

14th ISCA 2024

Utilizing Artificial Intelligence (AI) in the Tourism Industry: Enhancing Traveler Experience and Local Economies

Dyah Perwita^{1*}, Prisilia Hadi²

^{1*} Jenderal Soedirman University, dyah.perwita@unsoed.ac.id, Indonesia

²Jenderal Soedirman University, prisilia.hadi@mhs.unsoed.ac.id, Indonesia

*dyah.perwita@unsoed.ac.id

ABSTRACT

Local economic development is a participatory process that encourages partnerships between the private sector, communities and stakeholders in a particular area to undertake joint development by utilizing local resources to create jobs and stimulate economic activity. The tourism sector is one of the drivers of the local economy. The existence of rural tourism is very influential on the sustainability of livelihood community households as a means of survival. In reality, rural tourism has not been well developed in Indonesia and foreign tourists' perceptions of tourist destinations in Indonesia are still focused on Bali. For this reason, it is necessary to utilize Artificial Intelligence in digital tourism marketing to develop the local economy. This research uses the literature review method using 998 papers that are relevant to the topic and published during the period 2014 to 2024. The result of this study is the utilization of Artificial Intelligence (AI) in local economic development through the tourism industry has a positive impact. The findings show that the use of AI can increase memorable traveler experiences and be able to improve the welfare of communities around tourist destinations due to the high interest of returning tourists.

Keywords: Artificial Intelligence; Tourism; Traveler Experience; Local Economics

1. Introduction

1.1 Research Background

As the COVID-19 pandemic affects the world, the tourism sector is one of the most affected. Travel restrictions and health concerns have limited international mobility and led to a significant decline in tourist arrivals (Rahmaniah and Sugito, 2023). Therefore, in the current post-pandemic years, the development of tourism is of great interest and needs to be revitalized. In Indonesia itself, the development of the tourism sector has reached the rural level or known as rural tourism. Rural tourism is a tourism activity related to the potential of both nature, agriculture, ecotourism or other potentials that are developed into the tourism sector in the village (Sutikno, Widiyanto, and Wibowo, 2023). In the implementation, rural tourism is important to involve the surrounding community. The existence of rural tourism is very influential on the sustainability of community household livelihoods as a means of survival. According to Saputra, Wijianti, and Dinanti (2019), the sustainable livelihood approach describes community activities that include capabilities, asset ownership, and activities that support the means of human life.

Law No. 10 of 2009 concerning the Tourism Sector in Indonesia explains the principle of tourism, namely empowering local communities. The community has the right to play a role in the tourism development process and is obliged to maintain and preserve tourist attractions and help create an atmosphere of safety, order, cleanliness, polite behavior, and preserve the environment of tourism destinations (Frasawi and Citra, 2018). Tourism data in Indonesia according to BPS (2024) shows that in April 2024, foreign tourist visits in Indonesia reached 1.07 million visits. This number increased by 2.41 percent compared to March 2024 month-to-month (m-to-m) and increased by 23.23 percent compared to the same month last year (y-on-y). Foreign tourists visiting Indonesia in April 2024 were dominated by foreign tourists from Malaysia (15.99 percent), Australia (11.99 percent), and China (8.06 percent). Tourism is one of the important economic sectors that can increase state revenue through foreign exchange. In addition, tourism can also increase community income, employment, and reduce unemployment. The tourism sector has increased with a contribution to Indonesia's GDP of 4.1% in 2023, followed by tourism sector revenue of US\$14.63 billion (Anggela, 2024). This proves that the tourism sector is one of the leading sectors in Indonesia.

Tourism is an industry that produces a service as well as a product for its customers. The tourism industry includes various business activities, namely the entertainment business, tourist attractions, restaurants, hotels and inns and handicrafts (Winata, Prastiwi, and Sanjaya, 2018). Based on the experience economy concept, tourism product development is not only about facilities, but also includes experience design. According to (Muktaf and Zulfiana, 2018) foreign tourists' interest in Indonesia is grouped into 3, namely natural tourism (such as beaches and mountains), cultural tourism (traditions, rituals and so on), and spiritual / religious tourism and nationality or diversity, but the perception of foreign tourists to tourist destinations in Indonesia is still focused on Bali. This shows that Indonesian tourism needs to improve aspects of traveler experience and destination attractiveness. In addition, the management of the tourism sector in the regions is still not optimal and tends to involve less participation of local communities and is dominated by the role of investors and the private sector in planning and management (Lekatompessy, Maturbongs, and Oja, 2024). Based on this background, the author is interested in conducting a literature review on local economic development in the tourism industry that utilizes Artificial Intelligence (AI) as a digital marketing instrument and improving the tourism travel experience in Indonesia.

1.2 Research Purposes

This research aims to find out the results of a literature review on local economic development in the tourism industry that utilizes Artificial Intelligence (AI) as a digital marketing instrument and enhances the travel experience.

1.3 Scope of Research

The review of this article is limited to the utilization of Artificial Intelligence (AI) as a digital marketing instrument in the tourism industry to develop the local economy.

2. Literature Review

2.1 Local Economic Development

The International Labour Organization (ILO) defines local economic development as a participatory process that encourages partnerships between the private sector, communities and

stakeholders in a particular area to undertake joint development by utilizing local resources to create jobs and stimulate economic activity. So, there are 2 principles in its development, namely participatory and utilization of local resources by promoting common interests. Local economic development is a regional development capability based on the utilization of local resources to produce added value that is useful for improving the quality of life of local communities (Ayunda, et.al., 2024). Local economic development is closely related to the utilization of natural resources, human resources, institutions, and the surrounding environment.

Local economic development is achieved when people's living standards can be maintained and improved through a process of human and physical development based on the principles of equity and sustainability (Malizia et al., 2021). Local economic development has 6 aspects, namely (1) Target groups for local economic development; (2) Location factors; (3) Synergy; (4) Sustainable development that looks at economic, ecological, and social aspects; (5) Governance consists of partnerships with the public and private sectors, ease of regulation in the public sector and organizational development; (6) Management, local economic development is based on an iterative process with a diagnostic foundation and planning, implementation, and monitoring and evaluation. These six aspects become a measure of the implementation of local economic development (Huda, 2020).

2.2 Tourism Industry

The World Tourism Organization (WTO) defines tourism as the activity of people traveling to and staying in places outside their usual environment for not more than one consecutive year for leisure, business, and other purposes. Tourism is one of the most important industries in the world and is growing rapidly (Ferguson, 2015). The development of tourist destinations that develop regional potential as tourist attractions requires the active contribution of the community as organizers and actors who are inseparable from tourism products (Wijijayanti et al., 2020). Thus, the positive impact of rural tourism development can be felt directly by the local village community. The following is the framework of the Travel & Tourism Development Index:

Table 1. Travel & Tourism (T&T) Development Index framework

Enabling Environment	T&T Policy and Enabling Conditions	Infrastructure and Services	T&T Resources	T&T Sustainability
1. Business Environment	1. Prioritization of T&T	1. Air Transport Infrastructure	1. Natural Resources	1. Environmental Sustainability
2. Safety and Security	2. Openness T&T	2. Ground and Port Infrastructure	2. Cultural Resources	2. T&T Socioeconomic Impact
3. Health and Hygiene	3. Price Competitiveness	3. Tourist Services and Infrastructure	3. Non-Leisure Resources	3. T&T Demand Sustainability
4. Human Resoources and Labour Market				
5. ICT Readiness				

Source: (World Economic Forum, 2024)

2.3 Traveler Experience

Travel experience is an experience that travelers feel physically, cognitively, emotionally, and socially which can influence the decision to return to visit a tourist attraction (Pratama and Wulandari, 2024). A memorable tourism experience is an important element that shapes tourists'

perceptions, behavior, and loyalty to destinations (Sinaga et al., 2024). Travel experience can be measured by a sense of security during travel, comfort while traveling, friendliness of locals and staff while traveling, and infrastructure that meets expectations (Musnia, Hamid, and Maszudi, 2023). According to (Gunteja, Mulyantari, and Saputra, 2021) tourists are satisfied if their expectations of the destination are met and their experience is satisfactory.

2.4 Artificial Intelligence

Artificial Intelligence (AI) is a branch of computer science that aims to develop systems and machines capable of performing tasks that usually require human intelligence (Eriana and Zein, 2023). AI involves the use of algorithms and mathematical models to enable computers and other systems to learn from data, recognize patterns, and make intelligent decisions. In the context of AI, there are several important concepts such as machine learning, neural networks, natural language processing, and others. The development of AI has made a huge impact in various fields, one of which is tourism. AI allows the creation of models that predict tourist behavior, such as preferred activities, length of stay, and tourist profiles (Zancan, Passador, and Passador, 2023).

3. Research Methodology

This research uses a Systematic Literature Review approach to identify, evaluate, and interpret the results of research relevant to the topic related to local economic development in the tourism industry that utilizes Artificial Intelligence (AI) as a digital marketing instrument and enhances the travel experience. The meta-analysis method was used to systematically synthesize the research results. The process started with the identification and discovery of relevant keywords, namely “travel experience” “artificial intelligence” “digital marketing” “tourism” and “local economies” with the help of the Publish or Perish application to search for scientific articles both nationally and internationally from 2014 to 2024. The search was carried out using an electronic academic database through Google Scholar, the results of the screening of articles were then analyzed regarding the relationship between keywords using the VOSviewer application. The meta-analysis process in this literature review followed the following steps:

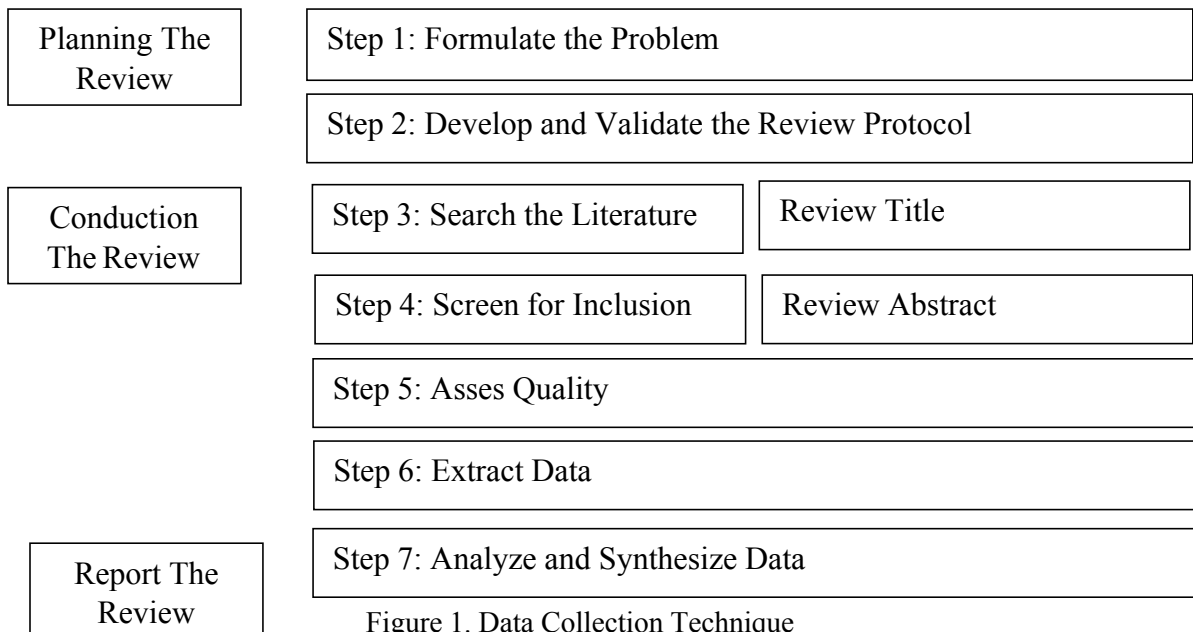


Figure 1. Data Collection Technique

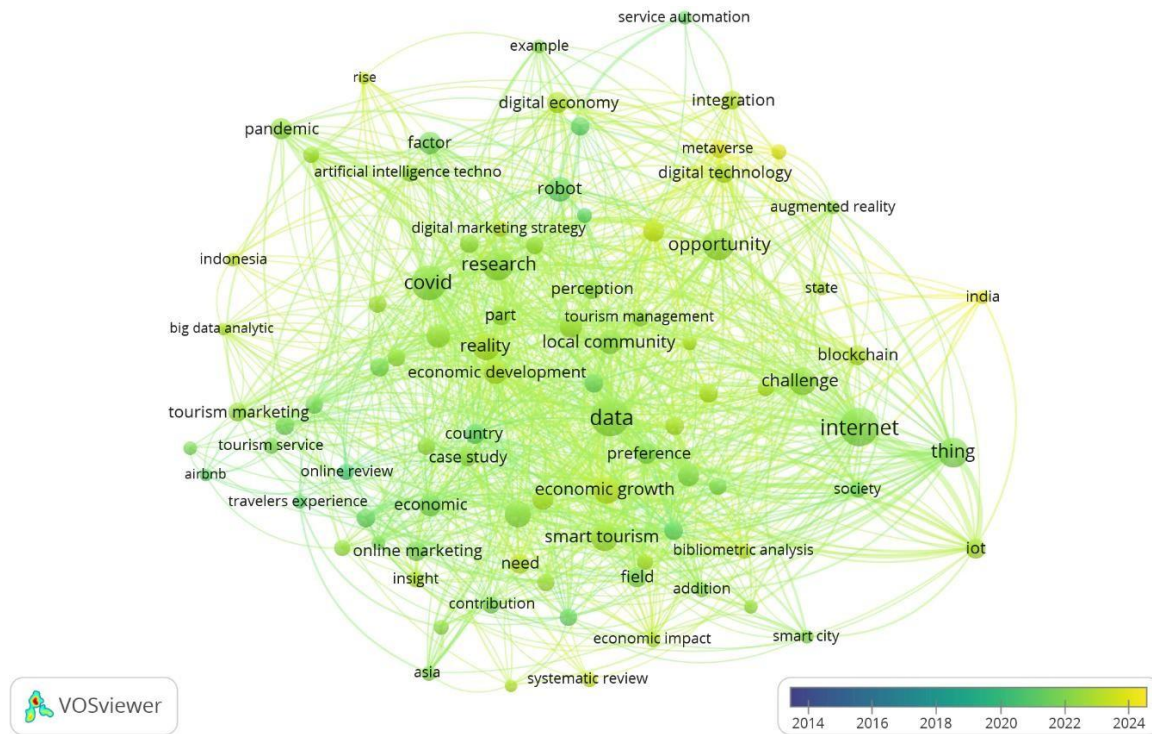


Figure 3. Overlay Visualization

Figure 3 is the result of a network visualization that shows the relationship between various topics in the study of AI development for tourism and local economy, with an additional time dimension from 2014 - 2024. From this visualization, it can be concluded that this topic only began to be researched in 2021 using a case study approach in several countries such as China, India, and Indonesia or based on big data or bibliometric analytics research. This topic is still being researched after the covid-19 pandemic by considering data availability, customer preferences and perceptions, and existing opportunities and challenges. “contribution” ‘need’ ‘addition’ indicates the urgency and consideration factors in the utilization of AI. In the current era of society, the use of AI is also a great opportunity in terms of the development of the tourism sector. The color and size of the nodes indicate the development and importance of the topic over time, providing a comprehensive view of the evolution and relationship of various aspects in the tourism industry.

4.3 Density Visualization

The analysis of the results of inter-author density of relevant research publications with keyword results from VOSviewer is shown in the following figure:

AI can currently be found embedded in forecasting systems, robots, conversational systems, and speech recognition systems. It is likely that AI will be involved in all areas of the travel and tourism industry in the near future. This is because the application of AI and robotics has a positive impact on tourism marketing and improving the overall traveler experience (Samala et al., 2022). Emerging technologies such as chatbots, virtual reality, language translators, and others can be effectively applied in the Travel, Tourism & Hospitality Industry. By adopting Blockchain, AI, and IoT technologies, the tourism industry can become more dynamic, responsive, and ready to face future challenges and opportunities (Setiawan, 2024).

Tourism activities have a close relationship with local communities because they are able to drive changes in social, cultural, environmental, and economic dimensions (Wijijayanti et al., 2020). The community-based tourism policy strategy serves as a solution to optimize tourism potential and empower local communities in tourism planning, management, and development (Lekatompeppy et al., 2024). According to Data Artificial Intelligence Center Indonesia, local economic development through the use of AI in the tourism industry must be pursued with strategies: (1) collaboration between the government, creative industry, and technology; (2) investment in human resource training and development; and (3) application of AI technology that suits local needs.

6. Conclusion

This research emphasized that the utilization of Artificial Intelligence (AI) in local economic development through the tourism industry has a positive impact. The findings show that the use of AI can increase memorable traveler experiences and can improve the welfare of communities around tourist destinations due to the high interest of returning tourists. Thus, this research makes an important contribution to the utilization of AI in developing sustainable local tourism in the future. To strengthen the findings, future research should include primary data collection. This could involve case studies, interviews, and surveys with relevant stakeholders, such as local business owners, tourists, and AI technology providers in the tourism sector. Such empirical data would provide more concrete evidence for AI's impact on local economies. Additionally, quantitative analysis using tourism-related AI platforms would offer insights into traveler behavior and its correlation with local economic growth.

References

- Anggela, Ni Luh. 2024. "Target Kontribusi PDB Pariwisata 4,6% Di Era Prabowo-Gibran, Realistis?" Retrieved (<https://ekonomi.bisnis.com/read/20240425/12/1760041/target-kontribusi-pdb-pariwisata-46-di-era-prabowo-gibran-realistis>).
- Ayunda, Irdian Okri Prio, Novi Kadewi Sumbawati, and Binar Dwiyanto Pamungkas. 2024. "Analisis Strategi Pengembangan Ekonomi Lokal Masyarakat Pesisir Di Desa Labuhan Bajo." *Scientific Journal of Economics, Management, Business, and Accounting* 14(01):148–61. doi: 10.37478/als.v14i01.3748.
- BPS. 2023. *Berita Resmi Statistik 3 Juni 2024*.
- Bulchand-gidumal, Jacques. 2020. "Impact of Artificial Intelligence in Travel, Tourism, and Hospitality." *Handbook of E-Tourism* (August):1–20. doi: 10.1007/978-3-030-05324-6.

- Doe, J. (2022). "AI and Sustainable Tourism: A Case Study Approach." *Journal of Smart Tourism*, 13(4), 210-225.
- Eriana, Emi Sita, and Drs. Afrizal Zein. 2023. *Artificial Intelligence*. Purbalingga: CV Eureka Media Aksara.
- Ferguson, Lucy. 2015. *Tourism, the Millennium Development Goals, and Gender Equality*. Vol. 24. Second Edi. Elsevier.
- Frasawi, Edison Stevanus, and I. Putu Ananda Citra. 2018. "Partisipasi Masyarakat Dalam Pengembangan Desa Wisata Ambengan Kecamatan Sukasada." *Jurnal Pendidikan Geografi Undiksha* 6(3):175–85. doi: 10.23887/jjpg.v6i3.20704.
- Gunteja, Benediktus Primus, Enny Mulyantari, and Arif Dwi Saputra. 2021. "Pengaruh Daya Tarik Terhadap Kepuasan Wisatawan Di Coffee on The Bus PO. Rejeki Transport Yogyakarta." *Journal of Tourism and Economic* 4(2):176–86. doi: 10.36594/jtec/366d8q08.
- Huda, Rojaul. 2020. "Pengembangan Ekonomi Lokal Melalui Sektor Pariwisata Di Desa Serang, Kecamatan Karangreja, Kabupaten Purbalingga." *Aspirasi: Jurnal Masalah-Masalah Sosial* 11(2):157–70. doi: 10.46807/aspirasi.v11i2.1470.
- Irawan, Buntoro. 2023. "Impact of Artificial Intelligence on the Tourism Industry: A Literature Review." *INNOVATIVE: Journal Of Social Science Research* 3(6):4865–78.
- Lekatompeppy, Ransta L., Edoardus E. Maturbongs, and Hubertus Oja. 2024. "Strategi Kebijakan Pariwisata Berbasis Masyarakat." *Societas: Jurnal Ilmu Administrasi Dan Sosial* 13(1):284–92.
- Malizia, Emil, Edward Feser, Henry Renski, and Joshua Drucker. 2021. *Understanding Local Economic Development*. Second. London: Routledge.
- Muktaf, Zein Mufarrih, and Enni Rizqa Zulfiana. 2018. "Persepsi Wisatawan Asing Terhadap Wisata Indonesia." *Jurnal Cakrawala* 7(1):83–106.
- Musnia, Musnia, Rahmad Solling Hamid, and Edi Maszudi. 2023. "Islamic Tourism: Peran Atribut Wisata Halal Dalam Menentukan Kepuasan Dan Loyalitas Wisatawan." *JESYA: Jurnal Ekonomi & Ekonomi Syariah* 6(2):1890–1900. doi: 10.36778/jesya.v6i2.1188.
- Pratama, Jefri Febrian, and Dwi Pratiwi Wulandari. 2024. "Pengaruh Tourist Experience Dan Travel Motivation Terhadap Revisit Intention Di Wisata Puncak Lawang." *Garuda: Global Research on Tourism Development and Advancement* 6(1):29–40.
- Rahmaniah, and Sugito. 2023. "Diplomasi Publik Melalui 'Wonderful Indonesia' Dalam Upaya Promosi Pariwisata Pada Masa Pandemi Covid-19 Di Amerika Serikat." *JIMPS: Jurnal Ilmiah Mahasiswa Pendidikan Sejarah* 8(4):4635–45.
- Samala, Nagaraj, Bharath Shashanka Katkam, Raja Shekhar Bellamkonda, and Raul Villamarin Rodriguez. 2022. "Impact of AI and Robotics in the Tourism Sector: A Critical Insight."

Journal of Tourism Futures 8(1):73–87. doi: 10.1108/JTF-07-2019-0065.

Saputra, R. M. Kunta Lamona, Wawargita Permata Wijianti, and Dian Dinanti. 2019. “Kajian Penghidupan Berkelanjutan (Sustainable Livelihood) Di Kecamatan Dayeuhkolot, Kabupaten Bandung.” *Planning for Urban Region and Environment Journal* 8(3):265–74.

Setiawan, Dodi. 2024. “Smart Tourism: Blockchain, Artificial Intelligence, Dan Internet of Things Implementasi Dalam Industri Pariwisata 5.0.” *INTELEKTIVA* 6(2):310–17.

Sinaga, Aprizal Haris, Syafrizal Helmi Situmorang, Beby Karina, and Fawzeeza Sembiring. 2024. “Memorable Tourism Experiences in Tourism : A Literature Review.” *JAMEK: Jurnal Akuntansi Manajemen Ekonomi Dan Kewirausahaan* 4(2):148–57.

Sutikno, Maulana Thariq Prajaduta, Widiyanto, and Agung Wibowo. 2023. “Dampak Wisata Pedesaan Terhadap Kehidupan Masyarakat Desa (Studi Kasus Di Kecamatan Polanharjo Kabupaten Klaten).” *Journal of Tourism and Creativity* 7(2):89. doi: 10.19184/jtc.v7i2.41330.

Smith, L. & Johnson, K. (2023). "AI and the Future of Tourism in Southeast Asia: Economic Impact and Sustainability." *Tourism Economics Journal*, 21(2), 154-169.

WEF. 2024. *Travel & Tourism Development Index 2024 - Insight Report*.

Wijijayanti, Trisetia, Yuli Agustina, Agung Winarno, Lulu Nurul Istanti, and Buyung Adi Dharma. 2020. “Rural Tourism: A Local Economic Development.” *Australasian Accounting, Business, and Finance Journal* 14(1 Special Issue):5–13. doi: 10.14453/aabfj.v14i1.2.

Winata, I. Gusti Ketut Adi, Ni Made Wulan Sari Prastiwi, and Ni Luh Putu Eka Yudi Sanjaya. 2018. “Tourism Experience Design Dan Penciptaan Nilai Pelanggan Pada Pariwisata Di Bali.” *Artha Satya Dharma* 11(1):245–62.

Zancan, Claudio, João Luiz Passador, and Claudia Souza Passador. 2023. “Artificial Intelligence (AI) in the Management of Inter-Municipal Tourism Consortia.” *Open Journal of Business and Management* 11(04):1454–78. doi: 10.4236/ojbm.2023.114080.