

Manuscript ID:
TIJCMBLIR-2026-030184

Volume: 3

Issue: 1

Month: February

Year: 2026

E-ISSN: 3065-9191

Submitted: 28 Jan. 2026

Revised: 31 Jan. 2026

Accepted: 25 Feb. 2026

Published: 28 Feb. 2026

Address for correspondence:
Basel A. Dabwan
Department of Computer Science,
Al Baha Private College of
Science, Al Baha, Kingdom of
Saudi Arabia
Email: basel@bpcs.edu.sa

DOI: 10.5281/zenodo.22171141

DOI Link:
<https://doi.org/10.5281/zenodo.22171141>



Creative Commons (CC BY-NC-SA 4.0):

This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International Public License, which allows others to remix, tweak, and build upon the work noncommercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

The Impact of Artificial Intelligence on Tourism Development in Al-Baha Region, Saudi Arabia

Basel A. Dabwan¹, Abdullah J. Al Zahrani², Abdulsalam A. Hlmat³, Mokhtar Khalil⁴, Sara M. Awaad⁵, Rabaa A. Malik⁶

¹Department of Computer Science, Al Baha Private College of Science, Al Baha, Kingdom of Saudi Arabia

^{2,3,4,5,6}Department Management Information Systems, Al Baha Private College of Science, Al Baha, Kingdom of Saudi Arabia

Abstract

This paper takes a close look at how Artificial Intelligence (AI) is changing the game for tourism in the Al-Baha Region, a spot that is arguably one of Saudi Arabia's most beautiful natural destinations. Between the mountains, forests, and cultural history, the area has a lot to offer. But as digital tech speeds up, AI is becoming vital for upgrading services and making visits better. Our goal here was to see how tools like data analytics, smart recommendation engines, and virtual assistants can actually boost tourist happiness in the region. We used a descriptive-analytical approach, digging into existing literature and looking at potential AI fixes for local tourism issues. What we found suggests that bringing AI into the mix can seriously upgrade management, help leaders make decisions based on real data, and generally make the whole experience better for visitors. Plus, it could bring in more tourists and support sustainable growth, which fits right in with Saudi Vision 2030.

Keywords: Artificial Intelligence, Tourism Development; Al-Bahah Region; Tourism Technology; Saudi Vision 2030.

Introduction

There is no denying that tourism is a massive economic driver globally. It creates jobs, brings in money, and helps regions develop. Because of this, countries are pouring money into high-tech solutions to make travel smoother and more enjoyable. Recently, the fast rise of Artificial Intelligence (AI) has opened up new doors, turning old-school tourism systems into smart, data-driven environments [1], [2], [3]. With AI, tourism bodies can crunch huge amounts of data, guess what visitors might like next, and offer personalized services. This ultimately makes tourists happier and operations more efficient [4] [5]. As digital transformation reshapes industries, tourism is one area that stands to gain a lot from these intelligent tools. So, what do we mean by AI? Basically, it's computer systems acting like humans—learning, reasoning, solving problems, and making decisions. This includes things like machine learning, understanding natural language, analyzing data, and virtual assistants. In tourism, these tools handle everything from planning trips to customer service and predicting how many people will show up. For instance, chatbots can answer questions instantly, while recommendation systems can suggest hotels or activities based on what a visitor has done before. Predictive analytics also helps authorities manage crowds and resources better.

The industry has changed a lot thanks to digital tech, including AI, big data, and the Internet of Things. This has birthed the idea of "smart tourism," where digital solutions are used to improve the experience and make services run better. Smart tourism is all about connecting tourists, service providers, and authorities through digital platforms. This makes sharing info and making decisions easier. As a result, travelers get accurate info, personalized tips, and can plan their trips without a headache.

Governments are starting to bake AI into their tourism strategies to stay competitive and sustainable. In Saudi Arabia, tourism is getting a lot of attention as part of the push to diversify the economy away from oil, known as Saudi Vision 2030. The plan is to build up other sectors like tourism and tech. Consequently, a lot of money is going into infrastructure and adopting modern tech to improve visitor experiences. AI plays a big role here by enabling smart services and data-driven management. Al-Baha is one of the up-and-coming destinations in the Kingdom. It sits in the southwest and is famous for its mountains, forests, great weather, and cultural sites. These features make it a draw for both locals and international travelers. The region is packed with forests, valleys, old villages, and landmarks that tell the story of the area.

How to Cite this Article:

Dabwan, B. A., Abdullah J. Al Zahrani, Hlmat, A. A., Khalil, M., Awaad, S. M., & Malik, R. A. (2026). The Impact of Artificial Intelligence on Tourism Development in Al-Baha Region, Saudi Arabia. *The International Journal of Commerce Management and Business Law in International Research (TIJCMBLIR)*, 3(1), 385–389. <https://doi.org/10.5281/zenodo.22171141>

Even with all this potential, there is plenty of room to improve how tourism is managed and marketed using modern tech. Traditional methods often rely on manual work and basic data analysis, which limits how well authorities can understand what tourists actually want. Integrating AI could offer fresh solutions to these problems. For example, AI systems can spot trends in data, predict demand, and help with strategic planning.

On top of that, AI can improve service quality. Smart apps can give visitors real-time updates on attractions, weather, transport, and hotel openings. Mobile apps powered by AI can also offer personalized travel tips based on what a tourist likes. This doesn't just make planning easier; it encourages people to see more of what the region offers. Another big plus is efficient destination management. Authorities can use AI analytics to watch how people move, spot overcrowding, and spread tourists out across different sites. This keeps the environment healthy while making sure visitors have a good time. Also, AI can boost marketing by analyzing online search trends and social media to find target audiences and promote the region effectively. Adopting AI also makes a destination more competitive. Places that use tech are more likely to attract modern travelers who expect digital services. So, for Al-Baha, integrating AI into its strategy could make it more attractive on a national and global stage.

Despite AI's growing importance, there isn't much research on how it applies to specific regional destinations, especially emerging ones like Al-Baha. Most studies look at global markets. Understanding how to use AI effectively in specific regions is key to sustainable growth. Therefore, this study investigates AI's potential impact on Al-Baha. We look at how it can enhance services, improve visitor experiences, and support data-driven management. We also examine the opportunities and challenges of implementing these solutions. By analyzing this, we hope to give policymakers and stakeholders the insights they need to adopt tech and strengthen tourism in the region. Ultimately, integrating AI can turn traditional models into smart, sustainable ecosystems, helping Al-Baha leverage its potential and contribute to Saudi Arabia's digital transformation.

Related Work

Artificial Intelligence is reshaping the tourism industry in a big way. As digital tech evolves, tourism organizations are leaning on AI to boost service quality, optimize operations, and improve experiences. Tools like machine learning and data analytics let stakeholders process massive amounts of data to understand tourist behavior better. Research shows AI systems support decision-making, cut down on inefficiencies, and provide services tailored to individual travelers [6].

A major development in this field is "smart tourism," which mixes AI with other tech like big data and the Internet of Things. These systems allow authorities to collect and analyze real-time data to manage destinations better. Gretzel et al. noted that

smart tourism ecosystems rely on digital platforms and intelligent tech to create innovative services and sustainable environments [7]. This helps coordinate stakeholders and enables data-driven planning.

Another key use is recommendation systems. These look at user preferences and past trips to suggest destinations, hotels, or activities. Machine learning algorithms make these suggestions more accurate over time. Studies show that personalized recommendations can significantly make tourists happier and streamline the planning process [8].

AI is also huge for marketing and understanding behavior. Organizations analyze data from social media and review sites to grasp what tourists think and expect. Xiang et al. pointed out that analyzing user-generated content online gives valuable insights into experiences and service quality [9]. This helps organizations tweak their marketing to better meet customer needs.

In terms of service, chatbots and virtual assistants are now standard. These bots talk to tourists via apps or websites, answering questions about transport, hotels, or attractions instantly. Research shows they improve efficiency and keep customers engaged by providing support right when they need it [10].

We are also seeing more robotics in hospitality. Robots can greet guests, give info, and even deliver items in hotels. Ivanov and Webster looked at this trend and found that robots and AI can improve service efficiency, cut costs, and boost satisfaction [11].

Furthermore, AI is used for managing destinations and forecasting demand. Predictive models look at past data to estimate future visitor numbers. This helps authorities manage resources and stop overcrowding. Intelligent management systems like this support sustainable development by helping with infrastructure planning [12].

Big data analytics is another big piece of the puzzle. Tourism creates tons of data from bookings and social media. Analytics tools process this to find patterns in traveler behavior. Studies suggest big data can vastly improve planning, marketing, and service delivery [13].

Information technology in general has shaped modern services. Buhalis and Law noted that digital tech has transformed management through online booking, digital marketing, and global connectivity [14]. This lets organizations reach wider audiences.

Finally, integrating digital marketing with smart communication is crucial. Modern marketing relies on social media and mobile tech to interact with tourists. Buhalis and Foerste highlighted that combining social, mobile, and location-based tech lets organizations co-create value with tourists through interactive platforms [15]. This builds smart ecosystems and makes promotion more effective.

However, most existing literature focuses on global markets or major hotspots. There is a gap when it comes to regional destinations with natural and cultural potential. These places could benefit hugely

from intelligent tech. So, more research is needed on how AI can help emerging destinations like Al-Baha, especially with the digital transformation happening

in Saudi Arabia. Based on this literature review, Figure 1 shows a conceptual framework for AI in regional tourism.

Table 1 summarizes AI applications in previous studies and highlights gaps for regional destinations.

Study	AI Application	Region/Scope	Key Findings	Gap/Opportunity
Tussyadiah (2020) [6]	Automation, Chatbots	Global	AI improves service efficiency and engagement	Limited regional application
Gretzel et al. (2015) [7]	Smart Tourism Systems	Global	Integrating AI and big data enhances management	Lack of real implementation in regional destinations
Kim & Park (2020) [8]	Recommendation Systems	Online Platforms	Personalized suggestions improve satisfaction	Needs testing in physical destinations
Xiang et al. (2017) [9]	Social Media Analytics	Online Platforms	Identifies tourist behavior patterns	Limited adaptation for regional planning
Ivanov & Webster (2017) [11]	Robotics & Service Automation	Hospitality & Tourism	Enhances operational efficiency	High cost, low regional adoption
Buhalis & Foerste (2015) [15]	SoCoMo Marketing	Tourism marketing	Co-creation of value via digital platforms	Not fully applied in regional tourism

Methodology

To figure out how AI impacts tourism in Al-Baha, we used a descriptive–analytical approach. The descriptive part helped us get a full picture of the current tourism situation in the region and how AI is being used globally. The analytical part let us examine how these technologies could actually fix local problems, improve services, and help manage the destination.

Our research relied mainly on secondary data and literature analysis. We reviewed academic papers, journals, and reports on AI and tourism. These sources gave us insight into applications like recommendation systems, chatbots, and smart platforms. We looked for trends and strategies that worked elsewhere to see if they could fit Al-Baha.

We also evaluated potential AI applications specific to the region. This meant analyzing how AI could improve local services like information desks, travel planning, and marketing. We considered how these tools could help local businesses and authorities make smarter decisions and run things more efficiently.

Additionally, we analyzed factors like tourist behavior and how accessible digital platforms are. This helped us spot where AI could boost performance and satisfaction. We also looked at how AI fits into Saudi Arabia's national strategies, specifically digital transformation and tourism growth.

We used a qualitative analytical approach to process the information. We compared and synthesized findings from the literature to find common patterns and opportunities. This allows us to offer practical recommendations for stakeholders and policymakers looking to adopt these technologies. Overall, this methodology gives a systematic look at the relationship between AI and tourism development, combining literature review with a specific look at Al-Baha.

Results and Discussion

After analyzing previous studies and tech applications, it is clear that AI has huge potential to transform the sector by boosting service quality, enhancing experiences, and helping manage destinations efficiently [16]. Based on our review, several key findings emerged about AI's role in Al-Baha.

First off, AI can drastically improve tourist information services. Intelligent systems like chatbots and virtual assistants can give visitors real-time info on attractions, hotels, transport, and events [16]. These can run on websites or apps, making it easy for tourists to get info quickly. Putting this tech on platforms dedicated to Al-Baha would help visitors plan better and see more of the region.

Another major finding involves recommendation systems. These analyze user preferences and history to suggest suitable spots or activities [17]. If applied in Al-Baha, these systems could guide visitors to lesser-known attractions. This would help spread out the crowds, reducing congestion in popular spots and possibly making people stay longer.

Marketing is another area where AI shines. AI tools can crunch massive amounts of online data—social media posts, search trends—to find potential markets and understand what travelers are interested in [17]. Authorities can use this to design targeted campaigns that promote Al-Baha's landscapes and heritage effectively. This could attract more domestic and international visitors.

Smart destination management is also crucial. AI can analyze visitor data to predict demand and monitor flow [18]. For instance, data from digital services can show when peak times are, helping authorities manage infrastructure. This kind of intelligent management improves the visitor experience and supports environmental sustainability.

Economically, AI could be a booster. By improving efficiency, satisfaction, and marketing, AI

can increase visitor numbers and lengthen stays [16][18]. This directly benefits local businesses like hotels, restaurants, and transport services.

However, implementing this isn't without challenges. One big hurdle is the need for advanced digital infrastructure and investment. Local organizations might need funding and technical expertise to set these up. Plus, employees might need training to get the digital skills required to run these AI services.

Data availability is another challenge. AI needs large, accurate datasets to work well. So, authorities need systems to collect and manage data from various services. Without this infrastructure, AI apps won't be very effective.

Despite these hurdles, the discussion suggests that integrating AI is key to turning traditional tourism into a smart ecosystem. These systems improve communication between tourists, providers, and authorities via digital platforms [16][17].

Moreover, adopting AI fits perfectly with Saudi Vision 2030. The vision emphasizes digital transformation and economic diversification. By using AI solutions, regional destinations like Al-Baha can become more competitive and position themselves as modern, tech-savvy spots [18].

In short, AI has strong potential to improve services, enhance experiences, and support sustainable growth in Al-Baha. With the right infrastructure, planning, and investment in digital skills, AI can be a major tool for promoting tourism and improving management efficiency in the region.

Conclusion

This study looked at how AI technologies could impact tourism development in the Al-Baha Region. The findings show that AI can play a vital role in upgrading services, improving visitor experiences, and supporting smart destination management. Tech like chatbots, recommendation systems, and data analytics can provide tourists with instant info, personalized tips, and smooth service delivery. On the management side, AI enables data-driven decisions, helps optimize visitor flow, and aids in designing effective marketing strategies to draw in more tourists.

We also highlighted that integrating AI into regional tourism helps the economy by increasing arrivals, extending stays, and supporting local businesses. Furthermore, AI applications match the broader goals of Saudi Vision 2030, specifically regarding digital transformation, innovation, and sustainable economic growth.

Of course, there are challenges. The research points out the need for better digital infrastructure, investment, workforce training, and solid data management. Addressing these is critical for AI to work successfully. In the end, AI offers a real opportunity to transform tourism in Al-Baha into a smart, efficient, and sustainable system. By adopting AI strategically, the region can boost its attractiveness, improve visitor quality of life, and contribute to the long-term growth of Saudi Arabia's tourism sector. Future research should focus on

practical ways to implement these strategies, how effective they really are, and how new tech like generative AI can be used for innovation.

Acknowledgment

The authors would like to express their sincere gratitude to the administration of Al Baha Private College of Science, Kingdom of Saudi Arabia, for providing the academic environment and support necessary to conduct this research. Special appreciation is extended to the faculty members and colleagues of the Departments of Computer Science and Management Information Systems for their valuable guidance, encouragement, and constructive suggestions throughout the study.

Financial support and sponsorship

Nil.

Conflicts of interest

The authors declare that there are no conflicts of interest regarding the publication of this paper.

References

1. B. Gretzel, U. Sigala, Z. Xiang, and C. Koo, "Smart tourism: foundations and developments," *Electronic Markets*, vol. 25, no. 3, pp. 179–188, 2015.
2. M. Tussyadiah, "AI in tourism: enhancing experiences and decision-making," *Journal of Travel Research*, vol. 60, no. 5, 2021.
3. F. Buhalis and S. Amaranggana, "Smart tourism destinations: Enhancing tourism experience through technology," *Information & Communication Technologies in Tourism*, 2020.
4. X. Li, C. Law, F. Buhalis, and U. Fuchs, "Big data analytics in tourism: Understanding tourist behavior and trends," *Journal of Destination Marketing & Management*, vol. 18, 2021.
5. F. Mariani, M. Baggio, and M. Fuchs, "AI for predictive analytics in tourism," *Tourism Review*, vol. 77, no. 5, pp. 1035–1050, 2022.
6. M. Tussyadiah, "A review of research into automation in tourism: Launching the Annals of Tourism Research Curated Collection on Artificial Intelligence and Robotics in Tourism," *Annals of Tourism Research*, vol. 81, 2020.
7. [7] U. Gretzel, M. Sigala, Z. Xiang, and C. Koo, "Smart tourism: foundations and developments," *Electronic Markets*, vol. 25, no. 3, pp. 179–188, 2015.
8. B. G. Kim and H. J. Park, "A recommendation system for personalized tourism using machine learning," *Information Processing & Management*, vol. 57, no. 5, 2020.
9. Z. Xiang, M. Du, Z. Ma, and W. Fan, "A comparative analysis of major online review platforms: Implications for social media analytics in tourism management," *Tourism Management*, vol. 58, pp. 51–65, 2017.
10. M. Tussyadiah and I. Miller, "Perceived impacts of artificial intelligence and responses to positive behavior change intervention," *Tourism Management*, vol. 77, 2020.

11. S. Ivanov and C. Webster, "Adoption of robots, artificial intelligence and service automation by travel, tourism and hospitality companies," *Revista Turismo & Desenvolvimento*, vol. 27/28, pp. 1501–1517, 2017.
12. F. Mariani, M. Baggio, M. Fuchs, and U. Höpken, "Business intelligence and big data in hospitality and tourism: A systematic literature review," *International Journal of Contemporary Hospitality Management*, vol. 30, no. 12, 2018.
13. X. Li, C. Law, U. Fuchs, and F. Buhalis, "Social media in tourism marketing: Opportunities and challenges," *Journal of Travel & Tourism Marketing*, vol. 35, no. 1, pp. 1–17, 2018.
14. F. Buhalis and R. Law, "Progress in information technology and tourism management: 20 years on and 10 years after the Internet," *Tourism Management*, vol. 29, no. 4, pp. 609–623, 2008.
15. D. Buhalis and E. Foerste, "SoCoMo marketing for travel and tourism: Empowering co-creation of value," *Journal of Destination Marketing & Management*, vol. 4, no. 3, pp. 151–161, 2015.
16. Y. Zeng, X. Li, and J. Li, "The impact of AI on tourism personalization and customer satisfaction," *Sustainability*, vol. 14, no. 8, 2022.
17. H. Liang and R. Law, "Automation in regional tourism: Efficiency and service quality," *Tourism Management Perspectives*, vol. 40, 2021.
18. B. Gretzel, U. Fuchs, and M. Sigala, "Future trends of AI applications in tourism destinations," *Journal of Destination Marketing & Management*, vol. 25, 2022.