

## A Comparative Benchmark Analysis of Recreation Programs in Türkiye, the United States, and Canada Using a Chatgpt-Based Interview Approach

Halime Dinç<sup>1\*</sup>

<sup>1</sup>Faculty of Sport Sciences, Afyon Kocatepe University, Afyon, Türkiye, halimedinc@yandex.com, ORCID: <https://orcid.org/0000-0002-2391-5508>

### Abstract

Among large language models (LLMs), ChatGPT has assumed a particularly significant position and has become widely utilized by both users and researchers. While the number of studies examining ChatGPT's applications in fields such as education and tourism has steadily increased, research on its use in recreation remains notably limited. Moreover, no prior study has benchmarked recreation programs against those offered in more developed countries.

Accordingly, the purpose of this study is to benchmark recreation programs in Türkiye, the United States, and Canada by comparing admission requirements, curricula, graduate competencies, and employment conditions, while also providing future projections and proposing a certification program for Türkiye. Benchmarking was employed as a cross-national comparative analysis method to identify the strengths and weaknesses of existing programs. Rather than conducting internal comparisons, the study adopts a macro-level perspective by situating Turkish recreation programs alongside more institutionally mature international examples.

Methodologically, the researcher conducted a structured interview with ChatGPT across six predefined themes. The interview lasted approximately 1.5 hours and included questions concerning admission policies, curriculum structures, graduate competencies, employment conditions, and future projections. ChatGPT's responses were presented in tabular form and evaluated to enable direct cross-national comparison.

The findings highlight significant differences among recreation programs in Türkiye, the United States, and Canada. For instance, the U.S. and Canada demonstrate more flexible admission policies, diversified course content, and broader post-graduation employment opportunities, whereas Turkish programs remain in an early stage of development. Building on these differences, the study puts forward recommendations for the recreation field in Türkiye, projects future developments over the next decade, and proposes a certification model.

The proposed certificate program consists of six modules, spans six months, and includes 120 hours of training. In this respect, it aligns with international examples and is designed to contribute to employment opportunities in the field. The study carries both theoretical and practical implications. Theoretically, it enriches the literature on recreation education and employment, while practically, it offers guidance for academics, policymakers, local governments, and sectoral stakeholders in shaping the future of recreation in Türkiye.

**Keywords:** Recreation, Leisure, ChatGPT, Benchmarking, Recreation in Türkiye.

\* İletişim: Halime Dinç, halimedinc@yandex.com, Faculty of Sport Sciences, Afyon Kocatepe University, Gazlıgöl Yolu, 03200 Afyonkarahisar, Turkey

## Chatgpt Tabanlı Görüşme Yaklaşımı Kullanılarak Türkiye, Amerika Birleşik Devletleri ve Kanada'daki Rekreasyon Programlarının Karşılaştırmalı Kıyaslama Analizi

### Özet

LLM'ler arasında ChatGPT önemli bir yer tutup hem kullanıcılar hem de araştırmacılar tarafından yaygın olarak kullanılmaya başlamıştır. Literatürde özellikle eğitimde ve turizm gibi alanlarda ChatGPT kullanımına yönelik araştırmaların sayısı her geçen gün artmasına karşın, rekreasyonda ChatGPT kullanımına yönelik çalışmaların sayısı oldukça sınırlıdır. Rekreasyon programlarına yönelik konuların gelişmiş ülkelerdeki programlarla benchmark edildiği çalışma ise bulunmamaktadır.

Dolayısıyla bu çalışmanın amacı Türkiye, ABD ve Kanada'daki rekreasyon programlarını benchmark ederek öğrenci kabul koşullarını, program müfredatlarını, mezun yeterliliklerini, istihdam koşullarını karşılaştırmak ve geleceğe dair bir projeksiyon sağlayarak Türkiye için bir sertifika programı önerisini ortaya koymaktır. Bu amaç doğrultusunda benchmarking, ülkeler arası karşılaştırmalı analiz yöntemi olarak kullanılmış ve programların güçlü ve zayıf yönlerini ortaya koymak hedeflenmiştir. Çalışma, içsel karşılaştırmalardan ziyade, Türkiye'deki rekreasyon programlarını daha kurumsallaşmış ülke örnekleriyle kıyaslayarak makro bir bakış açısı geliştirmektedir.

Çalışmanın yöntemi kapsamında araştırmacı, ChatGPT ile altı önceden tanımlanmış konu üzerine yapılandırılmış mülakat gerçekleştirmiştir. Mülakat yaklaşık 1,5 saat sürmüş, öğrenci kabulü, program müfredatı, mezun yeterlilikleri, istihdam koşulları ve geleceğe yönelik projeksiyonlara ilişkin sorular yöneltilmiştir. ChatGPT'den elde edilen yanıtlar tablolar halinde düzenlenmiş, doğrudan karşılaştırmaya imkân tanıyacak şekilde değerlendirilmiştir.

Araştırmanın bulguları, Türkiye, ABD ve Kanada'daki rekreasyon programlarına öğrenci kabulü, müfredat, mezun yeterlilikleri ve istihdamına yönelik dikkate değer farklılıkları işaret etmektedir. Örneğin, ABD ve Kanada'da daha esnek kabul koşulları, çeşitlendirilmiş ders içerikleri ve mezuniyet sonrası istihdam olanaklarının genişliği öne çıkarken; Türkiye'de rekreasyon programlarının henüz gelişim aşamasında olduğu görülmüştür. Bu farklılıklar temelinde Türkiye'deki rekreasyon alanına yönelik öneriler geliştirilmiş, 10 yıl sonrasına ilişkin projeksiyonlar yapılmış ve sertifika programı önerisi sunulmuştur.

Önerilen sertifika programı altı modülden oluşmakta, altı ay sürmekte ve 120 saatlik bir içerik barındırmaktadır. Bu yönüyle, uluslararası örneklerle uyumlu, istihdama katkı sağlayabilecek bir yapıya sahiptir. Araştırma sonuçlarının hem teorik hem de uygulamaya dayalı çıkarımları bulunmaktadır. Teorik açıdan çalışma, rekreasyon eğitimi ve istihdamına yönelik literatüre katkı sağlarken, uygulamada akademisyenler, karar vericiler, yerel yönetimler ve sektörel aktörler için yol gösterici nitelik taşımaktadır.

**Anahtar Kelimeler:** Rekreasyon, Boş Zaman, ChatGPT, Kıyaslama, Türkiye'de Rekreasyon.

## Introduction

Artificial intelligence (AI) technologies—particularly generative models like ChatGPT—represent one of the most transformative innovations of our era. Following the rise of the metaverse, AI applications have rapidly permeated both academic and professional domains. As Fırat (2023) notes, AI-based systems offer novel opportunities for researchers, companies, and service providers alike. This technological surge has catalyzed a significant body of research across various fields, with ChatGPT playing a central role.

In recent years, ChatGPT's integration into education (e.g., García-López et al., 2025; Heung & Chiu, 2025; Levine et al., 2025), tourism, and travel planning (e.g., Carvalho & Ivanov, 2024; Gursoy et al., 2023; Guttentag et al., 2024; Sigala et al., 2024) has received notable scholarly attention. However, despite its relevance, the field of recreation remains underrepresented in this body of literature, which indicates a significant research gap.

This gap is particularly evident in the absence of comparative studies examining how recreation programs vary across different countries. While a few recent studies in Türkiye have discussed ChatGPT's role in diversifying recreational events (Barakazi, 2023), contributing to tourism (Çolak, 2023), or its general potential (Genç, 2023), no study to date has systematically compared university-level recreation programs between Türkiye and countries where the discipline is more institutionally mature, such as the United States and Canada.

Recreation is still an emerging academic discipline in Türkiye, and comparative analyses are critical for informing future developments and aligning the field with global standards. As such, the purpose of this study is twofold: (1) to benchmark recreation programs in Türkiye, the United States, and Canada by analyzing student admission criteria, curriculum design, graduate competencies, and employment conditions; and (2) to explore future projections for recreation education and propose a certification model for Türkiye inspired by established practices abroad.

By employing ChatGPT as a tool to support data extraction and cross-national comparisons, this study not only fills a critical gap in the recreation literature but also offers practical insights for academic institutions, policymakers, and practitioners. Ultimately, this research seeks to contribute to the development of more standardized, globally informed recreation education frameworks and enhance strategic planning within the field.

## Literature Review

### *ChatGPT, Leisure and Recreation*

The increasing availability of data and computational power has recently drawn significant attention to the application of generative artificial intelligence and large language models (LLMs). Among these LLMs, ChatGPT stands out as a particularly influential tool, inspiring extensive research exploring its potential across various fields (Wu et al., 2025). Initially developed with GPT-3 and later enhanced through more advanced iterations such as GPT-4, ChatGPT undergoes pre-training on vast datasets and is fine-tuned using supervised and reinforcement learning techniques (Skjuve et al., 2023). The transition to GPT-4 has resulted in substantial improvements in comprehension, fluency, and contextual relevance, further solidifying ChatGPT's status as a cutting-edge conversational AI system (Bubeck et al., 2023). These advancements enable the model to perform a diverse range of tasks, including answering questions, generating and refining text, and even coding (Adiwardana et al., 2020; Roller et al., 2020). ChatGPT distinguishes itself from earlier conversational models with its ability to deliver precise, context-aware responses across numerous topics (Skjuve et al., 2023).

One of ChatGPT's most distinctive features is its ease of use and its accessibility as an open-source AI technology (Keiper, 2023). As a result, its user base has been growing exponentially each year. Due to these advantages, ChatGPT has been rapidly adopted, and as of 2023, it experienced a 275% growth rate, reaching over 100 million subscribers and attracting more than a billion visitors per month (Leggatt, 2023). These features make ChatGPT particularly suitable for use in research contexts, including content analysis, trend identification, and simulation-based applications—areas that are increasingly relevant in the field of leisure and recreation. ChatGPT leverages various knowledge sources to conduct advanced analyses, synthesize information, and provide comprehensive responses to complex queries (Wang et al., 2023). It sets itself apart by offering free access to individual users and featuring a highly intuitive interface, thereby broadening the primary user base of LLMs and fostering greater societal benefits (Ofosu-Ampong et al., 2023). One of its key advantages is its ability to adapt to user preferences and deliver personalized responses—an area where traditional search engines are still striving for improvement (Gude, 2023). By leveraging advanced deep learning algorithms, ChatGPT generates human-like responses to user inquiries, making it a potentially valuable tool across a wide range of applications (Ofosu-Ampong et al., 2023). Due to these capabilities, ChatGPT has proven to be not only beneficial for individual users and consumers but also a valuable resource for researchers, providing content and data that facilitate both opportunities and challenges in academic investigations (Firat, 2023).

Building on these capabilities, several studies have explored the potential applications of ChatGPT in the field of leisure and recreation. While studies on ChatGPT in the field of leisure and recreation exist, their number remains relatively limited. In the leisure sector, Gau et al. (2023) utilized AI-driven text mining and ChatGPT as a content analysis tool to identify emerging trends in the leisure and recreation industries. Chiang and Chiang (2023) introduced an innovative approach by integrating a virtual character powered by ChatGPT into a virtual reality environment to enhance the leisure experiences of elderly individuals living alone. Barakazi (2023), employing an interview technique through ChatGPT, investigated the model's recommendations for diversifying various types of recreational activities, including entertainment-focused, relaxation-oriented, cultural and artistic, sports-related, and tourism-based recreation. Additionally, Çolak (2023) conducted a study on the use of GPT technology in recreational tourism, emphasizing its potential to enhance customer engagement, decision-making processes, and the personalization of travel experiences. Genç (2023) focused on ChatGPT users' search preferences, emerging trends, and concerns in the field of recreation, exploring the opportunities offered by this AI technology and its potential contributions to the future of the domain. The findings of this research highlight significant insights in this regard.

### ***Benchmarking***

The concept of benchmarking refers to comparative analysis, having first emerged as a component of modern quality management principles in the 1940s. Since its initial introduction, it has undergone various developments and transformations, influenced by the works of Juran (1950), Shewhart (1980), and Deming (1982) (cite in Moriarty, 2011). Benchmarking has become a crucial strategy in the business world, enhancing organizational performance and competitive advantage (Kyrö, 2003). There are numerous definitions of benchmarking. According to one definition, benchmarking is a teleological, exemplar-focused process deliberately designed to transform an existing state within an organization into a superior one (Moriarty & Smallman, 2009). Another definition, proposed by Camp (2024), describes benchmarking as a process that enables an organization to improve its performance by comparing its products, services, and processes with well-established references (benchmarks). Similarly, benchmarking has been defined as "a systematic approach to information sharing between two or more organizations to improve the quality and performance of a selected process" (Terrell, 1995, p. 10). Based on these definitions, comparing recreation programs in Türkiye (as a product or service) with well-established recreation programs in the United States and Canada across various criteria aligns with the fundamental principles of benchmarking.

Anand and Kodali (2008) distinguish between internal and external benchmarking. Although benchmarking originally emerged in the fields of management, business, and quality assurance, it has

since been widely adopted by numerous industries and sectors. One such area is education, where benchmarking has been utilized to facilitate comparisons across different levels. The higher education sector has incorporated this practice for many years (Chaboyer et al., 2004). Stralser (1995) views benchmarking as a natural process through which the academic sector can learn from individuals who demonstrate innovation and excellence at a high level.

In this study, benchmarking is employed as a method of comparative analysis to evaluate recreation programs across countries, with the aim of identifying best practices and informing future improvements in the Turkish context. The concept of benchmarking is applied to compare recreation programs in Türkiye with those in the United States and Canada across multiple dimensions. Consequently, this study does not focus on internal comparisons among Turkish programs but rather adopts a macro-level approach to examining key aspects of recreation programs in these reference countries. The benchmarking analysis in this research specifically addresses student admissions, recreation program curricula, graduate competencies, and employment opportunities. To conduct these comparisons, the study utilizes the artificial intelligence tool ChatGPT.

## **Method**

### ***Participant***

In recent years, numerous studies have employed interview techniques with ChatGPT to acquire knowledge across various fields, ranging from anatomy and health to education, tourism, recreational activities, and recreational tourism (Barakazi, 2023; Corsello & Santangelo, 2023; Çolak, 2023; Elmohandes & Marghany, 2024; Oh & Lee, 2024; Totlis et al., 2023). In this study, ChatGPT serves as the interviewee, recognized as an independent intellectual knowledge source. It is deemed a suitable respondent due to its capability to explore a subject—in this case, the field of recreation—and conduct benchmarking analyses.

### ***Interview and Procedure***

The manuscript's author, who holds an active online subscription to ChatGPT (version 4, May 24 edition), engaged in a structured interview with the chatbot regarding six predefined topics related to recreation departments. The researcher conducting this study holds a Ph.D. in recreation science, has prior experience with ChatGPT-related research, possesses scholarly publications on the subject, and specializes in qualitative research and epistemic processes.

The interview with ChatGPT took place on March 5, 2025, using the researcher's personal workspace. The conversation was conducted via the ChatGPT web interface and lasted approximately 1.5 hours,

including the structured questioning, reading, and retrieval of responses from the chatbot. The questions were carefully formulated to account for ChatGPT's known limitations in search capabilities. For instance, OpenAI (2022) has acknowledged that ChatGPT, while generating coherent and appealing responses to open-ended questions (e.g., "What do you think about...?"), may still produce inaccuracies. Brown et al. (2020) further noted that the model is vulnerable to inconsistencies when questions are rephrased.

There is currently no universally accepted method in the literature specifically dedicated to formulating prompts for ChatGPT in the context of comparative educational program analysis. Therefore, the researcher adopted a custom-designed approach aligned with the study's objectives. The questions were logically constructed to prompt factual, structured, and comparative responses from ChatGPT. Rather than relying on a predetermined algorithm or external protocol, the researcher utilized domain knowledge and iterative testing to refine the prompts in a way that ensured clarity, consistency, and relevance to the study's scope.

Taking these considerations into account, the manuscript's author designed questions that prioritized factual retrieval rather than subjective interpretation or paraphrasing. The aim was to obtain direct information and benchmark various aspects of recreation programs across three countries. The research questions were formulated in alignment with the study's objectives. Within the scope of the research problem, ChatGPT was asked targeted questions (e.g., "Can you compare the curricula of recreation departments in Türkiye, the U.S., and Canada?"). ChatGPT generated relatively extensive responses to such inquiries. To obtain a more structured comparison, follow-up questions were posed, such as "Can you present this information in a table?" The same methodological approach was applied to all questions throughout the study.

As part of this study, the following questions were posed regarding seven key areas or topics in recreation:

1. Can you compare the student admission requirements or entrance exams for recreation departments in Türkiye, the U.S., and Canada? Can you present the information in a table?
2. How do the curriculum contents of recreation programs in Türkiye, the U.S., and Canada compare?
3. Can you compare the post-graduation employment status across these three countries? Can you present the information in a table?

4. Can you compare the professional competencies of graduates in these three countries? Can you present the information in a table?
5. Can you project the future recreation trends and employment fields for the next 10 years in these three countries? Can you display the findings in a table?
6. Based on the admission criteria, curriculum content, and graduate qualifications of recreation departments in the U.S. and Canada, can you develop recommendations for recreation programs in Türkiye?
7. Considering the accredited recreation certification programs in the U.S. and Canada, can you design a certification program tailored for Türkiye?

In some cases, there was no need to explicitly request ChatGPT to provide answers in table format (e.g., Questions 6 and 7), as it autonomously generated responses in tabular form based on the logical structure of the preceding questions. The content of the generated tables was neither modified nor edited; all expressions were presented exactly as provided by ChatGPT.

## **Results**

Based on the current questions (probes), seven key topics were identified through benchmarking the recreational structures of three countries (Türkiye, the USA, and Canada). These topics include the department entry requirements, the general framework of the program curriculum, employment opportunities, professional competencies, recommendations for recreation in Türkiye based on the identified topics, projections for the next ten years, and certification programs. These findings emphasize the importance of addressing recreational programs through a benchmark framework, specifically regarding the predicted topics for recreation programs across the three countries. Detailed explanations provided by the author regarding the tables generated by ChatGPT for each topic are presented below.

### ***Admission Criteria***

When asked to compare the entry requirements for recreation programs, ChatGPT summarized the conditions for the three countries through Table 1. Upon reviewing the table, it is evident that in Türkiye, the required scores from national university entrance exams—Higher Education Institutions Exam (YKS), Basic Proficiency Test (TYT), and Field Proficiency Test (AYT)—are considered in the admission process, with the additional information highlighting the presence of physical activity-based exams under special exams. In terms of language proficiency, it was noted that many programs



do not require language proficiency scores. When assessing the situation in the USA and Canada, it was found that in the USA, SAT/ACT scores, recommendation letters, and a personal statement are required, with TOEFL/IELTS scores being requested for English proficiency. Furthermore, it was emphasized that these language exams are mainly required from international students in the USA. In the context of the admission process in Canada, high school diplomas, special entrance exams, or assessments may be required. Similar to the USA, TOEFL/IELTS or equivalent language proficiency scores are requested.

Table 1. Comparison of Recreation Program Admission Criteria in Türkiye, USA, and Canada

Criteria	Türkiye	USA	Canada
<b>Admission Process</b>	YKS (TYT & AYT) score; some universities require a special aptitude exam	SAT/ACT scores, recommendation letters, personal statement	High school diploma; universities may require specific entrance exams or assessments
<b>Special Exams</b>	Some universities require practical exams for physical activities	SAT/ACT, personal statement, recommendations, possibly an interview	Entrance exams may be required for some programs, depending on the institution
<b>Language Proficiency</b>	Turkish (most programs); English proficiency not always required	English proficiency (TOEFL/IELTS)	English proficiency (TOEFL/IELTS or equivalent)

### ***Recreation Program Curriculum***

Upon being asked to compare the curriculum content of recreation programs in Türkiye, the USA, and Canada in general terms, rather than focusing on course titles and numbers, ChatGPT produced the output shown in Table 2. The table provides a comparative matrix of information under four categories: core courses, elective courses, practical training, and key skills developed. In Türkiye, it was found that the core courses include physical education, sports management, and leisure studies. However, the elective courses are more limited in their focus on sustainability or specialized areas. In terms of practical training, it was reported that there are programs with minimal emphasis on field applications. Lastly, in the context of key skills development, it was reported that the curriculum is based on event planning, physical activity leadership, and basic recreation programming. When evaluating the USA, core courses are related to health, wellness, recreation management, and outdoor recreation, while elective courses focus on community recreation, health promotion, and sustainability. In terms of practical training, there are extensive internships and fieldwork. For key skills development, areas such as community outreach, sustainable recreation, and event management are highlighted. In Canada, core courses focus on recreation management, tourism, fitness, and outdoor recreation, while elective courses cover topics such as ecotourism, health, and wellness.

Table 2. Comparison of Recreation Program Curriculum Content in Türkiye, USA, and Canada

Curriculum Area	Türkiye	USA	Canada
<b>Core Courses</b>	Physical education, sports management, leisure studies	Health and wellness, recreation management, sports management, outdoor recreation	Recreation management, tourism, sport and fitness, outdoor recreation
<b>Elective Courses</b>	Less focus on sustainability or specialized fields	Community recreation, health promotion, sustainability	Ecotourism, outdoor leadership, health and wellness
<b>Practical Training</b>	Limited application in the field (internships, on-site training)	Extensive internships, fieldwork, hands-on projects	Practical placements in parks, recreation centers, and community services
<b>Key Skills Developed</b>	Event planning, physical activity leadership, basic recreation programming	Community outreach, sustainable recreation, sports leadership, event management	Outdoor leadership, community engagement, sustainable tourism, fitness programming

### *Employment Opportunities for Recreation Graduates*

Table 3, which evaluates employment opportunities for graduates of recreation programs in Türkiye, the United States, and Canada, illustrates the differentiation in employment sectors, including the private sector, public sector, and entrepreneurship. In Türkiye, public institutions, municipalities, sports centers, and the tourism sector are identified as primary areas of employment. However, job opportunities in the private sector are comparatively more limited than in the United States and Canada. When considering the United States, employment opportunities are found in parks and recreation departments, as well as community centers. In the private sector, tourism, wellness, and recreation services offer a substantial number of employment opportunities, while the public sector provides job prospects in parks, community recreation services, and local government agencies. Employment conditions in Canada are similar to those in the United States, with particular opportunities in the private sector in areas such as eco-tourism, adventure tourism, and wellness. Additionally, in the public sector, parks and recreation community services, along with public health institutions, provide employment opportunities for graduates. Moreover, in Canada, independent work (freelancing) or entrepreneurial opportunities are available in fields like adventure travel and health services.

Table 3. Comparison of Employment Opportunities for Recreation Graduates in Türkiye, USA, and Canada

Employment Area	Türkiye	USA	Canada
<b>Primary Employment Areas</b>	Municipalities, sports centers, tourism sector	Parks and recreation departments, community centers, private sector, tourism industry	Public sector (parks, recreation departments), private sector (tourism, fitness)
<b>Job Opportunities in Private Sector</b>	Limited compared to the USA and Canada	Extensive in tourism, wellness, and recreation services	Strong demand in eco-tourism, adventure tourism, and wellness
<b>Job Opportunities in Public Sector</b>	Municipalities, public sport organizations	Local government (parks, recreation, community services)	Parks, recreation, community services, public health
<b>Freelance / Entrepreneurship</b>	Growing in tourism and small businesses	Popular in outdoor recreation, sports services, wellness programs	Expanding in eco-tourism, adventure travel, and health services

### *Professional Competencies of Recreation Graduates*

Table 4 compares the professional competencies of recreation graduates across three countries. When evaluated in terms of recreation management, it is revealed that Türkiye possesses fundamental program development skills in both the public and private sectors, whereas the United States exhibits dominance in parks, community sectors, and the private sector. Furthermore, Canada is characterized by its focus on community-based and nature-focused recreation management. In Türkiye, leadership in sports and leisure activities is prominent, while the United States is defined by advanced proficiency in event planning and outdoor recreation. In Canada, leadership and organizational skills within recreation programs are emphasized. When compared to the United States and Canada, Türkiye is described as possessing basic knowledge in health and fitness as well as outdoor and nature recreation. Similarly, with respect to legal and ethical knowledge, Türkiye is identified as having a foundational level of understanding, whereas competencies and awareness in this area are notably higher in Canada and the United States. In terms of communication, community management, and business and entrepreneurship, Türkiye is not significantly behind the United States and Canada and is described as being beyond the basic level. Table 4 provides a comparison of the three countries based on each of these competencies.

Table 4. Comparison of Professional Competencies of Recreation Graduates in Türkiye, the USA, and Canada

Professional Competency	Türkiye	USA	Canada
<b>Recreation Management</b>	Basic program development skills in public/private sectors	Advanced skills in park, community, and private sector management	Community-based and nature-focused recreation management
<b>Leadership &amp; Organization</b>	Leadership in sports and leisure activities	Advanced event and outdoor recreation management skills	Leadership and organization in recreation programs
<b>Health &amp; Fitness Knowledge</b>	Basic knowledge in physical education and sports	Wellness, exercise science, and sports management skills	Knowledge in physical activity and healthy lifestyle programming
<b>Outdoor &amp; Nature Recreation</b>	Basic knowledge in nature sports	Outdoor tourism, camping, nature sports management	Environmental stewardship and nature-focused recreation programming
<b>Communication &amp; Community Management</b>	Teamwork and public relations skills	Effective communication in community-based projects	Collaboration with local communities and stakeholders
<b>Legal &amp; Ethical Knowledge</b>	Basic legal knowledge in sports and recreation	Recreation laws, accessibility regulations for people with disabilities	Environmental protection and sustainability principles
<b>First Aid &amp; Safety</b>	Basic first aid knowledge	Advanced first aid and emergency management	Safety in outdoor and extreme sports
<b>Business &amp; Entrepreneurship</b>	Entrepreneurship in sports centers and leisure facilities	Marketing and business management for recreation services	Entrepreneurship in tourism and recreation industries

### *Suggestions Based on Entry, Curriculum, Competencies, and Employment*

Table 5 outlines recommendations for Türkiye based on the entry requirements, curriculum, graduate competencies, and employment opportunities of the three countries. For example, in reference to student admission information across the three countries, a proposal has been developed for Türkiye that includes background, volunteer activities, and specialized skill exams. Regarding the curriculum, the recommendation includes the incorporation of outdoor recreation, ecotourism courses, and therapeutic recreation education for individuals with disabilities. In terms of practical training, emphasis has been placed on expanding field applications and internships. Concerning graduate competencies and career development, recommendations focus on fostering partnerships with the private sector, promoting international certifications, and expanding entrepreneurship education. To broaden employment opportunities, the necessity of pursuing partnerships with the private sector and targeting a wide range of fields such as gyms, outdoor activities, and resorts has been highlighted.

Table 5. Suggestions Based on Entry Requirements, Curriculum, Graduate Competencies and Employment Opportunities

Category	USA & Canada	Türkiye	Suggestions
<b>Entry Requirements and Admission Process</b>	<ul style="list-style-type: none"> <li>- SAT/ACT scores, reference letters, statement of purpose</li> <li>- English proficiency (TOEFL/IELTS)</li> </ul>	<ul style="list-style-type: none"> <li>- YKS score, some universities have special talent exams</li> <li>- Generally Turkish language education, no English proficiency required</li> </ul>	<ul style="list-style-type: none"> <li>- Factors such as sports background, volunteer work, and leadership experience should also be considered.</li> <li>- Special talent exams should be more widespread.</li> </ul>
<b>Curriculum Content</b>	<ul style="list-style-type: none"> <li>- Health sciences, outdoor recreation, sustainable tourism, law</li> <li>- Community management, entrepreneurship</li> </ul>	<ul style="list-style-type: none"> <li>- Sports sciences and management, leisure fields</li> <li>- Generally recreation, sports events, management courses</li> </ul>	<ul style="list-style-type: none"> <li>- Outdoor recreation, nature sports, sustainable tourism and ecotourism courses should be added.</li> <li>- Special courses for people with disabilities and outdoor activities should be added.</li> </ul>
<b>Practical Training</b>	<ul style="list-style-type: none"> <li>- High practical content in courses, internships</li> <li>- Experience in parks, tourism facilities, and outdoor events</li> </ul>	<ul style="list-style-type: none"> <li>- Limited practical training opportunities, mostly theoretical education</li> </ul>	<ul style="list-style-type: none"> <li>- Internship opportunities in recreation centers, municipalities, sports clubs, and tourism facilities should be increased.</li> <li>- Field learning opportunities should be increased, students should gain more practical experience.</li> </ul>
<b>Graduate Competencies and Career</b>	<ul style="list-style-type: none"> <li>- Health and fitness, nature recreation, community services</li> <li>- Entrepreneurship, park and outdoor management</li> </ul>	<ul style="list-style-type: none"> <li>- Employment in municipalities, gyms, tourism sector</li> <li>- Competencies are generally limited, the recreation sector is a newly developing field</li> </ul>	<ul style="list-style-type: none"> <li>- Cooperation with the private sector should be enhanced, internship opportunities should be increased.</li> <li>- International certifications should be encouraged (recreation leadership, nature tourism, etc.).</li> <li>- Entrepreneurship education and business plan preparation courses should be provided.</li> </ul>
<b>Employment Opportunities</b>	<ul style="list-style-type: none"> <li>- Wide employment opportunities in public and private sectors</li> <li>- Health, sports, tourism, outdoor events</li> </ul>	<ul style="list-style-type: none"> <li>- Municipalities, private gyms, resorts, and the tourism sector</li> </ul>	<ul style="list-style-type: none"> <li>- Strong partnerships with the private sector should be established, job opportunities should be increased.</li> <li>- Graduates should find more job opportunities in gyms, outdoor activities, resorts, etc.</li> </ul>
<b>International and Environmentally Friendly Aspects</b>	<ul style="list-style-type: none"> <li>- Sustainability, eco-friendly tourism projects, nature-oriented works</li> </ul>	<ul style="list-style-type: none"> <li>- Environmentally and nature-focused projects are generally lacking.</li> </ul>	<ul style="list-style-type: none"> <li>- Special courses for eco-friendly tourism, sustainability, and nature-oriented programs should be added.</li> </ul>

### *Projection Regarding Future Employment Opportunities*

When ChatGPT was asked to project future employment opportunities for the three countries, five categories were presented in great detail in Table 5. For example, under the "growing recreation trends" category, areas such as ecotourism, wellness, digital fitness, extreme and adventure sports, and smart recreation were emphasized for Türkiye, while it was predicted that artificial intelligence, virtual reality, and smart technologies would develop in the United States. In Canada, sustainable and green recreation, cultural tourism, smart parks, digital recreation, and inclusive and accessible outdoor recreation were highlighted. Similarly, projections for the future employment sectors, key

skills for future professionals, recreation growth rates, and challenges & risks categories are detailed in Table 6.

Table 6. Projection of Recreation Trends and Future Employment Opportunities in Türkiye, USA, and Canada (2035)

Category	Türkiye (Projection for 2035)	USA (Projection for 2035)	Canada (Projection for 2035)
<b>Growing Recreation Trends</b>	<ul style="list-style-type: none"> <li>- Eco-tourism &amp; Sustainable Tourism</li> <li>- Wellness &amp; Digital Fitness Programs</li> <li>- Extreme &amp; Adventure Sports</li> <li>- Smart Recreation Spaces (AI &amp; VR in sports and wellness centers)</li> </ul>	<ul style="list-style-type: none"> <li>- AI &amp; Technology-Integrated Recreation (VR fitness, smart gyms)</li> <li>- Personalized Wellness &amp; Health Coaching</li> <li>- Outdoor &amp; Adventure Tourism Expansion</li> <li>- Hybrid Sports &amp; E-Sports Recreation Programs</li> </ul>	<ul style="list-style-type: none"> <li>- Sustainable &amp; Green Recreation</li> <li>- Indigenous Cultural Tourism &amp; Community-Based Recreation</li> <li>- Smart Parks &amp; Digital Recreation Infrastructure</li> <li>- Inclusive &amp; Accessible Outdoor Recreation</li> </ul>
<b>Future Employment Sectors</b>	<ul style="list-style-type: none"> <li>- Sustainable Tourism &amp; Nature-Based Recreation</li> <li>- Smart Fitness Centers &amp; Digital Wellness Platforms</li> <li>- Sports &amp; Adventure Tourism Management</li> <li>- Urban Green Spaces &amp; Recreational City Planning</li> </ul>	<ul style="list-style-type: none"> <li>- Recreation Technology &amp; AI-Based Fitness Coaching</li> <li>- Health-Oriented Urban Planning &amp; Community Wellness Programs</li> <li>- Virtual &amp; Augmented Reality Sports</li> <li>- Mental Health &amp; Therapy-Based Recreation</li> </ul>	<ul style="list-style-type: none"> <li>- Outdoor Recreation Growth &amp; Conservation Jobs</li> <li>- Smart City Recreation &amp; Sustainable Planning</li> <li>- Therapeutic Recreation &amp; Health Integration</li> <li>- Wildlife &amp; Eco-Recreation Management</li> </ul>
<b>Key Skills for Future Professionals</b>	<ul style="list-style-type: none"> <li>- Sustainability &amp; Eco-Recreation Leadership</li> <li>- Sports Analytics &amp; Digital Coaching</li> <li>- Adventure Tourism &amp; Risk Management</li> <li>- AI-Based Fitness &amp; Health Monitoring Skills</li> </ul>	<ul style="list-style-type: none"> <li>- Data-Driven Recreation Management &amp; AI Integration</li> <li>- Virtual Fitness Coaching &amp; Gamification of Sports</li> <li>- Community-Based Recreation &amp; Mental Wellness Leadership</li> <li>- E-Sports &amp; Competitive Gaming Recreation Skills</li> </ul>	<ul style="list-style-type: none"> <li>- Environmental Stewardship &amp; Nature Conservation</li> <li>- Hybrid &amp; Digital Recreation Programming</li> <li>- Cultural &amp; Community Engagement in Recreation</li> <li>- Personalized Fitness &amp; Holistic Health Expertise</li> </ul>
<b>Expected Growth in Recreation Employment (%)</b>	35-45% increase (Growth in eco-tourism, adventure sports, and smart fitness solutions)	40-50% increase (Technology-driven recreation, community wellness, and e-sports growth)	30-40% increase (Sustainability-focused recreation, green jobs, and accessibility in outdoor spaces)
<b>Challenges &amp; Risks</b>	<ul style="list-style-type: none"> <li>- Lack of investment in smart recreation technologies</li> <li>- Urbanization &amp; loss of green spaces affecting nature-based recreation</li> <li>- Need for better professional training &amp; international certifications</li> </ul>	<ul style="list-style-type: none"> <li>- Balancing digital &amp; physical recreation</li> <li>- Over-commercialization of recreation leading to higher costs for consumers</li> <li>- Ethical concerns in AI-driven health and recreation services</li> </ul>	<ul style="list-style-type: none"> <li>- Ensuring sustainability &amp; biodiversity conservation</li> <li>- Increasing accessibility &amp; inclusivity in recreation</li> <li>- Climate change impact on outdoor recreation availability</li> </ul>

### *Recreation Certificate Program Proposal for Türkiye*

Especially in the United States and Canada, certificate programs are widespread in addition to undergraduate and graduate programs at universities. ChatGPT was asked to prepare a recreation certificate program for Türkiye, and in this context, six module suggestions were presented (Table 7). Each module is 20 hours, the program duration is 6 months, and it covers a total of 120 hours of

training. The courses are suggested by ChatGPT to be held twice a week, with 3-hour sessions. Module 1: Fundamentals of Recreation Management, which includes definitions of recreation, its importance, types of recreation, and its areas. Module 2: Health and Fitness, which after providing definitions related to fitness and health, covers the design of fitness programs, exercise science, and first aid topics. Module 3: Outdoor Recreation, which covers topics such as the management of outdoor sports and activities. Module 4: Sustainability and Ecotourism, which covers training related to the management of these areas. Module 5: Community Services and Management, which offers training content related to community services and management. Module 6: Business and Entrepreneurship, which includes topics such as recreation entrepreneurship, marketing, and customer relations. To enhance the national recognition and practical applicability of this certification program in Türkiye, potential collaboration with national accreditation bodies—such as the Council of Higher Education (YÖK) or relevant vocational institutions—should be considered. Aligning the proposed modules with existing national qualification frameworks could also support formal adoption and sustainability.

Table 7. Recreation Certificate Program Proposal for Türkiye

Module	Content	Duration
<b>Module 1: Fundamentals of Recreation Management</b>	- Definition and importance of recreation - Types and areas of recreation (sports, outdoor activities, cultural and artistic events) - Management skills	20 hours
<b>Module 2: Health and Fitness</b>	- Definition of health and fitness - Designing fitness programs - Exercise science and basic first aid	20 hours
<b>Module 3: Outdoor Recreation</b>	- Nature sports (mountaineering, camping, cycling, hiking, etc.) - Managing outdoor activities - Safety and risk management	20 hours
<b>Module 4: Sustainable Recreation and Ecotourism</b>	- Sustainable tourism and eco-friendly practices - Nature-friendly recreation planning - Ecotourism and environmental management	20 hours
<b>Module 5: Community Services and Management</b>	- Community-based recreation programs - Community service management - Volunteering and leadership skills	20 hours
<b>Module 6: Business and Entrepreneurship</b>	- Recreation entrepreneurship - Marketing and customer relations - Starting a recreation business	20 hours

## Discussion and Conclusions

In this study, which addresses six key topics related to recreation, including the admission requirements for recreation programs, general curriculum content, employment opportunities, professional competencies, recommendations for Türkiye based on these topics, projections for ten years from now, and a certificate program, the recreation structures in three countries (Türkiye, the

US, and Canada) are analyzed on the basis of a benchmarking approach to achieve the intended goals through probe-based questions. It is believed that each topic can provide significant contributions to the development of recreation programs.

The admission to recreation programs in Türkiye has always been a subject of debate. Indeed, the centralized placement exam in 2024 temporarily caused disruptions in education. The debate continues today as to whether a centralized placement exam or university-specific student admissions is more suitable. However, in the US and Canada, it is observed that each university admits students according to its own specific conditions. Students from outside their home countries are required to demonstrate proficiency in a foreign language. One of the most important conditions for the internationalization of recreation programs in Türkiye can be considered to implement programs that require foreign language proficiency. Particularly in terms of graduate program admission requirements abroad, language proficiency is emphasized as a necessity.

It is evident that the curriculum content of recreation programs is shaped according to the educational systems and sector needs of the countries. For instance, due to Canada's geographical location and demographic structure, the curriculum is more focused on areas like outdoor recreation and park management. In the US, which shares similar characteristics as Canada, topics such as wellness, outdoor recreation, community recreation, and health recreation are emphasized. The findings of this study align with some of the observations of Karavelioğlu (2024) regarding the state of recreation in North America. The faculty or academic units that offer recreation programs may vary between countries. For example, at Indiana University, the recreation department is housed within the School of Public Health-Bloomington, while at the University of Georgia, a different structure is in place. Here, the recreation department is located under the Warnell School of Forestry & Natural Resources, while recreational sports are organized under the Department of Recreational Sports in the Division of Student Affairs. At many universities in the US, campus recreation and recreational sports departments may have separate administrative organizations. In Türkiye, although the proportion of programs with internship or field application opportunities is low, it is increasing gradually. In contrast, in the US and Canada, applied training curricula are more widespread. The findings regarding the US and Canada in this study align, to some extent, with the four scientific areas identified in Sever and Buzlu's (2015) bibliometric study.

Regarding the provision of employment opportunities for graduates, although there have been positive developments with the increasing recognition of the recreation profession in recent years, it can be stated that Türkiye has significantly fewer opportunities compared to the US and Canada. To expand employment conditions, the government, local authorities, and private organizations need to



consider the US and Canada, the pioneers in the sector, as benchmarks. For instance, in the US and Canada, in addition to employment opportunities at community centers, the private sector provides more job opportunities in tourism, wellness, and recreation services. In Canada, which shares similar characteristics with the US, areas such as eco-tourism, adventure tourism, and wellness stand out in the private sector. Yumuk and Güngörmüş (2023), in their work emphasizing adventure recreation, provide valuable insights into the employment potential of this field. In Canada, public health institutions and therapeutic recreation for special groups also offer additional opportunities for graduates. The findings of this study align with those of Akgül and Güneş (2019), who discussed the employment fields available to recreation management students. Similarly, the results related to employment are consistent with some aspects of the work by Beşikçi and Deveci (2023) on the job titles and areas where recreation specialists can find employment.

The structure comparing the professional competencies of recreation graduates consists of eight categories, and with the exception of communication and community management, and business and entrepreneurship, it is observed that graduates in Türkiye have basic-level competencies in the remaining six categories. For example, in areas such as recreation management, leadership, health and fitness knowledge, and outdoor and nature recreation, graduates' competency levels are at a basic level in Türkiye, while these competencies are more advanced in the US and Canada.

When ChatGPT was asked to generate recommendations for Türkiye based on admission requirements, curriculum, graduate competencies, and employment opportunities, suggestions included conducting background checks, volunteer activities, and specialized aptitude tests, as well as offering courses in outdoor recreation, ecotourism, and therapeutic recreation for individuals with disabilities. The expansion of field applications and internships was recommended, as well as increased cooperation with the private sector, the proliferation of international certifications, and the broadening of entrepreneurship education. A recommendation was also made to focus on private sector partnerships and expanding into a wide range of areas such as gyms, outdoor activities, and resorts to increase employment opportunities.

According to ChatGPT's projection regarding future employment opportunities, it is anticipated that fields such as eco-tourism, wellness, digital fitness, extreme and adventure sports, and smart recreation will grow in Türkiye. The findings support the environmental sustainability aspect of nature-based sports, as emphasized by Koçak and Balcı (2010), which presents potential employment opportunities for recreation, particularly in eco-tourism and adventure sports. Furthermore, the suggestions of adventure tourism and ecotourism, along with smart sports technologies in ChatGPT's analysis, are consistent with Barakazi's (2023) study on the diversification of recreational activities

for sports and tourism purposes. In the US, alongside the development of other areas of recreation, it is observed that more technology-based recreation, including artificial intelligence, is expected to emerge. In Canada, areas such as sustainable recreation and cultural recreation are prominent.

Finally, in line with the proposed recreation certificate program for Türkiye, ChatGPT suggested six modules: Fundamentals of Recreation Management, Health and Fitness, Outdoor Recreation, Sustainability and Ecotourism, Community Services, and Business and Entrepreneurship. The proposed certificate program is six months long and consists of 120 hours. Considering the employment power of certificate programs in the US and Canada, there is a growing interest in such programs in universities where the field of recreation is developing, in addition to undergraduate and graduate programs. Given the decisive impact on employment, it is anticipated that the content of the modules in the proposed certificate program can effectively provide knowledge in the field within a six-month period and offer career opportunities for those wishing to pursue a career in this area or develop themselves in a related field.

### **Theoretical and Practical Implications**

The results of this study offer both theoretical and practical implications. From a theoretical perspective, it is expected that the results of this study will contribute to the literature in the field and related areas. First, the findings of the current study are anticipated to primarily contribute to the international leisure and recreation literature through the comparison of recreation programs. Secondly, from the perspective of program development, it is likely that the study will offer new insights into the literature on recreation education. The third theoretical contribution will be to the literature on leisure and recreation employment policies. Finally, since this study compares the country's recreation programs, competencies, and employment outcomes, it will also contribute to the comparative leisure, recreation, and curriculum literature.

The results of this study will have various implications for practitioners as well. First, the findings of this research are expected to significantly enhance the understanding of scholars who aim to develop the field of recreation, particularly in Türkiye. Secondly, the results of this study may have a positive impact on the development of strategies by key players in the sector, enabling them to make projections on recreation and use the findings to shape future trends. Finally, local governments and state institutions will also derive significant benefits from the outcomes of this research.

## Limitations and Future Directions

Although the results of the study provide a general framework and are valuable in terms of implications, it is essential that they be interpreted with the following limitations in mind. First and foremost, it should be noted that the information generated by ChatGPT-4 in this study is limited by the algorithm of the model. As versions change and improve, the quality and content of the generated information can also change. Additionally, the phrasing of the question can influence the content produced. In other words, even a small difference in the phrasing of the questions (probes) posed to ChatGPT can lead to different outcomes being reported by the AI. For instance, the use of "ve" (and) instead of "veya" (or), "verir misin" (can you give) instead of "önerir misin" (can you suggest), or "tablo halinde verir misin" (can you give it in table form) can result in different outputs. Brown et al. (2020) reported that when a question was paraphrased and repeated in different ways, ChatGPT showed vulnerability, with repetitions and the use of templates in its responses. In this study, the questions were asked in Turkish, and the results (tables) were translated into English by ChatGPT. Therefore, asking the same question in a different language can cause the AI—in this case, ChatGPT—to generate content with different scopes. Furthermore, the use of different AI applications can lead to variations in the results. In future studies, it may be beneficial to obtain the approval of recreation experts from the three countries. Comparative studies based on expert opinions regarding the recreation programs, curriculum content, professional competencies, employment conditions, and projections of the three countries, alongside ChatGPT outputs, will offer a more comprehensive perspective. This study is based on a comparison between Türkiye, a country where the recreation field is developing, and the United States and Canada, which have relatively well-developed concepts of recreation. Therefore, the results should be evaluated from this perspective. Future studies comparing these two countries with European countries (e.g., the UK, Germany, France) could provide a separate perspective. Similarly, comprehensive studies comparing the recreation practices of Asian countries (e.g., Japan, China) with those in Europe or the United States and Canada will offer a broader view of the recreation field, employment opportunities, and professional competencies. In addition to the above limitations, the use of AI-generated data introduces important ethical considerations. Transparency in prompt design, potential biases in algorithmic responses, and challenges related to reproducibility should be acknowledged. Because responses generated by ChatGPT can vary across users, time, and phrasing, ensuring consistent and ethically sound usage remains a methodological concern in AI-assisted research.

**Ethics Committee Approval:** Ethics committee approval was not required for this study, as it does not involve human participants or any research requiring ethical oversight.

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## References

- Adiwardana, D., Luong, M. T., So, D. R., Hall, J., Fiedel, N., Thoppilan, R., ... and Le, Q. V. (2020). Towards a human-like open-domain chatbot. *arXiv preprint*. <https://arxiv.org/abs/2001.09977>
- Akgül, S. Ö., ve Güneş, S. G. (2019). Türkiye’de rekreasyon yönetimi bölümünde okuyan öğrencilerin kariyer beklentilerinin belirlenmesine yönelik bir araştırma. *Türk Turizm Araştırmaları Dergisi*, 3(3), 725-744.
- Anand, G., & Kodali, R. (2008). Benchmarking the benchmarking models. *Benchmarking: An International Journal*, 15(3), 257-291.
- Barakazi, E. (2023). The role of technological innovations in diversification of recreational activities: Interview with ChatGPT. *Journal of Gastronomy, Hospitality and Travel*, 6(4), 1639-1649.
- Beşikçi, E. A., ve Deveci, M. E. (2023). Rekreasyon eğitime ilişkin akademisyen görüşlerinin incelenmesi. *Spor Bilimleri Araştırmaları Dergisi*, 8(2), 210-230.
- Brown, T., Mann, B., Ryder, N., Subbiah, M., Kaplan, J. D., Dhariwal, P., ... and Amodei, D. (2020). Language models are few-shot learners. *Advances in neural information processing systems*, 33, 1877-1901.
- Bubeck, S., Chandrasekaran, V., Eldan, R., Gehrke, J., Horvitz, E., Kamar, E., & Zhang, Y. (2023). Sparks of artificial general intelligence: early experiments with GPT-4. *arXiv preprint*. <https://arxiv.org/abs/2303.12712>
- Camp, R. C. (2024). *Benchmarking: The search for industry best practices that lead to superior performance*. CRC Press.
- Carvalho, I., & Ivanov, S. (2024). ChatGPT for tourism: applications, benefits, and risks. *Tourism Review*, 79(2), 290-303.
- Chaboyer, W., Willman, A., Johnson, P., & Stockhausen, L. (2004). Embedding evidence-based practice in a nursing curriculum: a benchmarking project. *Nurse Education in Practice*, 4(3), 216-223.
- Chiang, C. H., & Chiang, H. Y. (2023, July). Enhancing elderly leisure experience through innovative VTuber interaction in VR with ChatGPT. In *International Conference on Artificial Intelligence and Virtual Reality* (pp. 163-178). Springer Nature Singapore.
- Çolak, O. (2023). The role of generative pre-trained transformers (GPT) in recreational tourism: An interview with ChatGPT. *Spor Bilimleri Araştırmaları Dergisi*, 8(3), 733-748.
- Corsello, A., & Santangelo, A. (2023). May artificial intelligence influence future pediatric research?—The case of ChatGPT. *Children*, 10(4), 757.
- Deming, W. E. (1982). *Quality, productivity, and competitive position*. Massachusetts Institute of Technology, Centre for Advanced Engineering Study.
- Elmohandes, N., and Marghany, M. (2024). Effective or ineffective? Using ChatGPT for staffing in the hospitality industry. *European Journal of Tourism Research*, 36, 3617-3617.
- Firat, M. (2023). What ChatGPT means for universities: Perceptions of scholars and students. *Journal of Applied Learning and Teaching*, 6(1), 57-63.
- García-López, I. M., González, C. S. G., Ramírez-Montoya, M. S., and Molina-Espinosa, J. M. (2025). Challenges of implementing ChatGPT on education: Systematic literature review. *International Journal of Educational Research Open*, 8, 100401.
- Gau, L. S., Chu, H. T., Chen, M. I., and Huang, C. H. (2023). Application effects of AI text mining and ChatGPT as a content analysis for developmental trends in leisure and recreation industries. In *System Innovation for a World in Transition* (pp. 65-69). CRC Press.
- Genç, N. (2023). Rekreasyon Tutkunları için ChatGPT: Gelecekte Ne Bekleniyor?. *Sportive*, 6(2), 67-83.
- Gude, V. (2023). Factors influencing ChatGPT adoption for product research and information retrieval. *Journal of Computer Information Systems*, 1-10.
- Gursoy, D., Li, Y., and Song, H. (2023). ChatGPT and the hospitality and tourism industry: an overview of current trends and future research directions. *Journal of Hospitality Marketing & Management*, 32(5), 579-592.

- Guttentag, D. A., Litvin, S. W., and Teixeira, R. (2024). Human vs. AI: can ChatGPT improve tourism product descriptions?. *Current Issues in Tourism*, 1-19.
- Heung, Y. M. E., and Chiu, T. K. (2025). How ChatGPT impacts student engagement from a systematic review and meta-analysis study. *Computers and Education: Artificial Intelligence*, 8, 100361.
- Juran, J. M. (1950). The role of statistics as a tool of management. *Statistica Neerlandica*, 4(1-2), 69-79.
- Karavelioğlu, B. (2024). Dünya’da ve Türkiye’de Sportif Rekreasyona Bakış Açısı: Bir Derleme Çalışması. *Uluslararası Bozok Spor Bilimleri Dergisi*, 5(2), 164-191.
- Keiper, M. C. (2023). ChatGPT in practice: Increasing event planning efficiency through artificial intelligence. *Journal of Hospitality, Leisure, Sport & Tourism Education*, 33, 100454.
- Koçak, F., ve Balcı, V. (2010). Doğada yapılan sportif etkinliklerde çevresel sürdürülebilirlik. *Ankara Üniversitesi Çevre Bilimleri Dergisi*, 2(2), 213-222.
- Kyrö, P. (2003). Revising the concept and forms of benchmarking. *Benchmarking: An International Journal*, 10(3), 210-225.
- Leggatt, J. (2023), “What Is ChatGPT? A Review of The AI In Its Own Words”, Forbes, March, 22, available at: <https://www.forbes.com/advisor/business/software/what-is-chatgpt/> (accessed 6 March 2025)
- Levine, S., Beck, S. W., Mah, C., Phalen, L., and Pittman, J. (2025). How do students use ChatGPT as a writing support?. *Journal of Adolescent & Adult Literacy*, 68(5), 445-457.
- Moriarty, J. P. (2011). A theory of benchmarking. *Benchmarking: An International Journal*, 18(4), 588-611.
- Moriarty, J. P., and Smallman, C. (2009). En route to a theory of benchmarking. *Benchmarking: An International Journal*, 16(4), 484-503.
- Ofori-Ampong, K., Acheampong, B., Kevor, MO, and Amankwah-Sarfo, F. (2023). Acceptance of Artificial Intelligence (ChatGPT) in Education: Trust, Innovativeness and Psychological Need of Students. *Information and Knowledge Management*, 13(4), 37-47.
- Oh, P. S., and Lee, G. G. (2024). Confronting imminent challenges in humane epistemic agency in science education: An interview with ChatGPT. *Science & Education*, 1-27.
- OpenAI (2022, November 22). ChatGPT: Optimising language models for dialogue. <https://openai.com/blog/chatgpt/> (Retrieved February 24, 2025)
- Roller, S., Dinan, E., Goyal, N., Ju, D., Williamson, M., Liu, Y., ... and Smith, E. M. (2020). Recipes for building an open-domain chatbot. *arXiv preprint arXiv:2004.13637*.
- Sever, G. N., ve Buzlu, M. Ö. (2015). Turizm fakülteleri bünyesindeki rekreasyon programları için müfredat kapsamı önerisi: bilimetrik bir çalışma. *Çukurova Üniversitesi Sosyal Bilimler Enstitüsü Dergisi*, 24(2), 381-396.
- Shewhart, W.A. (1980). Economic Control of Quality of Manufactured Product, American Society for Quality Control, Milwaukee, WI.
- Sigala, M., Ooi, K. B., Tan, G. W. H., Aw, E. C. X., Buhalis, D., Cham, T. H., ... and Ye, I. H. (2024). Understanding the impact of ChatGPT on tourism and hospitality: Trends, prospects and research agenda. *Journal of Hospitality and Tourism Management*, 60, 384-390.
- Skjuve, M., Følstad, A., and Brandtzaeg, P. B. (2023, July). The user experience of ChatGPT: Findings from a questionnaire study of early users. In *Proceedings of the 5th international conference on conversational user interfaces* (pp. 1-10).
- Stralser, S. (1995). Benchmarking: The New Tool. *Planning for higher education*, 23(4), 15-19.
- Terrell, J. (1995). QUT Benchmarking Project Book. *Brisbane, Australia, unpublished*.
- Totlis, T., Natsis, K., Filos, D., Ediaroglou, V., Mantzou, N., Duparc, F., and Piagkou, M. (2023). The potential role of ChatGPT and artificial intelligence in anatomy education: a conversation with ChatGPT. *Surgical and Radiologic Anatomy*, 45(10), 1321-1329.
- Wang, F. Y., Miao, Q., Li, X., Wang, X. and Lin, Y. (2023). What does ChatGPT say: The DAO from algorithmic intelligence to linguistic intelligence, *IEEE/CAA Journal of Automatica Sinica*, 10 (3), 575-579.
- Wu, D. C., Li, W., Wu, J., Hu, M., and Shen, S. (2025). How well can ChatGPT forecast tourism demand?. *Tourism Management*, 108, 105119.
- Yumuk, E.D. ve Güngörmüş, H.A. (2023). *Macera Rekreasyonu: Kuramlar ve Yaklaşımlar*. Gaziantep: Özgür Yayınları.