Global Perspectives on the Opportunities and Future Directions of Health Tourism

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MISSION

Globally, the hospitality, travel, tourism, and services industries generate a significant percentage of revenue and represent a large portion of the business world. Even in tough economic times, these industries thrive as individuals continue to spend on leisure and recreation activities as well as services.

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Derya Baysal, Ardahan University, Turkey
Hürriyet Çimen, Ardahan University, Turkey

Being healthy is an essential and indispensable need of people. Health tourism covers people's travels to relieve their physical or mental disorders and relax. It is possible to say that health tourism has an ancient history. This result, in line with the archaeological studies, shows that people have always traveled for health purposes. In ancient times, hot springs formed the destinations for people to seek healing and, simultaneously, fulfilled the requirements of their religious beliefs. The health facilities built during the time of the Sumerians are considered the first health tourism facilities known in history. Today, health trips are made primarily from developed co-developing countries, and health tourism services are offered in many qualified and equipped clinics.

Chapter 2

Selçuk Efe Efe Küçükkambak, Aydın Adnan Menderes University, Turkey

In the last thirty years, there have been radical changes and innovations in individuals' lifestyles. The tourism sector has also been significantly affected by this change. The rapid growth of the Health Tourism sector, especially in the last ten years, and the expectation of an increase in the market potential for the future; attracts the attention of researchers, entrepreneurs, and managers. In today's market conditions, where competition is intensely based on brands, it has become necessary to brand destinations as touristic products. In this research, why and how health tourism destinations should focus on branding activities in tourism activities has been discussed on theoretical grounds and with examples from various regions of the world. It is expected that this study will contribute to the literature in terms of determining the

research gaps for the studies to be carried out in the field of health tourism, as well as the expectation that it will provide implications in terms of practical applications for branding in health tourism in the future.

Ugur Bakir, Ege University, Turkey
Sinem Yeygel Çakır, Ege University, Turkey

Today, one of the essential service areas for elderly consumers is health tourism. Considering the basic elements promised to the target audiences within the scope of health tourism, the importance of the market segment formed by the elderly consumers becomes more and more noticable. Fundamentally, this chapter discusses the place, importance, and application forms of health services for elderly consumers, considered as a growing market and increasing its impact in many sectors, especially with regard to health tourism. Within the scope of the chapter, the concepts such as old age and being old are explained, before further elaborating the general characteristics of the elderly population and the consumer identities of the elderly. After creating a baseline with general information about elderly consumers, it is explained with examples how elderly consumers can be handled within the scope of health tourism, what strategies and practices can be developed accordingly.

Ece Özer Çizer, Yıldız Technical University, Turkey

This study examines the evolution of health tourism research in the literature in the last two decades. The study used the R Studio program to perform a bibliometric meta-analysis. The dataset consists of 418 articles selected from the Web of Science database by searching for the keywords "health tourism". Graphics related to the annual scientific production, country of the responsible author, most cited countries, most relevant sources, word cloud, word tree, trend topics, and the thematic map will be included in the study using the visualization technique. In conclusion, the meta-analysis aims to establish a comprehensive framework for the articles on health tourism published in the last two decades.

Süheyla Golcheshmeh, Nişantaşı University, Turkey

The main purpose of this chapter is to discuss the destinations hosting health tourism and how the locals living there are affected by this situation and what the reasons are. The impacts of tourism on destinations and the attitude of locals towards tourism were discussed. Afterwards, the destinations where health tourism has developed and its impacts on the locals living there were discussed with different examples. As a result of the examinations, the positive impacts of health tourism are seen as contributing to the local economy, employment creation, improving the infrastructure and superstructure, giving importance to education, training qualified health professionals, and providing a better service standard. Its negative impacts are brain drain, supply-demand gap, inequality, ethical and moral problems, exploitative activity in poor countries (such as organ transplants and surrogacy), inflationary pressure, xenophobia, and alienation from tourism. The chapter was concluded with general evaluations, solutions and recommendations, and suggestions for future research.

Chapter 6

 Züleyhan Baran, Duzce Universtiy, Turkey
 Şükran Karaca, Tourism Faculty, Sivas Cumhuriyet University, Sivas, Turkey

Essential developments in health tourism indicate that technology is critical to the current health system. The digital age makes life easier by providing fast accessibility, easy usability, and integrating new technological equipment into routine life. Developments in the field of digitalization in health tourism initially focused on e-Health technologies, which use information and communication technologies to improve existing communication processes, such as electronic health records. Managers and employees need to be prepared for the profound transformation brought about by technology. While it is essential for companies to evaluate investments in technologies through cost-benefit analysis, employees need to understand that they should focus on developing their own skills (corporate training, online courses, completing university degrees, etc.) rather than complaining about robots being replaced. For this reason, the study's primary purpose is to reveal the reflections on using new generation technologies in health tourism.

Chapter 7

 Joana A. Quintela, Portucalense University, Portugal
 Carlos Costa, University of Aveiro, Portugal
 Anabela Correia, Instituto Politécnico de Setúbal, Portugal

The health and wellness tourism sector is one of the most dynamic in Europe and has experienced a significant worldwide increase in the last decades. It emerges as

a key element of lifestyle, due to a set of circumstances and restrictions imposed by contemporary life. In this sense, health and wellness activities may be revealed as a means capable of satisfying the needs of the consumers, that constitute the modern wellness tourists. Although the pandemic of COVID-19 may have an impact on individuals' visits to health and well-being destinations, it may, on the other hand, contribute to an increase in health concerns, both from the perspective of cure and prevention, supported by a continuous search to raise QoL levels. The aim of this study is to identify the contribution of health tourism to the quality of life of the demand, identifying the satisfaction levels on its' different dimensions, and presents the results of a comparative study developed in Thermal Spas in Portugal and in Hungary, providing theoretical and practical contributions to this research field.

Chapter 8
Anita Medhekar, Central Queensland University, Australia

Traveling abroad to seek healthcare services for medical or wellness purposes is a global phenomenon since the start of the 21st century. However, since the pandemic was declared by the World Health Organisation in 2020, due to pandemic related regulations, travel restrictions, and grounded airlines, traveling for health reasons has been negatively impacted, resulting in a decline in demand for overseas travel and healthcare services. There is now a pent-up demand by consumers to travel abroad for health tourism to countries such as Thailand, India, and Turkey. At the same time with opening borders and airline-travel resumed, countries cannot be complacent about health-risk involved. Therefore, safety and wellbeing of the health tourists during and post-pandemic under the new-normal paradigm is important.

Chapter 9
Sunita Kumar, CHRIST University (Deemed), India
Nabanita Ghosh, CHRIST University (Deemed), India
Shivi Khanna, CHRIST University (Deemed), India

The chapter focused on the developmental path of medical tourism with effect from ancient days of civilization till the present technological era. The journey of the medical tourists contributed with paramountcy to the social and economic development of the medical tourism industry. Across the globe, different nations emerged as hotspots for treating various diseases due to natural climatic factors, man-made efforts for better serviceability, cost, administration, infrastructure facilities, and many more. The rapidity of the development became prominent with the ignitability of the remarkable influence of branding and invasion of the gigantic

technological waves, which eased out the repeated tasks of medical practitioners; on the one hand, seamless and trustworthy information was available to the medical migrants. The impeccable rendition of the traditional herbal and ayurvedically rich therapies and contemporary automated robotic projection would poise altruism in the medical tourism industry in future.

Chapter 10

The health tourism industry is gaining a growing global attention. Nutrition is one of the external factors that ensure the growth of health tourism. Health tourism includes four main headings. These are: medical tourism, elderly tourism, disabled tourism, and thermal tourism. Tourists who want to be involved in health tourism, unlike other tourists, want to receive services specific to their personal needs, and the most important of these is the nutritional services they receive during their travel. The lack of resources examining nutrition and dietetic practices, including food and beverage services in health tourism, created the need for a detailed compilation of this subject. In this context, in this section, the standards that health tourism should have in terms of food and beverage services, suggestions to meet the individual nutritional habits of tourists benefiting from health tourism, studies on this subject in our country and in the world, and recommendations to provide a good health tourism service will be examined in depth.

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Chapter 6
Next–Generation Technologies in Health Tourism

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ABSTRACT

Essential developments in health tourism indicate that technology is critical to the current health system. The digital age makes life easier by providing fast accessibility, easy usability, and integrating new technological equipment into routine life. Developments in the field of digitalization in health tourism initially focused on e-Health technologies, which use information and communication technologies to improve existing communication processes, such as electronic health records. Managers and employees need to be prepared for the profound transformation brought about by technology. While it is essential for companies to evaluate investments in technologies through cost-benefit analysis, employees need to understand that they should focus on developing their own skills (corporate training, online courses, completing university degrees, etc.) rather than complaining about robots being replaced. For this reason, the study's primary purpose is to reveal the reflections on using new generation technologies in health tourism.

INTRODUCTION

Health services is a dynamic sector closely related to other industries such as travel, tourism, information, communication, and technology. Health tourism, which emerged with the merger of the health and travel sectors, has gained significant force in recent years and created an extraordinary development in human mobility worldwide. The concept of health travel periods back to ancient times when people traveled far in search of the best health services (Wong & Hazley, 2021). Ancient civilizations recognized the therapeutic effects of thermal medicine, spa, and sacred temple baths (Gianfaldoni et al., 2017). The Sumerian Temple (4000 BC) is considered one of the world's first wellness centers where people from different parts of the world travel to get solutions for their medical inconveniences. The ancient Greeks have been arranged the first foundation for a comprehensive health travel system (HMT, 2022).

As part of the wellness journey, patients need time to recover, for these reasons these travels have evolved to include rest and entertainment in the modern age. This evolution has forced destination marketers to reconsider tourists' needs who receive health care when visiting a destination (Yusof et al., 2019). Therefore, a health tourist is defined as a tourist who travels from another place to request and receive improved health, medical, or well-being services for special reasons (Wong & Hazley, 2021). Depending on the technological advancement, real-lifelike experiences are offered and therefore the number of digital users is increasing. Many businesses that get this as an opportunity, are looking for new ways to use digital platforms to maximize their creativity and reach their target spectators in the most effective way possible. Even if they reside in their own country, remote control of health tourists by teleconsultations to evaluate the medicinal process requires digitalization. It is possible for patients to follow local primary health care providers in their own country through health professionals, teleconferencing, or telehealth applications in the health tourism destination. Therefore, technology is a very useful application for health tourism, especially in improving the pre-operative and post-operative care process from both medical and health tourist service perspectives (MTM, 2022). The progress of health technologies has a decisive role in health tourism. Therefore, for example, medical technologies that were previously applied only in sports medicine are now also offered in treatments for common patients, developing health tourism and promoting of healthy life (Glass, 2021).

Health tourism is a special field of tourism that requires the integration of different disciplines and meeting them in a common language. Along with recent technological developments that have occurred in recent years, the elements related to the new generation of treatment and personal care processes that have emerged in health tourism have led to an increase in sectoral responsibilities (Glass, 2021). The term industrial revolution refers to technological advances that introduced

new ways of life that have drastically transformed society. The first revolutionary process started with the industrial revolution (Industry 1.0) and was characterized by steam engines. The first industrial revolution is the basis of the technological revolution (Industry 2.0) that allows for superior products with help of mechanical machinery. The application of IT processes in a production led to the third industrial revolution (Industry 3.0), which enabled the automation of the entire production process and the concept of mass production emerged. Manufacturing systems that already leverage computer technology, Internet of Things (IoT), Blockchain, Big Data (Big Data), Metaverse, Artificial intelligence, Machine Learning, Robotics, Augmented Reality, Virtual Reality, 5G, Beacon, Deep Learning, 3D printing for mass production. A major milestone was the improvement of the networking of production and production systems, which took production automation to another level and ignited the digital evolution of the last decade (Industry 4.0) by bringing together new technologies. This digital evolution of the last decade has laid the foundation for the human-machine co-working era (Industry 5.0) of increased collaboration between humans and smart systems to address mass customization while increasing business efficiency (Taj & Noor, 2022). These developments have greatly impacted health tourism as well as all sectors, not only benefiting many patients but also enabling healthcare providers to streamline processes, synthesize information, and provide real-time updates in technology. The latest innovations in health technologies provide a much more competitive advantage, especially in developing faster and more effective treatment (Bernasconi, 2016).

Health tourism innovation is generally a response to the increasing demands of tourists for maintaining wellness and fitness for a quality long life. Technological developments in the age of Industry 5.0 contribute to the progress of the health sector, including the phenomenon of health tourism. Integration of technologies Industry 5.0 into the general health sector benefits the development of health tourism as it will revolutionize travel options and models of patients, especially for the initial control and subsequent follow-up phases (Frost & Sullivan, 2017). It is possible to establish real-time and instant communication between individuals and tourism businesses that provide health services, regardless of the concept of distance with the advancement of technology-based product/service offerings such as mobile health and digital health technology in health services. This situation is evaluated within the scope of new-generation technologies. It is thought that the adoption of Industry 5.0 products such as artificial intelligence, wearable digital technologies, reality technologies, and Metaverse will support health tourism in terms of creating real-time records.

The primary goal of this study is to examine the use of new-generation technology systems in the healthcare tourism industry from a theoretical perspective. Previous research on the topic has not adequately classified or analyzed the technological

innovations in healthcare tourism, and this study aims to fill this gap by providing a comprehensive overview of current and future trends in the use of new-generation technologies in this industry. In addition to exploring the potential commercialization opportunities and challenges presented by these technologies, this study also aims to consider the ethical implications and potential impact on patient care and satisfaction. By examining these various aspects, this study hopes to contribute to a futuristic debate on the role of technology in shaping the future of healthcare tourism and the considerations that must be taken into account when adopting and implementing these technologies in practice.

BACKGROUND

Technological developments have made great progress in the tourism industry (Sapiltra et al., 2021). The emergence of new generation technologies has been expressed by many researchers since the end of the 20th century (Ivanov, 2016). In particular, it is believed that robotic developments will replace human roles in the service sector (Lu et al., 2020). It is stated that the development of technology will evolve from "human-human" interaction to "human-machine," then to "human-computer," and finally to "human-robot" (Ivanov et al., 2017). In the late 20th and early 21st centuries, there have been various advanced technology developments such as the internet, websites, social media, mobile applications, RFID, NFC, virtual/augmented/mixed reality, chatbots, robots, and self-service kiosks (Gretzel et al.,2015).

Today, it is mentioned that people can live an average of 150 years in good health (García, 2017). With the possibility of living longer, investments in health industries are increasing day by day (Dominguez, 2017). This situation requires turning to technological investments such as robotics and artificial intelligence, which tend to replace personnel in health tourism due to cost, efficiency, and effectiveness reasons. The establishment of a system by Johnson & Johnson company to automate surgical anesthesia and allow a single anesthesiologist to participate in ten surgeries at the same time, instead of an anesthesiologist for each operating room, is an important step for the health sector (Paradinas, 2016). It should not be forgotten that robotic applications in the field of medical interventions should be evaluated in terms of treatments, not social relations. In today's century, the importance of personal relationships is becoming more and more important. Therefore, it is not yet known whether robotization will come to a more humane mode and become truly personalized through people who develop social bonds such as personalized attention and the doctor-patient relationship (Cooley, 1979). However, the usual trend and routine of all economic cycles in the world are undergoing a drastic transformation, and this reveals a new scenario in the tourism industry (Rubio, 2020). According to Forbes

magazine, health tourism tends to be a strong trend. This situation will take shape into a different concept through the development of mobile applications in health tourism and the integration of new-generation technologies into routine life in the coming years (Calderón-Fajardo, 2022).

MAIN FOCUS OF THE CHAPTER

Next-Generation Technologies

Next-generation reality technologies are known as Virtual Reality (VR), Augmented Reality (AR), Mixed Reality (MR), and Cross Reality (XR) technologies. These technologies allow daily life, art, design, communication, and tourism to be experienced in a different dimension with the perception they create. Real environments allow the sound and images produced by computer technologies to be further enriched with new data and experienced in reality through the new generation of reality technologies (Baran & Baran, 2021). The increasing power and prevalence of mobile devices have opened up new potential application areas of mobile health (mHealth) aimed at providing new services, such as remote monitoring of individuals' health status and well-being. Recently, with big data-driven tools in healthcare, there have been significant increases in the volume, speed, and diversity of health data available for analysis including machine learning. Digital health technologies have the potential to provide big improvements in both care and management of the system as a whole in the efficiency of the health system. Technological innovations created a unified body of tools by which data is constantly processed and have revolutionized analyzed healthcare from 3D printer automation to robotics. These aggregated data have the potential to be used for preventive medicine, real-time diagnostics, disease monitoring, and therapeutic application. The future of health services will facilitate more timely and accurate interventions, improving outcomes for patients and the entire healthcare ecosystem (Fahy & Williams, 2021).

Telemedicine

Telemedicine is one of the first stages of information and communication technology-supported cooperation in the health sector (Hassan & Bellos, 2022). Information and communication technologies within the scope of health tourism; It has an important power to popularize education and counselling methods in the fields of stress management, nutrition, and sports. In this case, many services can be provided within the scope of health tourism aimed at protecting health by integrating the health industry, medical technology, and ICT technologies (Glass, 2021). Telemedicine

application; virtually increases the mobility of patients, making geographic location less of a factor in obtaining health services. This allows patients in remote areas to access the best health services with a tap of their smart devices. A study conducted at the Mayo Clinic in the USA that more than 80% of patients are interested in using mHealth applications (Nehra et al., 2017).

Internet of Things (IoT)

Over the past years, the term internet of things (IoT) has provided the communication of networked physical objects at any time or any place and has led to the emergence of elements that make life easier (Kosmatos et al., 2011). IoT technologies can be thought of as a global network system that provides communication from person to person, from person to object, and from object to object by providing each object with a unique identity (Aggarwal & Das, 2012). IoT technology is an integrated part of the future internet development, defined as a dynamic global network infrastructure with self-configuring capabilities based on standard and interoperable communication protocols, where virtual and physical elements are seamlessly integrated into the information network. IoT technology use identities, physical feature, virtual personalities, and smart interfaces (Sundmaeker et al., 2010). IoT technology infrastructure has a lot to do with geolocation, weather conditions, availability and capabilities of various surrounding objects, risk factors, usage history, feedback from other users, etc., and also can more efficiently use information about the users compared to previous generation services. This situation allows the creation of a personalized user service space that can act on behalf of users by configuring ecosystems and launching services to minimize personal risks and maximize comfort for all users, anywhere and at any time (Balandina et al., 2015). IoT technology is specially built on health services, smart and autonomous tools, or devices working with artificial intelligence (AI), so it is developing in many different areas such as personal connected devices, portable health monitors, and smart home systems (Pérez & Guerra, 2017).

Blockchain

Blockchain is a special system designed for users that ensures reliable protection of all information. Blockchain's most important feature is that ensures all transactions are under the control of users without the need for central control. The self-sustainability of the blockchain process is that a transaction performed on each data block in a blockchain validates the next block of transactions. Therefore, the term "blockchain" refers to a system based on solving. Thus, the user keeps their system up-to-date and, at the same time, protects it (Gaggioli, 2018). The use of blockchain technology to

increase the security and effective use of health data in the health tourism industry has attracted attention in recent years (Wong & Hazlay, 2022). Technology is used, for health tourists, without the need for face-to-face appointments for follow-up sessions, especially after returning to home their country, thus providing a more convenient and cost-effective experience. The freer mobility of health tourists all over the world has relatively changed the requirements of supply and demand for health products and services. The commercial benefits of growth in health tourism can no longer be seen by developed countries but also by developing countries. Although health tourism remains a niche contributor to the total tourism revenues of many destinations, its direct and indirect effects on the overall tourism industry are appreciated (NaRanong & NaRanong, 2011). For example, the multiplier effects of health tourism on other tourism sectors (e.g., hotels, airlines, food and beverage). It has been reported that it is between three and four times more (Yusof, 2017). Innovative technologies such as blockchain can enable the continued growth of health tourism. Blockchain technology could allow the introduction of decentralized travel solutions and better management of electronic health record systems, help create smart medical devices, and assist medical certificates in the issuance of tamper-proof (Pilkington, 2017).

Big Data

Big data refers to data that contains unique information that helps to recognize behaviour patterns of individuals or systems and also helps to discover facts about objects. Features that make up big data; It is expressed as 3V "volume, variety, velocity" (Maslova et al., 2017). With increasing technological advances and breakthroughs, large amounts of data are being provided and produced rapidly under multiple data types and formats (Becha et al., 2020). Big data typically refers to large amounts of electronic health registries, administrative claims, clinical essay data, and collected data from smart device apps, wearables, social media, and personal genomics services in the health industry. Predictive analytics refers to innovative analysis methods developed to overcome big data challenges, including various statistical techniques from predictive modeling to machine learning and data mining (Garapati & Garapati, 2018). Information can be obtained with patient-generated health data to better understand vast amounts of information on patient progression from X-rays to blood test results easily. The amount of information will increase significantly due to genomics and personalized medicine as more patient data is collected; more insights will become available in times to come. Suppose computers collect data about a patient's disease, treatments, and outcomes. In that case, valuable information is automatically obtained about the effectiveness of these treatments or the relationships between side effects and patient characteristics across

the entire population. It is referred to as big data because a large amount of data is collected. Once the infrastructures are in place, the increased cost of adding a new patient will be essentially nothing, and this economy of scale will lead to further technical improvements. Epidemiologists will benefit enormously, but the benefits to individuals are less obvious, apart from the long-term contribution of big data to the advancement of medical science more generally (Thimbleby, 2013).

Metaverse

Metaverse is a virtual space created by combining physical and digital reality. The functionality of the metaverse domain represents a holistic innovation that requires technology and trends. Technologies contributing to the metaverse field include; AR, VR, head-mounted displays (HMD), IoT, AI, and space technologies. Soon, all actions taking place in the real world may occur in Metaverse areas (Baran & Baran, 2022b). For example, within the scope of health tourism, it is thought that medical procedures can be made visible through next-generation areas that host social networks such as Metaverse, and promotion beyond borders can be achieved (Montes & Hernandez, 2022). The most incredible convenience in this area is the creation of big data storage systems. Big data pioneer Alan Turing II. During World War II, he established the Enigma system, which deciphered encrypted codes containing millions of data, allowing the war to end. Today, how to manipulate, manage, collect, store, search and analyze large volumes of data is analyzed by big data ecosystems that can process and analyze databases as well as data mining. Big data technology consists of some essential components: content management systems, segmenting information, allowing new information to be included, and allowing all information to be processed in parallel. In short, big data is not an isolated technology from the metaverse base but a set of systems that can gather the correct information on time (Hurwitz et al., 2013).

Artificial intelligence (AI)

AI is an application with an inclusive future; voice translations, recognition-classification-tagging of static images, automatic detection of previously introduced features, and like this. This situation has emerged in mobile devices with machine learning, such as face unlock, voice command search, and unmanned transactions with virtual assistants (chatbots) (Boden, 2017). The use of AI techniques in solutions for the health and tourism sector continues to strengthen with each passing day, "the acceleration of the development of algorithms, the cheaper access to new technologies, the increase in ultra-specialized enterprises, and the participation of large technology companies" in this field. Therefore, it is necessary to use

advanced related technologies to realize the relevant functions of smart tourism. AI technology, with its superior technical advantages, smart tourism is increasingly becoming an essential tool in the innovation of products and services. For example, AI can offer tourists personalized route planning suggestions; using the big data of tourism; tourists can choose travel routes according to their preferences. It can also automatically transmit audio, video, and video information, providing real-time interactive translation services between guides and tourists. Furthermore, AI can generate visit routes, restaurants, and accommodation recommendations. Based on the real-time statistics of the landscape data shared by tourists, tourists can provide accurate advisory services such as (Wang et al., 2020). AI takes control of people's health and well-being while also increasing the ability of medical professionals to understand better the daily patterns and needs of those they care for, and with this understanding, they provide better feedback, guidance, and support to stay healthy (Ghassemi et al., 2020; Horne et al., 2020).

Machine Learning

It involves collecting and analyzing large volumes of customer data to improve business performance. Machine learning technique has come to the fore in developing digital and predictive solution methods activities with a better understanding of how data can be collected and analyzed. For example, AI technology based on machine learning systems can contribute to implementing strategies in promotion processes and decision-making (Rogers, 2016). Machine learning adapts promotional advertising strategies by focusing on the unique characteristics and preferences of each individual user (Katsov, 2019). This allows for a more personalized and effective advertising experience for the user, as the ads they see are tailored specifically to their interests and needs. By using machine learning, companies can better understand their target audience and create more targeted and relevant promotional campaigns, resulting in higher conversion rates and customer satisfaction (Baran, 2019a). Thus, companies can achieve higher conversion rates and customer satisfaction by creating targeted and relevant promotional campaigns that focus on the unique characteristics and preferences of each user (Starostin, 2018). Learning algorithms is a software system designed to plan advertisements that can attract users' attention by considering hundreds of parameters for suitable promotion targets (Butkovskaya et al., 2017). These algorithm systems consider the conditional metrics of a particular user and match them with data collected from thousands of other users to identify similar behavioral patterns, allowing companies to create more targeted and relevant promotional campaigns for each user. Advancements in machine learning have led to the emergence of next-generation personal digital assistant technology, such as Microsoft's Cortana, Apple's Siri, Amazon's Alexa, or Yandex's Alice, which

provide business planning and management solutions that communicate with users (Gutnik, 2021). These next-generation technologies are considered elements that can facilitate customer analysis (Baran, 2021) in Metaverse.

Robotics

In general, the term robot refers to autonomous machines that perform a specific task independently (Decker, 2008). Similarly, robotic virtual agents are software agents that "do not exist physically and are only digitally embodied by the graphics" (Tung & Law, 2017). On the other hand, AI consists of algorithms that are embedded in computer programs and designed to perform tasks that require human-like intelligence, such as learning, perception, problem-solving, understanding language, and logical reasoning (Frank et al., 2017). Robotic virtual agents can perform customer service and data management systems with scientific breakthroughs in AI technology (Ukpabi et al., 2018).

Augmented Reality (AR)

Augmented reality (AR) is a technology product that combines images with text, video, sound, and animation in two or three dimensions and reflects them with smart devices such as smartphones, tablets, glasses, and the real world with virtual images through software programs. Its most essential feature is the integration of reality and reality within the perspective of real life (Baran, 2020). AR is a modern technology that performs through critical heuristics and identification, providing competitive services, and is recognized as one of the world's leading advanced technologies (Ara et al., 2021). Today, AR applications in tourism are primarily used as systems that allow instantaneous information about the locations in tourist destinations with virtual attachments and make travel an exciting experience (Baran & Baran, 2022a). Mobile applications have become more functional in areas such as health, tourism, education, and e-commerce with the motion-tracking features of AR technology. In addition, the future of AR will be realized in virtual environments, including virtual training simulators and live experiences with the visual experience offered by Oculus reality glasses and other virtual reality accessories (Huerta et al., 2019). Currently, AR-based health solutions have made significant advancements by providing quality diagnosis and treatment with more secure connectivity, privacy, and remarkable speed and reliability among individual patients (Ara et al., 2021).

Virtual Reality (VR)

The concept of virtual reality (VR), which has developed and reached today, is a technology that requires participation in the virtual environment produced by the computer. In the VR medium, external stimuli are processed by the senses and become a mental activity with the illusion of focusing on a different space. Users can interact with personalized avatars in the Metaverse, a simulation space created with internet-connected computers or VR glasses, in real time (Baran, 2019b). Virtual reality (VR) technologies use multimedia devices and computer simulations to allow users to interact with a simulated environment and create a real-lifelike experience (Cao, 2016). This technology has an HMD component and displays a room-sized screen. It creates an artificial environment that software will accept as the real environment. The main application of this technology is to create an imaginary environment for gaming/interactive stories and education in a simulated environment (Gold & Mahrer, 2018). One of the most useful applications of VR is in the rehabilitation field. After brain injuries or illnesses, many patients suffer from physical or cognitive abilities such as difficulties moving arms or remembering names. VR has been used to help patients recover and rehabilitate both physically and cognitively in the last two decades (Cao, 2016).

5G

5G is the fifth-generation mobile communication technology. It has ultra-high band utilization and energy efficiency, much higher than 4G in terms of transmission speed and resource usage. The wireless coverage performance, transmission delay, and system security of 5G have also been significantly improved (Shafi et al., 2017). 5G has a high transmission rate, which can meet the needs of tourist applications such as AR, VR, and ultra-high-definition video live streaming during travel from the perspective of the tourist experience. 5G is a fast technology application that can solve access problems in densely populated environments with comprehensive signal, high bandwidth, and low latency network access services. Moreover, the collection of big data based on 5G technology and the smart processing of data by AI technology play a crucial role in unlocking tourism technologies (Wang et al., 2020).

Beacon

This technology uses Bluetooth Low Energy (BLE) signals; when the smart devices (telephones and pads) enter a beacon area, the application directs the signals it receives to the users and provides notifications and suggestions. These directions will provide the future trend for individuals' demands in travel, tourism, and

health (Micolta, 2018). Through special sensors, it is possible to integrate medical professionals for particular purposes to meet the patient's needs by using iBeacon and BLE technology. Thus, through this technology model, health tourism information management systems for tourist guidance can be significantly improved, kept up to date, and a detailed database can be created (Mesbah & Ebadati, 2021).

Wearable Technologies

Wearable technologies, also known as wearable devices, can be expressed as electronic that can be used as accessories, embedded in clothing, attached to the user's body, and even tattooed on the skin (Karaca, 2022). Additionally, remote telemonitoring and similar technologies enable the use and integration of wearable technology in the healthcare field, especially when home and mobile diagnostics are enabled (Collier & Randolp, 2015). The world is becoming more digitally informed, recognizing that wearable technology will be a vital component in the future of health. This means that technology users are more involved than ever before, whether through services, products, or combination initiatives with advances in technology and acceptance. This integration is driving the growing population with connected devices managed by developed countries. Wearable technologies are becoming more personalized and disease-specific, thanks to advances in AI and machine learning (Baran, 2021).

The use of fitness tracking bands, smartwatches, and smart textiles can easily collect data on patients' health status and connect with medical professionals in other parts all of the world. While these technological devices can be valid for any individual, for health tourists who may prefer to follow their medical professional in another country remotely, the user comes to the fore as the data can be transmitted to them on time (Psiha & Vlamos, 2017). One example of such technology in healthcare is a cloud-based wearable IoT sensor system that measures asthma patients' exposure to aldehydes in real-life settings (Li et al., 2019). Recent development in 5G medical technology and smart wearable technology has also contributed to this field (e.g., measuring heart rate, blood pressure, body temperature, and skin moisture, etc.). This further develops the production and consumption models of health tourism services (Psiha & Vlamos, 2017). Such development would be a valuable application for health tourism, as it enables continuous communication and data updates between health tourists (in the country) and medical professionals (in the health tourism destination) through cloud computing.

Deep Learning

Deep learning; is an AI method that uses multi-layered artificial neural networks in areas (e.g. object recognition, speech recognition, and natural language processing)

and is one of the varieties of machine learning (Kaya et al., 2019). Deep learning technologies are helping researchers and medical professionals analyze users' data to treat diseases. It also improves medical professionals' ability to analyze medical images, diagnose diseases correctly, and offer personalized medicines (Keleş, 2018). Machine learning techniques use the increasing amount of health data provided by IoT technology to improve patient outcomes. Medical imaging, natural language processing of medical documents, and machine learning, including genetic information, are the three main areas where machine learning is applied. Most of these areas focus on diagnosis, detection, and prediction (Toh & Brody, 2019). It is thought that the use of these methods in the field of health will help predict the processes that lead to fatal consequences and determine the stage of the disease (Kaya et al., 2019).

3D

3D printing technology has developed rapidly and has become popular in healthcare through its digital model, making it easy to digitize and automate the entire manufacturing process. It is one of the most popular uses of 3D printing in dentistry. The 3D printed medical model is used for pre-operative planning, medical education, and doctor-patient communication based on image data collected by CT, MRI, and other scanning equipment. With the emergence of new medical printing materials and new printing processes, 3D printing technology can be used not only for repairing and regenerating damaged tissues of physiological organs and tissues but also for producing protein carriers at the micro level. Through its protein carriers, it provides a new idea for solving problems such as metabolic disorders of human biochemical substances (Chunhua & Guangqing, 2020).

Technology on Health Tourism: Pros and Cons

Each generation has witnessed revolutionary technological breakthroughs occurring in the tourism industry. Organized group travel emerged with the invention of the train in the middle of the 19th century, the design of the automobile added flexibility to tourist route preferences in the first half of the 20th century, and long-distance destinations became accessible with the invention of jet planes in the second half of the 20th century, the internet, social media, and the web at the end of the 20th century. Websites and mobile applications facilitate communication (Benckendorff et al., 2014), have made the world smaller, and changed tourism rules.

Today, the tourism industry is entering the era of robotics, characterized as a new revolution that is more powerful, transformative, and with longer-term consequences than previous changes. This technology, which will become much more capable of

serving guests and performing various tasks with the advancements, will be easy to adopt, especially for the health tourism industry. As with every new generation of technology, the pros and cons of robots with AI and new technological equipment make it somewhat attractive for companies providing health tourism services (Ivanov, 2019).

There are some positive and negative aspects of digitalization in health tourism. These aspects can be listed as follows:

Pros

- A robotic application can serve 24/7; Depending on the job positions, legal regulations, health and mood, and the urgency of the job, it can serve 168 hours 24/7, unlike human employees 40-60 hours a week. While a hotel needs at least five receptionists to have an uninterrupted reception, all staff can be fulfilled with only one kiosk.
- Capabilities can be continuously expanded with software and hardware updates; a kiosk only needs a new software package to be used for another purpose. A new set of block answers and rules allows a chatbot to answer customer questions accurately.
- Can do their work accurately and on time by following service procedures scenarios.
- The quality of studies can be continuously improved; Updating the software and hardware of the services offered means the continuity of quality.
- Routine tasks can be repeated an infinite number of times; Unlike human workers, robots can do the same task repeatedly without complaint and do not need to be motivated to do it.
- Robots do not contain many human emotions such as strikes, gossip, separation of customers and employees, leaving work without permission, showing negative emotions, running away from work, demanding a salary increase, and getting sick (Paterson & Maker, 2018).

Cons

- Lacks innovation; They cannot invent new ways of serving customers, whether in the form of a new service or a new way of delivering an existing service unless their program is updated.
- Soon, they will not be completely independent of human control; Human intervention is required in cases such as monitoring the service delivery process and service failure.
- They lack a personal approach; The service process follows the scripts in the loaded program without any deviation. Therefore, robots can

only tailor their responses to specific interactions with customers or employees.

- ◦ They can only work for which they are configured; Robots can respond to questions containing certain keywords they know to activate a certain predetermined set of answers. The robot navigating the premises of a hotel also requires some navigation markers (Ivanov & Webster, 2017).
- ◦ They may be perceived as a threat by human workers (the Neo-Luddism movement, etc.); According to a study conducted in the USA, people see robots as a threat to their jobs and fear job loss (Frey & Osborne, 2017).

Worrying about losing their jobs and income causes people to perceive new technologies as threatening their survival. Tourism companies adopting next-generation technologies must consider these fears and handle them meticulously. In the future, developments in robotics, artificial intelligence, and new generation technology will be able to eliminate some disadvantages compared to human workers. Key concerns include a lack of empathy and confidence in a robot's decision-making process (Lobo, 2020; Tim, 2018). Among the other concerns regarding the inclusion of new generation technologies in health tourism, data leaks, privacy, cyber security, and unfair competition concerns are included. While the growth of health tourism in the company of new generation technologies comes to the fore, it is essential to consider the impact on issues such as the local health system, health resource management, cost containment strategies, and humanism (Hassan & Bellos, 2022).

CONCLUSION

In health tourism, people living in one place travel to another destination to receive medical services and treatment. For this reason, many medical and surgical procedures are covered by health tourism. Health tourism combines two opposite terms, such as tourism and health, with a paradoxical effect. Tourism refers to leisure, entertainment, and vacation activities, while health interventions refer to risk and pain. Health and tourism are among the world's fastest-growing businesses and the most prominent service industries, providing jobs to millions of people. The next generation of technology services that are shaping the era today is reshaping the landscape of both sectors.

Since health tourism is an organic system, it depends on its parts and is quite open to social effects. When health tourism is evaluated in a wide range, it offers highly detailed and personalized services. For this reason, it would be a suitable method to adopt a multidisciplinary perspective while analyzing health tourism development.

The evaluation of health tourism concepts, especially "healing facilities", offers a broader perspective on health tourism. The continuity of this situation is directly proportional to the increase in life expectancy of individuals and the high awareness of the protection of their health.

Health tourism, as a globalized medical tourism concept, is based on the intertwining of institutions and, in principle, includes services from non-common areas. Individuals can meet their health needs as comfortably as possible within the framework of the tourism theme with the effective use of technology. Especially with the widespread use of big data, it can significantly reduce the data cost for tourism research and effectively solve the problems in the tourism industry while ensuring the safe availability of healthy tourist data (Gao, 2021).

The most significant journey of change passes through technology. The transformation of a particular sector requires using technology as a catalyst. The increase in individuals using technology in recent years has provided a sufficient basis for using new ideas from next-generation technology developments. New generation technological equipment is also considered an essential auxiliary element in health protection. Concepts such as "better aging", "self-responsibility", "alternative treatments", "healthy nutrition", and increasing economic opportunities as a result of the new age also raise the expectations of individuals from health tourism.

In the future, new generation technologies have the potential to revolutionize the health tourism industry in a number of ways. Some potential applications include:

- Virtual consultations: Patients can consult with health professionals remotely through video conferencing, potentially reducing the need for physical travel to receive treatment.
- Wearable devices: Wearable devices, such as smartwatches and fitness trackers, can help monitor and track patient health data, allowing for more personalized and proactive care.
- Telemedicine: Telemedicine technologies, such as remote monitoring systems, can allow health professionals to remotely monitor and treat patients, potentially reducing the need for hospital visits.
- Robotics: Robotics technologies, such as teleoperated surgical robots, can allow for remote surgeries to be performed by surgeons located in different locations, potentially increasing access to specialized medical procedures.

Overall, the use of new-generation technologies in the health tourism industry has the potential to improve access and convenience for patients, as well as increase the efficiency and effectiveness of the healthcare system. It is important to carefully consider the ethical implications of these technologies and ensure that they are used responsibly and in a way, that benefits patients and healthcare professionals alike.

For this reason, the tourism sector must adapt quickly to new technologies to meet effective and personalized needs. Processes that value natural and sustainable areas and integrate "technology" into "ecology" are essential elements to be considered while adapting health tourism to technology. In this case, it is expected that the new generation of artificial smart-equipped innovative technologies will direct the individual to the most appropriate health tourism field. Such an orientation seems possible only if health tourism is fully integrated into technology. Personal decisions such as research centers and universities, health institutions, natural areas, and geographical conditions have particular importance in individuals' health tourism motivation. In this case, it is expected that the new generation of AI equipped with smart technologies will direct the individual to the most appropriate health tourism field. Such an orientation seems possible only if health tourism is fully integrated into technology.

SUGGESTIONS

The effects of new-generation technologies in tourism will significantly contribute to the tourism industry's development. Educational institutions providing tourism education should update their curricula and add robotics course modules that will provide students with the knowledge and skills to work in the high-tech tourism industry of the future. Since robots will perform many of the tasks that human workers currently do through next-generation technologies such as digital voice assistance, unions must accept that their members cannot have guaranteed jobs and act accordingly. On the other hand, agriculture, manufacturing, wholesale and retail companies, which are the suppliers of the tourism industry, should adopt new-generation technologies and integrate technological systems such as beacons into tourism companies. Therefore, the transformation in the tourism industry will have repercussions on many other sectors of the economy and society. Making new-generation technologies more affordable, accessible, and ready and secure health records can ensure widespread use. Diagnostic procedures to be performed digitally through wearable devices and sensors include blood glucose levels, electrocardiograms, pulse and blood pressure checks, and oxygen saturation levels. Collected data as digitally will then be linked to the mobile application installed on the user's (health tourist) smartphone. Regular health progress can be communicated to health professionals, and in turn, proactive measures for better health control can be recommended to users digitally and remotely.

Blockchain technology is continually evolving and rapidly transforming many industries, particularly the health sector. It is clear that health will become more streamlined, secure, and patient-centric in the future as more research is conducted

to establish a sustainable framework for the wider use of this technology in health tourism. Incorporating Industry 5.0 technologies into the general health sector will benefit the growth of health tourism as it will transform the travel options and models of patients, particularly during the initial assessment and subsequent follow-up phases. This benefit is becoming increasingly important for the elderly and those with mobility issues. Digitized and connected health has seen a surge in investment over the past few years for the widespread use of technology-enabled health, making the concept of the "Smart Hospital" a reality. Additional economic benefits can be gained by improving the electronic registration system and creating a person's health profile. The defined IoT infrastructure will help collect data 24/7 (when a person is healthy and when issues arise). These data include personal norms for critical life parameters and the body's response to various environmental changes, such as temperature changes, solar activity, atmospheric pressure, pollen, or other allergens in the air, etc. It provides valuable information that can significantly contribute to the growth of health tourism in countries with strong and competitive technologies.

While there are numerous possibilities for new generation technologies, as they are still in their infancy, it is expected that advancements in this field will accelerate significantly in the coming years. Many social and psychological factors are involved in driving widespread acceptance. In particular, the restrictions imposed by the ongoing pandemic continue to drive interest in the use of technologies that can reduce physical distance as much as possible without leaving home. It can be said that while the ability to access health services in the virtual world is currently limited, this perspective is likely to change with the advancement of technology. As technology continues to improve, it is likely that virtual health will become more prevalent and widely accepted as a viable alternative to in-person visits. Additionally, the incorporation of artificial intelligence and machine learning into these technologies will likely lead to more personalized and efficient health experiences for patients.

As new-generation technologies continue to advance and become more widespread, there will likely be a greater focus on integrating these technologies into various industries, such as healthcare, education, and transportation. This integration is expected to bring significant changes to the way these industries operate, potentially improving efficiency and accessibility for users. However, the ethical considerations surrounding the use of new-generation technologies will also likely become more prominent as these technologies become more prevalent. For example, there may be debates about the use of artificial intelligence in decision-making processes and the potential impact on employment and job security. Additionally, the potential for these technologies to have a positive impact on the environment should also be considered. For instance, the use of renewable energy sources in the production and operation of these technologies can help reduce carbon emissions and combat climate change. While the adoption and integration of new-generation technologies

are likely to bring numerous benefits, it is important to also acknowledge and address any challenges or setbacks that may arise as society navigates the use of these technologies. It will be crucial to work towards responsible and ethical use of these technologies in the future.

For those interested in conducting academic research on the use of new-generation technologies in health tourism in the future, some potential areas of focus could include:

- Examining the effectiveness and efficiency of virtual consultations and telemedicine in comparison to in-person visits,
- Investigating the potential benefits and drawbacks of using wearable devices to monitor and track patient health data,
- Analysing the ethical considerations surrounding the use of robotics in medical procedures, including issues related to privacy and accountability,
- Assessing the impact of new-generation technologies on the health tourism industry as a whole, including the potential economic, social, and environmental impacts.

It is important to stay up to date on the latest developments in the field and to carefully consider the potential implications of your research. It is also crucial to approach the topic with an open mind and to consider multiple perspectives in order to gain a well-rounded understanding of the issues at hand.

One potential addition to the ideas discussed could be the potential for new generation technologies to improve healthcare accessibility and affordability for underserved or marginalized communities. For example, the use of telemedicine and virtual consultations can allow individuals in rural or remote areas to access healthcare services that may not be available to them otherwise. Additionally, the use of robotics and automation in certain medical procedures can potentially reduce the cost of these procedures, making them more affordable for patients. However, it is important to also consider the potential drawbacks and unintended consequences of these technologies, such as the potential loss of jobs or the risk of exacerbating existing inequalities if access to these technologies is not equitable.

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KEY TERMS AND DEFINITIONS

Health tourism: Health tourism refers to the travels of people to different countries for treatment purposes in order to receive health services.

Next Generation Technologies (NGT): Next Generation Technologies is a full-service technology company with products and services ranging from personal computing sales/service to multi-site WAN/LAN engineering, project management, IT strategic planning, IT committee, security, and system integration.

Metaverse: The metaverse refers to both current and future integrated digital platforms focused on virtual and augmented reality.

Industry 5.0: Industry 5.0 is the revolution in which man and machine reconcile and find ways to work together to improve the means and efficiency of production.

IoT: Internet of Things, which we know by the abbreviation IoT, refers to the entire network of connected devices and technologies that enable communication both between devices and the cloud and between devices themselves.