



# Tourism and Recreation

<https://dergipark.org.tr/tourismandrecreation>

E-ISSN: 2687-1971

## Investigating esports tourism research using artificial intelligence applications: ChatGPT versus ZekAI

### *Yapay zekâ uygulamalarını kullanarak espor turizmi araştırmalarının incelenmesi: ChatGPT ve ZekAI karşılaştırması*

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#### ARTICLE INFO MAKALE BİLGİSİ

Research Article / Araştırma

Key Words:  
Technology, Artificial intelligence,  
ChatGPT, ZekAI

Anahtar Kelimeler:  
Teknoloji, Yapay zekâ, ChatGPT,  
ZekAI

Received Date / Gönderme Tarihi:  
28.05.2024

Accepted Date / Kabul Tarihi:  
27.12.2024

Published Online / Yayınlanma Tarihi:  
30.06.2025

DOI:  
[10.53601/tourismandrecreation.1517704](https://doi.org/10.53601/tourismandrecreation.1517704)

#### ABSTRACT

Developments in the digitalization process have enabled the use of many internet-based applications. The main purpose of this research is to determine the evolution, current status and future directions of esports tourism research using ChatGPT and ZekAI artificial intelligence applications. Semi-structured interview questions created by Shin and Kang (2023) were adapted and used to examine esports tourism research. The interview questions were asked to both artificial intelligence applications on different dates and a comparison was made. MAXQDA, a software for qualitative data analysis, was used to analyze the data obtained. According to the results of the thematic analysis, some differences were found between the responses of the two artificial intelligence applications. When the findings were analyzed, it was determined that ZekAI displayed four study topics on the evolution of esports tourism research, while ChatGPT revealed seven study topics. Considering the current state of esports tourism research, both artificial intelligence applications suggested that esports tourism research adopts an interdisciplinary approach like research in other academic fields and the methods used in research are similar. In the findings regarding the future directions of esports tourism research, it was determined that ZekAI put forward three research proposals, while ChatGPT put forward six research proposals. In the findings, it was found that ChatGPT also scanned current sources and gave longer responses compared to ZekAI. The results expose that the economic, social and cultural dimensions of esports tourism are becoming increasingly important.

#### ÖZET

Dijitalleşme sürecinde yaşanan gelişmeler internet tabanlı birçok uygulamanın kullanılmasına imkân sağlamıştır. Bu araştırmanın temel amacı, ChatGPT ve ZekAI yapay zekâ uygulamalarını kullanarak espor turizmi araştırmalarının evrimini, mevcut durumunu ve gelecekteki yönelimlerini belirlemektir. Espor turizmi araştırmalarının incelenmesi için Shin ve Kang (2023) tarafından oluşturulan yarı yapılandırılmış görüşme soruları uyarlama yapılarak kullanılmıştır. Görüşme soruları, her iki yapay zekâ uygulamasına farklı tarihlerde sorularak karşılaştırma yapılmıştır. Elde edilen verilerin çözümlemesi için nitel veri analizine yönelik yazılım olan MAXQDA programı kullanılmıştır. Yapılan tematik analiz sonuçlarına göre, iki yapay zekâ uygulamasının verdiği yanıtlar arasında birtakım farklılıklar tespit edilmiştir. Bulgular incelendiğinde, espor turizmi araştırmalarının evrimi noktasında ZekAI dört çalışma konusu ortaya koyarken, ChatGPT'nin yedi çalışma konusu ortaya koyduğu belirlenmiştir. Espor turizmi araştırmalarının mevcut durumuna bakıldığında, her iki yapay zekâ uygulamasının da espor turizmi araştırmalarının diğer akademik alanlardaki araştırmalar gibi disiplinlerarası bir yaklaşım benimsediğini ve araştırmalarda kullanılan yöntemlerin benzerlik içerdiğini öne sürmüştür. Espor turizmi araştırmalarının gelecekteki yönelimlerine ilişkin bulgularda ise ZekAI üç araştırma önerisi ortaya koyarken, ChatGPT'nin altı araştırma önerisi ortaya koyduğu tespit edilmiştir. Elde edilen bulgularda, ChatGPT'nin güncel kaynakları da taradığı ve ZekAI'ye kıyasla daha uzun yanıtlar verdiği tespit edilmiştir. Sonuçlar, espor turizminin ekonomik, sosyal ve kültürel boyutlarının giderek daha fazla önem kazandığını ortaya koymaktadır.

## 1. Introduction

Developments in science and technology have affected the sports industry as well as many other industries, paving the way for the emergence of esports (electronic sports), which also offers potential for the tourism sector. The concept of esports, which has rapidly spread with the development of technological devices, has become one of the popular markets of our lives (Hlee & Lee, 2023; Yenisoy & Konaklıoğlu, 2023). It is seen that there are various definitions of esports in the literature (Allal-Cherif et al., 2024; Hamari & Sjöblom, 2017; Jeong & Youk, 2023; Pedraza-Ramirez et al., 2020; Pluss et al., 2019; Poulus et al., 2024). Considering the common point of the definitions, esports can be defined as the competitive playing of video games with certain criteria by players.

Esports challenges traditional sports and is recognized as an engaging and entertaining activity for a new generation (Hlee & Lee, 2023). These events have emerged as a tourism product and attraction comparable to tourist participation in any sports organization (Becka et al., 2021; Çetin & Coşkun, 2021; Dilek, 2019; Hlee & Lee, 2023; Nikas & Poulaki, 2021; Vegara-Ferri et al., 2020; Yenisoy & Konaklıoğlu, 2023). Thus, the fact that there are tourists who experience and want to experience this tourism product brings esports tourism to the forefront as a new type of tourism.

Advances in science and technology are leading to changes that affect not only industries but also everyday life in many ways. One of the most popular topics of recent times is the emergence of artificial intelligence technology (AI), which creates a significant positive change in the grammatical output that computer algorithms can produce from human prompts (González et al., 2024). With the emergence of this technology, many AI-based applications such as ChatGPT and ZekAI have been developed (Benichou & ChatGPT, 2023; Javaid et al., 2023; Ratten & Jones, 2023).

The first version of ChatGPT (Talaie-Khoei et al., 2024), a generative AI application for conversational prompts created by OpenAI, was released in November 2022. ChatGPT 3.5 was released in early 2023 and reached more than 200 million users in the first two months of its release (González et al., 2024). Today, the 4.0 version of ChatGPT is available for a fee. Another artificial intelligence application is ZekAI (ZekAI, 2024), launched by Curiosity Technology in 2023. Both AI applications have important implications for both science and society. Researchers and other professionals use AI applications such as ChatGPT and ZekAI to write articles and reports, condense literature, edit papers, identify research gaps, and even create software code, including statistical analysis (Albayati, 2024).

A literature review shows that ChatGPT for tourism research has been used in many studies (Ali et al., 2023; Altun et al., 2024; Carvalho & Ivanov, 2024; Dalgıç et al., 2024; Dwivedi et al., 2024; Fan & Chen, 2024; Gursoy et al., 2023; Ivanov & Soliman, 2023; Mich & Garigliano, 2023; Nautiyal et al., 2023; Pham et al., 2024; Rather, 2024; Shin & Kang, 2023; Skavronskaya et al., 2023; Wong et al., 2023; Zhang & Prebensen, 2024). However, there is no study in tourism research in which ChatGPT and ZekAI are used together.

Therefore, the main purpose of this study is to determine the evolution, current status and future directions of esports tourism research using ChatGPT and ZekAI artificial intelligence applications (AIA). It will be referred to as AIA in the rest of the study. The fact that there is no other research that evaluates ChatGPT and ZekAI artificial intelligence application as a tool for esports tourism research displays the importance of this study. Semi-structured interview questions created by Shin and Kang (2023) were adapted and used to examine esports tourism research. Interview questions were asked to both AIA on different dates and a comparison was made. MAXQDA program was used to analyze the data obtained. The results of the thematic analysis are discussed.

In this study, ChatGPT-4.0 was selected due to its inclusion of 100 trillion parameters and its record-breaking growth rate among consumer applications. Moreover, given that the authors of the study are from Turkey, the decision to compare the responses of a national AI application with those of an international AI system led to the selection of ZekAI.

## 2. Theroretical Framework

### 2.1. Esports and Tourism

Sports tourism includes traveling to play or watch sports as well as visiting sports-related attractions (Dilek, 2019; Elsaid & Fathallah, 2023). According to Delphi, sports tourism is all of the activities carried out by traveling away from home to play sports, watch sports or visit a sports attraction. These activities include competitive and non-competitive sports activities (Dilek, 2019; Yenisoy & Konaklıoğlu, 2023). Sports tourism is basically analyzed under four headings (Dilek, 2019; Elsaid & Fathallah, 2023):

- *Active sports tourism*, includes traveling to participate in sports such as soccer, tennis, golf or yoga,
- *Passive sports tourism*, includes spectators and fans traveling to watch sports being played or to support a friend or relative playing sports
- *Sporting events tourism*, includes traveling for sporting events such as the Olympics, Rugby Championship and Football World Cup,
- *Nostalgia sports tourism*, includes visiting sports-related attractions such as the Barcelona Olympic Park and the Maracanã Football Stadium.

In recent years, a new sporting activity, which is mostly categorized within sports tourism, has gained popularity among young people. This new activity is esports, which challenges traditional sports (Dilek, 2019; Hlee & Lee, 2023; Yenisoy & Konaklıoğlu, 2023). Michael G. Wagner made the first official definition of the concept of esports in 2006. According to Wagner, esports is the field of sports activities where individuals develop their physical and mental skills with the spread of communication and information technologies (Wagner, 2006). Esports organizations such as the Cyberathlete Professional League (CPL), the Electronic Sports World Cup (ESWC) and the World Cyber Games (WCG) organize Local Area Network (LAN) tournaments at national and international level by partnering with companies in the gaming industry. Esports fans who participate in the

esports event by watching these tournaments on-site have the opportunity to watch the tournaments of the world's best esports players, meet their favorite players, and share their passion with other fans. These reasons lead esports fans to be willing to travel thousands of miles to attend big events (Dilek, 2019; Yenisoy & Konaklıoğlu, 2023). Therefore, esports tourism comes to the fore as a new type of tourism (Becka et al., 2021; Çetin & Coşkun, 2021; Dilek, 2019; Hlee & Lee, 2023; Nikas & Poulaki, 2021; Vegara-Ferri et al., 2020; Yenisoy & Konaklıoğlu, 2023).

Bayram (2018) defined esports tourism as a type of tourism characterized by esports events organized in a particular country or destination and attended by players, spectators and related institutions, offering various touristic activities such as eating, drinking, accommodation, entertainment. The acceptance of esports as a type of tourism is critical in terms of the fact that the spectators in the countries hosting esports events have vital experiences, esports fans have the opportunity to meet and chat with the players of the teams they support, they have the opportunity to come together with other fans who share the same goals, emotions and enthusiasm as the players of the teams they support, and they have the opportunity to experience the touristic opportunities of the country hosting esports events (Eslgaming, 2024).

According to a report published in Statista, the number of esports viewers is projected to reach 640.8 million in 2025 (Gough, 2024). Considering that esports events are not just one-day events, it is possible to state that such events are consequential tourist attraction factors for destinations. The contribution of tourists coming to watch esports events to the country's economy should be taken into consideration. The prediction that the number of esports viewers will reach 640.8 million emphasizes the importance of esports both in terms of tourism and the image of the country that will host a large-scale organization.

## 2.2. Artificial Intelligence Applications (AIA) (ChatGPT and ZekAI)

Artificial intelligence (AI)-based chatbots, which are computer programs designed to simulate a conversation with a human, are developing rapidly thanks to significant

investments in the digital world (Melissano et al., 2024). Various AI-based chatbots such as ChatGPT, DialoGPT, Replika, Jasperchat and ZekAI have been developed (Chang et al., 2023). ChatGPT is an artificial intelligence-based chatbot developed by OpenAI. It can be operated with commands in natural language without any programming skills. Its outputs are presented as texts in natural language that look like they were written by a human (Deng & Li, 2022; Jukiewicz, 2024). ZekAI, developed in Turkey, is another AI-based chatbot. It was created by integrating multiple artificial intelligence tools and combining them on a single platform. ZekAI is a Turkish-developed artificial intelligence tool that offers various features such as authoring, chatbot and design. The founders of ZekAI are Can and Betül Göymen and the company is called Curiosity Technology. Located in Yıldız Technopark at Yıldız Technical University in Istanbul, this company is an innovative company that cares about the principle of sustainability (Tavus, 2024).

Since its launch on November 30, 2022, ChatGPT has experienced unprecedented growth, setting a record for the fastest user growth among consumer apps (Beckmann & Hark, 2024). As of November 2023, it has over 180 million registered users globally, over 100 million active users, and the ChatGPT site attracts approximately 1.5 billion visitors per month (Beckmann & Hark, 2024; Curry et al., 2024). ChatGPT has evolved in four versions with varying numbers of parameters: ChatGPT-1 has 117 million parameters, ChatGPT-2 has 1.5 billion parameters, ChatGPT-3 has 175 billion parameters, and ChatGPT-4 has 100 trillion parameters. The increase in parameters has enabled ChatGPT-4 to reach unprecedented levels of performance and produce text that resembles human speech. As an artificial intelligence language model, ChatGPT and ZekAI can be useful in a wide variety of fields and applications. Examples of these areas and applications are (Albayati, 2024):

- *Customer service:* ChatGPT and ZekAI offer automated customer service support through chatbots, helping businesses save time and resources by handling general inquiries and requests without human intervention.
- *Education:* ChatGPT and ZekAI can deliver personalized learning experiences by answering student

**Table 1.** Demographic Questions Asked to ChatGPT and ZekAI Artificial Intelligence Applications

Stages	Questions
<b>The development of esports tourism research</b>	How do you think and evaluate the development of esports tourism research?
	Which issues have been significantly studied in the development process of esports tourism research?
	What are the internal and external factors that have a significant impact on the development of esports tourism research?
	What are the key achievements and limitations in the development of esports tourism research?
	How has research methodology evolved in the development of esports tourism research?
<b>Current state of esports tourism research</b>	How do you see the state of esports tourism research compared to other academic fields?
	Do you think esports tourism knowledge is sufficiently collected through esports tourism research? Why?
	What are the similarities and differences between existing esports tourism research and other academic fields?
	What are the most important issues in esports tourism research today?
	What are the limitations of recent esports tourism research and what is needed to support it?
<b>Future directions of esports tourism research</b>	What are the issues that esports tourism research should address in the future?
	What efforts are needed to further develop esports tourism research in the future?
	What efforts should researchers make to complement the limitations of esports tourism research and encourage continuous development in the future?
	How do you think the methodology of future esports tourism research should be developed?
	What in particular should researchers pay attention to in order for esports tourism research to continue to flourish in the future?

Source: (Shin & Kang, 2023)

questions and providing assignment feedback. It can also create educational content and lesson plans.

- *Healthcare:* ChatGPT and ZekAI can assist with medical diagnoses and treatment recommendations, provide patients with information about their health conditions, and answer questions about medical procedures.
- *Marketing:* ChatGPT and ZekAI can create personalized marketing content such as product descriptions and promotional messages. It can also provide customer insights and analytics to help businesses optimize their marketing strategies.
- *Finance:* ChatGPT and ZekAI can provide financial advice and investment recommendations to customers. It can also generate financial reports and forecasts based on market trends and data analysis.

ChatGPT and ZekAI have a wide potential for use in language processing and communication. Their versatility and adaptability make them a valuable tool for businesses and organizations operating in various sectors. However, there are some limitations in the performance of these AI applications, often related to privacy, security, ethics, transparency, and unintended consequences (Albayati, 2024; Baidoo-Anu & Owusu Ansah, 2023; Lund & Wang, 2023). These limitations are explained below.

- *Privacy:* ChatGPT and ZekAI are trained on large amounts of text data, some of which may be private or sensitive. There is a risk that personal or sensitive information may be inadvertently exposed in the event of its use or a data breach.
- *Security:* ChatGPT and ZekAI may be susceptible to security risks, such as hacking, malware attacks, or other cyber threats. If these risks are not managed appropriately, sensitive data may be lost or the functionality of the tools may be compromised.
- *Ethics:* ChatGPT and ZekAI may inadvertently reflect biases in the generated text or be misused for malicious purposes, which may raise ethical concerns. Conversely, they can also trigger ethical debates by generating thought-provoking content on moral issues and highlighting ethical dilemmas.
- *Transparency:* The inner workings of ChatGPT and ZekAI can be complex, which can lead to a lack of transparency in decision-making processes. This complexity can make it difficult to discern why certain responses were generated, or to identify and correct errors or biases.
- *Unintended consequences:* The use of ChatGPT and ZekAI may lead to unintended consequences, such as the perpetuation of biases. It is crucial to carefully monitor and evaluate the outputs of ChatGPT and ZekAI to prevent any negative effects.

### 3. Methods

#### 3.1. Research Process and Interview Questions

Unlike traditional reviews that rely on the description and

analysis of scientific data, this study attempts to gain insights into the scientific progression of esports tourism research by conducting multiple semi-structured interviews with ChatGPT-4.0 and ZekAI artificial intelligence application. Semi-structured interviews are a type of qualitative research in which participants are interviewed using open-ended questions, allowing for follow-up questions and discussion (Shin & Kang, 2023).

Within the scope of the study, ChatGPT-4.0 was preferred due to its 100 trillion parameters, breaking the record for the fastest user growth among consumer applications, etc. ZekAI was preferred because the authors of the study are Turkish and for this reason, the answers given by a national artificial intelligence application and an international artificial intelligence application were compared with each other.

The semi-structured interview questions were adapted from a study conducted by Shin and Kang in 2023. According to the study, a series of questions were identified to understand the progress of tourism research through interviews with tourism researchers, including eight professors and seven doctoral researchers in the US, China and South Korea. The researchers initially developed 34 questions but combined some questions that captured similar content. They reduced the final number of questions to 15 questions in 3 stages. These 15 questions were adapted to identify the evolution, current status and future directions of esports tourism research. No additional questions were added by the authors. Table 1 shows the interview questions.

#### 3.2. Data Collection and Ethics

Since ChatGPT and ZekAI are an artificial intelligence-based application, ethical considerations for data collection and analysis were carefully considered. These considerations include issues such as data consistency and result validation. To ensure the consistency and uniformity of the data collected from ChatGPT and ZekAI, the interview questions were re-asked on different dates. The interview questions were first conducted in March 2024 and the same questions were asked again in April 2024. The responses obtained on the two different dates were compared with each other. ChatGPT gave similar answers to the same questions asked on two different dates. Although ZekAI also gave similar answers to the same questions asked on two different dates, differences were found between the answers given by the two applications. To ensure the reliability and validity of the findings, the authors independently conducted a coding thematic analysis.

The analysis was conducted through the program frequently preferred in qualitative research. The slightest inconsistencies observed in the findings obtained from the analysis were discussed until a consensus was reached. However, to ensure the validity and reliability of the findings from the analysis, the final results of the thematic analysis were sent to a qualitative researcher who has published at least two academic research articles in tourism journals with an international index (SSCI). In order to avoid bias on the part of the researcher, it was not disclosed that the interviews were conducted with ChatGPT and ZekAI artificial intelligence application. Since AIA are used within the scope of the research, ethics committee permission is not required.

**Table 2.** Summary of Final Thematic Analysis Results (ChatGPT)

Stages	Themes	Sub-Themes	Findings
The development of esports tourism research	The development of esports tourism in research	Event diversity and organizational structures	The diversity of esports events, from large arenas to small gatherings, Organizational structures of these events and their effects on tourism, The effects of digitalization and technology on esports tourism
		Important topics	Economic impacts of esports tourism, Tourist profile of esports tourism, The potential of esports tourism, The contribution of esports events to the brand value of destinations, Socio-cultural effects of esports tourism, Sustainability of esports tourism, Esports law
	Factors affecting development	Internal factors	Developments in technology, The growth of the esports industry, Professionalization and better planning and management of esports events
		External factors	Global economic conditions, The growing interest of the new generation in esports, Support and investment in esports by governments, Health and safety policies
	The development process of esports tourism research	Successes	Increased awareness of esports, Ensuring interdisciplinary cooperation in organizing esports events, Increases in the number of academic publications on esports tourism
		Limitations	Inadequacy of research methods, Challenges in the collection and reliability of data on esports tourism, The cultural and regional dynamics of esports tourism vary widely across the globe, Insufficient studies on the environmental and social sustainability of esports events
	Methodological evolution	Early periods	Esports tourism research is mostly descriptive and exploratory
		Methodological diversification	The transition of research from descriptive and exploratory to more comprehensive and diversified methodologies, Adopting a variety of approaches such as comprehensive surveys, ethnographic studies and big data analysis
		Technological integration and interdisciplinary approaches	Increased use of technological tools and interdisciplinary methodologies in research, Methodologies supported by new technologies such as social media analysis, network analysis, artificial intelligence-assisted data collection, Integration of approaches from different disciplines such as tourism, business, sociology
	Current state of esports tourism research	Current status and comparative analysis of esports tourism research	Rapid development and innovation
		Interdisciplinary interest and theoretical diversity	Although esports tourism research has adopted a multidisciplinary approach by integrating methodologies and theories from various disciplines, more and deeper research is needed compared to other academic fields
		Academic acceptance and its effects	Although the increasing acceptance of the field of esports tourism in the academic field has led to a significant increase in the number and quality of academic publications and conference proceedings in this field, it is not widely accepted compared to other academic fields, Esports tourism research makes important contributions to practical areas such as event organization, destination marketing and policy development. This research is having an impact, supported by growing interest, especially among the young population and tech enthusiasts.
Comparisons with other academic fields		Similarities	Interdisciplinary approaches, Methodological approaches, Esports tourism includes theoretical and practical applications like other academic fields
		Differences	Esports tourism differs from other academic fields in that it is highly dependent on digital technology and media by its very nature. Esports tourism is dynamic due to the rapid evolution of technology and media trends. Esports tourism is especially popular among young people and strongly differentiates with the cultural preferences of the young population. Esports tourism is centered around specific events (tournaments, leagues, fairs).
Limitations in existing esports tourism research		Limitations	Lack of accessible and reliable data, Research often focuses on specific regions or cultures, Although studies have started to be conducted with comprehensive and innovative methods, existing esports tourism studies can remain descriptive and superficial, Interdisciplinary integration is not always successful.
		Requirements	Collaborations for accessible and reliable data, International and intercultural research, Enhanced research funding and support, Education and awareness programs, Interdisciplinary working groups.
		Study topics	Sustainable esports tourism, The impact of esports tourism on the global economy and its interactions with local communities, Integration of technologies such as virtual and augmented reality into esports tourism, Legal and policy frameworks of esports tourism, Social acceptance and effects of esports in different cultures, A more detailed examination of the economic impact of esports tourism.

Source: Created by the authors.

**Table 2.** Summary of Final Thematic Analysis Results (ChatGPT) (continued)

Future directions of esports tourism research	Ways to improve esports tourism research	Innovative methodologies, Training programs and workshops, Academic and industrial funding, Technological integration, Policy and regulation development, International and intercultural research, Broadcasting and sharing platforms, Sustainable-oriented research
	Ways to improve esports tourism research methodologies	Mixed method approaches, Big data analytics, Long-term and comparative studies, Virtual reality and simulation techniques
	Issues that researchers should be aware of	Adaptation to global and local trends, Adaptation to technological developments, Focus on practical applications, Training programs and mentoring initiatives to train the next generation of researchers

Source: Created by the authors.

### 3.3. Interviews and Data Alaysis

Coder thematic analysis of the responses obtained from the interviews conducted with the ChatGPT-4.0 artificial intelligence application was conducted. A summary of the final results of the thematic analysis is presented in Table 2 for ChatGPT-4.0. A coder thematic analysis of the responses obtained from the interviews conducted with the ZekAI artificial intelligence application was conducted. A summary of the final results of the thematic analysis is presented in Table 3 for ZekAI. Information about the interview and data process is presented in Figure 1.

## 4. Results

### 4.1. Results on the Development of Esports Tourism Research

The hierarchical code-subcode model created for the development of esports tourism research is presented in Figure 2.

*Event diversity and organizational structures:* According to the responses of ChatGPT and ZekAI, esports events range from large arenas to smaller gatherings and these events have a positive impact on tourism.

*ChatGPT:* Esports events range from tournaments held in large arenas to smaller gatherings held in hotels or conference centers. These events directly contribute to the local economy and have the potential to increase the brand value of the city.

*ZekAI:* With the development of digitalization and technology, this field is expected to expand further and add new theoretical frameworks and methodologies to the tourism literature.

*Key study topics:* ZekAI identified four previous study topics, including the economic impacts of esports tourism, participant and spectator profile, destination marketing and management, and the potential of esports tourism. In addition to these study topics, ChatGPT identified seven previous study topics, including the social and cultural impacts of esports tourism, the sustainability of esports tourism, and the legal and policy framework.

*Factors affecting development:* ChatGPT and ZekAI identified various internal and external factors related to the

topic. In summary, internal factors are defined as technological developments, growth of the esports industry, management of esports events, scientific research and investments. External factors are defined as economic conditions, health and safety policies, and government support.

*ChatGPT:* As the esports industry itself has grown, more companies and brands have started to invest in it. This has led to an increase in the number of professional leagues and tournaments, thus increasing the potential for tourism.

*ZekAI:* Technological advances are enabling esports tourism to grow and diversify further. In particular, developments in internet and communication technologies lead to the international expansion of esports tourism.

*The development process of esports tourism research:* ChatGPT and ZekAI gave very similar responses to the achievements and limitations of esports tourism research. Regarding the successes, they argue that the increasing interest in esports has increased the number of academic and sectoral researches and that these studies have started to be planned with a multidisciplinary approach. This view of AIA supports the results of the study conducted by Kara and Ekici (2021).

*ChatGPT:* With the popularization of esports, the number of academic and industrial researches in this field has increased. These studies have clearly exposed the economic and social impacts of esports tourism. Esports events have started to be planned with a comprehensive and multidisciplinary approach. This has encouraged collaboration between tourism professionals, urban planners and marketers, increasing the success of events.

ChatGPT and ZekAI argue data access and reliability as a key limitation of esports tourism research.

*ZekAI:* Difficulties in accessing sufficient and up-to-date data in the field of esports tourism can limit the comprehensiveness and accuracy of research.

*Methodological evolution:* ChatGPT and ZekAI argue that esports tourism research was initially descriptive and exploratory in nature, but over time researchers have adopted various methodological approaches.

**Table 3.** Summary of Final Thematic Analysis Results (ZekAI)

Stages	Themes	Sub-Themes	Findings
The development of esports tourism research	The development of esports tourism in research	Event diversity and organizational structures	Although similar to the findings obtained from ChatGPT, shorter explanations are given.
		Important topics	Although similar to the findings obtained from ChatGPT, shorter explanations are given.
	Factors affecting development	Internal factors	Investments and innovations, The growth of the esports industry, Education and scientific research,
		External factors	Although similar to the findings obtained from ChatGPT, technological developments were considered as external factors.
	The development process of esports tourism research	Successes	Although similar to the findings obtained from ChatGPT, shorter explanations are given.
		Limitations	Although similar to the findings obtained from ChatGPT, shorter explanations are given.
	Methodological evolution	Early periods	Although similar to the findings obtained from ChatGPT, shorter explanations are given.
Methodological diversification		Although similar to the findings obtained from ChatGPT, shorter explanations are given.	
Technological integration and interdisciplinary approaches		Although similar to the findings obtained from ChatGPT, shorter explanations are given.	
Current state of esports tourism research	Current status and comparative analysis of esports tourism research	Rapid development and innovation	Although similar to the findings obtained from ChatGPT, shorter explanations are given.
		Interdisciplinary interest and theoretical diversity	Although similar to the findings obtained from ChatGPT, shorter explanations are given.
		Academic acceptance and its effects	Although similar to the findings obtained from ChatGPT, shorter explanations are given.
	Comparisons with other academic fields	Similarities	Interdisciplinary approaches, Methodological approaches,
		Differences	Focus area
	Limitations in existing esports tourism research	Limitations	Lack of data and difficulty of access, Small samples and difficulty of generalization
		Requirements	Large and representative samples, Data sharing and collaboration
Future directions of esports tourism research	Strategic directions and development of future esports tourism research	Study topics	Sustainable esports tourism, Esports and technology integration, Design of esports arenas and facilities
		Ways to improve esports tourism research	Although similar to the findings obtained from ChatGPT, shorter explanations are given.
		Ways to improve esports tourism research methodologies	Although similar to the findings obtained from ChatGPT, shorter explanations are given.
		Issues that researchers should be aware of	Adaptation to global and local trends, Adaptation to technological developments, Adaptation to diversity and variability in the sector, Valuing the views of participants

**Source:** Created by the authors.

*ChatGPT:* The emergence of new technologies and social media platforms has fostered methodological innovations in esports tourism research. Social media analytics, network analysis and AI-assisted data collection methods have provided researchers with more dynamic and time-sensitive data.

*ZekAI:* The first steps in esports tourism research often started by focusing on the general conceptual framework. Later, there was a shift towards research on more specific and complex topics.

#### 4.2. Results on the Current Status of Esports Tourism Research

The hierarchical code-subcode model created for the current state of esports tourism research is presented in Figure 3.

*Rapid development and innovation:* ChatGPT and ZekAI argued that esports tourism has a faster innovation and adaptation process compared to other academic fields and this is a result of the rapid development of technology.

*ChatGPT:* Esports tourism has shown significant growth, especially in the last decade. This pace is in line with the rapid evolution of technology and digital media. Compared to other traditional tourism research, esports tourism has a faster innovation and adaptation process.

*ZekAI:* While esports tourism research often deals with topics such as technology, innovation and digitalization, other academic fields have different disciplines and focus areas. In this respect, esports tourism research covers more innovative and contemporary topics.

*Interdisciplinary interest and theoretical diversity:* ChatGPT and ZekAI suggested that esports tourism research takes an interdisciplinary approach and integrates various theories.

*Academic acceptance and impact:* ChatGPT and ZekAI suggested that esports tourism research has seen a marked increase in the number and quality of academic publications and conference papers, but has not gained wide academic acceptance compared to other academic fields.

*ChatGPT:* Esports tourism is still not as widely recognized as

traditional tourism research. However, this is changing rapidly, with more journal articles and conference papers focusing on esports tourism. As esports tourism becomes more recognized in the academic community, the depth and breadth of research in this area will increase.

*Comparisons with other academic fields:* ChatGPT and ZekAI clearly identified the existing similarities of esports tourism research with research in other academic fields. Both AI applications argued that esports tourism research adopts an interdisciplinary approach like research in other academic fields and the methods used in research are similar. In addition, ChatGPT also stated that in addition to theoretical studies, practical applications are also realized in esports tourism.

*ChatGPT:* In addition to theoretical studies in esports tourism research, practical applications also take place, which is a common feature with other fields such as tourism management, business and marketing.

*ZekAI:* Both esports tourism research and other academic fields require an interdisciplinary approach. Research on esports tourism often brings together different disciplines such as tourism, esports, marketing, communication, technology. Esports tourism research and research in other academic fields can often use similar data analysis methods and research techniques. Quantitative and qualitative research methods, statistical analysis, in-depth interviews, etc. are often used in both fields.

ChatGPT argued that esports tourism research is dependent on digital technology and media, which is different from research in other social sciences. On the other hand, it stated that esports tourism is popular among young people and may differ from the demographic characteristics of individuals participating in research in other academic fields. ZekAI suggested that the focus of esports tourism research is relatively different from the focus of other academic fields.

*ChatGPT:* Esports tourism is highly dependent on digital technology and media by its very nature. This makes esports tourism research different from more traditional tourism studies or other social science fields with less technology dependence.

*ZekAI:* Esports tourism research is often technology-driven and can include topics such as digitization, virtual reality. Other academic fields may not have such an intense technological focus.

*Limitations of existing esports tourism research:* Both AI applications identified the difficulty of data access as a limitation. In addition, ChatGPT emphasized that esports tourism research is focused on a specific region and that

comparative analyses should be conducted to eliminate this limitation. In addition, ChatGPT stated that although studies have started to be conducted with comprehensive and innovative methods, existing esports tourism studies can remain descriptive and superficial and interdisciplinary integration is not always successful. In order to overcome these limitations, ChatGPT suggested that interdisciplinary working groups should be formed and these groups should be supported with the necessary research funds and different studies should be published.

*ChatGPT:* Although esports tourism is a global phenomenon, research often focuses on specific regions or cultures. This makes it difficult to draw generalizable conclusions and can lead to some regional dynamics being overlooked. For this, esports tourism research needs to be expanded to cover global and cultural diversity. This means researchers from different regions collaborating and conducting comparative studies.

### 4.3. Results on the Future Directions of Esports Tourism Research

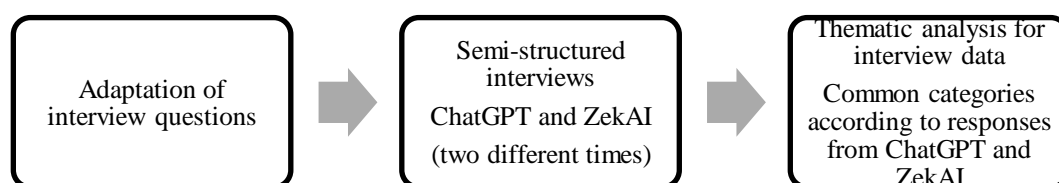
The hierarchical code-subcode model for the future directions of esports tourism research is presented in Figure 4.

*Research topics for the future:* Three research proposals were submitted by ZekAI, including sustainable esports tourism, esports and technology integration, design of esports arenas and facilities. ChatGPT submitted six research proposals, including sustainable esports tourism, impacts of esports tourism on the global economy and interactions with local communities, integration of technologies such as virtual and augmented reality into esports tourism, legal and policy frameworks of esports tourism, social acceptance and impacts of esports in different cultures, and further examination of the economic impacts of esports tourism.

*ChatGPT:* There is a need to examine the balance between the impacts of esports tourism on the global economy and its interactions with local communities. This should include studies on how esports tourism can be adapted and localized in different geographies.

*ZekAI:* Research can be conducted on how to better integrate the technologies used in esports events in the future and technological innovations to increase the audience experience.

*Ways to improve the quality of esports tourism research and research methodologies:* ChatGPT and ZekAI gave very similar answers to the questions about improving the quality of esports tourism research in the future. The various ways suggested by both AI applications are similar to the answers they gave to other questions asked within the scope of the research. Recommendations;



**Figure 1.** Interviews and Data Analysis Process

Source: Created by the authors.



*ChatGPT:* The use of innovative methodologies such as big data analytics, experiential studies in virtual reality environments and real-time data collection techniques should be increased.

*ZekAI:* In the future, research should be conducted on how to better integrate the technologies used in esports events and technological innovations to increase the audience experience.

*ChatGPT:* Training programs and workshops supported by universities, industry organizations and governments should be organized to increase the level of awareness and expertise in esports tourism.

*ZekAI:* International cooperation in the field of esports tourism should be strengthened and comparative studies should be conducted between different countries. In this way, a better understanding and development of the sector on a global scale can be achieved.

*ChatGPT:* Training programs and workshops supported by universities, industry organizations and governments should be organized to increase the level of awareness and expertise on esports tourism.

*ChatGPT:* Legal and policy frameworks for esports tourism should be supported and developed through international cooperation and intergovernmental agreements. This would allow the sector to grow in a more organized and sustainable way.

*ChatGPT:* They should be active and regularly share their work on platforms such as open access journals, conferences and online forums to disseminate their research findings to a wide audience.

*ChatGPT:* They should strive to develop sustainable esports tourism models, focusing on strategies to reduce the environmental impact of events.

When the responses given by ChatGPT and ZekAI are examined, it is seen that eight suggestions are presented as

innovative methodologies, training programs and workshops, academic and industrial funding, technological integration, policy and regulation development, international and intercultural research, publication and sharing platforms, and sustainability-oriented research.

ChatGPT and ZekAI made very similar suggestions for developing esports tourism research methodologies in the future. It was determined that the suggestions were similar to their answers to other questions asked within the scope of the research. Recommendations;

*ChatGPT:* The analysis of big data from social media, online platforms and event management systems offers the opportunity to monitor esports tourism trends and participant behavior in real time. Using machine learning and artificial intelligence technologies on this data can be effective in displaying insights and patterns.

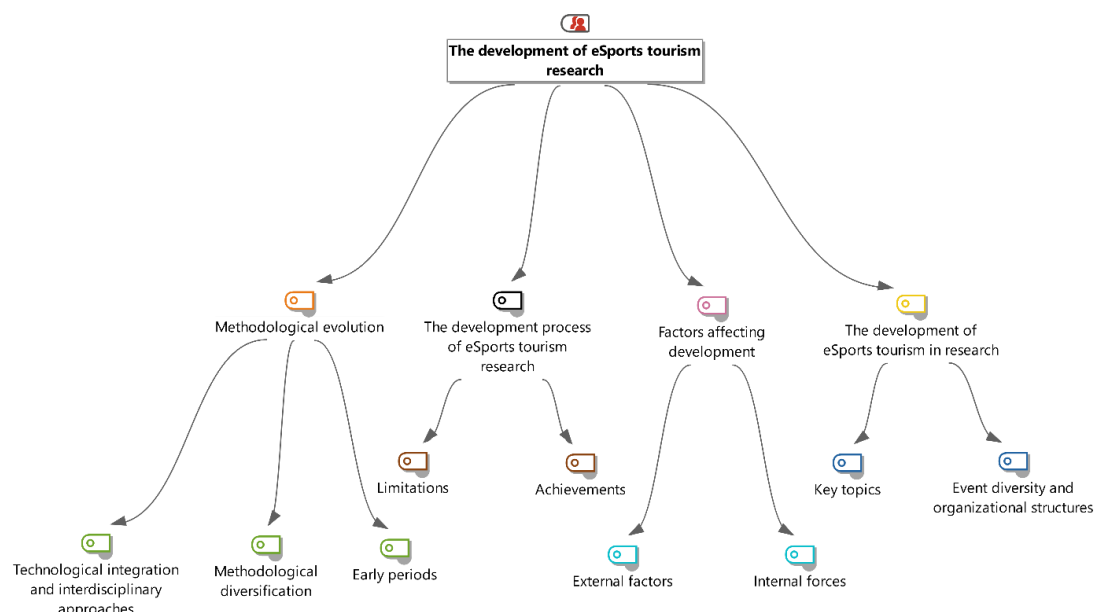
*ZekAI:* The use of mixed methodologies (e.g. a combination of quantitative and qualitative research methods) can help esports tourism research to delve deeper and reach more comprehensive conclusions.

*ChatGPT:* Virtual reality (VR) and simulation technologies can be used to better understand participants' experiences of esports tourism. These techniques can provide valuable insights, especially when participation in physical activities is limited, such as during a pandemic.

*ZekAI:* Conducting studies based on international collaborations that compare esports tourism practices in different countries can provide a better understanding of the overall structure and trends of the sector.

When the responses given by ChatGPT and ZekAI are analyzed, it is seen that four suggestions are presented: mixed method approaches, big data analytics, long-term and comparative studies, virtual reality and simulation techniques.

*Researchers' considerations for future esports tourism*



**Figure 2.** Hierarchical Code-Subcode Model for the Development of Esports Tourism Research

Source: Created by the authors using the MAXQDA analysis program.

*research:* ZekAI identified adaptation to global and local trends, adaptation to technological developments, adaptation to diversity and variability in the sector, and valuing participants' opinions, while ChatGPT identified adaptation to global and local trends, adaptation to technological developments, focus on practical applications, training programs and mentoring initiatives to train the next generation of researchers.

*ZekAI:* As esports is a field constantly shaped by technology, researchers need to keep up with the latest technology trends and integrate them into their research. Innovative technologies such as virtual and augmented reality enrich research methodologies and offer more authentic experiences.

*ChatGPT:* Training programs and mentoring initiatives are prominent to train the next generation of researchers. This is especially true for young researchers who will specialize in the disciplines of esports and tourism.

In this study, the comparison of ChatGPT and ZekAI's recommendations provides important clues for future research in the field of esports tourism. The themes emphasized by both AI models converge in critical areas such as adapting to technological developments in the sector and following global and local trends. These findings suggest that a multifaceted approach to the development of esports tourism research should be adopted. We now turn to the conclusion and discussion section to examine how research can be directed in line with these recommendations and how the results can be evaluated in a broader context.

## 5. Conclusion and Discussion

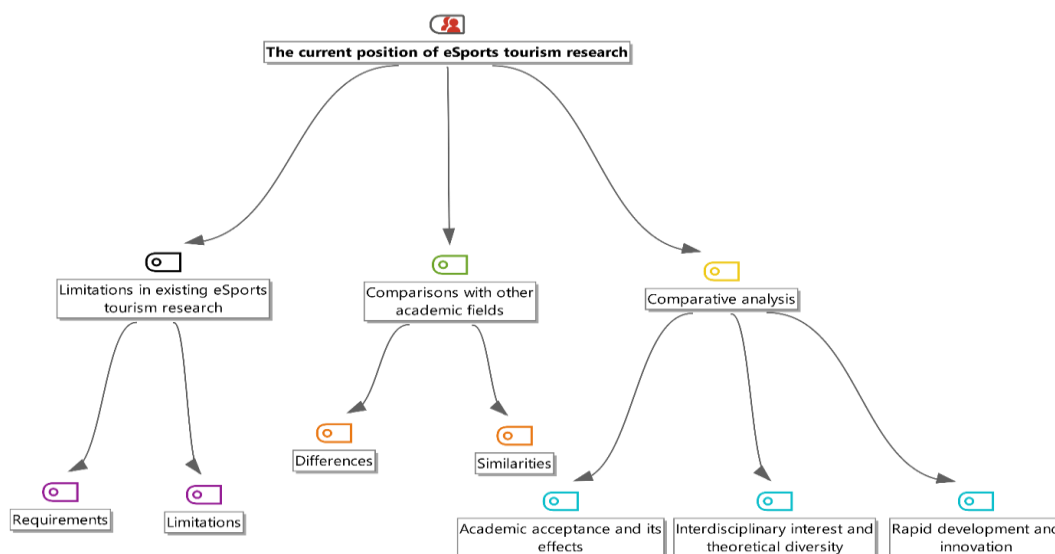
Esports has become a rapidly growing phenomenon in recent years, affecting traditional sports as well. Esports events range from tournaments held in large arenas to small-scale gatherings in hotels and conference centers. These events have not only directly contributed to local economies, but also created the concept of esports tourism. Tourists traveling to attend esports events has created new tourism opportunities in this field. The findings provide significant insights for

understanding the economic, socio-cultural and environmental impacts of esports tourism. In this context, an in-depth analysis of the development of esports tourism research has been conducted and the results obtained are shared.

ChatGPT and ZekAI argued that esports events make positive contributions to the tourism sector and that the capacity of these events varies. The findings are in line with the findings of the study conducted by Becka et al. (2021). In addition, Masłowski and Karasiewicz (2021) and Dülğaroğlu (2023) examine the rise of esports tourism as a new trend and the new opportunities created by digital technologies in the tourism industry.

While ZekAI identified four critical topics of previous studies on esports tourism, ChatGPT identified seven topics. The finding shows that ChatGPT also scanned current sources and gave longer answers to the questions asked. The study topics presented by ChatGPT and ZekAI were found to be related to the literature. However, resources on the sustainability of esports tourism and its legal and political framework were not found. When the literature is examined, resources on the sustainability and legal evaluation of esports independent of esports tourism are found. This finding raises questions about whether artificial intelligence chatbots are a fully reliable source despite their continuous development. The economic impacts of esports tourism (Leon et al., 2022), participant and spectator profile (Rietz & Hallmann, 2023), destination marketing and management (Wang et al., 2024), potential impacts of esports tourism (Nikas & Poulaki, 2021), and social and cultural impacts of esports tourism (Leon et al., 2022) can be given as examples.

ChatGPT and ZekAI identified internal and external factors influencing the development of esports tourism research. The most critical difference between the findings obtained from the two AIA is that ChatGPT considers technological developments among internal factors, while ZekAI considers them among external factors. In addition, while ChatGPT included health and safety policies among the external factors



**Figure 3.** Hierarchical Code-Subcode Model for the Current State of Esports Tourism Research

Source: Created by the authors using the MAXQDA analysis program.

and especially mentioned that Covid-19 has positive effects on esports tourism, ZekAI did not share such information. It was determined that the identified factors are related to the literature and the most popular topics are the growth of the esports industry (Kim et al., 2020; Rosell-Llorens, 2017) and studies to determine the effects of technological developments on esports tourism (Çetin & Coşkun, 2021; Molnár & Müller, 2023).

ChatGPT and ZekAI suggested data access and reliability as an important limitation of esports tourism research. As a result of the literature review, the number of visitors travelling for esports tourism could not be reached. The sources that can be accessed are texts written on websites, which raises questions about the security of the data.

ChatGPT and ZekAI initially argued that esports tourism research consisted of conceptual studies, while in current studies, an interdisciplinary approach is adopted and various methods are used. When the literature is examined, Yenışehirlioğlu et al. (2018) can be cited as an example for exploratory studies, and Becka et al. (2021), Leon et al. (2022) can be cited as examples for studies conducted with various methods. In addition, the fact that esports emerges from the combination of sports and tourism sector shows that it is an interdisciplinary approach and this supports the answers given by ChatGPT and ZekAI. Finally, the study by Wahyudi and Kencana (2024) supports the technological integration of esports tourism.

In comparison with other academic fields, ChatGPT and ZekAI bring out that esports tourism adapts faster to technological innovations. When the literature is examined, it is seen that this information obtained is compatible with the study conducted by Leon et al. (2022).

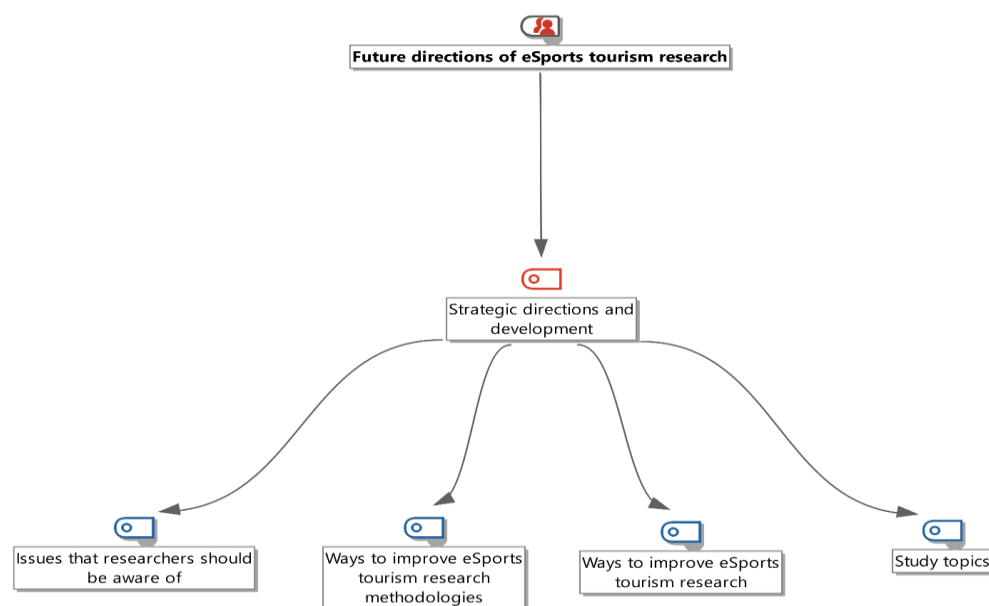
ChatGPT and ZekAI suggest that an interdisciplinary approach is adopted in esports tourism research. However, when the literature is examined, it is seen that interdisciplinary

approaches (Babin et al., 2024; Komatsu et al., 2021; Mo et al., 2023) are adopted in studies on esports independent of esports tourism. It is seen that esports tourism research is generally integrated with sports science. The finding shows that AIA have difficulty in distinguishing between 'esports' and 'esports tourism'.

ChatGPT and ZekAI suggest that there is a quantitative and qualitative increase in the number of academic publications in esports tourism research, suggesting that these studies should be further developed compared to other academic fields. It can be said that this is an expected result since esports tourism research is a relatively new topic. The finding obtained shows that esports, which is a potential type of tourism, is a subject that needs to be further studied.

While ChatGPT describes the existing differences of esports tourism research with research in other academic fields in detail, ZekAI's answers were found to be insufficient. ChatGPT states that unlike other social sciences research, esports tourism research is dependent on technology and media. The finding obtained is consistent with the study conducted by Leon et al. (2022). In addition, ChatGPT suggests that participation in esports tourism is more popular among young people, unlike other fields. When the literature was examined, it was determined that although there is no study on demographic characteristics in esports tourism research, there are studies (Rudolf et al., 2020; Trotter et al., 2022) that support the finding obtained in esports research. ZekAI suggests that the focus of academic studies in the field of esports tourism is different from the focus of studies in other academic fields. The finding obtained from ZekAI supports many scientific studies (Aktuna & Şimşek, 2021; Hlee & Lee, 2023; Thompson et al., 2022; Yenisoy & Konaklıoğlu, 2023). It has been determined that the focus of esports tourism research is related to technology.

Although ChatGPT and ZekAI gave similar answers to the



**Figure 4.** Hierarchical Code-Subcode Model for Future Directions of Esports Tourism Research

**Source:** Created by the authors using the MAXQDA analysis program.

limitations of esports tourism research, the answers given by ZekAI were quite short. Unlike ZekAI, ChatGPT states that comparative analysis of destinations should be made in esports tourism research. When the literature is examined, the small number of studies (Becka et al., 2021) that make comparisons on destinations for esports tourism supports the accuracy of ChatGPT's responses.

ChatGPT and ZekAI have made various suggestions for future esports tourism research. The suggestions made by Thompson et al. (2022) on the integration of VR technology into esports tourism and Bayram (2018) on the examination of esports tourism on destinations support the responses of two AIA. In addition, the study by Becka et al. (2021) can be shown as an example of the social acceptance and effects of esports in different cultures.

Esports tourism has brought a breath of fresh air to the tourism sector in today's world where technology and digitalisation are advancing rapidly. In this study, with the contributions of AIA ChatGPT and ZekAI, the evolution, current status and future directions of esports tourism are examined in depth. The results bring out that the economic, social and cultural dimensions of esports tourism are becoming increasingly significant. The opportunities and limitations created by technological developments in this field are discussed and the necessity of innovative methodologies and interdisciplinary approaches for future research is emphasised. In this context, the sustainability of esports tourism research will form the basis of academic and practical advances in the field. This study exposes the potential of esports tourism and the importance of further research in this field.

Theoretical and practical suggestions are needed in line with the findings of the research on esports tourism. Since esports tourism is a rapidly growing field, it is of great importance that research in this field both contributes to academic knowledge and includes concrete suggestions for practical applications. The suggestions presented below are in line with the literature in the field of esports tourism and provide guidance for future studies and practices.

### 5.1. Practical Implications

As a result of this research, which reveals the importance of esports tourism, some practical suggestions have been developed. In accordance with these recommendations, special tourism strategies should be developed for esports events. For example, hotel, transportation and catering services in destinations where esports events will be held should be optimised. These services can also be offered as package tours. Local authorities (Esports Federation, Ministry of Culture and Tourism, Government) and tourism agencies should cooperate to increase the potential of esports tourism, support esports events and focus on promotional activities. Workshops and training programmes on esports tourism should be organised for those working in esports and tourism sector. In this way, it can be ensured to raise awareness of sector employees who are not aware of esports tourism. Local people living in the destinations where esports events are organised should be made aware of esports tourism. Especially by organising information campaigns on economic and social benefits, the adaptation of the local people to this

type of tourism should be ensured. Integrating virtual reality (VR) and augmented reality (AR) technologies into esports events to enrich the experience of esports tourists can provide tourists with unforgettable experiences and revitalise esports tourism. Since esports is intertwined with technology, it is extremely important to follow and integrate current technologies in esports events.

### 5.2. Theoretical Implications

As a result of this research, which displays the importance of esports tourism, some theoretical suggestions have been developed. In accordance with these recommendations, although there are existing studies examining the economic, socio-cultural and environmental impacts of esports tourism, more comprehensive research should be conducted. When the literature is examined, no model has been developed on the sustainability of esports tourism. Theoretical models should be developed and these models should be tested in various destinations. In esports tourism research, there are studies in which tourism, sports science and technology come together. Studies that bring together different disciplines such as business and marketing should be emphasised. There is a need for bibliometric analyses on esports tourism. These analyses are important to identify gaps in the existing literature. More studies should be conducted on the political framework of esports tourism. Determining the political frameworks will contribute to the sustainable growth of this type of tourism. In future research, studies should be conducted especially on the number of tourists participating in esports events. These studies will contribute to the gaps in the literature. International comparative studies should be conducted on the social acceptance and economic effects of esports tourism in different cultures. With these studies, the potential of esports tourism will be revealed more clearly.

### 5.3. Limitations and Suggestions to Future Research

In this study, the opportunities and limitations provided by technological developments are discussed and the necessity of innovative methodologies and interdisciplinary approaches for future research is emphasized. In this context, the sustainability of esports tourism research will underpin academic and practical advances in the field. While ZekAI identified the issues that researchers should pay attention to in the future as adapting to global and local trends, technological developments, the diversity and variability of the sector, and valuing participant opinions, ChatGPT, in addition to these issues, emphasized focusing on practical applications, training programs and mentoring initiatives for the next generation of researchers. When the results obtained are evaluated, it is recommended to work on issues such as education and adaptation to technology for the future of artificial intelligence research.

**Ethics Statement:** Ethics committee approval was not obtained for this study as it did not require ethics committee approval. In case of detection of a contrary situation, TO&RE Journal has no responsibility, and all responsibility belongs to the author(s) of the study.

**Author Contribution Statement::** The contribution rates of the authors are equal.

**Authors Statement:** There is no conflict of interest among the authors.

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