



# The Use of Chat GPT for the Assessment of the Tourism Industry in the Island of Crete, Greece: A SWOT Analysis

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**ABSTRACT:** Artificial intelligence and the language model Chat GPT have increasing uses in several sectors including the tourism industry. The island of Crete, Greece is a popular global tourism destination with a flourishing tourism industry. Chat GPT has been used for the assessment of the island's tourism industry according to SWOT methodology. The responses of the abovementioned language model regarding the strengths, weaknesses, opportunities and threats of tourism industry in Crete have been analyzed and it was found that they were adequate and satisfactory. Chat GPT has identified the internal advantages and vulnerabilities of tourism industry in the island as well as the opportunities and risks imposed by the external environment. The results given by Chat GPT were in accordance with the views of tourism experts and tourism stakeholders indicating that artificial intelligence can be used supplementarily to human analysis in the tourism sector. The results of the current study and the responses of Chat GPT can be used by policy makers and tourism stakeholders in Crete for the development of rational and effective policies regarding the future of the local tourism industry.

**KEYWORDS:** assessment, Chat GPT, Crete-Greece, SWOT analysis, tourism industry

## 1. INTRODUCTION

Crete is a popular and attractive tourism destination all over the world while the flourishing tourism industry in the island contributes significantly in the prosperity of the local residents. Strengths, weaknesses, opportunities, threats (SWOT) analysis is a strategic planning tool which identifies strengths, weaknesses, opportunities and threats in private and public organizations assessing the internal and external environment and assisting them to make rational decisions. Chat GPT is a type of artificial intelligence (AI) known as a language model. It is based on deep learning trained on a vast amount of data while it produces coherent and useful outputs. The tourism industry in Crete and its future prospects have been analyzed by many authors [1], [2], [3], [4], [5]. SWOT analysis in tourism industry has been used in many cases [6], [7], [8], [9]. Chat GPT has been used in several sectors including the tourism industry [10], [11], [12], [13], [14].

*The aim of the current research is to use the Chat GPT for the assessment of the tourism industry in Crete, Greece with SWOT analysis.*

The text is structured as follows: After the literature review the tourism industry in Crete is analyzed followed by a description of Chat GPT. In the next two sections the principles of SWOT analysis are stated followed by a SWOT analysis of the Cretan tourism industry using the Chat GPT. The text ends with discussion of the findings, the conclusions drawn and the citation of the references used.

The current study fills a gap regarding the use of artificial intelligence in the analysis of the tourism industry in Crete while it is innovative since there are not similar studies in the island. It could be useful to policy makers and to multiple stakeholders of tourism who can benefit from the results of the present study.

## 2. LITERATURE SURVEY

The ecotourism development in Crete has been examined [1]. The authors stated that Greece, including Crete, is committed to the implementation of the 2030 agenda for sustainable development balancing economic growth, environmental protection and social cohesion. They also mentioned that the lack of a clear governmental strategy regarding tourism development is one of the main obstacles in the process of developing a competitive ecotourism product in Crete. The overtourism in the island of Crete, Greece has been appraised [2]. The author stated that overtourism is a multi-faced problem with severe economic, social and environmental consequences in tourism destinations. He also mentioned that Crete could be categorized as an overcrowded tourism destination



among EU regions while several tourism indexes in Crete are above the EU and global average. The development of tourism in Crete and the contribution of local authorities in its growth have been analyzed [3]. The author stated that although there are several actions currently undertaken by the local authorities towards tourism development in the island, there is still a need for more efforts to promote tourism and to provide more opportunities for encouraging tourism development. The carrying capacity of tourism in Crete has been assessed [4]. The authors stated the positive and the negative impacts of tourism in the island while they proposed several measures for improving the sustainability of the local tourism industry including the extension of the tourism period over the winter months, the linkage of tourists with the local culture, the tradition and the nature as well as the improved environmental protection of the fragile ecosystems in Crete. The tourism infrastructure, the health tourism and the environment in Crete, Greece have been studied [5]. The authors stated that the concept of carrying capacity in tourism is fundamental for sustainable development. They also mentioned that Crete has all the prerequisites and the capacity to develop medical tourism and to attract retired people who need medical care. The development of rural tourism in Suzhou, China based on SWOT analysis has been examined [6]. The author combined the internal resources and the external environment to determine the advantages and disadvantages of rural resources in Suzhou as well as the opportunities and challenges in order to promote the rural tourism in this area. The tourism industry in India using SWOT analysis has been analyzed [7]. The authors stated that tourism industry has a great potential to flourish in India provided its rich cultural and historical legacy. They also proposed 22 measures to ministry of tourism which can boost the tourism in India. The sustainable rural tourism in Andalusia using SWOT analysis has been studied [8]. The authors have identified several strategic priorities and have highlighted the key aspects in the Andalusian tourism sector. They stated several opportunities for developing sustainable rural tourism in Andalusia highlighting the necessity for cooperation of all the local stakeholders. The strategy of developing rural tourism with e-commerce using SWOT analysis has been analyzed [9]. The author stated that the development of rural tourism in China using e-commerce faces multiple choices. He also mentioned that in the current era, big data and tourism influence each other, promote each other and develop each other. The professionals' perspectives of Chat GPT in tourism industry have been studied [10]. The authors stated that tourism industry has witnessed significant transformations with the integration of AI technologies. They mentioned that the use of Chat GPT in tourism industry has advantages such as value creation and disadvantages such as the lack of human touch and potential data securing risks. The use of Chat GPT in tourism marketing has been studied [11]. The authors compared the marketing content created by Chat GPT and that by tourism marketers. They stated that tourism marketing materials created by Chat GPT achieve textual fluency and perceived attractiveness similar to those yielded by tourism marketers. They also suggested the cooperation between generative AI and tourism marketers. The interrelationships among Chat GPT, tourist's satisfaction and usage intention questioning 624 tourists have been studied [12]. The authors stated that Chat GPT has positive and direct impact on tourist's satisfaction. They also mentioned that Chat GPT has a moderating effect on tourist's usage intention. The determinants of the usage of Chat GPT in the tourism and hospitality industry have been studied [13]. The authors conducted a literature review examining several determinants of Chat GPT affecting the behavioral intention of using it. They stated that the six determinants affecting the usability of Chat GPT are experience quality, satisfaction, interaction, ethics, credibility and design features. The effects of generative AI in tourism industry have been studied [14]. The authors stated that tourism companies should develop a robust strategy for adopting generative AI. They also mentioned that local, regional and national tourism bodies can also benefit from generative AI by developing and promoting sustainable tourism practices. The impact of Chat GPT on tourists' trust and travel planning intention focusing on Vietnam has been investigated [15]. The authors stated that the integration of advanced language models in the tourism domain has empowered travelers with personalized and efficient information while it has also shaped their perception and decision-making processes. The tourists' acceptance of Chat GPT in travel services has been studied [16]. The authors stated that social influence is the most potent predictor of Chat GPT acceptance while the perceived trust directly impacts users' acceptance during the cognitive process. The development of sustainable tourism in Bangladesh using SWOT analysis has been studied [17]. The author used data from multiple sources including literature review and interviews with professionals. He stated that the existing tourism activities in the country are unsustainable, while he proposed several strategies to improve the sustainability of the national tourism industry. The development of sustainable tourism in Boujagh, National Park, Iran using SWOT analysis has been studied [18]. The authors used questionnaire surveys among local residents and tourists. They stated that the existing tourism activities in the park did not conform to sustainability requirements. The tourism development in Khon Kaen, Thailand using SWOT analysis has been examined [19]. The authors performed in-depth interviews with 21 key participants discussing the tourist development in Khon Kaen. They stated that



this area has many opportunities to attract tourists and generate a large amount of income. The tourism-based circular economy in Salento, south Italy has been studied using SWOT analysis [20]. The author explored the potential development of a second-generation biorefinery in Salento able to integrate waste management, renewable energy and bio-products production based on resource circularity in the tourism industry. They stated that the five most important factors identified in SWOT analysis are related to weaknesses and threats. The carbon emissions of tourism industry in the island of Crete, Greece have been estimated [21]. The author estimated that carbon emissions at 488.77 kgCO<sub>2</sub> per visitor. He also mentioned that international and domestic flights combined with tourists' arrivals by ships in Crete have the highest share in the total carbon emissions of the tourism industry at around 80%. A report on developing regional actions for tourism in the region of Crete, Greece has been published in the framework of the Interreg Europe project BRANDTour, [22]. It is stated that the island of Crete is the second largest island in the eastern Mediterranean Sea having six seaports and three airports for tourists' arrivals. The report included also a SWOT analysis of the tourism industry in the island. The perspectives of medical tourism in the region of Crete, Greece have been analyzed [23]. The authors stated that medical tourism is a rapidly growing sector in Greece. They conducted research with questionnaires with the participation of 97 hotel managers, 515 doctors and 890 medical tourists in the island of Crete. They mentioned that according to the perspectives of doctors, hotel managers and medical tourists, medical tourism has the potential to grow significantly in Crete. The nexus between agriculture and tourism in the island of Crete, Greece has been analyzed [24]. The author stated that the healthy Cretan diet is famous all over the world and it should be promoted by the local tourism industry. He also mentioned that strengthening the linkages between agriculture and tourism in Crete would trigger the growth in both sectors. A report related to sustainable tourism in Greece has been published [25]. The report has proposed 21 recommendations which were categorized in four areas: a) diversifying the tourism product offerings, b) fostering collaboration and sharing best practices, c) aligning the tourism strategy with the pathway to net positive tourism, and d) monitoring and evaluating Greece's progress towards net positive tourism. The features, abilities and challenges of Chat GPT have been analyzed [26]. The authors stated that Chat GPT can provide solutions to life's most and less significant problems. They also mentioned that it has the capacity to comprehend and react to a wide variety of issues altering the human engagement with technology.

### 3. THE TOURISM INDUSTRY IN THE ISLAND OF CRETE, GREECE

Crete, the largest of the Greek islands, is a popular destination in the global tourism industry, attracting millions of visitors annually. Its appeal lies in a harmonious blend of natural beauty, rich cultural heritage, and modern amenities. Known for its stunning landscapes, from the rugged White Mountains to pristine beaches like Elafonissi and Balos, Crete offers a diverse range of experiences that cater to every type of traveler. One of Crete's significant draws is its deep historical and archaeological significance. The island is home to the ancient Minoan civilization, with landmarks like the Palace of Knossos providing a glimpse into one of Europe's earliest advanced societies. Visitors can also explore Venetian fortresses, Byzantine monasteries, and charming old towns such as Chania and Rethymno, each showcasing the island's layered history. The main tourism infrastructure is concentrated in the north coast of the island while the visitors arrive in Crete in the period from April to early November. Crete's tourism industry thrives not only on its historical and natural attractions but also on its renowned hospitality. The concept of "philoxenia," or love for strangers, is deeply rooted in Cretan culture, making visitors feel welcome. Additionally, the island is famous for its gastronomy, with local delicacies like dakos, Cretan olive oil, and fresh seafood enhancing the tourist experience.

The main elements that attract and satisfy tourists in Crete are mostly:

- a) Weather and Climate,
- b) Famous gastronomy (the well-known Cretan cuisine),
- c) Tradition and Cretan way of life,
- d) Cultural heritage and history,
- e) Natural environment, and
- f) Beaches and Coasts

Moreover, there are specific groups of tourists who are satisfied with activities such as:

- a) Religious and pilgrimage sites,
- b) Botanical and natural routes,
- c) Alternative tourism of well-being and relaxation,



- d) Off-road activities, and
- e) Organization of congresses

Several characteristics of the tourism industry in Crete are presented in table 1.

**Table 1. Several characteristics of the tourism industry in Crete**

Surface of Crete	8,336 Km <sup>2</sup>
Length of coastline	1,040 km
Residents in Crete (Census 2021)	617,360 residents
Tourist's beds	more than 270,000
Arrivals in Crete in 2023	6,327,366 tourists
Number of airports for tourists' arrivals	3
Number of seaports for tourists' arrivals	6
%, arrivals in Crete to arrivals in Greece in 2023	17.7 %
Overnight staying of tourists in Crete in 2023	34,342,891 (bed-nights)
%, overnight staying in Crete to overnight staying in Greece in 2023	23.3 %
Average days of staying in Crete in 2023	5.43 days
Tourism density in 2023	4,120 (bed-nights/km <sup>2</sup> )
Tourism intensity in 2023	55.63 (Bed-nights/resident)

Source: own estimations

#### 4. THE OPERATION OF CHAT GPT

Chat GPT, developed by Open AI, is a type of artificial intelligence known as a language model. It operates through a series of processes that transform vast amounts of text data into a coherent, conversational output. At its core, Chat GPT functions based on deep learning, a subset of machine learning that uses neural networks to process and generate human-like text. The model's operation begins with training on enormous datasets that consist of text from books, websites, and other written sources, which provide a broad understanding of human language, including grammar, vocabulary, and even some factual information. During this training phase, the model uses patterns in the data to predict the likelihood of one word following another, building up complex connections over time. This pattern recognition process enables it to respond to prompts in a way that is coherent and contextually relevant.

ChatGPT is built on a pre-trained language model, fine-tuned with vast amounts of data from books, articles, and other written material. This training involves two main stages: pre-training and fine-tuning. During pre-training, the model learns general language patterns by predicting the next word in a sequence based on the preceding context. This phase equips the model with a broad understanding of grammar, syntax, and world knowledge. Fine-tuning narrows its focus, aligning its responses to be more accurate, user-friendly, and aligned with ethical guidelines. At a high level, Chat GPT operates by taking user input—questions, statements, or commands—and breaking it down into a series of mathematical representations called embeddings. These embeddings capture the semantic meaning of words and sentences, which the model uses to “understand” the input. The neural network then processes these embeddings through multiple layers of interconnected nodes, each layer refining the representation based on what it learned during training. These layers enable the model to capture nuanced language patterns and generate responses that are relevant, informative, and contextually appropriate. The model's responses are generated by predicting the sequence of words that are most likely to follow the input, one word at a time, until it produces a complete answer. Chat GPT is not truly "thinking"; rather, it relies on probabilities learned from data. Its strengths lie in generating text quickly, recognizing language patterns, and simulating a conversational style. However, it lacks personal experiences, opinions, and an understanding of the real world, as it operates purely based on statistical associations in language. Chat GPT operates through complex neural networks that transform input text into meaningful responses. Although it lacks human consciousness, its design allows it to generate text that appears conversational, making it a valuable tool for answering questions, generating ideas and engaging in dialogue across various topics.



## 5. THE PRINCIPLES OF SWOT ANALYSIS

SWOT analysis is a widely used strategic planning tool that helps individuals, organizations, and industries assess their internal and external environments. By systematically identifying Strengths, Weaknesses, Opportunities, and Threats, decision-makers can formulate strategies that capitalize on their advantages, address vulnerabilities, seize potential growth opportunities, and mitigate risks. The four Pillars of SWOT Analysis are:

### 5.1 Strengths

Strengths represent the internal attributes or resources that give an organization a competitive edge. These can include tangible assets, such as financial stability, technological capabilities, and a skilled workforce, as well as intangible factors, like brand reputation, intellectual property, or a loyal customer base. Recognizing strengths allows entities to leverage them to achieve goals, differentiate themselves from competitors, and sustain long-term success.

### 5.2 Weaknesses

Weaknesses are internal factors that hinder an organization's performance or create disadvantages compared to competitors. They might include outdated technology, limited funding, poor customer service, or inefficient processes. Identifying weaknesses is crucial, as it enables organizations to address these issues and prevent them from undermining their objectives.

### 5.3 Opportunities

Opportunities are external factors or trends in the environment that an organization can exploit to achieve growth or improve performance. These could arise from changes in technology, consumer preferences, market expansion, or regulatory shifts. Staying attuned to opportunities allows organizations to innovate and remain relevant in dynamic markets. For instance, a tourism destination can attract new markets by promoting sustainable travel initiatives.

### 5.4 Threats

Threats are external challenges that could negatively impact an organization. These may include economic downturns, increased competition, regulatory changes, or natural disasters. Identifying threats helps organizations anticipate and prepare for potential disruptions, minimizing their impact. For instance, a global health crisis like the COVID-19 pandemic posed significant threats to industries reliant on physical interactions, such as tourism and hospitality. Organizations that recognized these threats early and adapted to digital solutions were better positioned to survive.

### 5.5 Applications of SWOT Analysis

SWOT analysis is a versatile tool applicable across various contexts. In business, it guides strategic planning by helping organizations align their internal capabilities with external market conditions. In the public sector, governments and nonprofit organizations use SWOT to design policies and programs that address societal needs. For example, a city planning committee might conduct a SWOT analysis to develop sustainable urban development strategies, leveraging local resources (strengths), addressing infrastructure gaps (weaknesses), and responding to environmental challenges (threats).

### 5.6 Advantages of SWOT analysis

- Simplicity and Accessibility:** SWOT analysis is easy to understand and requires minimal resources. Its simplicity makes it a practical tool for organizations of all sizes and industries.
- Comprehensive Perspective:** By examining both internal and external factors, SWOT provides a holistic view of an organization's strategic position. This balanced approach helps decision-makers make informed choices.
- Versatility:** The flexibility of SWOT analysis allows it to be applied in various contexts, from business strategies to personal development and community planning.
- Encourages Proactive Thinking:** SWOT analysis encourages organizations to anticipate challenges and opportunities, fostering proactive decision-making and strategic foresight.

### 5.7 Limitations of SWOT analysis

- Subjectivity:** SWOT analysis relies on subjective judgment, which can lead to biased or incomplete assessments. Factors that seem significant to one team member may be overlooked by another.



- b) Lack of Prioritization: SWOT analysis does not inherently rank factors by importance or urgency. This can result in organizations focusing on minor issues while neglecting critical ones.
- c) Static Snapshot: SWOT provides a snapshot of a moment in time but does not account for the dynamic nature of markets or environments. Constant updates are necessary to keep the analysis relevant.
- d) Over-Simplification: Complex problems may require deeper analytical tools. SWOT is a starting point but often needs to be supplemented with other frameworks like PESTLE analysis or Porter’s Five Forces.

**6. A SWOT ANALYSIS OF THE TOURISM INDUSTRY IN CRETE BY CHAT GPT**

A SWOT analysis has been performed with the assistance of Chat GPT. It was asked to determine the strengths, weaknesses, opportunities and threats of the tourism industry in Crete. Its answers have been analyzed and presented below.

**6.1 Strengths**

**Natural Beauty and Climate:** Crete is endowed with an extraordinary range of natural landscapes, from pristine beaches like Elafonissi and Balos to rugged mountain ranges such as the White Mountains and Mount Psiloritis. These geographic features provide opportunities for diverse tourist experiences, including sunbathing, hiking, and exploring gorges like Samaria. The island’s mild Mediterranean climate ensures year-round attractiveness, with hot summers drawing beachgoers and mild winters appealing to those seeking adventure or cultural tours.

**Rich History and Cultural Heritage:** As the cradle of the Minoan civilization—Europe’s oldest advanced society—Crete boasts significant archaeological sites like Knossos, Phaistos, and Gortyna. These historical treasures, coupled with Byzantine monasteries, Venetian fortresses, and Ottoman relics, create a multifaceted cultural tapestry. Additionally, Cretan music, dance, and cuisine contribute to a distinctive cultural identity that captivates tourists seeking authentic experiences.

**Strong Tourism Infrastructure:** Crete is well-equipped to accommodate large numbers of visitors. The island features two major international airports, in Heraklion and Chania, and several modern ports for cruise ships and ferries. A wide range of accommodations—from luxury resorts to budget-friendly hotels—cater to diverse preferences and budgets. Roads and public transport connect most major attractions, facilitating ease of travel within the island.

**Culinary Excellence:** Cretan cuisine is world-renowned for its health benefits and flavor, rooted in fresh, locally sourced ingredients. Tourists can enjoy traditional dishes like dakos, kalitsounia, and slow-cooked lamb, paired with exceptional local wines and raki. Gastronomic tourism has gained popularity, with visitors seeking farm-to-table experiences and cooking classes in traditional villages.

**Safety and Hospitality:** Crete is widely regarded as a safe destination, with low crime rates and a hospitable local population. The warmth and friendliness of Cretans create an inviting atmosphere that enhances visitor satisfaction and encourages repeat visits. The strengths of the tourism industry of Crete are presented in table 2.

**Table 2. Strengths of tourism industry of Crete**

1	Natural Beauty and Climate
2	Rich History and Cultural Heritage
3	Strong Tourism Infrastructure
4	Culinary Excellence
5	Safety and Hospitality

Source: Chat GPT

**6.2 Weaknesses**

**Seasonal Dependency:** Tourism in Crete is heavily seasonal, with the majority of visitors arriving between May and October. This concentration creates challenges, such as overcrowding at popular sites and underutilized resources during the off-season. Seasonal employment also results in economic instability for workers in the tourism sector.

**Overtourism and Environmental Strain:** Popular destinations like Elafonissi and Samaria Gorge face significant pressure during peak months, leading to environmental degradation and diminished visitor experiences. Infrastructure in some areas struggles to cope with large numbers of tourists, exacerbating issues like waste management and water shortages.



**Limited Diversification:** While Crete offers a variety of attractions, the tourism industry remains heavily reliant on sun-and-sea vacations. This narrow focus makes the sector vulnerable to shifting trends or competition from other Mediterranean destinations offering similar experiences at lower costs.

**Weak Digital Presence:** Despite its global appeal, Crete's tourism sector could benefit from stronger digital marketing and online booking systems. Smaller businesses, in particular, lack visibility on international platforms, missing opportunities to attract tech-savvy travelers.

**Inconsistent Quality Standards:** While Crete has many high-quality accommodations and services, there is inconsistency in standards, especially in rural areas. Some visitors may encounter subpar facilities or unprofessional service, which can negatively affect the island's reputation.

The weaknesses of the tourism industry of Crete are presented in table 3.

**Table 3. Weaknesses of tourism industry of Crete**

1	Seasonal Dependency
2	Overtourism and Environmental Strain
3	Limited Diversification
4	Weak Digital Presence
5	Inconsistent Quality Standards

Source: Chat GPT

### 6.3 Opportunities

**Sustainable Tourism Development:** The growing global emphasis on sustainable tourism presents a significant opportunity for Crete. By implementing eco-friendly practices, such as promoting renewable energy, reducing single-use plastics, and protecting natural habitats, the island can attract environmentally conscious travelers. Initiatives like agritourism and ecotourism, which emphasize local traditions and minimal environmental impact, can also help diversify the tourism offering.

**Expansion of Cultural and Experiential Tourism:** Crete's cultural wealth provides a foundation for developing experiential tourism, such as heritage tours, traditional crafts workshops, and participatory festivals. By focusing on immersive cultural experiences, Crete can appeal to niche markets, including history enthusiasts and adventure travelers.

**Technology and Digital Transformation:** Investing in advanced digital marketing and online booking systems can expand Crete's reach in international markets. Virtual tours, mobile apps, and targeted social media campaigns can showcase the island's attractions to a global audience. Furthermore, integrating smart tourism technologies, such as augmented reality at archaeological sites, could enhance visitor experiences.

**Development of the Winter Tourism Market:** Crete's mild winters and mountainous terrain make it an ideal destination for activities like hiking, mountaineering, and rural tourism during the off-season. Promoting winter tourism could alleviate the seasonal dependency and boost the island's economy year-round.

**Wellness and Medical Tourism:** The global rise in wellness tourism aligns with Crete's offerings of tranquil environments, healthy cuisine, and spa facilities. The island could also capitalize on medical tourism by leveraging its high-quality healthcare services and competitive costs to attract international patients seeking treatments or wellness retreats.

The opportunities of the tourism industry of Crete are presented in table 4.

**Table 4. Opportunities in tourism industry of Crete**

1	Sustainable Tourism Development
2	Expansion of Cultural and Experiential Tourism
3	Technology and Digital Transformation
4	Development of the Winter Tourism Market
5	Development of wellness and Medical Tourism

Source: Chat GPT



## 6.4 Threats

**Global Economic Instability:** Economic fluctuations, inflation, and currency exchange rates significantly impact the affordability of travel. A global recession or economic downturn in key markets, such as Germany or the United Kingdom, could reduce tourist arrivals.

**Competition from Other Destinations:** Mediterranean basin is a highly competitive region for tourism, with countries like Turkey, Croatia, and Spain offering similar attractions. Lower costs or aggressive marketing by competitors could divert potential visitors from Crete.

**Environmental Risks and Climate Change:** Rising sea levels, extreme weather events, and higher temperatures pose significant risks to Crete's natural and cultural attractions. For example, prolonged heatwaves could deter tourists or damage archaeological sites, while water shortages could strain local communities and businesses.

**Pandemic and Health Crises:** The COVID-19 pandemic highlighted the vulnerability of the tourism sector to global health crises. Travel restrictions and concerns about safety can drastically reduce tourist arrivals, as evidenced by the sharp decline during 2020–2021.

**Overreliance on Specific Markets:** Crete heavily depends on tourists from specific countries, such as Germany and the UK. Political instability, visa restrictions, or economic issues in these markets could disproportionately affect the island's tourism industry.

The threats of the tourism industry of Crete are presented in table 5.

**Table 5. Threats in tourism industry of Crete**

1	Global Economic Instability
2	Competition from Other Destinations
3	Environmental Risks and Climate Change
4	Pandemic and Health Crises
5	Overreliance on Specific Markets

Source: Chat GPT

## 7. DISCUSSION

The tourism industry of Crete has been assessed using SWOT analysis. Instead of asking policy makers and tourism stakeholders for the internal and external environment of tourism in the island the research was conducted with AI. Chat GPT has been questioned and its response was immediate, clear and coherent. The answers of Chat GPT regarding strengths, weaknesses, opportunities and threats of tourism in Crete have been analyzed. These answers were almost similar with the opinion of several stakeholders of the local tourism industry indicating the benefits of using the Chat GPT in the hospitality industry. However, SWOT analysis and the answers of Chat GPT did not prioritize the main factors affecting the tourism industry by importance or agency.

The use of Chat GPT has several limitations related with the data which have been used in its training. In several cases the language model has not been trained in recent data and its response might lack the recent advances in the field.

Further research should be focused in analyzing the tourism industry in Crete using PESTEL analysis which can supplement the current SWOT analysis to achieve better results.

## 8. CONCLUSIONS

The use of Chat GPT for the assessment of tourism industry in Crete following the methodology of SWOT analysis has been examined. The island of Crete is a popular tourism destination worldwide and its tourism industry is well developed and flourishing nowadays. Chat GPT is currently used in several sectors with satisfactory results. The language model has quickly, adequately and satisfactorily described the strengths, weaknesses, opportunities and threats of the tourism industry in the island according to the methodology of SWOT analysis. Its answers were rational and almost similar with those proposed by policy makers and the multiple stakeholders of the local tourism industry. Chat GPT was able to respond effectively in questions related with the assessment of the tourism industry in Crete. Its answers can help policy makers and stakeholders of tourism to identify the strengths and weaknesses of the tourism industry in the island as well as the opportunities and threats created by the external environment in order to proact





and make rational decisions regarding the future of tourism in the island. The results of the current study based on Chat GPT answers could be used supplementarily to the SWOT analysis made by tourism experts regarding the assessment of the flourishing tourism industry in Crete. The satisfactory use of Chat GPT in the current study indicates that the abovementioned language model could be used in tourism industry helping humans to make rational decisions in several issues.

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