Source: Created by the author based on the analysis of the literature

The main characteristic of the above processes will be time lag. First of all, because the employer has a social responsibility and, despite the fact that modern technologies can replace the need for human resources in everyday work processes, he cannot dismiss them from work en masse. Second, those already employed in the tourism services sector have the opportunity to master modern technologies to a certain extent on the spot, in practice or through various trainings. Third, in order to move from one segment of the labor market to another, it will take some time for job seekers to acquire new skills and knowledge.

Accordingly, among the socio-economic consequences of increasing the scale of innovations in the tourism product, one can single out a decrease in the degree of personalization of the tourism product and a relatively slow redistribution of labor resources from the tourism services segment of the labor market to the technological services segment.

The life cycle of a tourism product based on modern technologies

The process of strengthening the technological component in a tourism product and changing the demand for it can be described using the concept of the product life cycle. For the purposes of the study, the concept of the life cycle of a tourist area was used, which considers the tourist area as a single tourism product (Diagram 7).

Diagram 7. shows that the increase in the importance of artificial intelligence and digitalization in the tourism product leads to an increase in both demand and supply in the market and is reflected in an increase in the number of supplied tourism products. At the stage of product development, demand for tourism products that are planned using artificial intelligence and modern technologies is emerging. Accordingly, the increase in consumer demand leads to a reduction in the role of personnel in the product creation and service process by manufacturers and the addition of technological elements.

At the discovery stage, consumers are offered innovative tourism products, which can be a completely innovative tourism product focused on a new segment of demand, or an existing tourism product that integrates technological or other innovative elements. The new offer takes into account the wishes and preferences of individual consumers more, and artificial intelligence plays a greater role in both the consumption and service production processes. Obviously, at this stage there is a certain distrust on the part of a large part of travelers, therefore, the scale of consumption of the new product is smaller, and the growth rate of sales is small.

At the engagement stage, interest in the given product increases on the part of the consumer, and a tendency to repurchase also appears. The number of consumers of innovative tourism services increases, as does the growth rate of sales. Along with the growth of consumer interest, companies operating in the tourism industry become interested in starting to implement similar innovations in their own production or working on their own, original changes, so as not to lose in the competitive struggle.

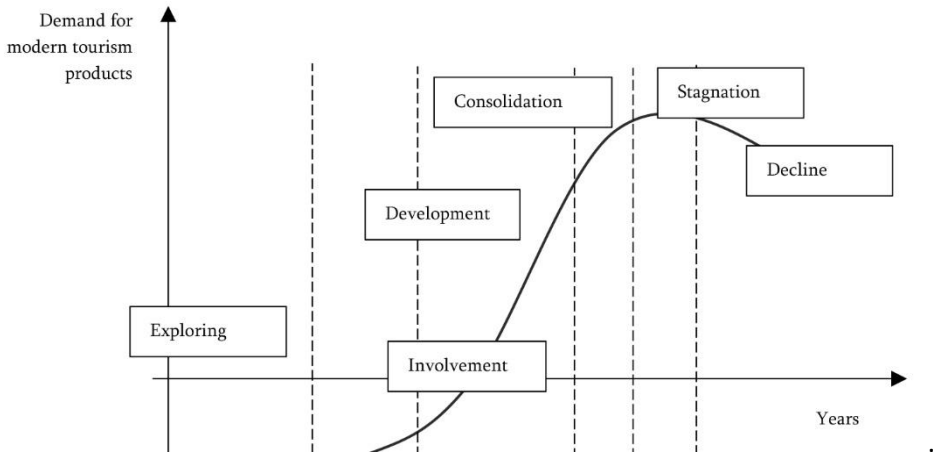
In the development stage - the growth rates of consumption of tourism products based on innovations are increasing, as most travelers have received a new product and its consumption has become massive. The share of modern technologies in the tourism products they form is increasing on the part of service providers, the involvement of artificial intelligence, virtual or augmented reality elements, the investment and education sectors are becoming more closely involved in order to prepare for the current upswing in the tourism services market.

In the consolidation stage - the interest of consumers in tourism products “saturated” with technologies is gradually stabilizing, the growth rates of consumption are decreasing. The tourism industry, investors and the education system continue to meet the growing demand for services, finances and human resources, although signs of stabilization are also observed here.

In the stagnation stage of the tourism product, the market finally stabilizes, a segment of travelers is created for tourism services based on innovations, which continue to purchase this service for a certain period of time. Relevant investments are made by the industry on a small scale or the business sector is looking for a solution, the beginning of a new cycle, in order to protect itself from the transition to the decline phase.

Life cycle of a modern tourism product

Diagram 7



Source: *Created by the author based on R. Butler's Tourism Destination Development Life Cycle*

In the decline stage, tourist products and services “saturated” with novelties, technological innovations, and artificial intelligence are no longer interesting to the consumer. Moreover, a segment of travelers

appears on the market that demands tour packages that are less loaded with modern technologies, or packages without any technological elements.

Ultimately, it can be said that a tourist product based on modern technologies has its own life cycle - despite the constant development of technologies, at some stage the increase in the quality of service modernization may no longer be a factor in increasing the quality of his impressions for the consumer. Moreover, in the final phases of the cycle, two radically different sub-segments of travelers may emerge: a) travelers who choose tourist services saturated with innovations, ultra-modern, created with the maximum participation of artificial intelligence; b) Travelers whose aversion to modern technologies leads them to plan and carry out their trips without any intervention from modern technologies.

Conclusion. The research revealed a key trend that underlies all other technological innovations in the industry - the increasing role of artificial intelligence. Three main elements emerging based on artificial intelligence are distinguished: assistance/recommendations; enhancement of impressions; simplification of production operations. Three key results are distinguished from the main socio-economic consequences: changes in the labor market; changes in marketing activities; changes in decision-making processes.

Among the socio-economic consequences of increasing the scale of innovations in the tourism product, one can single out a decrease in the degree of personalization of the tourism product and a relatively slow reallocation of labor resources from the tourism service segment of the labor market to the technological service segment.

A tourism product based on modern technologies has its own life cycle - despite the constant development of technologies, at some stage the increase in the quality of service modernization may no longer be a factor in increasing the quality of his impressions for the consumer. Moreover, in the final phases of the cycle, two radically different sub-segments of travelers may emerge: a) travelers who choose tourism services saturated with innovations, ultra-modern, created with the maximum participation of artificial intelligence; b) travelers whose reaction to modern technologies pushes them to plan and carry out their trip without any intervention of modern technologies.

References

Abd El-Kafy J. H., Eissawy T. M., & Hasanein A. M. (2022). Tourists' Perceptions Toward Using Artificial Intelligence Services in Tourism and Hospitality. *Journal of Tourism, Hotels and Heritage (JTHH), 5*(1), 1-20. doi:https://doi.org/10.21608/SIS.2022.145976.1064

Camisóna C., & Monfort-Mir, V. M. (2012). Measuring innovation in tourism from the Schumpeterian and the dynamic-capabilities perspectives. *Tourism Management, 33*(4), 776-789. doi::10.1016/j.tourman.2011.08.012

Chon K., & Hao F. (2024). Technological Evolution in Tourism: A Horizon 2050 Perspective. *ResearchGate*, 1-23. doi:10.1108/TR-10-2023-0753

Ergashev R. K., & Jabborova Z. (2021). THE IMPORTANCE OF INNOVATIVE ACTIVITY IN TOURISM. *European Scholar Journal (ESJ), 2*(4).

Irawan B. (2023). Impact of Artificial Intelligence on the Tourism Industry: A Literature Review. *INNOVATIVE: Journal Of Social Science Research, 3*(6), 4865-4878. Retrieved from https://j-innovative.org/index.php/Innovative

Tüzünkan D. (2017). The Relationship between Innovation and Tourism: The Case of Smart Tourism. *International Journal of Applied Engineering Research, 12*(23), 13861-13867.

World Travel & Tourism Council, & Harvard Learning Insights. (2021). *Science-Based Targets.* Behavioural Economics .

Archi Y. E., Benbba B., Kabil M., & Dávid L. D. (2023, 08 10). Digital Technologies for Sustainable Tourism Destinations: State of the Art and Research Agenda. *Administrative sciences*, 1-21. Retrieved from https://www.mdpi.com/2076-3387/13/8/184

Butler R. W. (1980 March). THE CONCEPT OF A TOURIST AREA CYCLE OF EVOLUTION:IMPLICATIONS FOR MANAGEMENT OF RESOURCES. *Canadian Geographer, XXIV*(I), 5-12. doi:DOI: 10.1111/j.1541-0064.1980.tb00970.x

Cardoso R. C., Lisboa Sohn A. P., Ferraso M., & Júnior S. P. (2024, September). Open innovation in the tourism field: A systematic literature review. *Journal of Open Innovation: Technology, Market, and Complexity, 10*(3). Retrieved from https://doi.org/10.1016/j.joitmc.2024.100359

ÇOLAK O. (2023). The Impact of Artificial Intelligence on the Employment Structure of the Tourism Industry: An Interview with ChatGPT. *JOURNAL OF ECONOMICS BUSINESS AND POLITICAL RESEARCHES, 8*(22), 919-939. Retrieved from https://doi.org/10.25204/iktisad.1347642

Gidumal J. B. (2020). Impact of Artificial Intelligence in Travel, Tourism, and Hospitality. *ResearchGate*. doi:10.1007/978-3-030-05324-6_110-1

Gidumal J. B., Secin E. W., O'Connor P., & Buhalis D. (2023, June 30). Artificial intelligence's impact on hospitality and tourism marketing: exploring key themes and addressing challenges. *Current Issues in Tourism*, 1-18. doi:https://doi.org/10.1080/13683500.2023.2229480

Gurjar P. (2024, May 5). Role Of Artificial Intelligence In Tourism Sector For Improved Customer Experience. *International Journal of Creative Research Thoughts (IJCRT), 12*(5), 6-21.

Gutierriz I., Ferreira J. J., & Fernandes P. O. (2023). Digital transformation and the new combinations in tourism: A systematic literature review. *Tourism and Hospitality Research*, 1-20. doi:https://doi.org/10.1177/14673584231198414

Hallak R., O'Connor A., Corsi A., Akbar S., Onur I., & Ludwichowska G. (2020). *Impacts of Technology Investment on Tourism Growth and Employment.* Canberra: Regional Australia Institute.

Henriques H. J., de Almeida C. R., & Ramos C. M. (2024). The Application of Artificial Intelligence in the Tourism Industry: A Systematic Literature Review Based on Prisma Methodology. *Journal of Tourism, Sustainability and well-being, 12*(1), 65-86. Retrieved from https://doi.org/10.34623/hkqk-ht95

Ilieva L., & Todorova L. (2023). Role of technological innovation for sustainable management of tourism organizations. *The 247th ECS* (pp. 1-12). MOntreal, Canada: IOP Conf. Series: Earth and Environmental Science. doi::10.1088/1755-1315/1269/1/012038

Jayamani J., Priya U. G., & Sangeetha C. P. (2024). ENHANCING TOURIST EXPERIENCES THROUGH IMMERSIVE VIRTUAL REALITY, AUGMENTED REALITY AND ARTIFICIAL INTELLIGENCE TECHNOLOGIES. In D. I. Series, *Futuristic Trends in Management Volume 3 book 10* (Vol. 3, pp. 126-132). Iterative International Publishers (IIP),.

Majan K. K., Mishra A., Tiwari V., & Vemuri V. P. (2024). Artificial intelligence: the next frontier for marketing in the tourism industry. *Academy of Marketing Studies Journal, 28*(1), 1-12. doi:1528-2678-28-1-107

OECD. (2018). *Analysing Megatrends to Better Shape the Future of Tourism.* Paris: OECD Tourism Papers. doi:https://doi.org/10.1787/d465eb68-en

OECD. (2021). *Preparing the Tourism Workforce for the Digital Future.* Paris: OECD Tourism papers. doi:https://doi.org/10.1787/9258d999-en

Omerzel D. G. (2015). Innovativeness in Tourism: Model Development. *ScienceDirect*, 750-756. doi:10.1016/S2212-5671(15)00550-X

Pratisto E. H., Thompson N., & Potdar V. (2022). Immersive technologies for tourism: a systematic review. *Information Technology & Tourism, 24*, 181-219.

Sardak S., Dzhyndzhoian V., & Samoilenko A. (2016). Global innovations in tourism. *Innovative Marketing,, 12*(3). Retrieved from https://philpapers.org/archive/SARGII.pdf

Sustacha I., Banos-Pino J. F., & Valle E. D. (2023). The role of technology in enhancing the tourism experience in smart destinations: A meta-analysis. *Journal of Destination Marketing & Management*, 1-12. doi:https://doi.org/10.1016/j.jdmm.2023.100817

World Travel & Tourism Council. (2024). *Artificial intelligence in action: use cases and impacts of ai in society, business and travel & tourism.* World Travel & Tourism Council.

World Travel & Tourism Council. (2024). *Introduction to Arificial Intelligence (AI) Technology.* World Travel & Tourism Council.