

The strategic impact of artificial intelligence on medical tourism marketing

Medikal turizm pazarlamasında yapay zekanın stratejik etkisi

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Abstract

Artificial intelligence (AI)-driven marketing strategies have become indispensable for attracting international patients in the rapidly expanding field of global health tourism. This study explores the transformative impact of AI in redefining marketing paradigms within this highly competitive sector. AI-powered technologies, including intelligent chatbots, predictive analytics, and sophisticated recommendation algorithms, play a pivotal role in enhancing patient engagement by delivering highly personalised experiences and real-time assistance. Leveraging vast datasets, AI enables precise audience segmentation, optimises advertising campaigns with unprecedented accuracy, and anticipates patient preferences, thereby significantly improving conversion rates. Moreover, advanced sentiment analysis of digital feedback facilitates robust reputation management for healthcare providers. The automation of critical functions, ranging from dynamic pricing strategies to multilingual customer support, enhances operational efficiency, reduces costs, and extends global outreach. Despite challenges such as data privacy concerns and the necessity for human oversight, this study underscores the profound potential of AI to revolutionise health tourism marketing by fostering intelligent, patient-centred strategies and bridging the divide between patients and healthcare providers on a global scale.

Keywords: AI in Health Tourism, Medical Travel Marketing, Personalised Healthcare Marketing

JEL Codes: M31, I15, O33, L83, C55

Öz

Yapay zekâ (YZ) odaklı pazarlama stratejileri, hızla genişleyen küresel sağlık turizmi alanında uluslararası hastaları çekmede vazgeçilmez hâle gelmiştir. Bu çalışma, yapay zekânın bu son derece rekabetçi sektörde pazarlama paradigmasını yeniden tanımlamadaki dönüştürücü etkisini incelemektedir. Akıllı sohbet robotları, tahmine dayalı analizler ve gelişmiş öneri algoritmaları gibi YZ destekli teknolojiler, hastalara son derece kişiselleştirilmiş deneyimler ve gerçek zamanlı destek sunarak hasta etkileşimini artırmada kritik bir rol oynamaktadır. Geniş veri kümelerinden yararlanan YZ, hedef kitle segmentasyonunu yüksek doğrulukla gerçekleştirmekte, reklam kampanyalarını benzersiz bir hassasiyetle optimize etmekte ve hasta tercihlerini öngörerek dönüşüm oranlarını önemli ölçüde artırmaktadır. Ayrıca, dijital geri bildirimlerin gelişmiş duygu analizi, sağlık hizmeti sağlayıcıları için güçlü bir itibar yönetimini mümkün kılmaktadır. Dinamik fiyatlandırma stratejilerinden çok dilli müşteri desteğine kadar kritik işlevlerin otomasyonu; operasyonel verimliliği artırmakta, maliyetleri azaltmakta ve küresel erişimi genişletmektedir. Veri gizliliği endişeleri ve insan denetimi gereksinimi gibi zorluklara rağmen, bu çalışma yapay zekânın sağlık turizmi pazarlamasında devrim yaratma potansiyelini vurgulamakta; akıllı, hasta odaklı stratejiler geliştirerek hastalar ile sağlık hizmeti sağlayıcıları arasındaki küresel etkileşimi güçlendirdiğini ortaya koymaktadır.

Anahtar Kelimeler: Sağlık Turizminde Yapay Zekâ, Tıbbi Seyahat Pazarlaması, Kişiselleştirilmiş Sağlık Hizmeti Pazarlaması

JEL Kodları: M31, I15, O33, L83, C55

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Submitted: 25/10/2025

Revised: 25/11/2025

Accepted: 3/12/2025

Online Published: 31/12/2025

Citation: Yorulmaz, M., The strategic impact of artificial intelligence on medical tourism marketing, *tujom* (2025) 10 (3): 107-114, doi: <https://doi.org/10.30685/tujom.v10i3.220>

Introduction

The global health tourism industry has undergone a significant transformation as patients increasingly seek cross-border healthcare solutions (Lunt et al., 2016). Artificial intelligence (AI) has emerged as a pivotal technology in this sector, reshaping health tourism through data-driven insights and intelligent digital applications that support service design and customer-oriented processes (Wang et al., 2022). Empirical evidence highlights AI's capacity to enhance patient engagement and streamline service delivery in medical tourism contexts. AI-driven conversational agents, particularly chatbots, have redefined patient-provider communication by offering real-time, multilingual assistance (Fadhil & Gabrielli, 2017). These systems not only improve interaction quality but also alleviate administrative burdens. Furthermore, predictive analytics enables precise patient segmentation and the development of culturally tailored marketing strategies (Liang et al., 2021), while machine learning algorithms strengthen reputation management through sentiment analysis of patient feedback (Gupta et al., 2020).

Despite these advancements, challenges remain, particularly concerning data privacy regulations and ethical considerations in AI applications (Price & Cohen, 2019). Research also suggests that the thoughtful integration of AI could significantly enhance both patient satisfaction and operational performance (Ramos et al., 2022). For example, patient-centric empirical studies reveal that transparency, human oversight and strong data governance are crucial for successful AI adoption in healthcare settings (Foresman et al., 2025). Moreover, broader reviews demonstrate that AI and big data analytics are reshaping healthcare delivery models, underscoring their implications for tourism contexts as well (Al-Dmour et al., 2025). In the tourism domain specifically, AI is beginning to change how destinations and providers interact with travellers, pointing to new research agendas around experience, strategy and ethics (Tuo et al., 2021).

This article explores AI's transformative potential by drawing on empirical evidence and theoretical frameworks, offering actionable insights for stakeholders in the health tourism sector. Based on the author's literature review, the author discusses marketing strategies applicable to health tourism marketing under the following headings: Additionally, this study used artificial intelligence-based tools, such as ChatGPT (OpenAI), for language editing, improving readability, and providing formatting support.

Artificial intelligence applications in health tourism

The dynamic nature of global transformation has made the application of artificial intelligence a critical requirement across multiple professions in international business lines (Aksakal & Ulgen, 2021). Artificial intelligence (AI) plays a transformative role in the health tourism sector through a wide range of applications that enhance both patient experience and operational efficiency.

AI-powered chatbots and virtual assistants facilitate initial interactions by providing potential patients with 24/7 information and instant responses to their inquiries. Such systems, widely used across tourism and healthcare services, offer interactive, personalised, and multilingual support, which strengthens engagement and trust between patients and providers (Tuo et al., 2021). Predictive analytics further enables healthcare institutions to anticipate patient preferences and travel trends, thereby supporting the design of targeted, culturally adaptive marketing strategies.

Moreover, AI algorithms assist physicians across diverse clinical processes—from medical image analysis to personalised treatment planning—improving diagnostic precision and service quality (Smith et al., 2023). These technologies also integrate contextual awareness, enabling digital platforms to provide tailored recommendations and real-time assistance based on patient behaviour and data inputs, similar to the smart service frameworks used in tourism destinations such as Hangzhou's "City Brain" initiative (Tuo et al., 2021).

AI contributes not only to marketing personalisation but also to automation and efficiency in back-office operations. Automated scheduling, dynamic pricing, and multilingual communication systems reduce operational costs and administrative burdens while expanding global outreach. In line with findings from the tourism industry, AI's integration supports the creation of "smart health tourism ecosystems," where intelligent systems link patients, service providers, and destination managers in real time to ensure seamless service experiences (Tuo et al., 2021).

Collectively, these applications strengthen the competitiveness of the health tourism sector by combining technological innovation with patient-centred care. They promote greater accessibility, personalisation, and data-driven decision-making, positioning AI as a cornerstone of the future of sustainable, intelligent health tourism.

Personalised health tourism marketing

Personalised marketing strategies in health tourism entail delivering highly targeted marketing communications and service offerings that are meticulously aligned with the unique needs, expectations, and situational contexts of individual prospective patients. Departing from traditional standardised, one-size-fits-all models, personalisation prioritises bespoke communication channels and service architectures that are responsive to patients' medical profiles, cultural preferences, decision-making patterns, and personal circumstances.

In the domain of health tourism, this approach facilitates the creation of fully customised treatment packages, accommodation solutions, and comprehensive travel itineraries by systematically integrating patient-specific data. Such integration fosters a genuinely patient-centred experience that emphasises perceived value and individual relevance (Topol, 2019).

Recent developments in artificial intelligence (AI) and customer relationship management (CRM) technologies have substantially augmented the capacity of health tourism providers to execute sophisticated personalised marketing strategies at scale. AI-powered chatbots and intelligent digital assistants are now routinely deployed to deliver contextually relevant information, facilitate pre-travel medical consultations, and provide continuous, real-time support across the entire patient journey — thereby significantly enhancing patient engagement, trust, and overall satisfaction (Baglivo et al., 2024).

Moreover, the incorporation of predictive analytics enables healthcare organisations to anticipate evolving patient preferences, determine optimal timing for communications, and proactively recommend personalised treatment pathways and complementary travel arrangements.

Furthermore, contemporary studies underscore that personalised digital tools not only contribute to greater operational efficiency but also reinforce patients' perception of truly individualised care. This perception translates into significantly higher levels of satisfaction, repeat intention, and long-term loyalty among international health tourists (Minvielle, 2021).

By harnessing AI-enabled advanced analytics and next-generation CRM platforms, health tourism providers can offer highly tailored recommendations and end-to-end services to patients seeking specialised medical interventions. In doing so, personalisation emerges as a central strategic lever for achieving sustained competitive advantage in the increasingly globalised and competitive health tourism market.

AI-powered big data analytics in health tourism

Artificial intelligence-driven big data analytics has emerged as a pivotal enabler within the health tourism industry, facilitating the systematic processing and interpretation of vast, heterogeneous patient datasets. This capability supports advanced patient segmentation and the development of highly personalised service offerings.

By synthesising demographic, socioeconomic, and clinical variables, healthcare providers can uncover meaningful patterns in patients' needs, preferences, and behavioural tendencies. Such insights enable more precise targeting of communication strategies and the design of genuinely patient-centred service models, which are particularly valuable in the complex environment of cross-border healthcare delivery (Dwivedi et al., 2019). Beyond its applications in segmentation and marketing-oriented decision support, the integration of artificial intelligence and advanced analytics significantly enhances clinical decision-making processes. Empirical evidence demonstrates that AI systems, through the integration and deep analysis of clinical data, can substantially improve the accuracy of disease prediction, diagnosis, and treatment planning, thereby increasing both diagnostic precision and overall efficiency of care delivery (Zhang, 2023). Furthermore, large-scale, data-intensive approaches facilitate earlier disease detection, more refined risk stratification, and the development of truly individualised care pathways — all of which contribute to superior clinical outcomes and enhanced patient safety in international medical travel settings (Topol, 2019).

Patient experience and sentiment analysis

A critical element in enhancing the patient experience within the health tourism sector is the effective evaluation of patient feedback. Sentiment analysis is a computational technique that automatically determines the subjective tone (positive, negative, or neutral) of text data. This method enables health tourism providers to gain an in-depth understanding of how patients perceive their experiences through online platform reviews, social media posts, and other written feedback. For example, an online review analysis study identified key satisfaction dimensions in medical tourism services, highlighting the importance of information and service-related attributes in shaping medical travellers' evaluations (Ahani et al., 2021). Such analyses help healthcare organisations identify their strengths and areas for improvement, thereby enabling them to increase patient satisfaction and achieve a more competitive position. Otherwise, artificial Intelligence (AI) is assisting the healthcare sector by complementing healthcare professionals. AI finds applications in various domains of healthcare. One of the most critical factors for the success of AI in healthcare is the adoption of this technology by customers (patients) (Kumar et al., 2025)

The impact of automation and language technologies on health tourism efficiency

Artificial intelligence (AI) and language technologies have emerged as critical drivers of efficiency in the increasingly competitive field of health tourism. Artificial intelligence provides substantial support to healthcare providers by optimising operational processes and enhancing the quality of services delivered to international patients.

One of the most prominent applications in this domain is the implementation of automated appointment management and digital reservation systems. These systems significantly reduce waiting times, facilitate easier access to healthcare services, and improve operational efficiency through online booking capabilities and seamless service coordination. At the same time, they enhance patient satisfaction by offering greater convenience and flexibility (Veseli et al., 2025).

Building on this foundation, AI-powered appointment systems have demonstrated the ability to increase attendance rates and reduce operational inefficiencies by effectively managing no-show risk, thereby positively contributing to service quality and overall organisational performance (Toker et al., 2024). Similarly, evidence from online appointment scheduling systems indicates improvements in patient-centred care and more efficient resource utilisation. These systems reduce no-show rates, rapidly fill vacant appointment slots, and consequently enhance the overall patient experience while increasing the efficiency of care delivery processes (Betancor et al., 2024).

Another major dimension of technological innovation concerns reducing language barriers. Although not exclusive to health tourism, the integration of online translation tools has been shown to improve the quality of healthcare delivery markedly. These tools increase satisfaction levels for both providers and patients, while strengthening patient-provider communication, trust, and engagement in cross-border care settings (Al Shamsi et al., 2020).

Health tourism marketing benefits of AI

AI-enabled analytics can enhance health tourism marketing by identifying patterns in prospective patients' information-seeking and engagement behaviours and by supporting the delivery of more relevant, personalised digital content. Evidence from web-based health contexts suggests that machine learning can combine user and content features to generate personalised recommendations at scale, aiming to improve engagement and the effectiveness of digital outreach (Guni et al., 2021). In addition, machine learning approaches that predict and characterise engagement patterns in digital health programs demonstrate how data-driven models can be operationalised to optimise personalisation strategies and improve retention—capabilities that are directly transferable to the design of patient-centred marketing and communication workflows in health tourism services (Rodriguez et al., 2024).

AI-powered strategies for optimizing marketing budget efficiency

In the health tourism sector, AI-enabled targeting and digital automation can improve marketing budget efficiency by enhancing outreach precision and reducing resource waste associated with broad, non-specific campaigns. Evidence from health-related digital recruitment demonstrates that paid social media advertising strategies can yield substantially different cost outcomes depending on campaign

objective and ad placement, indicating that data-driven optimisation of targeting parameters can materially affect cost per acquired user and overall efficiency (Kutok et al., 2021). Similarly, large-scale social media recruitment research shows that platform selection and persona-based targeting approaches influence both conversion patterns and cost-effectiveness, highlighting the importance of analytics-informed segmentation to allocate marketing spend more efficiently (Pathak et al., 2025). More broadly, systematic evidence from digital health interventions indicates that digital channels can provide advantages in reach and cost-effectiveness compared with traditional approaches, supporting the rationale for scaling AI-supported, data-driven marketing workflows to improve efficiency in cross-border health service promotion (Rhodes et al., 2020).

Patient-centred personalisation: Driving loyalty and higher conversion rates

In health tourism, patient-centred personalisation supported by artificial intelligence (AI) strengthens patient trust. It enhances behavioural intentions by delivering services and information that are perceived as relevant to individual needs. Evidence from smart healthcare services demonstrates that perceived personalisation directly influences users' behavioural intention and, indirectly, acceptance through the mediating role of trust (Liu & Tao, 2022). As trust is a key determinant of technology acceptance in healthcare settings, personalised digital services can foster stronger patient-provider relationships and improve engagement across the decision-making process. In addition, research in medical tourism contexts indicates that trust-related factors and perceived well-being significantly shape revisit intentions, suggesting that personalised service strategies can also contribute to higher retention and loyalty in cross-border healthcare markets (Abdul-Rahman et al., 2023).

AI-driven optimisation of global patient access

Artificial intelligence is increasingly important for improving global patient access in the medical tourism ecosystem by enhancing digital communication and information delivery across borders. AI-enabled natural language processing and multilingual support systems facilitate clearer, more accessible interactions between healthcare providers and international patients, thereby reducing informational and linguistic barriers to care. Evidence from healthcare research indicates that AI-supported digital health tools improve patients' access to health information and services by enabling personalised, language-adapted communication, which is particularly relevant in cross-border healthcare contexts (Al Shamsi et al., 2020). By improving mutual understanding and information exchange, such technologies support more inclusive patient outreach and strengthen international engagement in medical tourism services.

Challenges and solutions in AI-assisted health tourism marketing

This study has systematically demonstrated the transformative influence of artificial intelligence (AI) technologies on the evolution of medical and health tourism marketing. AI-driven innovations have become integral to creating personalised patient experiences, improving operational efficiency, and enhancing global accessibility. Through tools such as predictive analytics, intelligent chatbots, and virtual care platforms, AI is enabling a shift from traditional marketing practices to data-driven, adaptive, and patient-centred strategies.

However, despite these remarkable benefits, several critical challenges remain. The rapid digitalisation of healthcare and tourism introduces complex ethical, legal, and technical dilemmas. These include concerns about data privacy, algorithmic transparency, cultural sensitivity, and trust management between patients and service providers. Effective implementation of AI in health tourism, therefore, requires a human-centric approach that ensures technology serves as a complement—not a replacement—for human empathy and clinical judgment (Foresman et al., 2025).

Ethical and regulatory challenges

One of the most pressing issues involves the ethical governance of AI applications. Patient data in health tourism often crosses international boundaries, exposing sensitive medical information to varying regulatory regimes. Compliance with frameworks such as the General Data Protection Regulation (GDPR) and the Health Insurance Portability and Accountability Act (HIPAA) is essential to safeguarding patient rights and maintaining institutional credibility. Furthermore, bias in machine learning algorithms stemming from unbalanced or culturally narrow datasets can inadvertently

perpetuate inequities in healthcare access and decision-making (Price & Cohen, 2019). Addressing these issues demands robust ethical oversight mechanisms, transparent algorithmic auditing, and continuous professional education for AI practitioners in healthcare marketing.

Emerging technological solutions

Looking forward, three interconnected innovations are set to redefine the strategic landscape of AI-assisted health tourism marketing:

- **Metaverse Integration:** The fusion of virtual reality (VR) and augmented reality (AR) into health tourism marketing will allow prospective patients to explore hospitals, interact with healthcare professionals, and experience treatment environments virtually. Such immersive experiences not only strengthen patient engagement but also reduce uncertainty and travel anxiety, leading to more confident decision-making (Tuo et al., 2021).
- **AI-Powered Predictive Simulations:** Advanced machine learning and predictive modelling will enable patients to simulate treatment outcomes using real clinical data. By visualising potential results and recovery processes, patients gain transparency and trust, while healthcare providers can better align expectations and personalise delivery (Liu et al., 2022).
- **Blockchain-Enabled Data Security:** Blockchain technology offers decentralised, tamper-proof storage of medical and travel data, enabling secure information exchange among hospitals, insurance firms, and travel agencies. This not only ensures compliance with international data protection laws but also strengthens patient confidence in cross-border health systems (Baglivo et al., 2024).

Strategic recommendations

To fully realise the potential of AI while mitigating its risks, health tourism stakeholders must adopt a multi-level strategic framework:

- **Ethical Integration:** Establish multidisciplinary ethics boards to oversee AI deployment and ensure equitable marketing practices.
- **Regulatory Alignment:** Harmonise international standards for data sharing and consent management to support interoperability across borders.
- **Capacity Building:** Invest in AI literacy among medical and marketing professionals to enhance responsible adoption.
- **Transparency and Explainability:** Develop explainable AI models to improve understanding among patients and regulators.
- **Sustainability and Inclusion:** Ensure AI adoption benefits all demographic groups and supports the broader goals of sustainable health tourism.

In conclusion, the future of health tourism will be defined by the convergence of technological innovation and human-centred ethics. As AI systems become more sophisticated, maintaining a balance between automation and empathy will be vital. Ethical frameworks, transparent governance, and patient empowerment will serve as the cornerstones of this transformation. By strategically integrating AI while upholding trust, inclusivity, and humanistic values, the health tourism industry can achieve a sustainable paradigm shift those benefits patients, providers, and global health systems alike.

Ultimately, artificial intelligence applications are used across many fields in the digital world. The main focus of this article is an evaluation of the impact of AI applications on medical tourism marketing; it can be stated that, while AI offers positive benefits in many areas, it is also a highly significant factor in the marketing of healthcare services.

Peer-review:

Externally peer-reviewed

Conflict of interests:

The author has no conflict of interest to declare.

Grant Support:

The author declared that this study has received no financial support.

Acknowledgement:

This study made use of AI-based tools such as ChatGPT (OpenAI) solely for language editing, improving readability, formatting support, and assisting the literature search process.

Ethics Committee Approval:

Ethics committee approval was not required for this study, as it did not involve any intervention on human participants.

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