KÜLLİYE
ULUSLARARASI SOSYAL BİLİMLER DERGİSİ
INTERNATIONAL JOURNAL OF SOCIAL SCIENCES

# The Blockchain Usage and Current Trends in the Tourism Sector: A Conceptual Research

**Tunç Durmuş MEDENİ♦, Yusuf ESMER♦, İhsan Tolga MEDENİ•, İsmail EROL***

## Abstract

Today, with changes and developments in technology, there are changes in concepts, uses, and even in daily life, and it is seen that this situation permeates all areas of life. In this context, many new types of technology have emerged. Blockchain is one of these technologies and is one of the applications in the tourism sector in human life. Therefore, it is necessary to examine this phenomenon by focusing on the studies carried out to perceive the possible results of both software and hardware applications realized with technologies developed on blockchain, and to understand the opportunities that may arise in the tourism sector. Accordingly, in this study, particularly studies on the areas where tourism and blockchain intersect are examined and a conceptual analysis is conducted on these topics by determining the topics of blockchain use in Europe and the USA from the perspective of basic accommodation services, tourist data, medical tourism, and global application areas. Based on this academic framework, an application suggestion for Türkiye is also provided.

**Keywords:** Tourism Sector, Blockchain Technology, Current Trends

# Turizm Sektöründe Blockchain Kullanımı ve Güncel Eğilimler: Kavramsal Bir Araştırma

## Özet

Günümüzde teknolojide meydana gelen değişme ve gelişmeler ile birlikte kavramlarda, kullanımlarda ve hatta günlük hayatta değişimler olmakta ve bu durumun hayatın her alanına nüfuz ettiği görülmektedir. Bu bağlamda birçok yeni teknoloji türleri ortaya çıkmaktadır. Blockzincir bu teknolojilerden biri olup, turizm sektöründe insanların hayatında yer alan uygulamalardan biridir. Dolayısıyla blokzincir üzerine geliştirilen teknolojiler ile gerçekleştirilen gerek yazılım gerekse donanımsal uygulamaların olası sonuçlarını algılamak ve turizm sektörü ile doğabilecek fırsatları anlamak için yapılan çalışmalara odaklanarak bu olguyu incelemek gerekmektedir. Bu araştırmada öncelikle turizm ve blokzincirin kesiştiği alanlara yönelik çalışmalar incelenmekte ve temel konaklama hizmetleri, turistik veriler, sağlık turizmi ve küresel uygulama alanları perspektifinden Avrupa ve ABD'de blokzincir kullanımının konu başlıkları belirlenerek bu başlıklar üzerinde kavramsal bir inceleme yapılmaktadır. Bu akademik çerçeve üzerine, Türkiye için bir uygulama önerisi de sunulmaktadır.

**Anahtar Kelimeler:** Turizm Sektörü, Blokzincir (Öbekzincir) Teknolojisi, Güncel Eğilimler

♦ Prof. Dr., Ankara Yıldırım Beyazıt Üniversitesi, Yönetim Bilişim Sistemleri Bölümü, Ankara/ Türkiye, e-mail: tuncmedeni@gmail.com
ORCID: https://orcid.org/0000-0002-2964-3320.
♦ Doç. Dr., Bayburt Üniversitesi, Uygulamalı Bilimler Fakültesi Yönetim Bilişim Sistemleri Bölümü Bayburt / Türkiye, e-mail: yesmer@bayburt.edu.tr
ORCID: https://orcid.org/0000-0003-3691-1730.
• Prof. Dr., Ankara Yıldırım Beyazıt Üniversitesi, Yönetim Bilişim Sistemleri Bölümü, Ankara/ Türkiye, e-mail: tolgamedeni@gmail.com
ORCID: https://orcid.org/0000-0002-0642-7908.
* Prof. Dr. Başkent Üniversitesi, İktisadi ve İdari Bilimler Fakültesi, İşletme Bölümü, Ankara / Türkiye, e-mail: ierol@başkent.edu.tr
ORCID: https://orcid.org/0000-0003-3327-7608.

Bu makaleyi şu şekilde kaynak gösterebilirsiniz / To cite this article (APA):
Medeni, D. T. & Esmer, Y. & Medeni, T. İ. & Erol, İ. (2023). The Blockchain Usage and Current Trends in the Tourism Sector: A Conceptual Research. *Külliye*, 4(2), 112-124. DOI: 10.48139/aybukulliye.1262305.

**Makale Bilgisi** / Article Information

| **Geliş** / *Received* | **Kabul** / *Accepted* | **Türü** / *Type* | **Sayfa** / *Page* |
|---|---|---|---|
| **8 Mart 2023** | **4 Eylül 2023** | **Araştırma Makalesi** | **112-124** |
| *8 March 2023* | *4 September 2023* | *Research Article* | |

## Introduction

Blockchain is a distributed database shared among the nodes of a computer network that electronically stores information in a digital form (Hayes et al., 2022). A blockchain is then basically and literally a chain of blocks in which each block contains transaction records (Esmer and Şaylan, 2021). Blockchain systems have been developed with the progress of computer and Internet technology (Dayi, 2019) with different possible application areas.

As a more recent and popular technological and practical theme, blockchain technologies are not only financial instruments that use Bitcoin, Ethereum, and similar altcoins, but can also be used by many sectors with the scattered data storage and sharing mechanism they contain. As a new digital technology, blockchain, in other words, is a technologically superior structural tool that can be used to integrate and secure customer relationship databases.

In a similar fashion, blockchain technology has the potential to revolutionize the tourism and hospitality industry by providing secure and transparent record-keeping for various aspects of the industry including travel itineraries and financial transactions, among others. Accordingly, this study examines tourism industry-oriented literature written to include industry-specific perspectives, benefiting from recent academic and practical works. As shown in Figure 1, blockchain can help industry players correlate all the content produced by tourist activities, as an illustration that tries to capture the essence and form of these works and other relevant initiatives.

Figure 1.Blockchain in Tourism Industry, Generated by OpenAI's Dalle

An example of a company using blockchain in the tourism industry is the Winding Tree, a decentralized platform for the travel industry that allows the direct booking of hotel rooms and flights without the need for intermediaries. To meet these expectations, Air New Zealand and the Winding Tree are teaming up to explore this potential, which could lead to lower fees and costs for both consumers and businesses (Sundararajan, 2017).

Meanwhile, there are restaurants and cafes that work on incorporating blockchain into their operations. (Hardy, 2018; Dalton, 2020). In addition to more common and popular crypto-currency endeavors, some of these business establishments even offer non-fungible token (NFT) toys as part of their specific customer deals (PYMNTS, 2021).

In addition, blockchain can be applied to securely store and share personal identification information with travelers. This technology can facilitate related processes of passport control and other security checks, making travel more efficient and safe (Topping, 2022). With a built-in quick response (QR) code and a suitable Internet of Things (IoT) infrastructure created for the private key of each baggage stored on a blockchain, the baggage owner can easily track this record and use it as proof of ownership.

As the purpose of this study is to examine the use of blockchain in the tourism sector from a conceptual perspective, the co-authors mostly focus on an original discussion of the existing relevant literature, attempting to integrate blockchain works with those of the tourism sector. In this context, in the study, especially based on preliminary research results, hosting services, customer or tourist data, medical tourism areas, and regional works initiated in the USA and Europe are explained by sharing academic studies, and other related works. Based on these contextual contents, a relevant application proposal for Türkiye is also suggested.

**What About Services Focused on Specific Hosting and Hospitality Services?**

The implementation of blockchain technology could be the key to revitalizing tourism, as its applicability offers various opportunities for tourism stakeholders, adds security and trust to business transactions, and can influence changes in the tourism value system in terms of value creation for customers, value creation for businesses and the tourism distribution chain. (Ramos, 2021). As highlighted by numerous authors, blockchain technology offers significant benefits to the tourism sector, as its implementation can improve performance and overall profitability by helping to increase competitive advantage, customer satisfaction, and operational effectiveness and efficiency (Erceg et al., 2020; Willie, 2019). All these benefits, as a consequence, provide significant opportunities for commercialization, public value, and employment opportunities, among other socio-economic impacts in more general terms. Meanwhile, blockchain is recognized as a viable technology to remove middlemen from the supply chain of the tourism industry and also to prohibit new middlemen from accessing this industry, thus removing middlemen from the tourism market (Rashideh, 2020).

While all these developments and changes would have various impacts on different sub-sectors of tourism and hospitality industry in general, if we more closely look at the hosting and hospitality services, blockchain technology has the potential to revolutionize the respective services in the tourism industry by providing secure and transparent record-keeping for various aspects of the industry such as accommodation bookings, property management, and payments, among others. According to available sources, this could cause ripple effects in the industry, which may disrupt the tourism industry (Globaldata Travel and Tourism, 2022). Based on the GlobalData survey, disruption is not expected by 32%, and

46% believe that blockchain will slightly or significantly disrupt the tourism industry. Professionals and executives in the hospitality industry confirm that blockchain is an emerging technology with enormous implications for the tourism sector (Flecha-Barrio et al., 2019).

In the context of tourism regulations, one example of how blockchain technology is implemented is the use of smart contracts. Smart contracts are self-executing contracts with terms of agreement written directly into the lines of code. Accordingly, smart contracts can automate the process of compliance, such as ensuring that accommodations meet certain standards and that taxes are paid (Draganov, 2021).

Service providers and customers sign contracts related to the services of the tourism and hospitality industry. Blockchain technology is implemented in the hosting services sector of the tourism industry, particularly using smart contracts. In addition to satisfying the standardized contracts and the execution of the decentralized applications (DAPPs) with the self-executing structures of the smart contracts, the agreements can be written directly into the lines of code. Accordingly, creating a more efficient and secure system for both property owners and renters, smart contracts can automate the process of booking accommodations and managing property rentals (Maliwal, 2018).

Another example is the use of blockchain-based platforms for peer-to-peer (P2P) real estate transactions, such as OpenBazaar. These platforms use blockchain technology to create decentralized marketplaces for short-term rentals, allowing property owners to list and rent their properties directly to renters, without the need for intermediaries. This can potentially lead to lower costs for property owners, renters and potential buyers at the same time (Filippi, 2017).

Recently, NFT initiatives have also gained momentum. In the next few years, it is expected that smart contract-based applications will be created for the specific rental and buying contracts that may include the transfer of NFT-based property-ownership formal documents.

**Customers Data**

Every transaction creates records for both the service providers and customers. This brings about the issue of maintaining these records with respect to privacy. Blockchain technology has the potential to revolutionize the manner in which personal information is handled in the tourism industry, specifically in terms of tourist privacy.

Knowledge of customers is essential for service providers. However, the data privacy and security issues remain critical. A question then arises for how blockchain technology is being implemented to protect tourist privacy using decentralized identity systems. These systems allow travelers to create a digital identity that they can control and share with various service providers in the tourism and hospitality industry, such as hotels and airlines, without the need to hand over their personal identification documents (Calvaresi et al., 2019).

According to Thees et al. (2020), travel is facilitated through the transformation of time-intensive back-stage processes, thereby offering extra value for travelers within the tourism value system. Furthermore, this blockchain architecture will help

chain hotels to provide the same, standardized services anywhere around the world, that could be facilitated as part of quality management measures. It will also help identify potential fraud attempts that may arise for falsifying customers' identities. In addition, decentralized data sharing provides a new, reliable and trustworthy data-sharing mechanism. The use of blockchain-based platforms for secure and transparent data sharing will spread among various actors in the tourism industry, such as travel and government agencies. This will allow for the necessary sharing of information for security and compliance purposes while ensuring that the personal data of tourists remain protected (Zhang, 2021).

Tourist data can be available in different types and forms, opening up new frontiers for academic and practical research. As illustrated in Figure 2, tourists can generate different content such as location-based data, personal media, and flight schedules, among others.

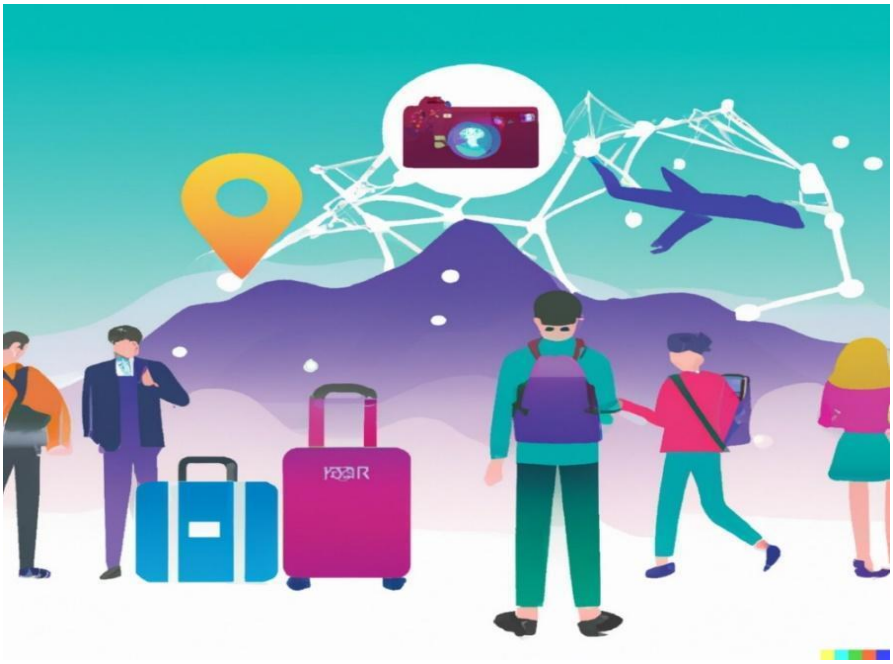

Figure 2 .Tourist information with focusing on location, uploaded photos and flight destinations, Generated by OpenAI's Dalle

**Medical Tourism**

Blockchain technology has also the potential to revolutionize the medical industry, and one area where this is particularly true is in the field of medical tourism. With the increasing need to keep patient records private and anonymous, medical tourism could particularly benefit from the potential applicability of blockchain-based implementation.

Medical tourism refers to the practice of traveling to another country to receive medical treatment, and related services and solutions. This can include a wide range of services, from routine check-ups and diagnostic testing to major surgeries and specialized care (Tyan et al., 2021). Similar to other subdomains of the tourism and hospitality industry, medical tourism lacks trust and transparency. Accordingly, patients are often unsure about the quality of care they will receive, on the other

hand service providers are also often reluctant to share information about their services and outcomes.

Blockchain technology can address these issues by providing a secure and transparent platform for the information exchange. Using blockchain, patients can access a wide range of information about potential providers, including their qualifications, experiences, and outcomes. Providers can also share information about their services, such as the types of procedures they offer, and their success rates (Rejeb et al., 2020).

In addition, blockchain can be used to improve the coordination and management of care for patients traveling for treatment. For example, blockchain-based electronic medical records (EHRs) can be used to share patient information among service providers, allowing seamless continuity of care (Tyan et al., 2021).

Another benefit of blockchain technology in medical tourism is its ability to securely store and share medical data, which can help facilitate medical research and improve patient outcomes. Blockchain-based medical data platforms can enable researchers to access large amounts of data from a variety of sources, surely helping them better understand diseases and develop new treatments (Parekh et al., 2021).

Based on their research, Rejeb et al. (2019) conclude that blockchain technology can benefit medical tourism, laying the foundation for future work. Overall, blockchain technology has the potential to improve the quality, transparency, and trust in the medical tourism industry, making it a more appealing and accessible option for patients worldwide. Having discussed these potential application areas, this paper presents selected regional applications such as those in Europe and United States, as next.

**Global Regions, Europe and United States**

For the actual and potential application areas of blockchain, looking at the specific global regions of Europe and the United States (US) can provide further insights into current conditions and readiness in the new blockchain perspectives.

Firstly, from the Europe's perspective, blockchain technology has the potential to revolutionize the tourism and hospitality industry in the European continent by providing secure and transparent record-keeping for various aspects of the industry, such as financial transactions, travel itineraries, and personal identification information and documentation (Thees et al., 2020). The current industry practices in Europe are supported by the European Union (EU) regulations such as General Data Protection Regulation (GDPR), which may also have impacts outside the EU. For instance, the US hotel group Marriott International has been fined due to GDPR breach (SAI360, 2019).

One example of how blockchain technology is being implemented in the European tourism industry is through the use of digital tokens. Digital tokens, also known as utility tokens, can be used to represent different aspects of the tourism experience such as hotel bookings, attraction tickets, and transportation, among others. By using digital tokens, tourists can easily manage and track all aspects of their travel itinerary in one place while also having a secure and transparent record of their transactions (Viano et al., 2022).

Another example is the use of blockchain-based platforms for P2P rentals such as LockTrip and CryptoCribs. These platforms use blockchain technology to create decentralized marketplaces for short-term rentals, allowing property owners to list and rent their properties directly to renters without the need for intermediaries. This can potentially lead to lower costs for both property owners and renters and can also provide more options for tourists looking for accommodation in Europe (Schneck et al., 2020).

The US is also important for showing readiness for blockchain-oriented transformation around the world. As mentioned in European applications, digital token-based transactions are receiving considerable attention owing to the increased number of blockchain adaptation cases. One example of how blockchain technology is being implemented in the tourism industry in the US is through the use of digital (utility) tokens, as well. These tokens are also effectively used in the US for tourism (Deloitte, 2019; Deloitte, 2020). Similarly, as in Europe, P2P rentals benefit from blockchain-based platforms in the US, as well. AirBnB can be considered a good example for this. (Schneiders et al., 2022).

Beyond this, blockchain technology has the potential to revolutionize the way tourism regulations are enforced by providing secure and transparent record keeping. The decentralized and immutable nature of blockchain technology allows for the secure storage and sharing of personal identification information for travelers, while also ensuring compliance with data privacy regulations such as the GDPR in the EU, and the California Consumer Privacy Act (CCPA) in the US (Bhatia & Hernandez, 2019, Aghaei et al., 2021).

However, despite the fact that certain global regions such as the US and Europe may have more advanced blockchain application areas and prospects, it is important to note that the implementation of blockchain technology in the tourism industry is still in its early stages, and challenges such as scalability, interoperability, standardization and privacy concerns remain to be addressed,. Additionally, it is important to consider the regulatory environment and laws of different countries and regions, as the use of blockchain technology for regulatory compliance may vary (Bjelobaba, 2023).

For example, Turkey currently lags behind Europe and the United States in terms of blockchain-based tourism applications, despite having significant blockchain applications in other sectors. In the next section, a sample proposal specific to the tourism and hospitality sector is presented in this direction.

**An Application Proposal for Türkiye**

Blockchain applications could address potential opportunities or risks in the tourism and hospitality sector in Türkiye. For instance, as one of the top destinations in medical tourism, Türkiye could benefit from additional information security and care quality measures enhanced by blockchain adaptations into service providers. In more general terms, complementing GDPR in Türkiye, No. 6698 Personal Data Protection Law (PDPL) and its effective implementation in tourism industry could also significantly benefit from similar blockchain applications and adaptations.

In this direction, a project proposal was prepared by Medeni et al. (2022) in collaboration with Edicate Company. The project proposal aims to increase transaction security, reduce costs, save time and increase accessibility for

businesses such as restaurants, cafes and small-scale food and beverage businesses. The proposal proposes to develop a secure and cost-effective blockchain-powered menu preparation, ordering and payment system, along with a decentralized wallet integration, a matching engine and a customer loyalty mechanism, as well as ensuring that employees are not affected by harassment and morally negative behavior by customers. The components of the system are described in detail below:

- Know Your Customer (KYC) system component will identify and verify a customer that opens and keeps an account. With the KYC approach, the authenticity of the real persons and businesses registered to the platform users will be assured. Prevention of unethical financial cases such as fraud, money laundering will be supported by the KYC system.
- With the respective Asset Payment system components, users within the platform will be able to directly trade with their blockchain-based digital assets, and businesses will be able to receive payments. In this way, the platform will be able to work in integration with alternative financial products and meet the needs of many different users. Meanwhile, users within the platform will also be able to perform traditional banking transactions and make payments through their banks. In this way, the platform will be able to work in integration with traditional financial products and meet a wide range of user needs.
- The Choose Your Customer system component will also be developed in order to realize a policy of positive discrimination and encouragement for businesses that prioritize employment of disadvantaged people. The system will provide material incentives as part of the Asset Payment system components for the registered businesses. At the same time, businesses will have the authority to block their customers that are showing unethical behaviors, depriving them of giving orders or receiving services.
- Using the Online Order Taking system component, customers will be able to place their orders with the menus created by the businesses with the QR code on the tables of the businesses, reducing constant menu update or excess labor costs.
- Order Taking by Appointment is the system component that will allow customers to save time, as they can receive the product immediately when they arrive at the business by ordering and paying in advance.
- Customer Matching system component will enable customers to find the closest business to their location, see products, prices and discounts, and discover new businesses.
- Finally with the Gourmet Advertising and Marketing system component, an expert opinion platform for users will also be provided, also enabling advertising and marketing opportunities within the scope of the project.

The tourism and hospitality service sector, where many small-medium-sized enterprises such as restaurants or cafes constitute a large part, has an important place in the Turkish economy. Accordingly the proposed project is hoped to provide positive impacts for the national and local economy. As the location of our university main campus, “Külliye”, is in Çubuk town, a pilot work has also been suggested to be implemented in the Çubuk area with a suitable business and customer target market. The project proposal is currently in the process of funding-

seeking, and is hoped to inspire similar, new ideas and opportunities for blockchain-based applications into the tourism sector in Türkiye.

**Evaluation and Conclusion**

It is seen that new technological applications are realized with the increase in international trade and the emergence of new technological developments in the tourism sector, which is an important source of income for the countries, and is so called the "flueless industry". One of these technological applications is the blockchain technology. Research has shown that the use of blockchain technology in the tourism sector is becoming increasingly common and is mostly used in transportation channels (Karagöz and Demirel, 2020). Blockchain technology can provide greater security and transparency in the tourism industry, thus increasing its effectiveness and impact for all stakeholders in its ecosystem. Therefore, as presented in this research, it has been revealed that blockchain-oriented software and hardware applications, whether people are aware of them or not, have started to take their place in the tourism sector.

As acknowledged, at its core, blockchain data is immutable and trustworthy and can be shared with any stakeholder. Accordingly, blockchain can be seen as a disruptive technology that will completely change the distribution network and business model in the tourism sector. The demand of tourists for decentralized, secure, transparent and agentless transactions reveals the need to change the tourism infrastructure. There are already examples of these transactions taking place in different parts of the world.

However, it can also be said that the adoption and application of blockchain technology in tourism is quite slow (Yazıcı, 2021). Accordingly, the co-authors hope that this research will contribute to paving the way for advancing Turkish initiatives (as well as those of other countries) of blockchain-based tourism initiatives in theory and practice, an example of which is also provided in the text.

As a result, blockchain technology has brought great value and significant opportunities to the tourism industry. It can be said, for instance, that the introduction of blockchain in tourism will help both passengers and travel agencies as significant stakeholders of the industry. A blockchain database can be constructed and distributed in collaboration with airlines, hotels, and other tourism-related industries. Individuals can directly book flight tickets, hotels, and rentals through smart contracts (Çilingir, 2018). Other authors also conclude that blockchain technology has a potential to contribute to sustainable tourism development as well as the Sustainable Development Goals and propose the directions for future research (Tyan et.al, 2021). All these aspects can be considered significant prospects for the future and should be studied further in future academic works. In this context, this study contributes to the relevant literature and practice.

While this research has just been a preliminary conceptual work without any first-hand data collection, it is believed by its coauthors to provide an original value and contribution to the respective fields, as existing works on related topics so far have been limited. As a result of this research, it is foreseen that these generally

examined topics will emerge as more detailed and focused areas of study in the future, while numerous researchers will focus on these areas from various academic and practical angles and will contribute to the disruptive development or incremental improvement of different blockchain based tourism initiatives.

## References

Aghaei, H., Naderibeni, N., & Karimi, A. (2021). Designing a Tourism Business Model on Block Chain Platform. *Tourism Management Perspectives, 39,* 1-12. https://doi.org/0.1016/j.tmp.2021.100845

Bjelobaba, G., Savić, A., Tošić, T., Stefanović, I., & Kocić, B. (2023). Collaborative Learning Supported by Blockchain Technology as a Model for Improving the Educational Process. *Sustainability,15*(6), 1-23. https://doi.org/10.3390/su15064780

Bhatia, S., & Hernandez, A. W. (2019). Blockchain is Already Here. What does That Mean for Records Management and Archives? *Journal of Archival Organization, 16*(1), 75-84. https://doi.org/10.1080/15332748.2019.1655614

Calvaresi, D., Leis, M., Dubovitskaya, A., Schegg, R., & Schumacher, M. (2019). Trust in Tourism via Blockchain Technology: Results from a Systematic Review. In: J. Pesonen, J. Neidhardt (Eds), Information and Communication Technologies in Tourism 2019 (pp. 304-317). Springer, Cham. https://doi.org/10.1007/978-3-030-05940-8_24

Çilingir, T. (2018). Turizmin Geleceği Blockchain Teknolojileriyle Değişiyor. *Dijital Biz Dergisi*, (1), 76-77.

Dalton, M. (2020). Burgers and Bitcoin: Five Fast Food Restaurants That Are Working With Crypto. Retrieved on April 18, 2023 from Bitrates: https://www.bitrates.com/news/p/burgers-and-bitcoin-five-fast-food-restaurants-that-are-working-with-crypto

Dayi, F. (2019). The Global Financial System's New Tool: Digital Money. In: Hacioglu, U. (Eds) Blockchain Economics and Financial Market Innovation. Contributions to Economics (pp.17-39). Springer, Cham. https://doi.org/10.1007/978-3-030-25275-5_2

Deloitte. (2019). Deloitte's 2019 Global Blockchain Survey-Blockchain Gets down to Business. Retrieved on January 27, 2023 from https://www2.deloitte.com/content/dam/Deloitte/se/Documents/risk/DI_2019-global-blockchain-survey.pdf

Deloitte. (2020). Deloitte's 2020 Global Blockchain Survey-From Promise to Rality. Retrieved on January 27, 2023 from https://www2.deloitte.com/content/dam/Deloitte/tw/Documents/financial-services/2020-global-blockchain-survey.pdf

Draganov, R. (2021). Innovative Perspectives to Apply Blockchain Model for the Saints Cyril and Methodius and Saint Sophronius of Vratsa Historical Sights in the Context of European Cultural Routes. *Journal of Tourism and Hospitality Management, 9*(1), 53-63. https://doi.org/10.17265/2328-2169/2021.01.005

Erceg, A., Damoska Sekuloska, J., & Kelić, I. (2020). Blockchain in the Tourism Industry-A Review of the Situation in Croatia and Macedonia. *Informatics, 7* (5), 1-16. https://doi.org/10.3390/informatics7010005

Esmer, Y. and Şaylan, O. (2021). A Qualitative Research on the Use of New Digital Technologies in Customer Relationship Management. *Balkan and Near Eastern Journal of Social Sciences, 7*(4), 71-78.

Filippi, P. D. (2017). What Blockchain Means for the Sharing Economy. Harvard Business Review. Retrieved on January 27, 2023 from https://hbr.org/2017/03/what-blockchain-means-for-the-sharing-economy

Flecha-Barrio, M.D., Palomo, J., Figueroa-Domecq, C., Segovia-Perez, M. (2020). Blockchain Implementation in Hotel Management. In: Neidhardt, J., Wörndl, W. (Eds) Information and Communication Technologies in Tourism 2020. Springer, Cham. https://doi.org/10.1007/978-3-030-36737-4_21

Globaldata Travel and Tourism. (2022). Blockchain has the Potential to Disrupt the Tourism Industry. Retrieved on January 27, 2023 from Hotel Management Network: https://www.hotelmanagement-network.com/comment/blockchain-disrupt-tourism-industry/

Hardy, K. (2018). Explaining the Rise of Blockchain in Restaurants. Retrieved on April 18, 2023 from QSR: https://www.qsrmagazine.com/technology/explaining-rise-blockchain-restaurants

Hayes, A., Brown, J. R. and Kvilhaug, S. (2022). Blockchain Facts: What is It, How It Works, and How It can be Used. Retrieved on March 15, 2023 from Investopedia: https://www.investopedia.com/terms/b/blockchain.asp

Karagöz, Z. S. & Demirel, E. (2020). New Trend in Tourism Industry: Blockchain Startup Projects. *Journal of Tourism Intelligence and Smartness, 3*(2), 169-188.

Maliwal, C. (2018). Real Estate on the Blockchain. Retrieved on January 27, 2023 from https://www.linkedin.com/pulse/real-estate-blockchain-chirag-maliwal/

Medeni, T., Yücesan, E., & Medeni, İ.T. (2022). *ORBIT (Order Bitcoin) Project Proposal.* Ankara: Ankara Yıldırım Beyazıt University

Parekh, J., Jaffer, A., Bhanushali, U., & Shukla, S. (2021). Disintermediation in Medical Tourism Through Blockchain Technology: An Analysis Using Value-Focused Thinking Approach. *Information Technology & Tourism, 23*, 69-96. https://doi.org/10.1007/s40558-020-00180-4

PYMNTS. (2021). NFTs Flip the Script on Fast-Food Toys With Crypto Collectibles. Retrieved on April 18, 2023 from https://www.pymnts.com/restaurant-innovation/2021/nfts-flip-the-script-on-fast-food-toys-with-crypto-collectibles/

Ramos, C. M. (2021). Blockchain Technology in Tourism Management: Potentialities, Challenges, and Implications. In R. Bansal, P. Malyadri, A. Singh, & A. Pervez (Eds), Blockchain Technology and Applications for Digital Marketing (pp. 84-109). IGI Global. https://doi.org/10.4018/978-1-7998-8081-3.ch006

Rashideh, W. (2020). Blockchain Technology Framework: Current and Future Perspectives for The Tourism Industry. *Tourism Management, 80,* 1-13. https://doi.org/10.1016/j.tourman.2020.104125

Rejeb, A., Keogh, J. G., & Treiblmaier, H. (2019) The Impact of Blockchain on Medical Tourism. *WeB2019 Workshop on e-Business* (18th Workshop on e-Business), December 14, Munich, Germany.

Rejeb, A., Keogh, J. G., & Treiblmaier, H. (2020). The Impact of Blockchain on Medical Tourism. In: K. R. Lang, J. Xu, B. Zhu, X. Liu, M. J. Shaw, H. Zhang, M. Fan (Eds), Smart Business: Technology and Data Enabled Innovative Business Models and Practices. WeB 2019. Lecture Notes in Business Information Processing (Vol. 403, pp. 29-40). Springer, Cham. https://doi.org/10.1007/978-3-030-67781-7_4

SAI360. (2019). ICO Strikes Again, Slapping Marriott with £99m Fine Over GDPR Breach. Retrieved on April 15, 2023 from https://www.sai360.com/resources/grc/ico-strikes-again-slapping-marriott-with-99m-fine-over-gdpr-breach

Schneck, P., Tumasjan, A., & Welpe , I. M. (2020). Next Generation Home Sharing: Disrupting Platform Organizations with Blockchain Technology and the Internet of Things? In: H. Treiblmaier, T. Clohessy (Eds), Blockchain and Distributed Ledger Technology Use Cases. Progress in IS (pp. 267-287). Springer, Cham. https://doi.org/10.1007/978-3-030-44337-5_13

Schneiders, A., Fell, M. J., & Nolden, C. (2022). Peer-To-Peer Electricity Trading and The Sharing Economy: Social, Markets and Regulatory Perspectives. *Energy Sources, Part B: Economics, Planning, and Policy, 17*(1), 1-17. https://doi.org/10.1080/15567249.2022.2050849

Sundararajan, S. (2017). Air New Zealand, Winding Tree Team Up for Blockchain Exploration. Retrieved on January 27, 2023 from CoinDesk: https://www.coindesk.com/markets/2017/11/23/air-new-zealand-winding-tree-team-up-for-blockchain-exploration/

Thees, H., Erschbamer, G., & Pechlaner, H. (2020). The application of blockchain in tourism: Use cases in the tourism value system. *European Journal of Tourism Research, 26*, 1-21. https://doi.org/10.54055/ejtr.v26i.1933

Topping, S. (2022). How Blockchain Technology is Being Used in the Travel Industry. Retrieved on January 27, 2023 from UBC Digital Magazine: https://ubc.digital/how-blockchain-technology-is-being-used-in-the-travel-industry/

Tyan, I., Guevara-Plaza, A., & Yagüe, M. I. (2021). The Benefits of Blockchain Technology for Medical Tourism. *Sustainability, 13*(22), 1-12. https://doi.org/10.3390/su132212448

Tyan, I., Yagüe, M.I., & Guevara-Plaza, A. (2021). Blockchain Technology's Potential for Sustainable Tourism. *Information and Communication Technologies in Tourism 2021*

Yazıcı, S. (2021). The Process of Transition from Information and Communication Technologies to Blockchain Technology in Tourism Management and Application Examples. *European Journal of Science and Technology*, (21), 136-146. https://doi.org/10.31590/ejosat.807716

Viano, C., Avanzo, S., Cerutti, M., Cordero, A., Schifanella, C., & Boella, G. (2022). Blockchain Tools for Socio-Economic Interactions in Local Communities. *Policy and Society, 41*(3), 373-385. https://doi.org/10.1093/polsoc/puac007

Willie, P. (2019). Can All Sectors of The Hospitality and Tourism Industry Be Influenced by The Innovation of Blockchain Technology? *Worldwide Hospitality and Tourism Themes*, 11(2), 112-120. https://doi.org/10.1108/WHATT-11-2018-0077

Zhang, X. (2021). A Commentary of Data Trusts in MIT Technology Review 2021. *Fundamental Research, 1*(6), 834-835. https://doi.org/10.1016/j.fmre.2021.11.016

**Çatışma beyanı:** Makalenin yazarları, bu çalışma ile ilgili taraf olabilecek herhangi bir kişi ya da finansal ilişkileri bulunmadığını dolayısıyla herhangi bir çıkar çatışmasının olmadığını beyan ederler.