



**ΠΑΝΕΠΙΣΤΗΜΙΟ ΠΕΙΡΑΙΩΣ**

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**ΤΟΥΡΙΣΤΙΚΗ ΦΕΡΟΥΣΑ ΙΚΑΝΟΤΗΤΑ:  
ΜΕΛΕΤΗ ΠΕΡΙΠΤΩΣΗΣ  
ΤΗΣ ΠΑΛΑΙΟΧΩΡΑΣ ΧΑΝΙΩΝ**

***Γκετμάνοβα Αναστασία***

**Πειραιάς, Σεπτέμβριος 2024**





**UNIVERSITY OF PIRAEUS**

**DEPARTMENT OF  
ECONOMICS**

**M.Sc. in Bioeconomics**

**TOURISM CARRYING CAPACITY:  
A CASE STUDY OF  
PALEOCHORA, CHANIA**

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**Piraeus, September 2024**





ΤΜΗΜΑ  
ΟΙΚΟΝΟΜΙΚΗΣ ΕΠΙΣΤΗΜΗΣ  
ΠΑΝΕΠΙΣΤΗΜΙΟ ΠΕΙΡΑΙΩΣ

## **ΒΕΒΑΙΩΣΗ ΕΚΠΟΝΗΣΗΣ ΔΙΠΛΩΜΑΤΙΚΗΣ ΕΡΓΑΣΙΑΣ**

«Δηλώνω υπεύθυνα ότι το έργο που εκπονήθηκε και παρουσιάζεται στην υποβαλλόμενη διπλωματική εργασία, για τη λήψη του μεταπτυχιακού τίτλου σπουδών, στη «*Βιοοικονομία, Κυκλική Οικονομία και Βιώσιμη Ανάπτυξη*» με τίτλο: “**ΤΟΥΡΙΣΤΙΚΗ ΦΕΡΟΥΣΑ ΙΚΑΝΟΤΗΤΑ: ΜΕΛΕΤΗ ΠΕΡΙΠΤΩΣΗΣ ΤΗΣ ΠΑΛΑΙΟΧΩΡΑΣ ΧΑΝΙΩΝ**” έχει γραφτεί από εμένα αποκλειστικά στο σύνολό της. Δεν έχει υποβληθεί ούτε εγκριθεί στο πλαίσιο κάποιου άλλου μεταπτυχιακού προγράμματος ή προπτυχιακού τίτλου σπουδών στην Ελλάδα ή στο εξωτερικό, ούτε είναι εργασία ή τμήμα εργασίας ακαδημαϊκού ή επαγγελματικού χαρακτήρα.

Δηλώνω επίσης υπεύθυνα ότι οι πηγές στις οποίες ανέτρεξα για την εκπόνηση της συγκεκριμένης εργασίας αναφέρονται στο σύνολό τους, κάνοντας πλήρη αναφορά στους συγγραφείς, τον εκδοτικό οίκο ή το περιοδικό, συμπεριλαμβανομένων και των πηγών που ενδεχομένως χρησιμοποιήθηκαν από το διαδίκτυο. Παράβαση της ανωτέρω ακαδημαϊκής μου ευθύνης αποτελεί ουσιώδη λόγο για την ανάκληση του πτυχίου μου.»

Υπογραφή Μεταπτυχιακού Φοιτητή

Γκεζμάνοβα  
Αναστασία

Ονοματεπώνυμο



*“..the many cannot enjoy all that the few enjoyed.  
This may be undemocratic but is an unavoidable fact.”*

*James Truslow Adams, 1930*





## Acknowledgments

To my heroines, sources of inspiration, and guiding lights – to my mother, Valentina,  
and my grandmother, Larisa.

This thesis could not have been written without the unwavering support  
of my husband, Giorgos.

Thank you all.



# **Τουριστική φέρουσα ικανότητα:** **μελέτη περίπτωσης της Παλαιόχωρας Χανίων Κρήτης**

## **Περίληψη**

Ο τουρισμός αποτελεί μια από τις κυριότερες πηγές εσόδων πλήθους ελληνικών νοικοκυριών. Επιπλέον, η χώρα φημίζεται για την φιλοξενία της καθώς και το υψηλό επίπεδο των υπηρεσιών. Τα τελευταία χρόνια παρατηρείται έντονη τουριστική κίνηση. Μάλιστα, το 2019 η Ελλάδα έσπασε το ρεκόρ των αφίξεων, φιλοξενώντας συνολικά 31.35 εκατομμύρια επισκέπτες. Φυσικά, η κίνηση αυτή μειώθηκε κατά την περίοδο της πανδημίας COVID-19, ωστόσο σήμερα η τάση για αυξημένο τουρισμό παραμένει προφανής αναδεικνύοντας την ανάγκη για άμεση χάραξη στρατηγικής διαχείρισης.

Στην παρούσα μελέτη έγινε προσπάθεια να μελετηθεί εις βάθος το φαινόμενο του τουρισμού. Στο Κεφάλαιο 1 έγινε ιστορική αναδρομή στις ρίζες και την εξέλιξη του τουρισμού από έθιμο σε βιομηχανία. Επιπλέον, αναλύθηκαν οι θετικές και οι αρνητικές επιπτώσεις και προοπτικές. Τέλος, παρουσιάστηκαν τα στοιχεία του ελληνικού τουρισμού. Στο Κεφάλαιο 2 έγινε αναφορά στην πορεία της εξέλιξης του τουρισμού σε πιο βιώσιμη μορφή μέσω της ανάπτυξης του σχετικού νομοθετικού πλαισίου και της περιβαλλοντικής συνείδησης. Φυσικά, αναφέρεται ο ρόλος του τουρισμού για την Ατζέντα 2030. Στη συνέχεια, το Κεφάλαιο 3 διαπραγματεύεται την έννοια της τουριστικής φέρουσας ικανότητας, τα βασικά της επιμέρους συστατικά καθώς αναφέρονται τρόποι εκτίμησής τους. Τέλος, στο Κεφάλαιο 4 περιγράφεται αναλυτικά η υπό μελέτη περιοχή, δηλαδή η Παλαιόχωρα Χανίων. Πρώτα, γίνεται αναδρομή στην ιστορία του τόπου. Στη συνέχεια παρουσιάζονται οι υποδομές και τα δημογραφικά της στοιχεία. Επιπρόσθετα, αναφέρονται οι στρατηγικές ανάπτυξης που έχουν εφαρμοστεί στο παρελθόν καθώς και η ανάγκη για νέα πιο βιώσιμη στρατηγική. Έπειτα περιγράφεται η μεθοδολογία της μελέτης, ο τρόπος διεξαγωγής της, καθώς και οι στατιστικοί έλεγχοι των δεδομένων. Στη συνέχεια, παρατίθενται οι αναλύσεις των αποτελεσμάτων και ακολουθούν τα συμπεράσματα.



# **Tourism Carrying Capacity:**

## **A case study of Paleochora, Chania, Crete**

### **Abstract**

Tourism is one of the main sources of income for many Greek households. In addition, the country is famous for its hospitality as well as the high level of services. In recent years there has been intense tourist traffic. In fact, in 2019 Greece broke the record of arrivals, hosting a total of 31.35 million visitors. Of course, this trend decreased during the period of the COVID-19 pandemic period, however today the trend for increased tourism remains evident highlighting the need for an urgent management strategy.

This study attempts to examine the phenomenon of tourism in depth. Chapter 1 includes a historical review of the roots and evolution of tourism from custom to industry. In addition, positive and negative impacts and perspectives were analyzed. Finally, the elements of Greek tourism are presented. Chapter 2 refers to the development of tourism in a more sustainable form through the development of the relevant legislative framework and environmental awareness. Of course, the role of tourism for the 2030 Agenda is mentioned. Then, Chapter 3 explores the concept of tourism carrying capacity, its basic components as well as methods of assessing them. Finally, in Chapter 4 the area of Paleochora, Chania is described in detail. First, a look back at the history of the place. Its infrastructure and demographics are then presented. In addition, the development strategies that have been implemented in the past are mentioned as well as the need for a new more sustainable strategy. Then the methodology of the study is described, its execution, and the statistical analysis of the data are then described. Then, the analyses of the results are presented, followed by the conclusions.



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## **List of Abbreviations**

CC	Carrying Capacity
CO <sub>2</sub>	Carbon dioxide
EC	European Commission
EPSON	EU Programme for the European Observation Network for Territorial Development and Cohesion
EU	European Union
EURES	European Employment Services
GDP	Gross Domestic Product
GHGs	Greenhouse gases
ILO	International Labour Organization
ILOSTAT	International Labour Organization Department of Statistics
IOBE	Foundation for Economic & Industrial Research
SETE	Greek Tourism Confederation
IUCN	International Union for Conservation of Nature
MDGs	Millennium Development Goals
SDGs	Sustainable Development Goals
SET	Social Exchange Theory
INSETE	Institute of SETE
UN	United Nations
UNCED	United Nations Conference on Environment and Development
UNEP	United Nations Environmental Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFCCC	United Nations Framework Convention on Climate Change
UNGA	United Nations General Assembly
UNHRC	United Nations Human Rights Council
UNWTO	World Tourism Organization
WCED	World Commission on Environment and Development
WHO	World Health Organization
WTO	World Tourism Organization
WTTC	World Travel and Tourism Council



# CHAPTER 1

## TOURISM: EVOLUTION FROM PHILOXENIA TO INDUSTRY

### 1 Introduction

In contemporary societies, traveling around the world is a common hobby. People visit various countries, meet different people, and delve into foreign cultures and customs. Over time, tourism has become a widespread activity, and the vast majority of people has been to a foreign destination at least once.

According to the UNWTO, “Tourism is a social, cultural, and economic phenomenon which entails the movement of people to countries or places outside their usual environment for personal or business/professional purposes. These people are called visitors (which may be either tourists or excursionists; residents or non-residents) and tourism has to do with their activities, some of which involve tourism expenditure.”

Year after year, tourism is evolving into one of the greatest economic industries worldwide, with its dimensions and associated activities becoming more complex and diverse. To determine the right vector of tourism development, critical decisions need to be made towards sustainability.

#### 1.1 Evolution from philoxenia to tourism

Humans were always moving from place to place searching for shelter, food, or better climate conditions to live in. In ancient Greece, “philoxenia”, i.e., hospitality, was a significant institution, while hosting a guest was considered an ethical obligation. Moreover, it was

believed that travelers were under the protection of Zeus Xenios, “the strangers’ god”. Thus, the concept of hospitality had mostly religious character and became a tradition among the Greeks since ancient times. Back then, recreational travels were rare and occurred during periods of the Olympic Games and festivals or aimed to explore new lands.<sup>1</sup> Hence, the prevailing motives were commercial and trading.

The Medieval era constituted a transitional stage between the early and the contemporary forms of hospitality. In the early Middle Ages, people were visiting holy sites to make a pilgrimage. With the passage of time, at Venice’s trade peak in the 15<sup>th</sup> century, another tendency emerged. Wealthy and well-educated citizens used to travel seeking to learn foreign languages, arts, and other cultural values. Later, this kind of trip developed and was called “The Grand Tour”.<sup>2</sup>

In the 18<sup>th</sup> century, tours through Europe became extremely popular among the English nobility and constituted a passage from youth into adulthood. In the 19<sup>th</sup> century, referred to as an era of significant social, technological, and industrial changes, the term “tourism” appeared. In 1841, the agency (which defunct just in 2001!) of an English entrepreneur, Thomas Cook, sold the first organized trip, “The Grand Tour”. Young European aristocrats traveled mostly to Rome and Athens, excelling in their language skills and experiencing different cultures. Therefore, tourism between the 16<sup>th</sup> and 19<sup>th</sup> centuries was an educational tool, defined as an activity of the upper classes, related to wealth, and connected to British and Western European travelers.<sup>3</sup>

The social spreading of leisure and tourism from the upper classes through the middle class and ultimately to the masses has its roots in technology innovations. In the 19<sup>th</sup> century, the Industrial Revolution brought infrastructure development such as the first railway network created in 1828 in cooperation between England, France, and Austria. After only 19 years, in 1847, The Continental Railway Guide with timetables was issued.<sup>4</sup> The new era of tourist movement was just beginning.

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<sup>1</sup> Romero, F.G. ‘Sports tourism in Ancient Greece’

<sup>2</sup> Brodsky-Porges, E. ‘The Grand Tour - Travel as an educational device 1600-1800’, p. 178

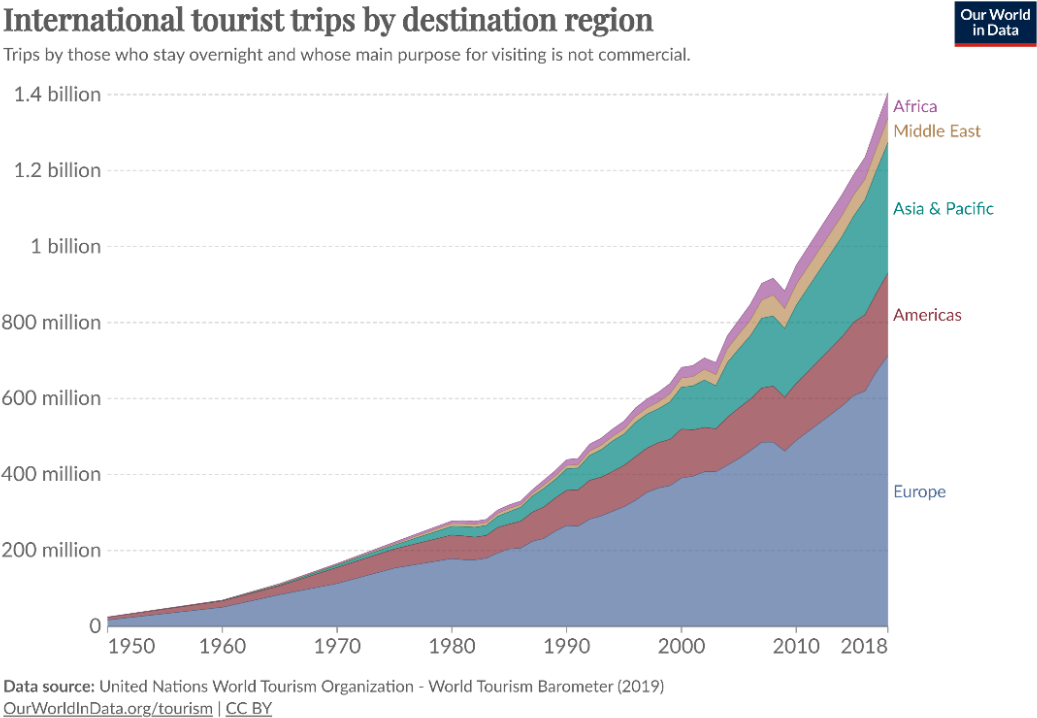
<sup>3</sup> Towner, J. ‘What is tourism’s history?’, p.339-340

<sup>4</sup> Brodsky-Porges, E. ‘The Grand Tour - Travel as an educational device 1600-1800’, p. 183



## 1.2 Tourism as an industry

Over the last almost 70 years, tourism has been developing at a rapid pace. Since 1955, the number of international tourist arrivals has multiplied by almost 60-fold, reaching from 25 million to 1.5 billion (an increase of  $\approx 5.750\%$  !) international inbound arrivals in 2019.<sup>5,6</sup> Europe, as observed in Figure 1.1, commands the vast majority of arrivals, followed by Americas and East Asia, dominating globally. As estimated, Europeans hold the first position among tourists visiting foreign countries more than any other nation, as shown in Figure 1.2.



Source: Our World in Data

**Figure 1.1**

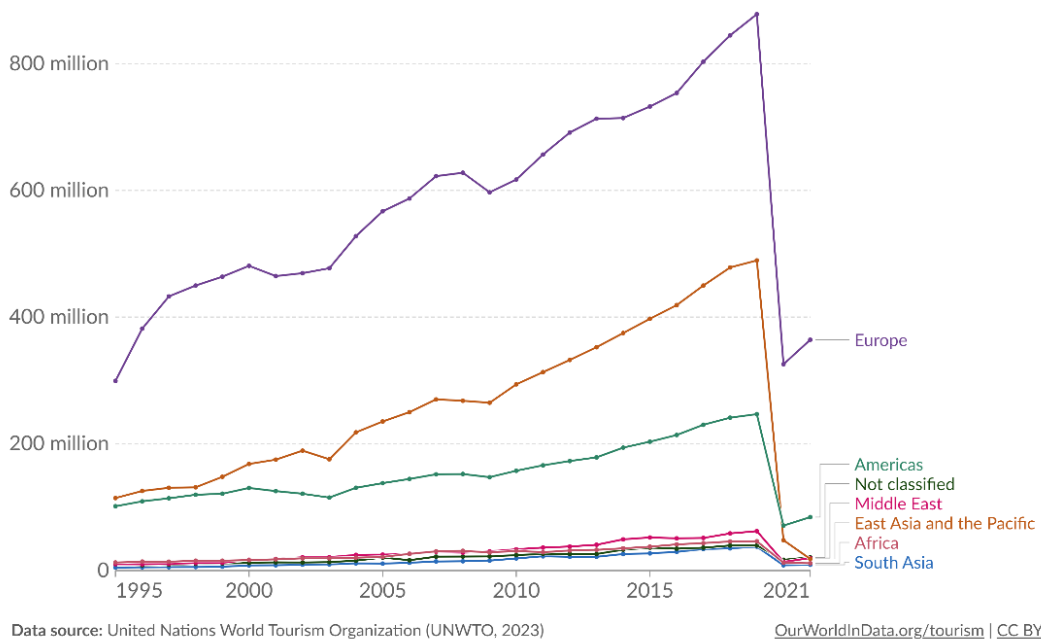
### International tourist arrivals, 1950-2019

<sup>5</sup> WTO, 'Tourism Highlights 2000', p. 1

<sup>6</sup> UNWTO, 'International Tourism Highlights 2020', p. 2

## International tourist trips by region of origin

Trips by people who arrive from abroad and stay overnight.



Source: Our World in Data

**Figure 1.2**

### **International tourist trips by region of origin, 1995-2021**

From an economic perspective, tourism is considered an industry, despite the challenge of defining its product. Like any other industry, the tourist product involves attributes of demand and supply relations. Although a consensus on the definition of tourism product consistency is lacking, three main pillars can be distinguished:<sup>7</sup>

- The tourism experience, consisting of anything a tourist sees, uses, and experiences, such as climate, nature, friendly host community etc.
- The tourism destination, i.e. the place of consumption where the tourism experience is lived, such as the condition of infrastructure, cleanliness, local population etc.
- The tourism services and goods, i.e. tourism products such as accommodation, restaurants, travel agencies etc.

<sup>7</sup> Berno T., Bricker K. 'Sustainable tourism development: the long road from theory to practice', pp. 6-7

Due to the wide range of sectors involved and because the tourism product consists of tangible and intangible goods, tourism contributed approximately 10% to the world GDP in 2023.<sup>8</sup>

Certainly, with the onset of COVID-19 pandemic in 2019-2020, there was a substantial downward fluctuation of 72% compared to 2019.<sup>9</sup> To curb the spread of the virus, numerous policies were implemented, rendering the travels almost impossible. Despite significant economic damage, particularly in countries whose economy depends on tourism, a recovery trend has emerged, reaching pre-pandemic levels, as illustrated in Figure 1.3.

During the first three quarters of 2023, tourism's contribution to global GDP approached the performance level of 2019 by 87%.<sup>10</sup> According to the WTTC, this contribution is expected to reach 15.5 trillion dollars by 2033, as demonstrated in Figure 1.4. Furthermore, while in 2019 tourism offered 1 in 10 jobs worldwide, providing 334 million jobs, it is expected that by 2033, tourism will offer about 430 million jobs.<sup>11</sup>

In terms of the local economy, tourists' expenditures have three distinct positive effects. Firstly, taxes earned from tourists' payments contribute to the destination's revenues through the sale of services and goods. Secondly, the increasing trading activity leads to the enhancement of the private sector. Simultaneously, tourists' money is considered foreign exchange and can be reinvested by the government in social sectors, such as education, health, and other public services.<sup>12</sup>

### **1.3 Tourism social perspective**

International tourism development constitutes a great opportunity for economic growth of emerging countries, which are more dependent on it. Aiming to increase national revenues, governments proceed to develop economic strategies closely focused on the hospitality sector. Thus, tourism not only impacts economies but also affects societies and cultural aspects.

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<sup>8</sup> IMF, 'Dirty Dance: Tourism and Environment'

<sup>9</sup> UNWTO, <https://www.unwto.org/tourism-data/global-and-regional-tourism-performance>

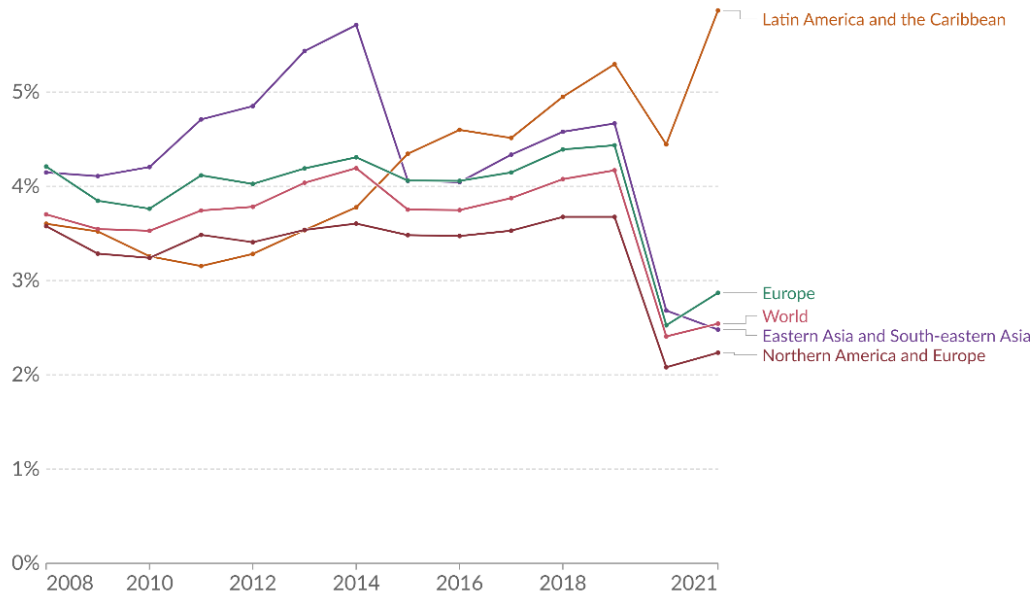
<sup>10</sup> UNWTO, 'World Tourism Barometer', p. 1

<sup>11</sup> WTTC, 'The Social Impact of Global Tourism', p. 3

<sup>12</sup> Stainton H., '10 Economic impacts of tourism + explanations + examples'

## Share of tourism in total GDP, 2008 to 2021

Our World  
in Data



Data source: UNWTO and OECD (2023)

Note: GDP from tourism includes tourism industries and other industries that directly serve visitors.

[OurWorldInData.org/tourism](https://OurWorldInData.org/tourism) | CC BY

Source: Our World in Data

**Figure 1.3**

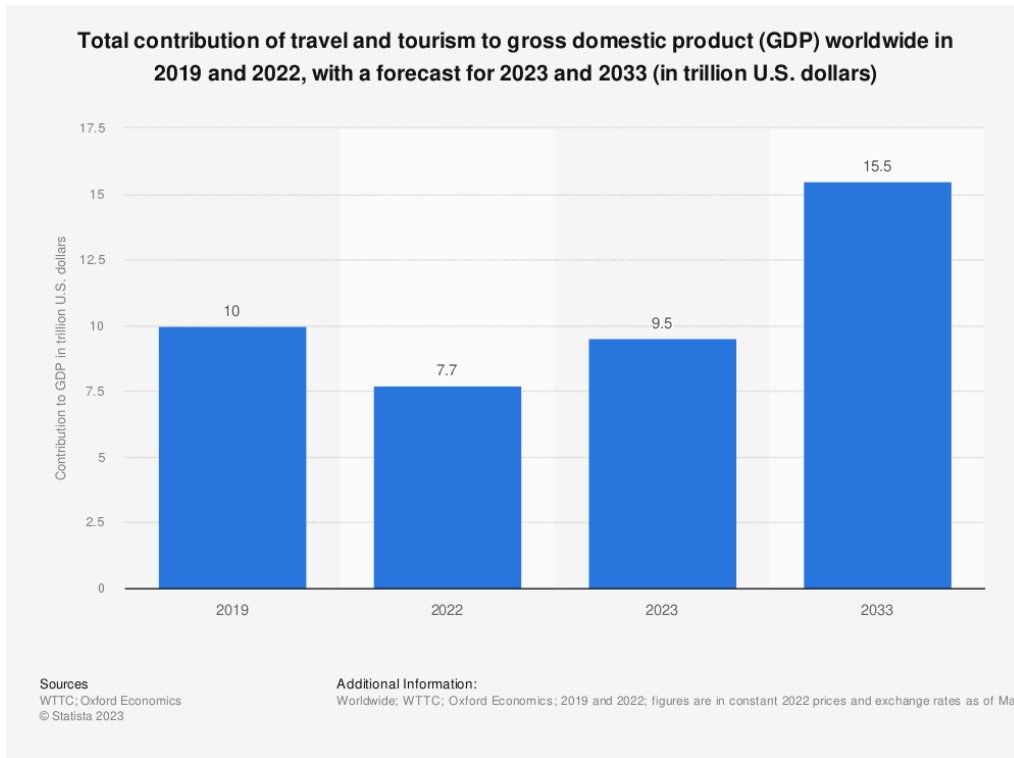
### **Tourism contribution to total GDP, 2008-2021**

Tourism is an interactive service that presupposes the host destination's ability to offer a valuable experience to its visitors. In 2022, the Museum of the Acropolis welcomed 1.4 million tourists,<sup>13</sup> the Musée du Louvre sold 7.8 million tickets,<sup>14</sup> and the Venice Carnival hosted around 200.000 arrivals, both domestic and international.<sup>15</sup> These renowned attractions cater to visitors seeking a unique experience and a connection with foreign culture and arts. As a result, the preservation of local heritage and its commercialization becomes a priority for authorities and the host population, as these culture elements attract visitors, thereby increasing the destination's popularity.

<sup>13</sup> ELSTAT, 'Museums and archeological sites activity. December 2022'

<sup>14</sup> The Musée du Louvre's Press Room, '7.8 million visitors to the Musée du Louvre in 2022'

<sup>15</sup> Statista, 'Tourism volume in Venice in the Carnival month 2019-2022'



Source: Statista

**Figure 1.4**

**Forecast for total contribution of travel and tourism to GDP worldwide by 2033  
(in tn USD)**

Furthermore, cultural events and traditions serve as a unifying force among residents, offering opportunities to foster strong connections within the community. For instance, the 2004 Olympic Games in Athens were deemed “very significant” or “quite significant” by 82.3% of the Greeks in 2003. By the beginning of 2004, as the high organizational cost became apparent, 74% responded with “absolutely agree” when asked about the importance of the Olympics,<sup>16</sup> showing complete coherence among the Greeks. In other words, the values of customs, arts, culture, and authentic national food are embraced and highlighted by residents, which then spread to visitors.

Moreover, the enhancement of destination popularity improves the quality of life for the host population. This not only leads to higher wages, but also creates conditions of social

<sup>16</sup> Vernardakis C., ‘The Greek public opinion and the organization of the 2004 Olympic Games: National consensus and critical perspectives’

equality, particularly for youth and women in terms of employment. According to the WTTC report, in 2021, the worldwide youth share of direct employment in the Travel & Tourism sector amounted to 15%, against 12.5% in the whole economy. Correspondingly, the global share of women's employment in tourism is nearly equivalent to the whole economy, standing at 39.3% for the former and 39.2% for the latter.<sup>17</sup> Moreover, according to ILOSTAT, the Travel & Tourism sector empowers women's and youth's role in domestic economic development. Despite the challenging nature of the hospitality sector, which includes obstacles such as higher informality rates, self-employment, and lower wages, an increasing number of women are occupying job positions in the food and accommodation sectors. As a result, many of them become entrepreneurs themselves.<sup>18</sup>

Finally, as the host destination undergoes development, authorities strive to enhance visitors' experience by offering an array of social services. Therefore, the most popular destinations are renowned for the comfort they provide, including features like new roads, clean streets, and expanded bus timetables, among others. Consequently, residents also have the opportunity to enjoy high-quality services.

#### **1.4 Socio-economic challenges**

For many years tourism has been developed without considering the negative effects it might cause. Undeniably, there are plenty of positive impacts, but simultaneously both socio-economic and environmental destination's resources deteriorate. Certainly, this controversial cause-and-effect relationship lies on the question of how much the number of visitors in an area exceeds certain thresholds.

Once a destination becomes popular, its exposure to foreign traditions and goods increases. Since tourism became the main source of income in many locations worldwide, residents attempt to attract more visitors by offering standardized services. Hence, traditional elements are sometimes replaced by standardized ones in order to satisfy tourists' desires, encompassing food, staff uniforms, decoration, and even architecture. While a metropolis may be able to absorb various elements, smaller destinations, where traditional attributes form their

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<sup>17</sup> WTTC, 'The Social Impact of Global Tourism', pp. 7-11

<sup>18</sup> ILOSTAT, 'Where women work: Female-dominated occupations and sectors '

trademark, are at the highest risk of gradually losing their authenticity due to tourism development.<sup>19</sup> In light of this, globalization enhances predominant tendencies, blurring the distinguishing unique social characteristics.

Additionally, when developing countries transform into tourist destinations, the lifestyle of local residents undergoes a radical change. As small provinces and villages accommodate travelers seeking to experience “authenticity” by coming close to local traditions, dwellers are more likely to take advantage of raising demand of hospitality services and switch their occupations. Given this, agricultural societies are at risk of losing their traditional identity, which makes them exceptional. Furthermore, the conversion of arable land for other recreational purposes, such as hotel construction, is often due to the lack of proper domestic laws and regulations.<sup>20</sup>

Certainly, successful coexistence of tourists and the host population is a substantial component of the experience that constitutes the destination tourism product. On the one side, there are tourists – the consumers of services and goods the destination offers; on the other side, there are residents – the traders. Both parties are connected in a socio-economic relationship.<sup>21</sup> Due to this link, the behavior of the former affects the behavior of the latter, and vice versa. Consequently, phenomena such as an increase in crime, fraud, drug trade, and prostitution, which often follow tourism development, cause a negative attitude toward it among the local population. Additionally, even if the aforementioned phenomena do not take place, the noise pollution, inappropriate behavior of visitors, crowding and congestion can potentially turn the local community against the visitors.<sup>22</sup>

As for economic impacts, tourism acts as a catalyst for price rises. As tourist demand increases, prices simultaneously trend upward. As a result, not only does the cost of living becomes very high, but infrastructure costs, such as house rental, electricity, sewage etc., also rise. Ultimately, local residents are likely to be forced to move out of a popular tourist destination due to the increased living expenditures, called “The Venice Syndrome”.<sup>23</sup>

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<sup>19</sup> Ross G., ‘Heritage Lost or Fortune Found: Issues and Dilemmas concerning Tourist Development within Local Communities’

<sup>20</sup> Ghadami M., Dittmann A., Pazhuhan M., Aligholizadeh Firouzjaie N., ‘Factors Affecting the Change of Agricultural Land Use to Tourism: A Case Study on the Southern Coasts of the Caspian Sea, Iran’

<sup>21</sup> Stainton H., ‘13 Social impacts of tourism + explanations + examples’

<sup>22</sup> Goodwin H., ‘Overtourism: Causes, Symptoms and Treatment’

<sup>23</sup> *The Venice Syndrome* (2012) Directed by Andreas Pichler

Beyond the aforementioned factors, both tourism development and the globalization of trade create propitious circumstances for the expansion of international and multinational firms. These financial giants invest immense amounts of money in assets, establishing tourist resorts and taking advantage of domestic sources, such as cheap labor, low taxation, and free resources – climate, nature, friendly host population, and rich cultural heritage. However, the revenues they earn are usually saved in other countries, benefiting foreign economies. Despite that, the dominance of imported goods in the tourism value chain primarily favors the global corporations.<sup>24,25</sup> Therefore, due to economic leakage, the money spent by tourists in a destination does not always contribute significantly to the local economy.



Source: Author's personal collection. November 2023.

**Figure 1.5**

**A sign at a hotel in Santorini requests visitors to respect the hosts**

In addition to the outflow of revenues from the tourism industry, the risk of escalating economic dependence on tourism is also considered a crucial factor for many globally popular holiday destinations, as demonstrated in Figure 1.6. While tourism is a great economic booster

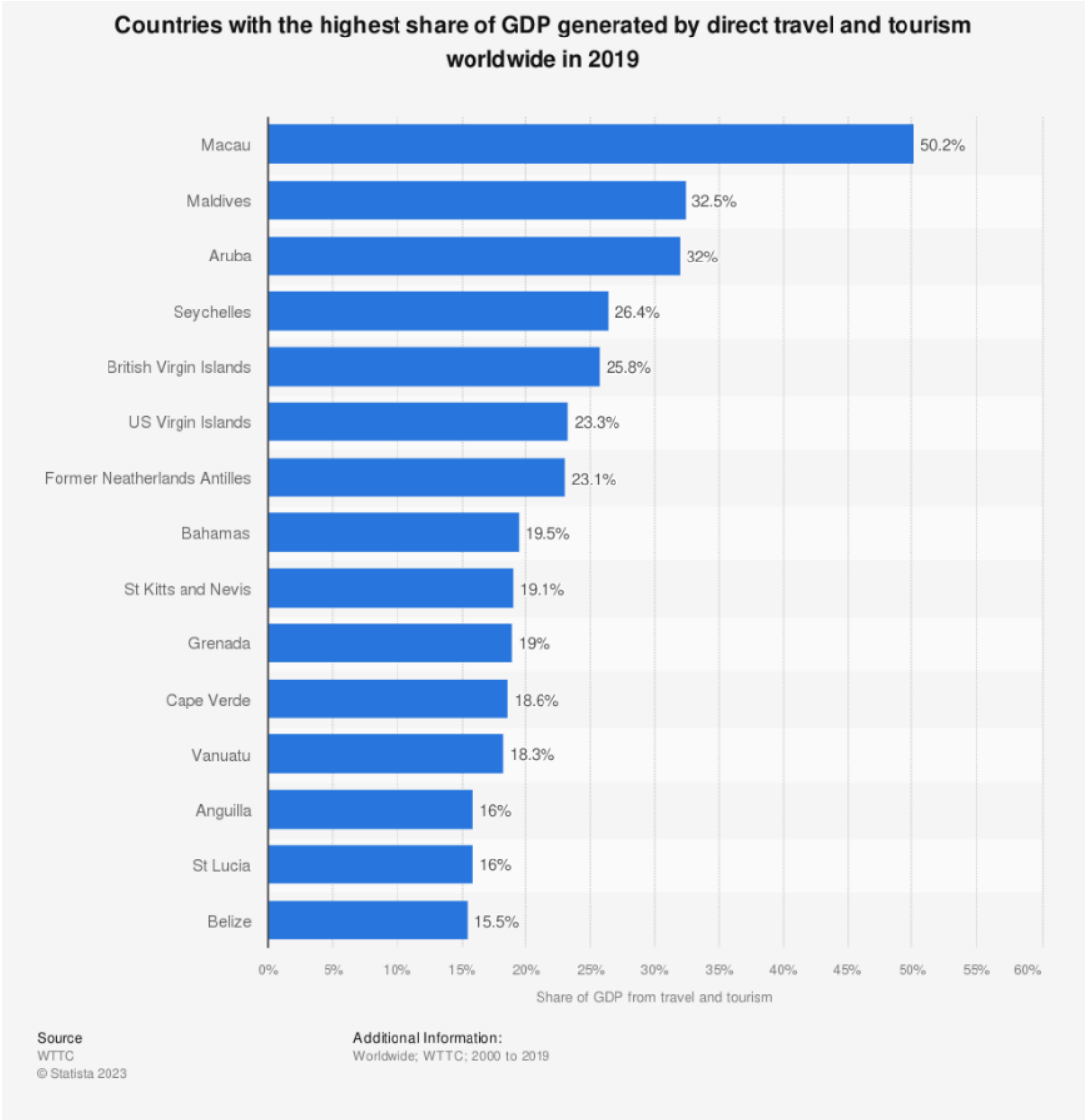
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<sup>24</sup> Anderson W., 'Leakages in the tourism systems: case of Zanzibar'

<sup>25</sup> Buhalis, D. 'Limits of tourism development in peripheral destinations: problems and challenges'



for the economies of these countries, overreliance on it sets them up highly vulnerable to economic fluctuations, pandemics, geopolitical events, or natural disasters. Therefore, the sustainable development of a destination should be based on diversification of the economy, prioritizing active participation of the local community members, and leveraging domestic resources.



Source: Statista

**Figure 1.6**

**The most dependent on tourism countries, according to the tourism share of GDP**

## 1.5 Environmental impacts of tourism

Today, people worldwide are witnessing noticeable climate change manifested through extreme weather phenomena such as drought, wildfire, and flood. Since 2010, humanity has experienced a progressive increase in heat, with the past decade being recorded as the ten warmest years. In 2023, the average surface temperature reached a record high of 1.18 °C compared to the 20th-century average temperature, marking it as the hottest summer since 1880.<sup>26</sup>

As the tourism sector is one of the most rapidly developing industries, it relies on high numbers of travelers and encompasses numerous activities. Consequently, with the increase in the number of visitors in an area, substantial amounts of GHGs are emitted. Although calculating the tourism footprint is challenging, Lenzen, Sun, Faturay *et al* (2018) claimed in their study that between 2009 and 2013, CO<sub>2</sub> emissions reached a peak of 4.5 Gt, which corresponds to approximately 8% of the world's carbon emissions.<sup>27</sup> This is nearly equivalent to the ratio of industrial processes and product use in the entire EU in 2019.<sup>28</sup> Given these circumstances, it is indisputable that hospitality services contribute significantly to global GHGs emissions, the factor that cannot be ignored.

Similar to gas emissions, waste disposal is another environmental issue in many vacation destinations. Many places, especially the islands, demonstrate high fluctuation of seasonality, which lies on the increasing number of visitors in the warm period and its decline in the wintertime. Thus, with the onset of the tourist season, the consumption of resources gradually multiplies reaching its peak. Furthermore, many places do not have the necessary infrastructure nor knowledge for the proper waste management. As a result, the host areas often face such problems as uncontrollable garbage disposal, marine debris, and sewage.<sup>29</sup> For this reason, in 2018, the governance of the Philippines proceeded to a six-month prohibition of tourists' accommodation in Boracay due to colossal environmental depletion, which brought the island almost at the edge of an irreversible natural disaster.<sup>30</sup> Unfortunately, it seems to be not the last

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<sup>26</sup> NOAA National Centers for Environmental Information, Monthly Global Climate Report for Annual 2023

<sup>27</sup> Lenzen, M., Sun, Y.Y., Faturay, F. *et al*, 'The carbon footprint of global tourism'

<sup>28</sup> European Parliament, 'Greenhouse gas emissions by country and sector (infographic)'

<sup>29</sup> 'Μύκονος: «Έσκασε» η αποχέτευση από την υπερβολική δόμηση - Φεύγουν τουρίστες από καταλύματα', *ΕΘΝΟΣ* (the author is not mentioned)

<sup>30</sup> Morris, H. 'What's happening in Boracay, the island paradise ruined by tourism?', *The Telegraph*

protective measure relative to tourism restriction, as more and more countries, including Greece, embrace the concept of setting limitation.<sup>31</sup>

Seasonal high population density has also been noted as a crucial factor in the lack of important resources such as food, electricity, raw materials, and especially water. This does not occur solely because of increasing demand, but also because of both the expanded range of services (SPA, swimming pools, beach showers, gardens), and the need to maintain the place presentable and neat. Considering that tourism usually develops in coastal areas and islands, where the potable water is usually limited, some resorts operate private water tanks, which, when filled, can leave local residents without water for hours.<sup>32</sup> Mediterranean regions have also already experienced the lack of water, mainly during peak seasons on dry islands,<sup>33</sup> there the tourism exacerbates pressures on already stretched water resources.

Vigorous anthropogenic activity, among other factors, affects flora and fauna. Therefore, biodiversity is the first to suffer from the direct and indirect negative impacts of tourism, as it is an essential element of leisure activities. Sea sports, mountain or forest trekking, kayaking, fishing, wildlife safari, bird observation – just a short list of some common activities that can cause permanent disasters such as migration or even extinction of local wildlife habitats, coral reefs' death, and deforestation. Consequently, tourism causes plenty of declines like soil erosion, desertification, and aquifer pollution. In fact, the contradictory relationship between destination biodiversity and popularity is obvious: while the rich nature makes a tourist destination distinguished, when its limits exceed the popularity declines due to diminished natural aesthetic.

To sum up the abovementioned environmental impacts, today, more than never before, the consequences of human activity are observable in almost every corner of the planet. Apparently, tourism has no difference from any other industry. While the areas with virgin nature attract many tourists, hospitality sector potentially constitutes a great threat to entire ecosystem, including local residents.

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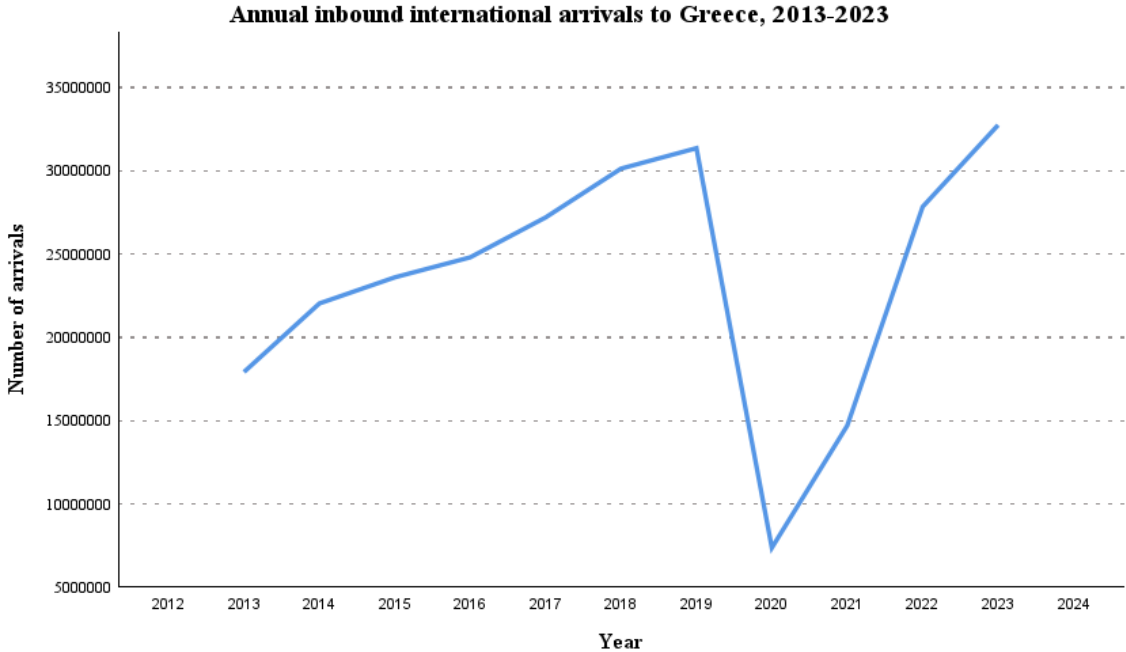
<sup>31</sup> Wilson, N. (2023) '24 destinations cracking down on overtourism, from Venice to Bhutan', *The Independent*

<sup>32</sup> UNEP (2011), 'Tourism: Investing in Energy and Resource Efficiency'

<sup>33</sup> Lialios, G. (2024), 'Water shortages a looming threat for Greek isles', *Kathimerini*

### 1.6 Tourism in Greece

Greece has always been a point of attraction for foreign visitors due to its rich culture, history, and natural beauty. Although tourism has been developing in the country for more than fifty years, over the last two decades its pace became particularly intensive. As a result, many rural areas began to engage not only in agriculture but also in tourism. Today, visitors choose Greece for its hostable and authentic people, affordable accommodation, delicious food, and the fair relationship between cost and benefits in services and goods. Thus, in 2023 Greece completely recovered from the COVID-19 pandemic-induced impacts on tourism, setting a new arrivals record (Figure 1.7).

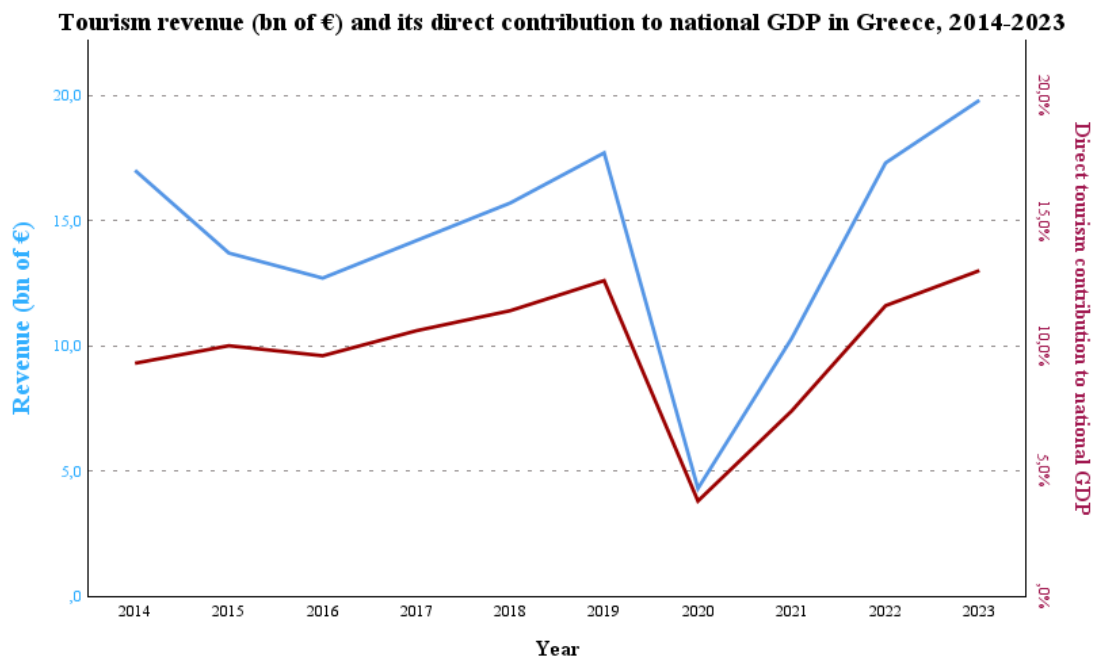


Data Source: INSETE

Figure 1.7

Annual inbound international arrivals to Greece, 2013-2023

According to the Foundation for Economic & Industrial Research (IOBE), every 1 euro spent in Greece generates 2,20 euro in national GDP.<sup>34</sup> The upward trend in tourism's contribution to the domestic economy is apparent while revenues increase (Figure 1.8). The rates of direct tourism contribution to the national GDP indicate how sustainable is this development. Moreover, UN marked this index (8.9.1) under Goal 8 on decent Work and Economic Growth of the 17 Sustainable Development Goals.<sup>35</sup>



Data Source: INSETE

**Figure 1.8**

**Tourism revenue (in bn of €) and its direct contribution to national GDP in Greece, 2014-2023**

As tourism-related activities increase, the economy expands. Despite the challenges in calculating it, the indirect financial contribution of tourism is estimated to be as significant as the direct contribution if not even higher (Table 1.1). This underscores the fact that the

<sup>34</sup> IOBE, 'Η Επίδραση του Τουρισμού στην Ελληνική Οικονομία'

<sup>35</sup> UN Tourism 'Economic Contribution and SDG'

hospitality sector in Greece not only offers numerous job opportunities but also influences various other occupations.

Table 1.1 Maximum and Minimum indirect contribution of tourism to national GDP. Greece, 2014-2023

Indirect Tourism contribution to National GDP	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Maximum	20,0%	22,0%	21,1%	23,2%	25,2%	27,7%	8,5%	16,3%	25,4%	28,5%
Minimum	25,0%	26,5%	25,5%	28,0%	30,3%	33,4%	10,2%	19,6%	30,6%	34,3%

Source: INSETE

As more than 70% of the Greek population is engaged in the tertiary sector,<sup>36</sup> it emerges that tourism services primarily involve vulnerable age groups. Specifically, recent INSETE research reveals that over the last five years, the hospitality sector mostly employs both young adults and senior citizens.<sup>37</sup> It is worth mentioning that from the onset of the COVID-19 pandemic until 2023, the year of full recovery, the number of older adults employees in the Accommodation and Food Service sector nearly doubled. Consequently, the hospitality sector plays a major social role and serves as a driving force against the unemployment of socially vulnerable groups.

Table 1.2 Age and gender distribution of employees in the Accommodation and Food Services Sectors. Greece, 2014-2023

Age	2014/2018	2019/2023
15-24	20,7%	24,8%
25-29	37,8%	-17,7%
30-44	6,9%	-6,4%
45-64	36,7%	12,4%
65+	30,8%	95,5%
Gender	2014	2023
Male	58,6%	57,8%
Female	41,4%	42,2%

Source: INSETE

<sup>36</sup> Statista ‘Greece: Distribution of the workforce across economic sectors from 2012 to 2022’

<sup>37</sup> INSETE ‘Η απασχόληση στα Καταλύματα και την Εστίαση και τους Λοιπούς κλάδους της Ελληνικής Οικονομίας, 2014-2023 ’

Although there are numerous arrivals during the colder months, Greece is principally characterized as a “sun-and-sea” destination. As a result, the vast majority of visitors come to the country during the summertime (Figure 1.9). Consequently, not only do provincial destinations and islands experience congestion, but Athens also faces similar issues. Seasonality, therefore, puts pressure on both the hospitality sector and local residents. On the one hand, there is a lack of resources to both manage tourism-induced impacts, such as increased waste disposal and water crisis, and meet demand; for example, the labor shortage in Greek hotels at the peak of the summer 2021<sup>38</sup> was 21,8%, and in summer 2022<sup>39</sup> it was 22,9%. On the other hand, many places transform into “no-go zones” for local residents due to the intense presence of tourists. The sharp fluctuation in the number of visitors clearly impacts the exceeding of certain capacities and the destination’s ability to absorb tourism.



Data Source: INSETE

**Figure 1.9**

**Number of monthly international tourist arrivals in 2023 compared to 2013**

<sup>38</sup> INSETE ‘Απασχόληση και ελλείψεις εργατικού δυναμικού στα ελληνικά ξενοδοχεία στην αιχμή της θερινής σεζόν 2021 ’

<sup>39</sup> INSETE ‘Απασχόληση και ελλείψεις εργατικού δυναμικού στα ελληνικά ξενοδοχεία στην αιχμή της θερινής σεζόν 2022 ’

## **1.7 Recapitulation**

Tourism is a multidimensional activity that has evolved over centuries, making it one of the most rapidly growing industries globally. As it continues to expand gradually, tourism affects essential aspects such as the domestic economy, local residents' lifestyles, and the ecological footprint.

During the 20<sup>th</sup> century, as technology evolved, the number of travelers significantly multiplied, creating both great opportunities and high pressure on everything that developed either as a consequence or prerequisite of tourism. Thus, tourism now generates not only 10% of the global economy but also 8% of global GHG emissions.

Today, as tourism industry expands, the top holiday destinations offer a plethora of activities for any visitor. As a result, tourism product, consisting of various components such as hospitality, environmental and infrastructure conditions, and the quality of services, becomes more lucrative. Consequently, the revenues increase, and the living conditions improve. On the other hand, the destination's ability to provide better accommodation conditions to visitors requires numerous resources. Moreover, the intense tourists' presence puts pressure on the dwellers and can even create conflicts of interest.

As one of the most popular destination, Greece shows an emerging trend in the number of arrivals. Indeed, compared to the rest of the EU, Greece fully recovered from the pandemic's impacts by 2023. This emerging trend underscores the need for an integrated blueprint to maximize the benefits offered by tourism while mitigating any potential risks.



## CHAPTER 2

# REFLECTION OF THE CONCEPT OF SUSTAINABILITY IN INTERNATIONAL LEGISLATION AND SOCIAL NORMS

### 2 Introduction

In the European Union, sustainable development formally became a long-term goal under Article 3(3) of the Treaty on European Union.<sup>40</sup> Nowadays, the term “sustainability” is being used absolutely in every socio-economic, political, educational, and – especially - environmental public discussion. Yet governments around the world have agreed to cooperate in implementing shared strategies in sustainable development, but the path towards sustainability has just begun.

The first mention of the term “sustainable development” achieved ubiquitous recognition in **1987**, when the Brundtland Report was published by the World Commission on Environment and Development, also known as “Our Common Future”. According to the Report:

“Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs. It contains within it two key concepts:

- the concept of “needs”, in particular the essential needs of the world’s poor, to which overriding priority should be given; and
- the idea of limitations imposed by the state of technology and social organization on the environment’s ability to meet present and future needs.”<sup>41</sup>

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<sup>40</sup> EU, ‘Founding agreements: Treaty of Lisbon’

<sup>41</sup> UN, WCED, ‘Report of the World Commission on Environment and Development: note / by the Secretary-General’

Generally, sustainable development is about social and economic transformation, using management tools and planning in advance. The changes it brings concern both developed and developing countries. First of all, policies anticipating the establishment of equitable access to natural resources should be implemented, and actions towards fair cost-benefit distribution should be done. In light of this, developing countries are called to cooperate in order to address poverty improving the quality of residents' life, while the developed countries are called to promote standards of living which have regard with ecological possibilities, aiming to meet the lasting sustainability. The Brundtland Report emphasizes that the satisfaction of human needs and aspirations is a number one priority for development. However, achieving that goals sustainably requires considering long-term social and environmental impacts it may induce. Also, the importance of balance between economic growth, environmental conservation, and generations' equity must be taken into account.

In summary, sustainable development is a process that starts with an assessment of the environmental wealth and involves laying out a rational strategy for the utilization of natural resources to ensure socio-economic well-being of humanity. Thus, there are three obvious pillars of sustainability: society, economy, and environment.

## **2.1 Convergence of tourism legislation to sustainability**

Recently, sustainability has become one of the most discussed topics worldwide. Today, as governments attempt to establish the concept of sustainable development and implement its regulations in every anthropogenic activity, it may seem as if this has always been the case. However, environmental institutions were established, and policies were put in place after decades of discussion between authorities and scientists, being evolved simultaneously. Thus, the journey of tourism industry growth from a conventional to a sustainable model met numerous milestones leading to contemporary achievements that are often taken for granted.

After World War II, developed countries met an extremely sharp economic rise. Industrialization, continuous population growth and increased demand enlarged tourism activity. In **1963**, the Conference on International Travel and Tourism, held in Rome, Italy,

attempted to outline essential guidelines for development of tourism industry.<sup>42</sup> The declaration defined the term “visitor”, i.e. “tourist”, for the purposes of international statistics, and clarified the tourism as an economic pillar for developing countries. In addition, social, educational, and cultural aspects were highlighted as well as tourism role in preservation of global peace and international understanding. The Conference agreed that developed countries should be aimed by international **cooperation**, provision of technical assistance, sharing of skills and knowledge, and financing with low-interested loans. In turn, the concerned countries should establish self-regulatory institutes, adopt adequate measures of preservation and protection of natural, historical, cultural, and environmental heritage. In addition, the host residents should become a “tourism-minded” population. Regarding to that declaration, the economic, environmental, social, and cultural aspects were recognized as essential elements of tourism, demonstrating its complexity as an industry.

In June **1972**, the UNEP was formed in order to confront the first environmental challenges that appeared. Thus, the state of nature was formally placed on the global agenda. Furthermore, the most significant achievement of this conference was the Stockholm Declaration and Action Plan for the Human Environment<sup>43</sup>, which included 26 principles and 109 recommendations for sustainable development of industrial sectors, and also launched **cooperation** between developed and emerging countries.

In **1980**, the first World Conservation Strategy was launched.<sup>44</sup> This document, based on three pillars – the maintenance of essential ecological processes and life-support systems, the preservation of genetic diversity, and the sustainable utilization of species and ecosystems, - highlighted the importance of international **cooperation** on the environmental topics and policies. The World Conservation Strategy constitutes the first international sustainable development strategy, emphasizing that today’s needs shouldn’t compromise the needs of future generations.

Some months later, in September **1980**, the World Tourism Conference was held in Manila, Philippines. The topic of the conference was the definition of the nature of tourism, the role of the industry in an ever-evolving world, and the responsibility of states to contribute to

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<sup>42</sup> UN, ‘Recommendations on international travel and tourism’

<sup>43</sup> UN, ‘United Nations Conference on the Human Environment, 5-16 June 1972, Stockholm’

<sup>44</sup> IUCN–UNEP–WWF, ‘World Conservation Strategy: Living Resource Conservation for Sustainable Development’

its development, considering its multilateral character, apart from its economic aspects. In the Manila Declaration,<sup>45</sup> tourism-induced direct effects on social, cultural, educational, and economic sectors were recognized not only on a national level of the concerned countries, but also internationally. Moreover, in the Manila Declaration, it was argued that the use of tourism resources, such as space, facilities, and values, cannot be uncontrolled due to the risk of their deterioration, and even destruction. In light of this, socio-economic interests of residents, the environment, and natural resources, historical, cultural, and religious heritage should not be left aside because of tourism development. In addition, the Declaration stated that tourism plays a major role in social stability, enhancing the spiritual growth of the host population, when it focuses on interdependence and interconnectedness among diverse communities and individuals. Certainly, financial and technical international **cooperation** was mentioned as a vital element of harmonious and sustained tourism development.

During the next decades, as the environmental and social consciousness was transforming into a ubiquitous trend, a plethora of agreements was signed. Thus, in 1982, the Montevideo Environmental Law Programme was established, stipulating international order of law on the environmental issues for 120 countries. This program paved the way for several significant agreements, including the Montreal Protocol on Substances that Deplete the Ozone Layer in 1987, the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal in 1989, the Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade in 1998, and the Stockholm Convention on Persistent Organic Pollutants (POPs) in 2001. Regarding recreative activities, in **1982**, the Acapulco Document was issued that outlined the importance of policies and adoption of several measurements, such as paid leave for workers, preserving the environment and cultural heritage, promotion awareness of responsible tourism practices among the public etc. Overall, the Acapulco Document highlighted the need for the establishment of accessibility and sustainability in recreational activities and encouraged mutual respect within the tourism industry, in order to ensure lasting peace and better distribution of wealth among humanity.<sup>46</sup>

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<sup>45</sup> UNWTO, 'Manila Declaration on World Tourism'

<sup>46</sup> UNWTO, 'Acapulco Document'

In response to the growing importance of the tourism industry, the Tourism Bill of Rights and Tourist Code were issued by the UNWTO in **1985**.<sup>47</sup> This declaration recognized the significance of implementing tourism policies aligned with the Manila Declaration and the Acapulco Document, and their integration into general development policies at all levels. Furthermore, it emphasized that the tourism environment - human, natural, social, cultural - is the legacy of all mankind and should be protected in the interest of present and future generations. Additionally, rights and obligations of both host population and tourists were outlined to ensure the protection of tourists' rights, harmonious coexistence, and mutual respect between the former and the latter.

In **1989**, two years after the WCED released the Brundtland Report, The Hague Declaration on Tourism was issued.<sup>48</sup> Providing ten principles of protection and preservation of cultural and historical heritage in the context of tourism development, it also recognized tourism both as a consequence and a determinant factor of quality of life. Thus, according to the Declaration, tourism development should occur in line with needs properly set up by the governments and national priorities which ensure self-sufficient development. In addition, every policy should consider natural, physical, and cultural environment capacity of destinations. For the first time it was recorded that due to rational management of hospitality sector, determination of carrying capacity and compliance with boundaries it sets, - even restrictive ones, - could protect and develop the physical environment, the cultural heritage, as well as improvement of the quality of life. Generally, the Hague Declaration focuses on collaborative efforts among governments, tourism stakeholders, and local communities to promote responsible tourism behavior and establishment of sustainable management.

Alongside the formation of tourism legislative framework, the dialogue on the environmental topics continued at the United Nations Conference on Environment and Development, or well-known "Earth Summit", which took place in Rio de Janeiro, Brazil, in **1992**.<sup>49</sup> At this conference for the first time the interdependence of three primary aspects - social, economic, and environmental - was highlighted. Additionally, the need to restore balance between them was emphasized. Particularly, sustainable development was considered a feasible goal if properly based on development of the abovementioned pillars. Thus, the key

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<sup>47</sup> UNWTO, 'Statutory and Legal Matters: (a) Tourism Bill of Rights and Tourist Code – A/6/11(a)'

<sup>48</sup> UNWTO, 'The Hague Declaration on Tourism'

<sup>49</sup> UN, 'United Nations Conference on Environment and Development, Rio de Janeiro, Brazil, 3-14 June 1992'

to sustain the human life on the planet lies on assimilating social, economic, and environmental factors into policy, planning and management levels. Withal, the Earth Summit concluded that the change in the development model not only requires people to reject the “produce-and-consume” model perceptions, but also entails additional costs to national budgets. All things considered, the plan of action and new strategies, named Agenda 21,<sup>50</sup> was issued in order to address global environmental affairs.

Subsequently, in **2000**, the Millenium Summit took place in New York, USA, resulting in the adoption of the 8 Millennium Development Goals (MDGs).<sup>51</sup> Among others, the assurance of environmental sustainability was one of the goals set out to be achieved by 2015. Notwithstanding, in **2012**, at the United Nations Conference on Sustainable Development (Rio 20), it was decided to implement a comprehensive strategy, adopting the outcome document “The Future We Want”.<sup>52</sup> In this manner, the Member States agreed to develop a new set of Sustainable Development Goals (SDGs), due to supersede the 8 MDGs.



Source: UN Association of Australia

**Figure 2.1**

**The eight Millenium Development Goals**

<sup>50</sup> UN, ‘Agenda 21’  
<sup>51</sup> WHO, ‘Millennium Development Goals (MDGs)’  
<sup>52</sup> UN, ‘Future We Want - Outcome document’

The last, but not least pact - agreed upon by 196 Parties - was signed in December **2015**, at the UN Climate Change Conference, known as “The Paris Agreement” or COP21. This significant and legally binding treaty foresees, inter alia, international collaboration and coordinated actions between governments. The chief goal of the agreement is to keep the average global temperature below 2°C above pre-industrial levels, while its long-term application should limit the average global temperature to 1.5°C above the pre-industrial levels.<sup>53</sup> The mandates enveloping the Paris Agreement were outlined in the 2030 Agenda, which consists of 17 Sustainable Development Goals and 169 targets,<sup>54</sup> incorporating the 8 MDGs. Hence, governments are required to develop policies, actions, and management tools based on the Agenda directions in order to implement its goals due to further sustainable development. Thus, the 17 SDGs constitute the absolute guideline for establishing global prosperity, wealth, and sustainability.



Source: UN Communications materials

**Figure 2.2**  
**The 17 Sustainable Development Goals (2030 Agenda)**

<sup>53</sup> UNFCCC, ‘The Paris Agreement’

<sup>54</sup> UN, ‘THE 17 GOALS’

In conclusion, in **2021**, the UNHRC adopted the resolution on “*safe, clean, healthy, and sustainable environment*”, recognizing it as a human right.<sup>55</sup> Finally, in **2022**, the UNGA recognized the environmental right for everyone on the planet.

## **2.2 Stages of tourism evolution towards sustainability**

For a long period, there was not much information about tourism. Statistical data for the industry were not recorded, as it did not contribute to domestic economies as much as it does today. However, after the end of World War II, tourism gradually emerged as one of the largest economic pillars not only in Europe but also throughout the world. Nonetheless, concerns regarding the environment and sustainability in the concept of anthropogenic activity arose due to the observation of certain negative impacts.

### **2.2.1 Advocacy platform**

Initially, European countries overcame the economic collapse, and as the economies returned to normal levels, then they met unprecedented economic growth. In cooperation with the World Bank, which was actively investing substantial amounts of money in the tourism industry, domestic administrations evolved into its conceptual supporters. Besides, there were also other institutions, such as UNESCO, which provided support by conducting relevant research, while the UN declared the year 1967 as “The Year of the Tourist”, using the slogan “Tourism, Passport to Peace”.<sup>56,57</sup> Consequently, were highlighted not only the positive cultural aspects of tourism, but also its important regional and national economic benefits. In this manner, especially developing countries managed to ensure necessary foreign exchange using already existing resources (sun, sea, sand, and friendly people).<sup>58</sup> Therefore, this tendency during the postwar period motivated the emergence of the advocacy platform that supported all tourism activities, even if they could possibly cause harmful impacts.<sup>59</sup>

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<sup>55</sup> UNHRC, ‘Human Rights Council adopts four resolutions on the right to development, human rights and indigenous peoples, the human rights implications of the COVID-19 pandemic on young people, and the human right to a safe, clean, healthy and sustainable environment’

<sup>56</sup> Pleumarom A., ‘The political economy of tourism’, p. 142-143

<sup>57</sup> UNWTO, ‘History, 1946-1970’

<sup>58</sup> Berno T., Bricker K., ‘Sustainable tourism development: the long road from theory to practice’

<sup>59</sup> Postma A. *et al.*, ‘Overtourism: Carrying Capacity Revisited’, p. 230



### **2.2.2 Cautionary platform**

As the popularity of tourism continued to grow, so did the annual number of visitors, leading to the appearance of the first negative environmental and social impacts, which triggered the idea that tourism cannot be developed at the expense of both humans and the environment. This recognition led to the establishment of the cautionary platform, which emphasized that a “smokeless industry” can also be harmful.<sup>60</sup>

Additionally, numerous scientific endeavors aimed to formulate the concept of the threshold that needed to be integrated into the decision-making processes in the hospitality sector, considering residents’ attitude towards tourism development. Amid the array of research, the G. Doxey’s irritation index (1975), commonly known as Irridex, and R. Butler’s Area Life Cycle (1980), gained significant attention and remain relevant even today. Ultimately, the landmark Club of Rome report – “The Limits to Growth” (1973), defined the trademark of the cautionary era emphasizing that Earth’s capacity is finite.

### **2.2.3 Adaptancy and knowledge platform**

The period of awareness was succeeded by both adaptancy and knowledge platform, spanning the two decades of the 1990s and 2000s. During the adaptancy period, there was a focus on utilizing scientific knowledge to transform tourism practices into more “ecofriendly” forms, while the knowledge platform aimed to optimize decision-making tools within management, as strategy and prognosis.<sup>61</sup> Specifically, in Agenda 21 tourism is referred as a crucial tool of sustainable development, in particular:

- environmentally sound and culturally sensitive tourism programs, as a strategy, would contribute to sustainable development of the urban and rural settlements, enhancing urban decentralization and social consistency;  
(Chapter 7: “Sustainable Human Settlement Development”)
- integration of environmental concerns and developmental issues into decision-making processes through the utilization of economic incentives and market mechanisms, could output multiple sustainable outcomes across various sectors;

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<sup>60</sup> Postma A. *et al.*, ‘Overtourism: Carrying Capacity Revisited’, p. 230-231

<sup>61</sup> Würzl A., ‘Future development of tourism’

(Chapter 8: “Integrating Environment and Development in Decision-Making”)

- eco-tourism is considered a wildlife management and planning tool that influences the value of the forests, forest lands, and woodlands, through other non-damaging uses, such as the collection of inhabitants’ genetic material, could contribute to production of goods and services, employment, income generation, and increase the foreign exchange earnings;

(Chapter 11: “Combating Deforestation”)

- tourism serves as an income-generating and stabilizing factor for residents of mountain and hillside areas, when used in integrated management, contributing to the reduction of economic risks in that highly vulnerable to any climatic or anthropogenic changes’ impact;

(Chapter 13: “Managing Fragile Ecosystems: Sustainable Mountain Development”)

- in rural and coastal areas, where the intensification of agriculture is not feasible, tourism activity could influence the efficiency of sustainable utilization of local resources, minimizing economic risks and protecting the land from the environmental degradation;

(Chapter 14: “Promoting Sustainable Agriculture and Rural Development”)

- as a factor affecting marine environment, tourism serves as a means of integrated management and sustainable development for the protection of coastal areas and their resources - such as coral reefs, mangroves, and other habitats, - from coastal erosion and siltation provided that attitudes of indigenous communities are considered, and the academic and private sector are involved;

(Chapter 17: “Protection of The Oceans, All Kinds of Seas, Including Enclosed and Semi-Enclosed Seas, and Coastal Areas and The Protection, Rational Use and Development of their Living Resources”)

- promotion of eco-friendly and culturally mindful leisure and tourism activities, as outlined in the Hague Tourism Declaration (1989), lead to the proper utilization of

museums, heritage sites, and other sightseeing, which are the pillars of sustainable tourism.

(Chapter 36: “Promoting Education, Public Awareness and Training”)

During these two periods, tourism was recognized for the first time as a significant economic engine with both advantages and impacts.<sup>62</sup> Furthermore, in addition to focusing on impacts, tourism studies began to deepen into cause-and-effect relationships.

## 2.2.4 Tourism as a part of the 2030 Agenda

In the present day, the 17 SDGs are considered the most comprehensive strategy, covering a wide range of topics and actions. Furthermore, globalization constitutes the world as a vast unified society, where the anthropogenic activity of one affects the activity of others. In this context, today there are no longer isolated industries nor populations. Consequently, the success of one sustainable goal enhances the success of another. Specifically, tourism is verbatim mentioned in 3 targets of 17 Goals:<sup>63</sup>

**Goal 8:** Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all.

- **Target 8.9:** By 2030, devise and implement policies to promote sustainable tourism that creates jobs and promotes local culture and products.

**Goal 12:** Ensure sustainable consumption and production patterns.

- **Target 12.b:** Develop and implement tools to monitor sustainable development impacts for sustainable tourism that creates jobs and promotes local culture and products.

**8** DECENT WORK AND  
ECONOMIC GROWTH



**12** RESPONSIBLE  
CONSUMPTION  
AND PRODUCTION



<sup>62</sup> O' Reilly A.M., 'Tourism carrying capacity: Concept and issues'

<sup>63</sup> UN, 'Tourism in the 2030 Agenda'

**Goal 14:** Conserve and sustainably use the oceans, seas, and marine resources for sustainable development.

- **Target 14.7:** By 2030, increase the economic benefits to small island developing States and least developed countries from the sustainable use of marine resources, including through sustainable management of fisheries, aquaculture and tourism.



Recognizing the challenging character of the 2030 Agenda, particularly for low and middle-income countries, the UN accentuate advisory and economic international multilateral cooperation. Thus, the slogan “**Leave No One Behind**” underscores the significance of the strategy in the development of the tourism industry, considering social and environmental aspects, and aiming for balanced and sustainable economic development for all stakeholders.

## **2.3 Recapitulation**

The tourism industry has been evolving for decades and apparently constitutes a meaningful source of income for a plethora of countries. As a multilateral concept, tourism development causes many contradictions while its activities cover numerous economic sectors, affect domestic society, and include potential environmental depletion risks. The rapid pace at which tourism is developing requires immediate legislative response to mitigate possible negative consequences.

This chapter analyzes the parallel evolution of tourism and environmental legislation, which arose after the negative tourism-induced impacts were noticed. Despite the scientific community being the first to ring alarm bells, its warnings did not initially have any legal effect. As a result, in certain destinations, the concept of physical, environmental, economic, cultural, and social capacity emerged, underlining the need to use thresholds as a management tool.

With the adoption of the Agenda 21, governments are now legally bound to set their national strategies in accordance with the 17 SDGs. However, substantial actions must still be taken.



## CHAPTER 3

# CARRYING CAPACITY AS A SUSTAINABLE DEVELOPMENT MANAGEMENT TOOL

### 3 Introduction

Carrying capacity gained widespread use in the 1930s, initially being applied in agriculture and livestock studies such as ecology, biology, and population studies. In the 1960s, CC concept was integrated into recreational studies. Hence, the concept of tourism carrying capacity (TCC) was created, aiming to define the peak performance of a destination to accommodate a certain number of visitors, without causing negative impacts. In contrast to sustainable tourism development methods, which aim to balance the interests of destinations and the growth of tourism as a global industry, TCC focuses on domestic factors. It can be considered one of the earliest management tools for limiting the number of visitors to a destination at one time.<sup>64</sup>

According to the UNWTO, tourism carrying capacity is defined as “The maximum number of people that may visit a tourist destination at the same time, without causing destruction of the physical, economic and socio-cultural environment and an unacceptable decrease in the quality of the visitors’ satisfaction” (WTO, 1981). This definition considers a destination as a comprehensive system, including the interrelationships between its key determinants.

O’Reilly (1986) emphasizes that TCC depends on the interconnectedness of environmental impacts, social tolerance for visitors’ presence and behavior, and the economic and political structure and organization. From this perspective, TCC includes the concept of economic carrying capacity, which refers to local activities, such as agriculture or livestock, sacrificed due to the tourism development. Consequently, tourism carrying capacity relates not

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<sup>64</sup> Kennel, J., ‘Carrying capacity’

only to the number of visitors but also to the limits of tourism industry development, beyond which tourism becomes detrimental.<sup>65</sup>

Postma *et al.* (2020) emphasize that tourism carrying capacity represents a level of tourism development that leads to overtourism. At this point, not only physical, environmental, economic, and political capacities, but also levels of visitors' satisfaction (perceptual or psychological capacity) and local residents' tolerance (sociocultural capacity) are considered exceeded. In other words, TCC is the threshold beyond which any further tourism development becomes unsustainable and results in negative effects.<sup>66</sup>

The concept of carrying capacity (CC) remains a topic of discussion even today. Despite the tool having been used for decades, there is neither a unique nor exact answer as to how it can be defined or measured. The main idea revolves around the number of species that can be sustained within a given system without causing irreversible changes to the system. However, the contemporary notion of carrying capacity, apart from the environmental ability, is based on certain other factors which define the ability of the system to sustain residents' life in harmonious coexistence with visitors.<sup>67</sup>

### 3.1 Key elements of TCC

Each destination represents a unique system characterized by its distinct elements, such as culture heritage and religion, population size, condition of existing infrastructure etc., which define potential destination's complications and obstacles in tourism development. In this context, destination's specificities constitute TCC key components defining both quantitative (number of visitors, contribution to GDP etc.) and qualitative (tourists' behavior and satisfaction from the experience that the destination offers etc.) thresholds. Moreover, the type of tourism (leisure, eco-tourism, cultural, etc.) also sets TCC thresholds concerning the range of limits or tourism development strategy. Ultimately, developed interrelationships based on the destination's key attributes and the type of visitors it attracts, also affect tourism carrying

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<sup>65</sup> O'Reilly, 'Tourism carrying capacity: Concept and issues'

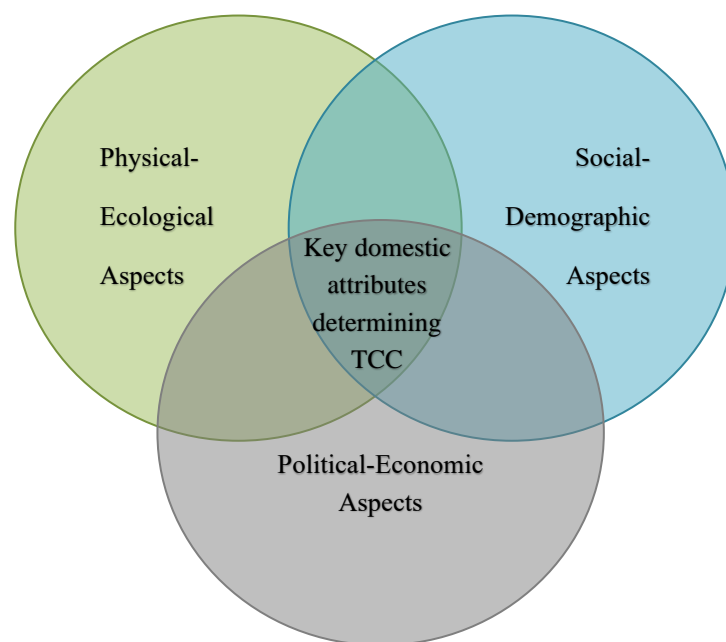
<sup>66</sup> Postma A. *et al.*, 'Overtourism: Carrying Capacity Revisited', p. 230

<sup>67</sup> Mohamad Pirdaus bin Yusoh *et al.*, 'Tourism carrying capacity and Social Carrying capacity: A literature review'



capacity, highlighting the complexity of TCC concept. Apparently, each of the aforementioned determinants has a different weight of importance depending on the destination.

Generally, it is accepted that there are three essential aspects defining the value of TCC: physical-ecological, social-demographic, and political-economic (Figure 3.1), whereas each type of capacity obviously has variable threshold of tolerance per destination in a specific time. According to guidelines for carrying capacity assessment for tourism in Mediterranean coastal areas (PAP/RAC, 1997), the fact that assessment of socio-demographic, political, and economic factors became feasible in near past - contrary to definition of the environmental and physical thresholds - gave them greater priority in TCC assessment.<sup>68</sup> Thus, tourism carrying capacity cannot be characterized as a one-size-fits-all nor everlasting perception, but an unstable dynamic value, which follows the destination's changes over time.<sup>69</sup>



**Figure 3.1**

**Components of Tourism Carrying Capacity**

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<sup>68</sup> UNEP/MAP/RAC-PAP, 'Guidelines for carrying capacity assessment for tourism in Mediterranean coastal areas', p.6

<sup>69</sup> Coccossis, H. *et al*, 'Defining, Measuring and Evaluating Carrying Capacity in European Tourism Destinations'

TCC comprises a valuable management and planning tool for local authorities in the estimation of a destination's ability for tourism development, defining the guidelines in the context of broader economic and social goals, and preventing possible negative consequences. Evaluation of tourism carrying capacity requires local authorities to clarify the vision of how the destination should be after limits have been set. This future point must be accepted by all stakeholders in society. Accordingly, decision-making processes should be based on cooperation among authorities, the business sector, and locals. This dialogue should lead to an acceptable range of limits. Thus, although the idea of TCC may seem simple, its concept remains highly complex because of the multitude of interconnected factors.<sup>70,71,72</sup>

### **3.2 Assessing Tourism Carrying Capacity: challenges and perspectives**

Tourism is a multifaceted industry and measuring its carrying capacity by a single number of visitors results in misleading conclusions about a destination. Hence, sustainable management must consider domestic factors and a time horizon be taken into account, despite the quantification is not a simple process. The assessment of TCC is a topic of dispute among scientists due to the lack of consensus on whether the notion defines a maximum, an optimum, or a minimum threshold. Besides, TCC encompasses plethora of dimensions (i.e. other capacities), which vary from one destination to another. Consequently, the definition of TCC appears to depend on which component-capacity is being analyzed and in relation to what.<sup>73</sup>

In terms of physical condition every destination has a finite maximum threshold, but from social perspective the thresholds might vary. Wagar (1964) emphasizes in his monograph that managers should determine the point at which carrying capacity stabilizes, based on the quality of the destination. Furthermore, the possibility of multiple equilibria in the relationship between the number of visitors and the host area should be considered. For instance, a beach can comfortably accommodate 2,000 visitors per day, offering high quality services in terms of cleanliness, quietness, and sufficient space for each visitor. However, it might be feasible for

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<sup>70</sup> Postma A. *et al.*, 'Overtourism: Carrying Capacity Revisited', p. 233-236

<sup>71</sup> Zekan B. *et al.*, 'Regional sustainability and tourism carrying capacities'

<sup>72</sup> Coccossis, H. *et al.*, 'Defining, Measuring and Evaluating Carrying Capacity in European Tourism Destinations'

<sup>73</sup> Singh S., 'What's Wrong with Carrying Capacity for Tourism?'

the beach to handle 3,000 visitors per day, even though the quality would decline. In both cases, a certain equilibrium is reached, but the experiences the destination offers, and the visitors' satisfaction differ because the first scenario is about the optimum social carrying capacity limits and the second is about the maximum.<sup>74</sup>

In response to the complexity of the methodological issues in assessing and evaluating TCC, Coccossis and Mexa (2004) claim that all three concepts – minimum, optimum, and maximum – can be accepted simultaneously, depending on the time horizon be applied in the planning process: minimum in the short term (e.g. necessary infrastructure facilities to attract visitors); optimum in the medium term (e.g. residents' attitudes towards visitors to ensure harmonious coexistence); maximum in the long term (e.g. spatial capacity to sustain a certain number of individuals at once).<sup>75</sup> Based on this approach, Singh (2006) identified three key components which vary according to the time horizon and affect TCC evaluation: economic and infrastructural capacities concerning short term planning (minimum capacity threshold); socio-cultural and psychological capacities regarding medium term (optimum capacity value); physical, environmental, infrastructural capacities with reference to long term planning (maximum capacity value).<sup>76</sup>

From this perspective, the Tourism Area Life Cycle (TALC) (Butler, 1980) model focuses on the process of a destination's maturation as a tourist spot and explains the evolution of total tourism carrying capacity, demonstrating cycles of popularity (Figure 3.2). According to Butler, a destination develops through six stages, beginning from the exploration stage, providing basic infrastructure and attracting just few tourists. Subsequently, the more tourists visit the destination, the more locals get involved in hospitality-related activities. As a result, the infrastructure expands, simultaneously improving the quality of facilities and services. At this point, the destination develops rapidly, and a ratchet mechanism is set. Thus, the facilities alter the landscape, and the domestic economy starts to depend mostly on tourism - the stage of development is in progress. As the destination reaches a developed state and tourism becomes an organized industry, the number of visitors stabilizes, and the consolidation stage takes place. Over time, the first negative signs of infrastructure obsolescence become observable to both local residents and visitors, and the stage of stagnation comes. Afterward, the destination

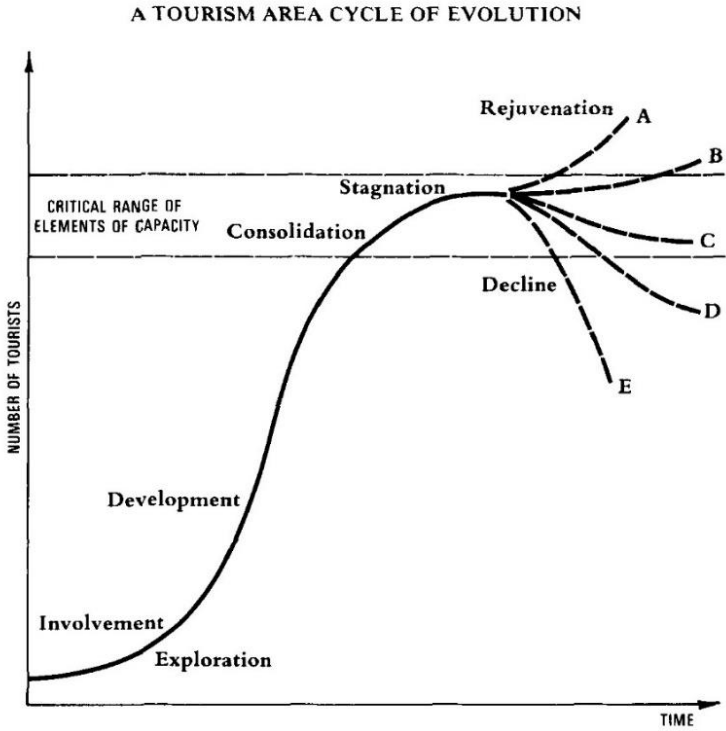
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<sup>74</sup> Wagar, J.A. 'The Carrying Capacity of Wild Lands for Recreation'

<sup>75</sup> Coccossis H., Mexa A. 'The Challenge of Tourism Carrying Capacity Assessment'

<sup>76</sup> Singh S., 'What's Wrong with Carrying Capacity for Tourism?'

reaches its maximum capacities values, while development slows down. At the same time, visitors' satisfaction declines due to the overdeveloped landscape and overcrowding. Therefore, the destination's attractiveness and competitiveness gradually weaken. Ultimately, investments gradually decline, effecting the quality of infrastructure and facilities.<sup>77</sup> This stage highlights the maturity of destination and the need for revitalization of its image and reputation. At this point, certain measures and policies should be implemented in order to enlarge the capacities to improve quality of facilities and services. Apparently, rejuvenation process demands investments and organization. If no measures be taken or the taken measures do not perform well, destination risks further degradation and, as a result, loss of attractiveness.



Source: Butler, R. 'The Concept of a Tourist Area Cycle of Evolution: Implications for Management of Resources'

**Figure 3.2**

**A Tourism Area Cycle of Evolution**

<sup>77</sup> Butler, R. 'The Concept of A Tourist Area Cycle of Evolution: Implications for Management of Resources'

### 3.3 Residents' attitude as a determinant factor of TCC

Saveriades (2000) defines carrying capacity as a notion consisting of two main components: **biophysical**, which is a resource-based capacity that includes the concept of thresholds for the exploitation of natural resources beyond which tourism-induced negative implications become observable; and **behavioral**, which involves limits on visitors' satisfaction and concerns the experiential aspects imposed by domestic agents.<sup>78</sup>

According to O'Reilly (1986), there are two determining principles of tourism carrying capacity: the former relates to non-observable by the host population tourism-induced negative impacts, and the latter concerns the threshold beyond which tourism activity declines due to exceeding its capacities, while the negative impacts are observable by visitors.<sup>79</sup> The concept of the first stage emphasizes how many visitors are wanted rather than how many of them can be hosted, whilst the perception of the second school deals with the marginal thresholds beyond which the destination offers poorer experience and, as a result, attracts less visitors.

Apparently, hospitality is a key tourism product that enhances destination's trademark attracting more and more visitors or, conversely, discouraging them from visiting the destination again. As the intensity of tourism activity depends on the social environment in which it develops, residents become a part of the visitors' vacation experience. Thus, a comprehensive approach to TCC assessment must include measurement of social carrying capacity from both visitors' and residents' perspectives.

From the perspective of Homans's Social Exchange Theory (SET) (1961), residents' attitudes towards tourism depend on the balance of the cost-reward ratio, which develops between at least two actors: local residents (traders) and visitors (buyers). Thus, residents, whose income derives from occupations related to the tourism industry, tend to maintain a more favorable attitude towards the topic. Thereby, a two-dimensional mutual exchange occurs, as the residents earn profits, and the visitors experience satisfying vacation. On the other hand, residents who are not relevant to the tourism and do not have any profit from it, might completely disapprove of its further development. Consequently, social groups with diverse interests perceive differently the thresholds of carrying capacity. This interaction constitutes

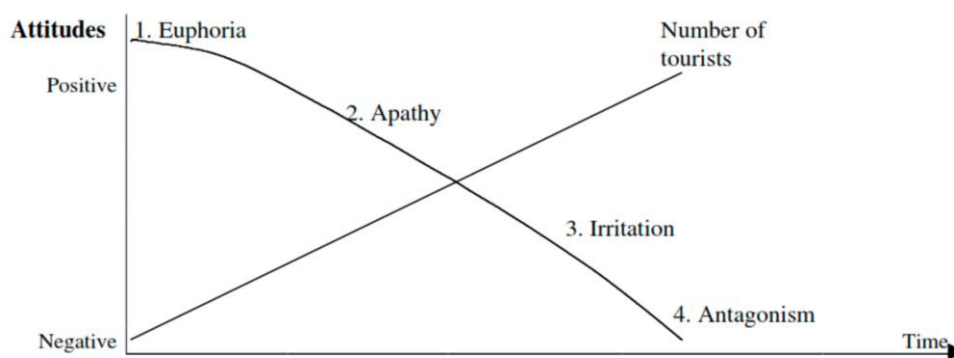
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<sup>78</sup> Saveriades, A. 'Establishing the social tourism carrying capacity for the tourist resorts of the east coast of the Republic of Cyprus'

<sup>79</sup> O'Reilly, 'Tourism carrying capacity: Concept and issues'

social carrying capacity: one for residents and one for visitors, whose interdependency determines the total social carrying capacity.<sup>80</sup>

Conversely, Doxey introduced the Irritation Index (1975), known as Doxey's Irridex, to categorize the levels of residents' attitudes towards tourism-induced social and environmental impacts. Essentially, Irridex tracks transformations in social carrying capacity in relation to the level of the destination's tourism development (Figure 3.3).<sup>81</sup> According to Doxey, residents' perceptions of tourism change through five stages: (1) Euphoria: tourism is just beginning to develop; local residents are enthusiastic about the visitors and interact with them informally; (2) Apathy: destination develops rapidly; tourism is seen as a source of income, and the visitors are targeted for profit; (3) Annoyance: the destination's capacities are exceeded by the excessive numbers of visitors; first residents' objections are observed; (4) Antagonism: local residents view tourists as an unwanted presence and a cause of problems (e.g. increased rental prices); antagonism among residents increases; (5) Final stage: irreversible consequences of tourism occur, as the natural environment degrades and the type of tourism changes. Tourists who initially discovered the destination as a vacation spot may no longer prefer it.



Source: Szromek A.R. *et al*, 'The Attitude of Tourist Destination Residents towards the Effects of Overtourism - Kraków Case Study'

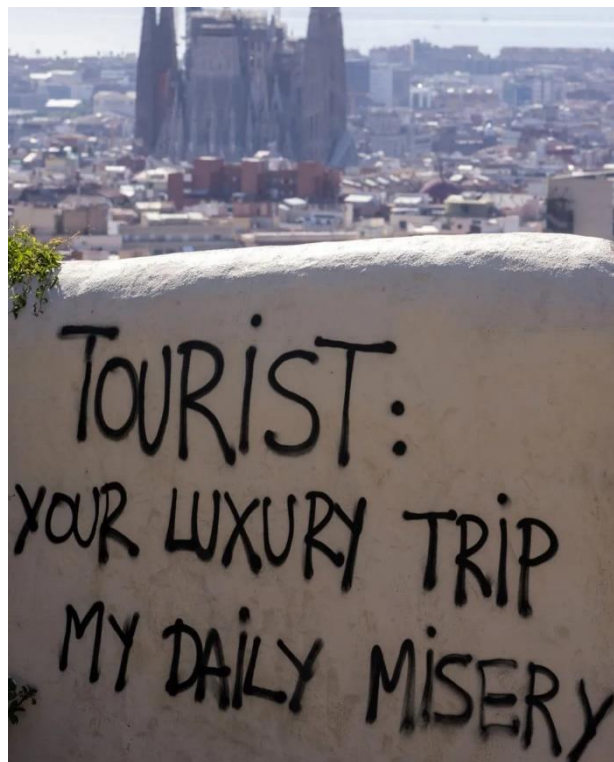
**Figure 3.3**

**Transformation of Residents' attitudes towards tourism development**

<sup>80</sup> Muler Gonzalez, V. *et al*, 'Overtourism: residents' perceptions of tourism impact as an indicator of resident social carrying capacity - case study of a Spanish heritage town'

<sup>81</sup> Shobha, K. B., 'A Case Study on Irritation among Local People towards the Growth of Tourism in Kodagu District: With the Reference of Doxey's Irridex Model'

Over time, a wide range of methodologies estimating carrying capacity have been developed and extensively used. Some of them concede the environmental factor of more significant importance, while the other place greater emphasis on the socio-economic dimensions. Among others, theories such as The Tragedy of the Commons (Hardin, 1968)<sup>82</sup> or the Limits of Acceptable Change (LAC) (Stankey, 1980)<sup>83</sup> highlight that any scientific approach of TCC needs to include the social dimension. Thus, the exclusion of residents' perceptions and uncontrollable tourism development result in anti-tourism movements, such 'Tourists Go Home' or 'Venexodus' (Figure 3.4).



Source: BBC

**Figure 3.3**

**Graffiti at Park Güell in Barcelona, Spain**

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<sup>82</sup> Hardin, G. 'The Tragedy of the Commons'

<sup>83</sup> Stankey G. *et al.* (1985), 'The Limits of Acceptable Change (LAC) system for wilderness planning'

### 3.4 Tourism development indicators

The abundance of dimensions composing tourism as a socio-economic activity, in combination with exploitation of natural resources, makes the assessment of its capacities difficult. Therefore, a plethora of indexes have been developed for the evaluation of the related dynamics.

Administration requires mathematical models that are as precise as possible to evaluate, monitor, and predict key production indicators of vital importance for any enterprise such as future requirements, emerging tendencies, risks and opportunities. Consequently, local authorities need to use adequate methods and integrate them into planning and decision-making processes. Subsequently, descriptive data and statistics provide accuracy to these methods by reflecting the current situation and the original profile of a destination in **numbers**, which is more convenient to use.<sup>84</sup>

In the contemporary world, the attractiveness of tourism spots can be enhanced through the preservation of natural resources, thereby preventing the degradation of the environment. As ecological consciousness emerges, the value of a destination's natural beauty offers greater potential in terms of socio-economic profits. Thus, a wide range of **complex** physical-ecological indexes has been created, combining environmental and spatial characteristics such as ratios of changes in land use, the proportion of road network relative to the total destination area, the number of foreign visitors per population size etc. These ratios numerically indicate the socio-economic relationships that develop within the destination under study and estimate the condition of the environment.

Notwithstanding the numerous of methodologies and enchiridia for assessing and interpreting TCC indexes, such as 'Indicators of Sustainable Development for Tourism Destinations. A Guidebook' (WTO, 2004), 'The European Tourism Indicators System (ETIS)' (EC, 2016), and 'Carrying capacity methodology for tourism' (ESPON, 2020), the lack of recent or accurate data, often makes it infeasible to calculate them, especially at the provincial level. The need for an integrated index capable of depicting a general trend has led to widespread use of simpler indexes, such as the Difert's index (1), Defert-Baretje's index (2), and Charvats' index (3), which measure the intensity of tourism development as follows:<sup>85</sup>

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<sup>84</sup> Vandarakis, D. *et al* 'Carrying Capacity and Assessment of the Tourism Sector in the South Aegean Region, Greece'

<sup>85</sup> Marković, S. *et al* 'Application of tourist function indicators in tourism development'



$$DTFI = T(f) = \frac{N}{P} \times 100 \quad \text{N: number of beds} \quad (1)$$

$$DBTFI = T(f) = \frac{N \times 100}{P} \times \frac{1}{S} \quad \begin{array}{l} \text{P: size of local population} \\ \text{S: area under study (km}^2\text{)} \end{array} \quad (2)$$

$$Tch = T(f) = \frac{N}{P} \times 100 \quad \begin{array}{l} \text{N: number of overnights} \\ \text{P: size of local population} \end{array} \quad (3)$$

The aforementioned indexes measure the saturation of tourists presence and the spatial needs of local residents. Particularly, Differt's and Defert-Baretje's indexes focus on accommodation capacity relative to the size of the domestic population, i.e. social capacity of local residents. On the other hand, Charvat's index demonstrates the intensity of tourism activity as a consequence of a destination's urbanization. All these indexes influence the evaluation of tourism development level, providing valuable information to authorities for planning and management processes.

### 3.5 Recapitulation

After the first tourism-induced impacts became noticeable, various approaches of measuring TCC emerged. As destinations differ from each other confronting diverse problems, the criteria for assessing carrying capacity depend on individual domestic specifics. The complexity of these factors not only influences the components of tourism carrying capacity but also thresholds of tolerance. Three main dimensions of TCC are commonly distinguished: physical-ecological, social-demographic, and political-economic.

As the tourism industry expands, hospitality-related activities become increasingly intensified. Moreover, destinations constantly undergo transformation of landscape, urban structure, domestic economy, visitors' satisfaction, and residents' lifestyle. Consequently, the need for an integrated strategy and establishment of contemporary plan for sustainable development emerges as the only option. This involves defining a vision of the desirable future state, including establishing thresholds that determine the time horizon.

Since social carrying capacity relies on subjective perceptions, this concept is the most challenging to evaluate. Contrary to the environmental and economic capacities, which involve physical quantities, there is no universally accepted measurement system of the social capacity and its subdimensions. As a result, various theoretical approaches have been developed to evaluate these factors. However, the actual numbers of all three sizes are not of significant importance but are able to indicate red flags relatively to thresholds of tolerance.

Nowadays, despite sustainability has become a part of any development strategy, the majority of destinations has no certain tourism development model, especially in coastal areas. In this respond, statistical data and other indexes that integrate various tourism dimensions have been developed to contribute to as accurate as possible estimation of tourism carrying capacity.

## **CHAPTER 4**

### **NYMPH OF THE LIBYAN SEA: PALEOCHORA, CHANIA CASE STUDY**

#### **4 Introduction**

In this chapter is being analyzed the case study of Paleochora. First, a comprehensive description of Paleochora and its crucial elements is quoted. This analysis aims to make a complete report on each factor of high importance for tourism carrying capacity assessment. Subsequently, the following methodology is attentively described while comments are made. Finally, the results as well as the conclusions are presented.

#### **4.1 The case of Paleochora in Crete tourism development**

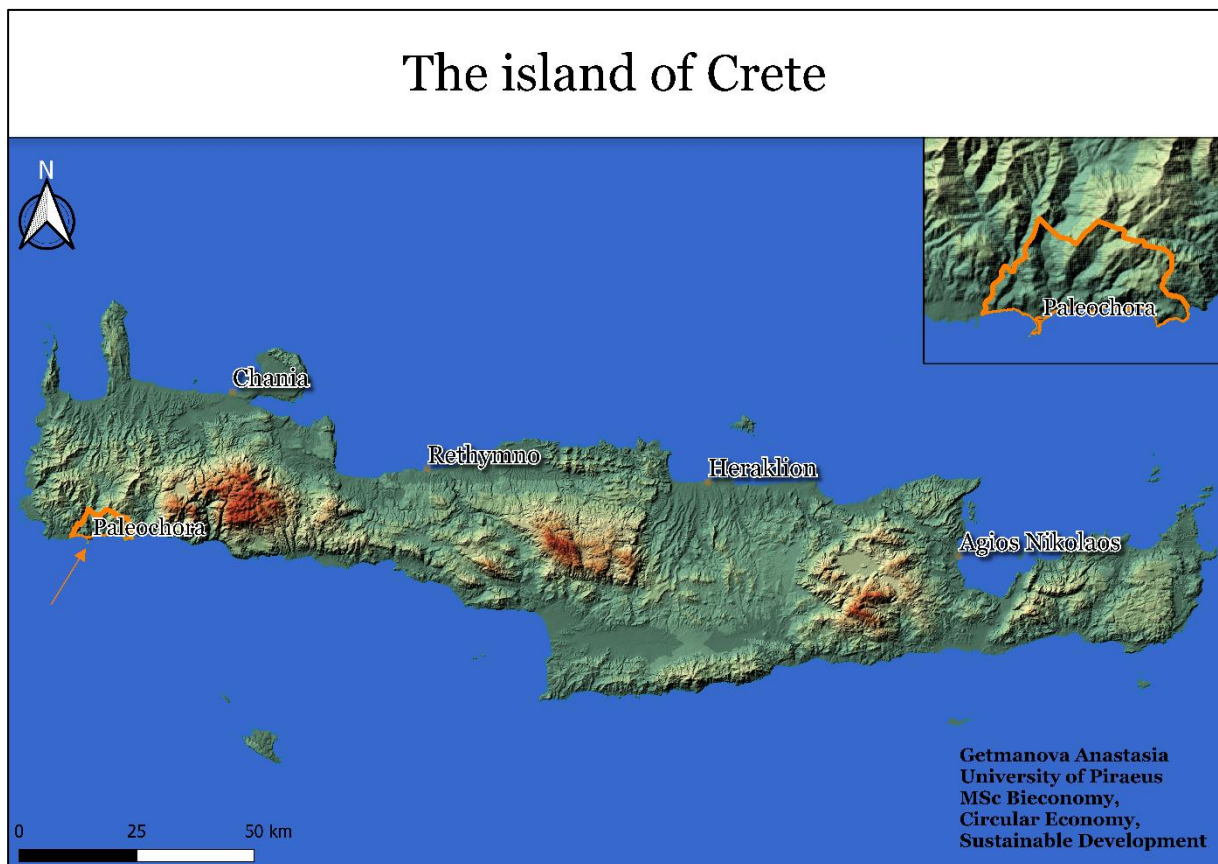
Crete first encountered tourism during the 1960s, with the archeological site of Knossos in Heraklion becoming a center of attraction. In 1964, the Ministry of Coordination conducted the first study on tourism development in Crete. Among the ten other destinations on the island that were proposed as potential tourism zones, Paleochora (and Elafonissos) was also included on the list. Moreover, according to the researchers, the development of tourism in Crete not only presents huge opportunities to the island but is also essential for its future growth. The study concluded that domestic development should focus on the hospitality and manufacturing sectors rather than agriculture, urging the Government to invest in the proposed destinations.

The 1970s are often referred to as “the decade of the tourism” in Crete. Tourism spurred growth in various sectors such as services, transportation, and construction. In 1985, the island’s dependence on tourism had become evident, leading the Government to revitalize the

agricultural sector. However, the lack of an integrated blueprint based on the research affected the island's commitment to a mass-tourism development model.<sup>86</sup>

#### 4.1.1 Historical review

Paleochora is a little town located on the southwest coastline of Crete, approximately 70 km from Chania. Paleochora was designated as the head of Municipal Unit of Pelekanos within the Municipality of Kantanos-Selinos, by Law N. 4555/2018 (*Kleisthenis I Programme* for the administrative division of Greece), under the jurisdiction of the Regional Unit of Chania, Region of Crete.



Source: Author's editing in QGIS (data obtained from <https://geodata.gov.gr>)

**Figure 4.1**

#### **Paleochora on the map of the island of Crete**

<sup>86</sup> Fragkiadoulakis, M. 'Τουρισμός και επιχειρηματικότητα: Μια εθνογραφική προσέγγιση'

Emerged on a peninsula, Paleochora is washed by two gulfs of the Libyan Sea. In the 13<sup>th</sup> century, after Crete was conquered by the Venetians, the Paleochora Castle, or Castel Selino, was built as a fortress (in 1279 or 1282) <sup>87,88</sup>. However, the first recorded settlements appeared on maps in the 17<sup>th</sup> century, located to the north and east to the castle.

Paleochora was discovered by hippies in the early 1970s and has been developing as a tourist destination ever since. At that time, it was an agricultural Cretan village where most residents were engaged in land cultivation, animal husbandry, and fishing. This authentic traditional character, combined with the virgin natural beauty, secluded beaches, hospitable people attracted the first visitors. Since then, tourism has increased year by year. Nowadays, Paleochora is one of the most attractive tourist destinations in Chania, Crete.

#### **4.1.2 Strategic infrastructure and expanding amenities**

As Paleochora is located on the island of Crete, its connection both with external destinations and within the island is of vital importance for domestic development.

Regarding external connections, Paleochora is 88 km away from the International Airport of Chania “Ioannis Daskalogiannis” and 77 km away from the Port of Souda, through which approximately 80% of visitors reach the town.<sup>89</sup> As another option, the second most important logistics hub in Greece -International Airport of Heraklion “Nikos Kazantzakis” is 209 km away and is located next to the Port of Heraklion. Thus, Paleochora is accessible for foreign visitors both by boat and by plane.

Within Crete, the island is well-connected by the Northern Road Axis of Crete, which links the island from Kissamos to Sitia. A new road from Paleochora to Chania, which connects to the Road Axis, makes Chania just an hour away by car. Additionally, there are frequent bus services to or from Chania, with increased frequency during the high season.

Moreover, Paleochora is linked via sea routes with various villages of the south coastline of Crete. There is a pier on the east side of the peninsula which is used during the summer period for daily departures from Paleochora connecting it with Gavdos, Elafonissi, Sougia, Agiya Roumeli and Loutro by public ferryboats and private boats. Also, additional perspectives

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<sup>87</sup> Kastrologos, ‘Castle of Selinos’

<sup>88</sup> Paleochora.com, ‘Castel Selino’

<sup>89</sup> Chania Chamber of Commerce and Industry ‘Τουρισμός & Εμπόριο στην Παλαιόχωρα’

are provided by a marina, located on the south side of Paleochora. Given that there is no south road, Paleochora plays a significant role in the logistics of the wider region.

Paleochora is located between two beaches, which are awarded with the Blue Flag every year. For the last two decades, it has been expanding territorially and enriching amenities. Thus, to the north a settlement named Panorama has developed, and the boundaries with the western neighboring village, named Kountoura, have become blurred. The total area of the Municipal Community of Paleochora is approximately 55,20 km<sup>2</sup>,<sup>90</sup> while the town itself is about 0,17 km<sup>2</sup>.<sup>91</sup> The majority of dwellings, i.e. 48,48%, is single-family homes, while 29,01% are apartment buildings and 19,91% are duplexes.<sup>92</sup> Regarding social welfare the infrastructure, Paleochora offers the most necessary facilities.



Source: Author's personal collection. September 2023.

**Figure 4.2**

**Aerial view of Paleochora**

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<sup>90</sup> Hellenic Statistical Authority

<sup>91</sup> Official site of the Municipality of Kantanos-Selinos

<sup>92</sup> Hellenic Statistical Authority (B02)

Chiefly, there are units of all educational levels: a kindergarten, a primary school, a junior high school and a high school equipped with a library. In addition to the aforementioned medieval Castle of Selino, the Museum of the Acritans of Europe is also located in Paleochora. In terms of health services, Paleochora has two pharmacies and an optical center. Furthermore, the Elderly Day Care Center operates in the town. Also, a Hellenic Post office and a courier office are also located in Paleochora, offering postal services. Finally, like every traditional village, Paleochora has a church.

As head of the Municipality of Kantanos-Selinos, Paleochora hosts the building of the Municipal Administration and the Citizen Service Center. Additionally, a Coast Guard headquarters is located in the center of the town conducting frequent patrols along the coastline. Moreover, the castle area hosts a radio station of the Civil Aviation Authority.

Besides, Paleochora maintained its headquarters of the financial sector despite the economic crisis that led several banks to closure and merger. Today, the town has two banks and four ATMs, providing essential financial services to both residents and visitors.

Furthermore, the town has its own Municipal Water Supply and Sewerage Company (DEYAS). It is worth noting that Paleochora had been attempting to establish a biological wastewater treatment nearly for thirty years.<sup>93</sup> Ultimately, this important installation was completed in 2022.

Apparently, due to its developed hospitality sector, Paleochora offers a plethora of stores beyond the two supermarkets: souvenir shops, clothing stores, restaurants and cafes, hotels, and rooms for rent. Certainly, during the high season, this town is not as quiet as it is during the wintertime.

Among others, 16 km northern to Paleochora a village named Kantanos is located. This key area is the geographical center of the Municipality and hosts several other public welfare facilities, such as a Police Department, Fire Department, and Health Center. The choice of this location is not random as Kantanos is almost equidistant from the surrounding areas.

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<sup>93</sup> Konstas, G. 'Biological wastewater treatment in Paleochora after 30 years of efforts!', *Chaniotika Nea*

Ultimately, 7 km to the west of Paleochora lies another village names Kountoura. This settlement is literally covered by greenhouses where the local residents farm vegetables, primarily tomatoes, cucumbers, eggplants, and peppers.

### 4.1.3 Socio-economic shifts

In the last two decades, Paleochora has gradually evolved: urbanization has taken place, and both the type and the intensity of tourism has changed. Moreover, the economic crisis that Greece faced in 2009 accelerated the pace of socio-economic changes. Currently, the crisis has been passed, but it totally altered the local community.

The number of residents of the Municipality of Paleochora shrunk by 14,24% in 2011 compared to 2001, followed by an increase of 15,60% in 2021 compared to 2011, despite the overall Greek population decreasing by 3,09% during the same decade (Table 4.1)<sup>94</sup>. This substantial upward trend in the number of Paleochora residents and simultaneous significant population decrease in neighboring communities, along with the minor change (approximately +2%) in the total population of the Municipal Unit of Pelekanos, indicates a trend towards urbanization.

Table 4.1. Population changes over time. Paleochora, Chania 1991-2021.

Administrative Entity	Year				% of population change		
	1991	2001	2011	2021	1991-2001	2001-2011	2011-2021
Greece		10.934.097	10.816.286	10.482.487		-1,08%	-3,09%
Municipality of Kantanos-Selinos			5.431	5.010			-7,75%
Municipal Unit of Pelekanos		3.753	3.292	3.357		-12,28%	1,97%
Municipal Community of Paleochora	2.147	2.205	1.891	2.186	2,70%	-14,24%	15,60%
Paleochora	1.826	1.903	1.675	2.039	4,22%	-11,98%	21,73%

Source: Hellenic Statistical Authority

Along with urban growth, Paleochora is in the process of a gender and age redistribution. Over the last two decades the male population both aged 15-24 and 25-39 declined by 35,82% and 30,50%, respectively, while the female population both aged 15-24 and 25-39 decreased by 25% and 21,55%, respectively (Table 4.2.a). As a result, the current young adults population

<sup>94</sup> Hellenic Statistical Authority, Demographic Characteristics



Table 4.2.a Municipal Community of Paleochora population distribution by age and gender (%) 2001-2021

Age	2001			2021			% of age change		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
0-14	169	167	336	171	189	361	1,18%	13,17%	7,44%
15-24	134	132	266	86	99	184	-35,82%	-25,00%	-30,83%
25-39	318	297	615	221	233	447	-30,50%	-21,55%	-27,32%
40-54	243	217	460	245	237	486	0,82%	9,22%	5,65%
55-64	100	86	186	147	148	294	47,00%	72,09%	58,06%
65+	165	177	342	204	206	414	23,64%	16,38%	21,05%
Total	1.129	1.076	2.205	1.074	1.112	2.186	-4,87%	3,35%	-0,86%

Source: Hellenic Statistical Authority

decreased by almost 1/3 compared to 2001. Moreover, a total increase of 58.06% in older citizens aged 55-64, and an increase by 21,05% in people aged 65+, reveals an upward trend in the aging population in Paleochora (Table 4.2.b).

Table 4.2.b Municipal Community of Paleochora population distribution by age and gender (%) 2001-2021

Age	2001			2021		
	%			%		
	Male	Female	Total	Male	Female	Total
0-14	14,97%	15,52%	15,24%	15,92%	17,00%	16,51%
15-24	11,87%	12,27%	12,06%	8,01%	8,90%	8,42%
25-39	28,17%	27,60%	27,89%	20,58%	20,95%	20,45%
40-54	21,52%	20,17%	20,86%	22,81%	21,31%	22,23%
55-64	8,86%	7,99%	8,44%	13,69%	13,31%	13,45%
65+	14,61%	16,45%	15,51%	18,99%	18,53%	18,94%

Source: Hellenic Statistical Authority

Over time Paleochora has changed its occupational character. With nearly half of the population economically inactive, the majority of the economically active residents is engaged in tertiary sector. Compared to the Municipality level, Paleochora has fewer residents engaged in agricultural occupations (primary sector) and more involved in service-based occupations, with the fewest employed in the manufacturing sector (Table 4.3).

Table 4.3. Occupational distribution by Industry in the Municipal Community of Paleochora and Municipality of Kantanos-Selinos 2021

Sector of activity	Municipal Community of Paleochora	Municipality of Kantanos-Selinos
	% of population	% of population
Primary	12,40%	17,66%
Secondary	3,90%	3,20%
Tertiary	28,43%	21,44%
Unemployed	6,06%	4,34%
Economically inactive	49,20%	53,37%

Source: Hellenic Statistical Authority

#### 4.1.4 Regional development strategy: Tourism and agricultural balance

Today, tourism and agriculture have become the economic driving forces of Crete.<sup>95</sup> Due to the lack of recent data on agricultural production, especially at the municipal level, it is challenging to calculate the exact size of its contribution to regional GDP. In contrast, a plethora of datasets with tourism data is available. This fact demonstrates that the hospitality sector is of greater interest to authorities, regulators, and residents.

According to the Tourism Development Study of the Region of Crete, conducted in 2003 by the Ministry of Development, the carrying capacity of tourism development is defined as “*the number of users and the type of activities that an area can accommodate without lowering the level of local elements (local balance) and without endangering its ability to support tourism activities or threatening the possibility of visitor satisfaction*”.<sup>96</sup> In other words, the Region of Crete follows an economic development strategy based on activities that can harmoniously coexist with the hospitality sector. On the other hand, tourism cannot be developed at the expense of traditional local activities. In this study, Paleochora was mentioned as an area under threat in terms of the carrying capacity of tourism development. Therefore, it is crucial to maintain the sustainable balance of these two activities.

<sup>95</sup> EURES, ‘Labour market information: Greece’

<sup>96</sup> EOT, ‘Μελέτη Τουριστικής Ανάπτυξης - β' Φάση: Προτάσεις για τη Στρατηγική της Τουριστικής Ανάπτυξης (2003)’

## 4.2 Methodology

The present study was inspired by and modeled after a 1992 study conducted by Donald Getz in Spey Valley, Scotland,<sup>97</sup> which primarily focused on evaluating residents' attitudes towards tourism by evaluating the quality of their lives. Similarly, in this study Donald Getz's methodology was followed to primarily assess the attitudes of Paleochora residents towards tourism. As described in detail in the following subsections, a questionnaire was developed and distributed via social media. The measurement of perceptions was performed by using a Likert scale to assign a value to each perception. Subsequently, the means of the responses and the Consensus Index were calculated and interpreted in terms of prevailing tendency and coherence among the respondents across the domains. Afterwards, hypotheses regarding the factors affecting residents' attitudes were tested in SPSS.

The data obtained were processed and, when combined with certain tourism development indexes, were interpreted in terms of tourism carrying capacity. Since there had never been a similar research in Paleochora, this study could serve as a basis for future study and provide critical insights.

### 4.2.1 Creating and sharing the questionnaire

To conduct the study, a questionnaire was developed using Google Forms, consisting of twenty-three (23) questions (Annex I). These questions were selected from Donald Getz's study in collaboration with the supervising professor. Subsequently, the questionnaire was shared among various Facebook and Viber groups related to Paleochora, to ensure completion by random respondents. The questionnaire remained available for responses from 25.09.2023 to 20.10.2023 and was completed by a representative sample of 100 respondents (n=100). The collected data was processed using Excel and SPSS software, and the results are listed below.

The questionnaire of the current study was partially adapted from Donald Getz's study, following a similar logical flow. Similarly, it is also divided into three (3) main parts:

- Part 1: Questions 1 to 5

These questions aim to gather basic demographic information about the respondents to capture the profile of Paleochora residents. This data will be further used to

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<sup>97</sup> Getz, D. 'Residents' attitudes towards tourism: A longitudinal study in Spey Valley, Scotland'

categorize the local population into groups with specific perceptions regarding the aspects examined in this study.

- Part 2: Questions 6 to 17

These questions evaluate residents' perceptions using a Likert scale and are presented in a random order on the questionnaire. The selected elements are categorized into four (4) dimensions: Conservation, Newcomers, Growth & Change, and Tourism. The questions are structured so that agreement in some cases represents a positive perception of the field, classifying them as "favourable", while agreement in other cases reflects a negative attitude, classifying them as "not favourable".

- Part 3: Questions 18 to 23:

This section captures residents' satisfaction levels across various aspects of their life in Paleochora. When combined with the responses from Part 2, it will be possible to identify and assess the link between residents' satisfaction and their attitudes towards tourism and other issues.

#### **4.2.2 Satisfaction and attitude scales**

As mentioned above, residents' perceptions are assessed through twelve (12) closed-ended questions using a five-point Likert scale. Since the questions are categorized as either favourable or not favourable, the values on the Likert scale vary based on the type of attitude represented by the responses. For favourable question, which capture a positive attitude towards the dimension in question, the scale ranges from 1 to 5, where 5 indicates strong agreement and 1 indicates strong disagreement. The scale for not favourable questions also ranges from 1 to 5, but the values are reversed: 5 indicates strong disagreement and 1 stands for strong agreement. Therefore, agreement with a favourable question and disagreement with a not favourable question both reflect a positive attitude towards the relevant dimension. Thus, a higher score of the question, and consequently a higher mean, indicates a more positive attitude.

Similarly, the assessment of the residents' satisfaction with the quality of their lives in Paleochora was conducted through six (6) closed-ended questions using a three-point Likert scale. These questions aimed to highlight the connection between residents' satisfaction and their perceptions of other dimensions examined in this study.

For a more accurate interpretation of the collected data, the index of consensus was used. This index, developed by Donald Getz, ensures a more reliable analysis of the results, as means can easily be affected by extreme high or low values, as well as by mode or median values. Additionally, this method allows the interpretation without the need to consider data distribution. The index of consensus reveals the cohesion of the residents' attitude towards the relevant dimension, capturing prevailing perception. The index can be calculated in the following 4 steps:

- 1) addition of the number of respondents who filled in strongly agree/agree, and the number of respondents who answered strongly disagree/disagree;
- 2) subtraction of the smaller from the larger number;
- 3) division of the result by the total number of respondents;
- 4) assignation of a positive or negative sign, considering that the agreement with the given state represents a positive attitude towards the dimension or negative.

Consequently, as more respondents agree with a favourable statement or disagree with a not favourable statement, the consensus index takes higher values and a positive sign. Similarly, as more respondents agree with a not favourable statement or disagree with a favourable statement, the index takes higher values, but with a negative sign. The values range from -1 to +1, where -1 represents total disagreement with the relevant dimension, and +1 indicates total positive perception across the statement.

### **4.2.3 Validity and Reliability tests**

Validity test is a process that ensures the tool selected for measuring the study object, is capable to measure what it is supposed to measure.<sup>98</sup> In his study, Donald Getz identified the key issues of the tourism industry that were concerning residents in 1978, focusing on publications of the local media. Based on these statements, Getz developed the questionnaire. Afterwards, he conducted a validity test by comparing responses from random participants with those from special-interest groups. In such manner, author confirmed that the questionnaire was understandable and comprehensive. Additional tests were not performed, as each dimension contained multiple statements to capture the relevant attitudes.

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<sup>98</sup> Psychological scales, 'Statistical Validity'

Reliability test is another process which allows to assume the internal coherence among the collected data. For this purpose, Cronbach's *a* test was performed. This index's range varies from 0 to 1, where 0 indicates no correlation among the responses, which makes the questionnaire not reliable at all, and 1 indicates total correlation. Thus, the higher values of Cronbach's *a* prove the internal consistency of the questionnaire. It is generally accepted that values above 0.70 indicate strong consistency. However, according to Taber (2018) there is not an absolute consensus on alpha values range, while in various studies Cronbach's alpha is labeled as excellent (0.93–0.94), strong (0.91–0.93), reliable (0.84–0.90), robust (0.81), fairly high (0.76–0.95), high (0.73–0.95), good (0.71–0.91), relatively high (0.70–0.77), slightly low (0.68), reasonable (0.67–0.87), adequate (0.64–0.85), moderate (0.61–0.65), satisfactory (0.58–0.97), acceptable (0.45–0.98), sufficient (0.45–0.96), not satisfactory (0.4–0.55) and low (0.11).<sup>99</sup>

The reliability test of the current questionnaire was conducted twice due to the dual scale used within the survey. Thus, two separate Cronbach's *a* indexes were calculated: one for the questions in Part 2, which contains five-point Likert scale questions, was found to be equal to 0.615 (Table 4.3), and another for the questions in Part 3, which consisted of three-point Likert scale questions, was found to be equal to 0.536 (Table 4.4). Both values demonstrate that the scales, used in the survey, are acceptable and sufficient. Apparently, the index for Part 2 is slightly increased.

**Table 4.3**  
**Cronbach's *a* for Part 2 of the**  
**Questionnaire**

<b>Reliability Statistics</b>		
<b>Cronbach's Alpha</b>	<b>Cronbach's Alpha Based on Standardized Items</b>	<b>N of Items</b>
.615	.602	12

**Table 4.4**  
**Cronbach's *a* for Part 3 of the**  
**Questionnaire**

<b>Reliability Statistics</b>		
<b>Cronbach's Alpha</b>	<b>Cronbach's Alpha Based on Standardized Items</b>	<b>N of Items</b>
.536	.553	6

<sup>99</sup> Taber, K.S. 'The Use of Cronbach's Alpha When Developing and Reporting Research Instruments in Science Education'

### 4.3 Data analysis

The analysis of the obtained data was conducted in stages. First, a demographic overview was performed to capture the general profile of the respondents who participated in the study. Thereafter, the levels of residents' satisfaction with the quality of life in Paleochora were visualized and analyzed. Ultimately, following Donald Getz's methodology, residents' attitudes towards Conservation, Growth and Change, Newcomers and Tourism were measured and analyzed using the author's Consensus Index. Finally, hypotheses regarding the factors affecting residents' perceptions of tourism were investigated performing a nonparametric chi-squared test in SPSS.

#### 4.3.1 Demographic data analysis

The sample of this survey consists of 100 respondents, with 57% being women and 43% men (Figure 4.3).

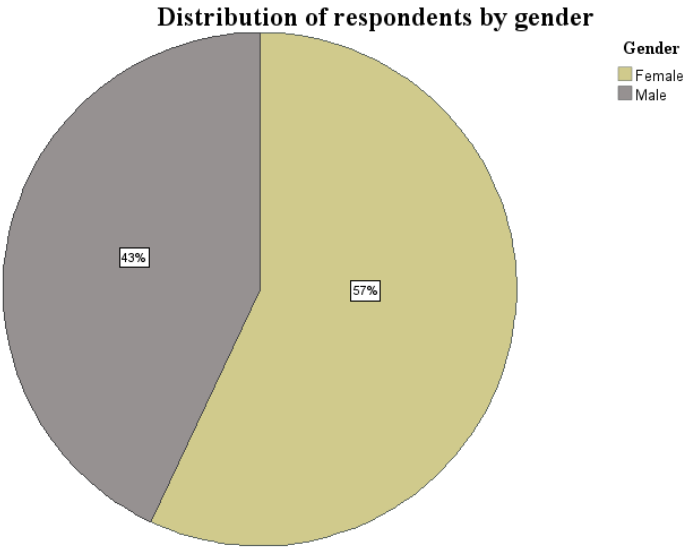
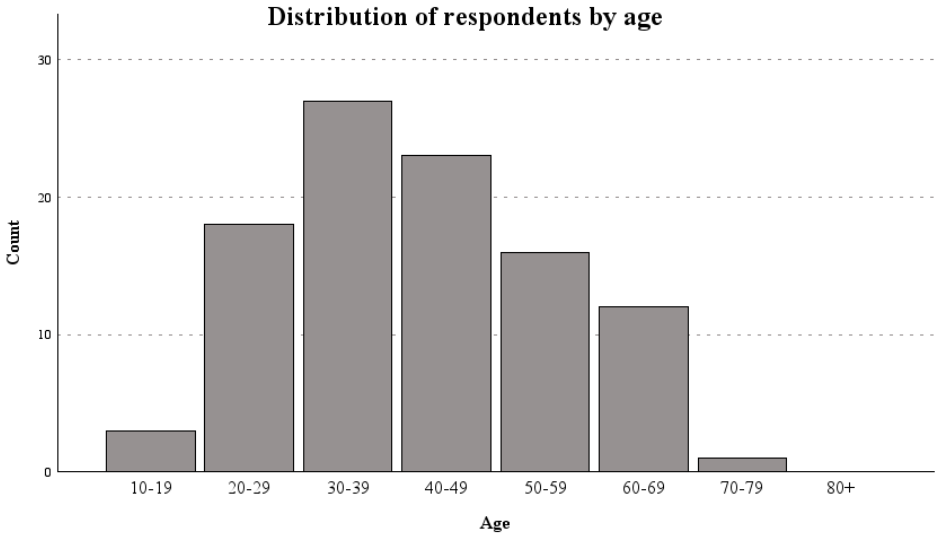


Figure 4.3

Distribution of respondents by gender

Participants were categorized into eight (8) age groups. The questionnaire was completed by 3 (3%) respondents aged 10 to 19 years; 18 (18%) respondents are between 20 to 29 years old; 27 (27%) respondents are between 30 to 39 years old; 23 (23%) respondents aged 40-49 years; 16 (16%) respondents are between 50-59 years old; 12 (12%) respondents are 60-69 years old; and 1 respondent (1%) is 70-79 years old. Evidently, 68% of the respondents are young adults, aged between 20 and 49 years old (Figure 4.3).



**Figure 4.4**

**Distribution of respondents by age**

Regarding occupational data, the questionnaire was completed by two almost equal groups relevant and not to tourism, with a slightly increased participation rate of those who work in the hospitality sector. As shown in Table 4.5, there is nearly double number of young adults aged 20-29 who are tourism employees in contrast to those who are not. Regarding the age groups of 30-39 and 40-49, employees working in the tourism industry are slightly more than those who do not. Furthermore, as demonstrated in Table 4.6, most of the employees in the tourism industry are women.



**Table 4.5**

**Tourism sector employee Vs Gender Crosstabulation**

Count		Gender		Total
		Female	Male	
Tourism sector employee	No	28	19	47
	Yes	27	22	49
	Other	2	2	4
Total		57	43	100

**Table 4.6**

**Tourism sector employee Vs Age Crosstabulation**

Count		Age							Total
		10-19	20-29	30-39	40-49	50-59	60-69	70-79	
Tourism sector employee	No	1	6	14	9	8	9	0	47
	Yes	2	11	13	13	8	2	0	49
	Other	0	1	0	1	0	1	1	4
Total		3	18	27	23	16	12	1	100

The questionnaire was completed mainly by the native population of Paleochora. Additionally, the majority of participants are permanent residents who lived in Paleochora for more than 20 years. The participation of the natives in this survey was 66%; 11% of respondents are from the rest of the Regional Unit of Chania, while 9% are from other parts of Greece. Furthermore, 8% of the respondents originate from EU countries, while a minority of 6% come from non-EU countries. Regarding newcomers who have lived in Paleochora for 1 to 10 years, most are Greek, either from Paleochora or the Regional Unit of Chania or other parts of Greece (Figure 4.5).

In conclusion, it can be claimed that the questionnaire was completed by a woman, aged 30 to 39, a native resident of Paleochora for over 20 years, who is equally likely to be employed in the tourism industry or not.

### Distribution of population by origin and years of residence in Paleochora

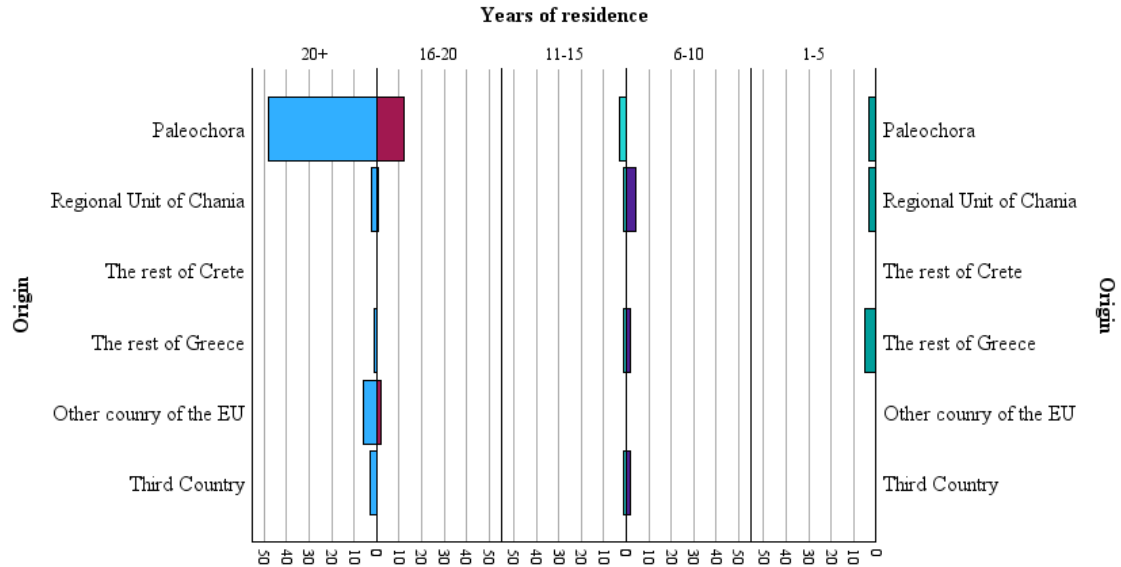


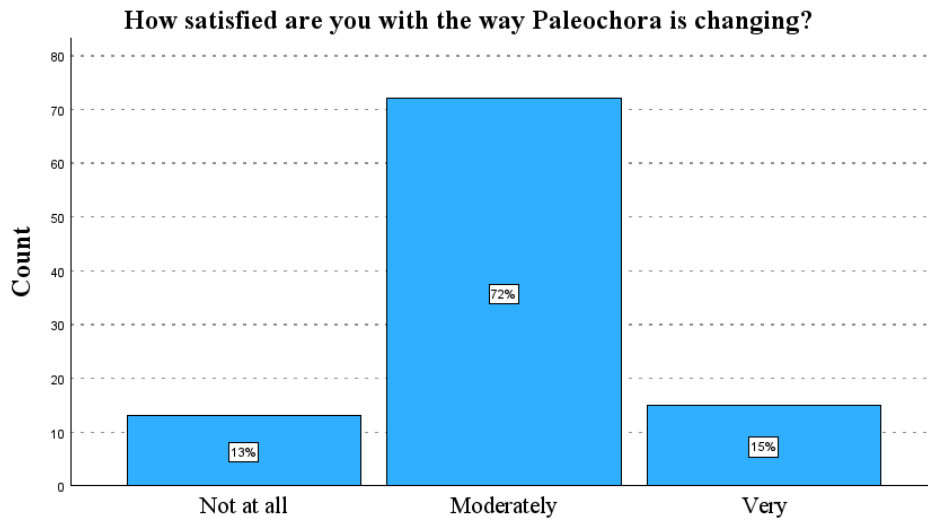
Figure 4.5

### Distribution of population by origin and years of residence in Paleochora

#### 4.3.2 Assessment of residents' life satisfaction

Residents' satisfaction with their life could reflect their attitudes towards tourism, its impacts and contribution to the development of Paleochora. It is anticipated that a more negative evaluation of the quality of live in a place may imply skepticism towards further development of the hospitality industry, as its contributions are disputed.

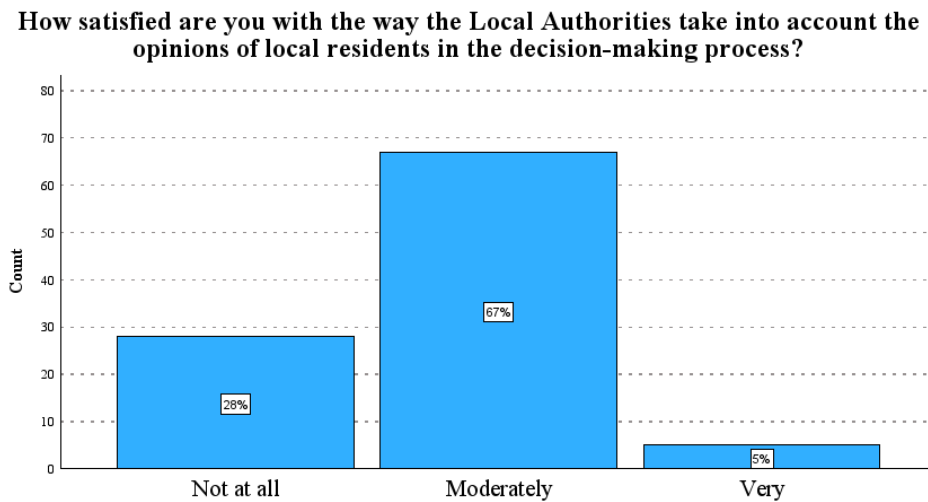
Out of 100 respondents, 72 respondents (72%) declare being moderately satisfied with the changes in Paleochora, while 15 (15%) are very satisfied, and 13 (13%) expressed dissatisfaction with the way Paleochora is changing (Figure 4.6). This data shows that the majority of residents approves the transformation performed in the town and see positively its growth.



**Figure 4.6**

**Distribution of responses to: How satisfied are you with the way Paleochora is changing?**

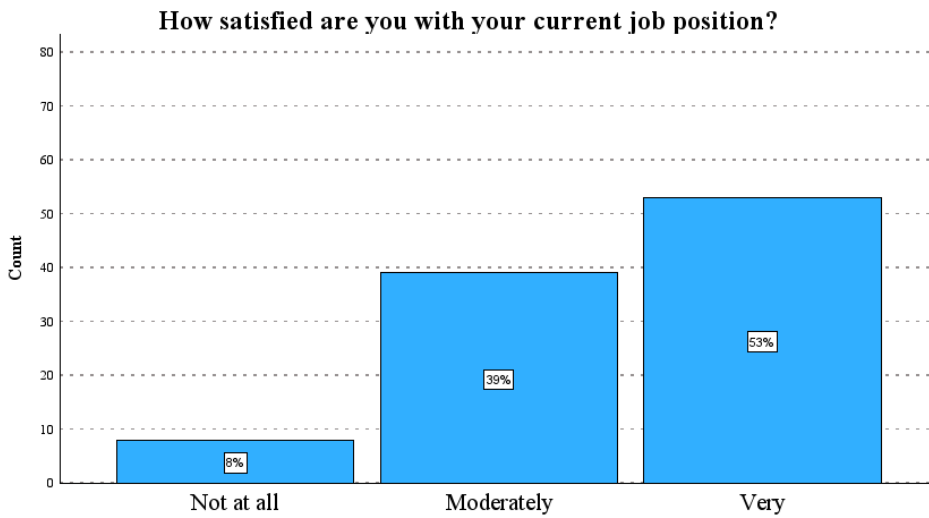
Regarding how much the local authorities consider residents' opinions in decision-making processes, 67 (67%) residents expressed moderate satisfaction; 28 (28%) respondents expressed dissatisfaction; and only 5 (5%) declared being satisfied with the way decisions are made based on the residents' perceptions.



**Figure 4.7**

**Distribution of responses to: How satisfied are you with the way the Local Authorities take into account the opinions of local residents in the decision-making process?**

Moreover, 92 residents claimed being satisfied (53% of respondents) or moderately satisfied (39% of respondents) with their current occupation. However, a minority of 8% expressed dissatisfaction with their job position (Figure 4.8).

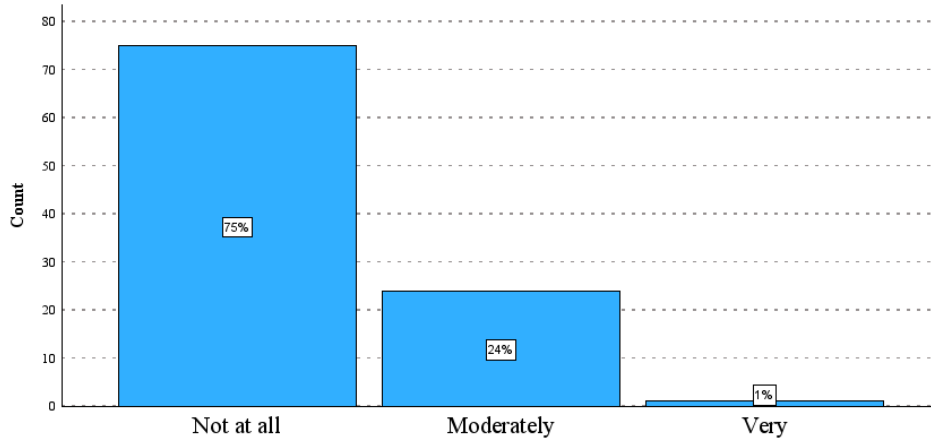


**Figure 4.8**

**Distribution of responses to: How satisfied are you with your current job?**

Regarding evaluation of healthcare services and sports and recreational amenities, the questionnaire revealed high levels of dissatisfaction: 75 (75%) and 73 (73%) respondents, respectively, declared being discontented with healthcare services and sports and recreational amenities. Similarly, 24 (24%) and 25 (25%) expressed moderate satisfaction with the healthcare services and recreational amenities provided. Finally, only 1 (1%) person expressed satisfaction with healthcare services, and 2 (2%) residents are satisfied with the sport facilities and recreational amenities available in Paleochora (Figures 4.9, 4.10).

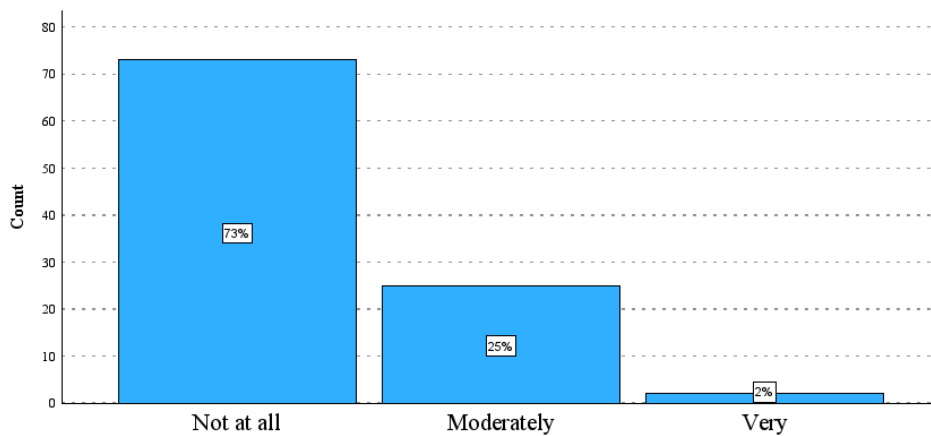
**How satisfied are you with the healthcare services in Paleochora, compared to the rest of Greece?**



**Figure 4.9**

**Distribution of responses to: How satisfied are you with the healthcare services in Paleochora, compared to the rest of Greece?**

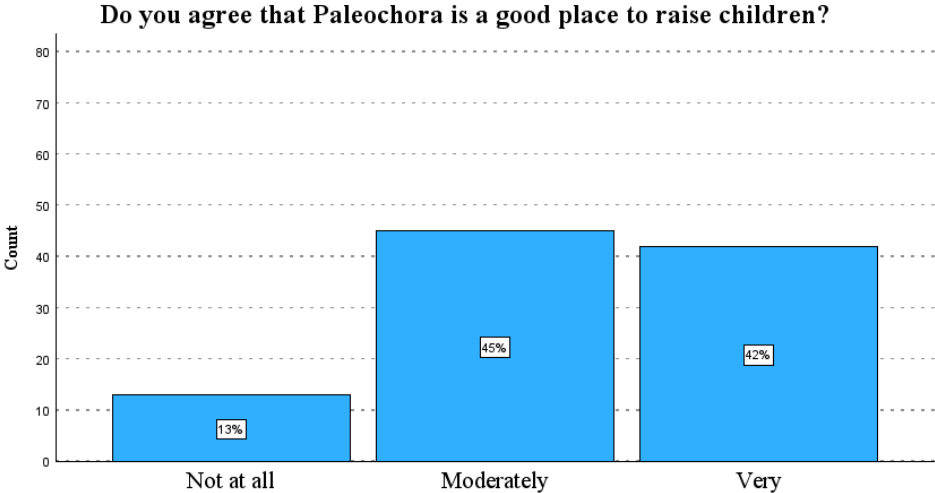
**How satisfied are you with the sports facilities and recreational amenities available in Paleochora?**



**Figure 4.10**

**Distribution of responses to: How satisfied are you with the sports facilities and recreational amenities available in Paleochora?**

Despite strong dissatisfaction with healthcare services and recreational facilities, residents maintain a moderate-to-positive attitude regarding whether Paleochoira is a good place to raise children. Specifically, 42 (42%) residents are very satisfied with the prevailing conditions for raising children in Paleochoira, 45 (45%) are moderately satisfied, and only 13 (13%) expressed dissatisfaction.



**Figure 4.11**

**Distribution of responses to: Do you agree that Paleochoira is a good place to raise children?**

Overall, Paleochoira residents’ outlook on various aspects of their lives is moderate-to-positive. Most residents are content with the town’s growth and are likely satisfied with their job positions, while also recognizing Paleochoira as a good place to raise children. Despite some dissatisfaction with healthcare and sports and recreational amenities, the quality of life in Paleochoira is viewed favorably by the majority.

**4.3.3 Analysis of residents’ attitudes**

The sample of this research shows strong consensus on several domains, while there are also some areas with uncertain perception or even negative. As demonstrated in Table 4.7 below,

the Conservation domain is the primary concern of the residents of Paleochora. The majority strongly believes that environmental protection measures must be implemented, even if it requires slowing down growth and sacrificing development.

The second most cohesive perception concerns Newcomers, highlighting the strong consensus that residents feel satisfied with ambitious people moving to Paleochora. This attitude indicates that the local population has positive interactions with newcomers. Although the majority recognizes that newcomers have become an important part of the local society, some residents remain uncertain. Thus, greater contribution to social development is expected. Considering the responses to other questions in this domain, it becomes apparent that residents hold more uncertain-to-positive than negative attitudes towards newcomers.

Growth and Change is the most ambiguous domain of the present study. The number of residents who believe that needless growth is responsible for the degradation of Paleochora's resources is equal to the number of residents who disagree with this statement. As a result, there is an absolute lack of coherence regarding progress and evolution. However, the majority of residents admits that Paleochora has not yet reached the desired level of development. Moreover, there are more uncertain residents than those convinced that no further growth is necessary. To sum up, attitudes towards Growth and Change lean more towards conservative-to-positive, indicating that any radical development measure or policy would likely not be accepted.

Since tourism is the main focus of this study, this domain is of particular interest. The vast majority of residents recognizes the significant benefits provided by the hospitality sector. Additionally, tourism is widely considered as a privilege that Paleochora holds over other locations in Crete. This attitude suggests that tourism is more preferable than agriculture or livestock activities. Similarly, the majority acknowledges that significant facilities have been emerged in Paleochora due to tourism development, even though a noticeable portion of the population remains uncertain.

Ultimately, there is only slight coherence among residents concerning the question that juxtaposes the socio-economic benefits with the inconveniences caused by tourism. The majority prioritizes economic benefits and expresses eagerness to tolerate the nuisances associated with tourism. On the other hand, approximately one-third of the population is

reluctant to endure possible nuisances and values serenity and calm over the revenues and jobs opportunities created by tourism.

To sum up, the prevailing perceptions towards tourism appear to be positive. However, a more comprehensive view reveals that a significant portion of residents expect visitors to respect that Paleochora is not only a tourism destination, but also a place of residence of people who will not accept the degradation of quality of their life due to the presence of tourists.

**Table 4.7**

**Residents' attitudes towards Conservation, Newcomers, Growth & Change, and Tourism**

	Domains and Statements	SA	A	U	D	SD	Mean	Consensus Index
No	Conservation							
q6	We must protect wildlife even at the expense of some development. (F)	40	47	11	2	0	4,25	0,85
q7	Not nearly enough has been done to protect our attractive countryside. (F)	30	48	16	6	0	4,02	0,72
	Newcomers							
q8	It is good to see this District attract ambitious people to live here. (F)	54	31	12	3	0	4,36	0,82
q9	Newcomers have become a valuable part of this community. (F)	20	42	32	4	2	3,74	0,56
q10	I sometimes feel like a stranger in my own community because of all the newcomers. (NF)	2	15	17	50	16	3,63	-0,49
q11	If we get a lot of new people moving here it will spoil things for everyone. (NF)	1	15	34	37	13	3,46	-0,34
	Growth & Change							
q12	The point has been reached when no more growth should be permitted in this area. (NF)	4	12	26	41	17	3,55	-0,42
q13	Much of what was the best of Paleochora has already been ruined by needless growth. (NF)	6	30	28	32	4	2,98	0,00
	Tourism							
q14	Tourism brings money and jobs and that is more important than the nuisance it cause. (F)	19	34	15	26	6	3,34	0,21
q15	Tourism is this area's big advantage over other parts of Crete. (F)	20	50	18	10	2	3,76	0,58
q16	The truly local people do not benefit much from the tourist industry. (NF)	1	4	11	51	33	4,11	-0,79
q17	Tourism can be thanked for bringing good facilities. (F)	11	49	22	15	3	3,50	0,42

*Key: F: Favourable, NF: Not Favourable; Mean: average out of 5.00; Consensus index: value out of ±1; numbers of responses: SA= strongly agree; A=agree; U= uncertain; D= disagree; SD= strongly disagree.*

#### 4.3.4 Research hypotheses analysis

As the analysis of the residents' attitudes towards tourism is the primary focus of this study, without investigating the affecting factors, it is incomplete. To prove that there are actual



relationships between the examined statements influencing residents' perceptions, a nonparametric statistical Chi-squared test was performed to define the statistically significant relationships between the entities of the questionnaire.

As demonstrated in Table 4.8, there are some statistically significant relationships between demographic data, resident's perceptions on Conservation, Newcomers, Growth and Change, as well as residents' satisfaction with the quality of their lives in Paleochora. Thus, crosstabulations where the chi-squared calculations output is less than or equal to 0.05 ( $p \leq 0.05$ ), are considered statistically significant, leading to the rejection of the null hypothesis, which supposes that there is no relationship between the compared variables. Their analysis is described below. Correspondingly, the results of chi-squared test higher than 0.05 ( $p > 0.05$ ) accept the null hypothesis and prove that there is no statistically significant relationship between compared variables.

Ultimately, it can be claimed that the perceptions on Tourism vary depending on the attitudes expressed in certain entities of the questionnaire. Below, the dimensions of tourism are analyzed in terms of the variables that affect it.

**Table 4.8**  
**Chi-squared test results: Statistical significance of relationships between demographic elements, residents' perceptions and satisfaction with the quality of live in Paleochora**

Questionnaire	Tourism brings money and jobs and that is more important than the nuisance it cause. (F)	Tourism is this area's big advantage over other parts of Crete. (F)	The truly local people do not benefit much from the tourist industry. (NF)	Tourism can be thanked for bringing good facilities. (F)	
<b>Demographic data</b>					
q1	Gender	0,270	0,931	0,217	0,538
q2	Age	0,427	0,842	0,302	0,378
q3	Origin	0,696	0,175	<b>0,001</b>	<b>0,007</b>
q4	Years of residence	0,373	0,540	0,488	0,308
q5	Tourism sector employee	0,222	0,112	0,060	0,951
<b>Conservation</b>					
q6	We must protect wildlife even at the expense of some development. (F)	0,052	0,299	0,402	0,541
q7	Not nearly enough has been done to protect our attractive countryside. (F)	0,240	0,760	0,793	<b>0,030</b>
<b>Newcomers</b>					
q8	It is good to see this District attract ambitious people to live here. (F)	0,052	<b>0,002</b>	0,061	0,790
q9	Newcomers have become a valuable part of this community. (F)	0,196	<b>&lt;0,001</b>	<b>&lt;0,001</b>	<b>0,010</b>
q10	I sometimes feel like a stranger in my own community because of all the newcomers. (NF)	0,933	0,108	<b>&lt;0,001</b>	0,529
q11	If we get a lot of new people moving here it will spoil things for everyone. (NF)	0,316	0,256	<b>&lt;0,001</b>	0,416
<b>Growth &amp; Change</b>					
q12	The point has been reached when no more growth should be permitted in this area. (NF)	0,712	<b>0,019</b>	<b>&lt;0,001</b>	0,573
q13	Much of what was the best of Paleochora has already been ruined by needless growth. (NF)	<b>0,003</b>	0,090	<b>0,001</b>	<b>0,001</b>
<b>Residents' satisfaction</b>					
q18	How satisfied are you with the way the Local Government takes into account the opinions of local residents in the decision-making process? (F)	0,763	0,828	<b>0,003</b>	0,075
q19	How satisfied are you with your current job position?	0,071	0,882	0,361	0,114
q20	How satisfied are you with the way Paleochora is changing?	0,142	0,629	0,164	<b>0,013</b>
q21	Do you agree that Paleochora is a good place to raise children?	0,880	0,190	0,224	0,734
q22	How satisfied are you with the healthcare services in Paleochora, compared to the rest of Greece?	0,562	0,055	0,709	0,194
q23	How satisfied are you with the sports facilities and recreational amenities available in Paleochora?	0,368	<b>0,001</b>	0,425	0,320

*Pearson's Chi-squared Test - Asymptotic Significance (2-sided) Values. Performed in SPSS.*

**4.3.4.1 “Tourism brings money and jobs and that is more important than the nuisance it cause”**

As shown in Table 4.9, the majority of respondents agree that tourism brings money and creates job opportunities. Additionally, the number of respondents who believe that the needless growth has already partially ruined much of the best of Paleochora, is equal to the number of respondents who are not of that opinion. However, the former seem to be of a more positive-to-uncertain opinion about the reckless development, than the latter. Of course, this relationship might imply residents’ desire for a more environmentally friendly development strategy.

**Table 4.9**

**Crosstabulation: Much of what was the best of Paleochora has already been ruined by needless growth Vs Tourism brings money and jobs and that is more important than the nuisance it cause**

**Crosstab**

Count

		Tourism brings money and jobs and that is more important than the nuisance it cause.					Total
		SD	D	(F) U	A	SA	
Much of what was the best of Paleochora has already been ruined by needless growth. (NF)	SA	1	1	1	1	2	6
	A	3	13	3	7	4	30
	U	0	4	7	13	4	28
	D	0	8	4	13	7	32
	SD	2	0	0	0	2	4
Total		6	26	15	34	19	100

**4.3.4.2 “Tourism is this area’s big advantage over other parts of Crete”**

The most respondents approve that Paleochora attracts new residents. It appears that those who view tourism as an asset also consider newcomers to be a valuable addition to the local population (Tables 4.10 and 4.11). Additionally, most identify the advantage of Paleochora over other parts of Crete. Actually, both these points of view are connected while people who consider tourism as an asset tend to hold a more positive attitude towards newcomers. Moreover, it seems that residents who recognize tourism as Paleochora’s advantage over other locations of Crete are more likely to believe that further development is needed (Table 4.12). Probably, they base their prospects on tourism growth. Finally, there is a relationship between

the residents' satisfaction with recreational and sport facilities and their opinion towards tourism as a local asset. The upward trend in positive opinion on tourism is associated with dissatisfaction with sports and recreational amenities (Table 4.13).

To sum up, there is a strong link between the perception of newcomers as a positive social factor. Also, it can be implied that residents expect better infrastructure due to tourism growth while they appreciate that new residents contribute to the local development.

**Table 4.10**

**Crosstabulation: It is good to see this District attract ambitious people to live here Vs Tourism is this area's big advantage over other parts of Crete**

**Crosstab**

Count

		Tourism is this area's big advantage over other parts of Crete. (F)					Total
		SD	D	U	A	SA	
It is good to see this District attract ambitious people to live here. (F)	D	1	0	1	1	0	3
	U	0	0	4	7	1	12
	A	0	7	6	15	3	31
	SA	1	3	7	27	16	54
Total		2	10	18	50	20	100

**Table 4.11**

**Crosstabulation: Newcomers have become a valuable part of this community Vs Tourism is this area's big advantage over other parts of Crete**

**Crosstab**

Count

		Tourism is this area's big advantage over other parts of Crete. (F)					Total
		SD	D	U	A	SA	
Newcomers have become a valuable part of this community. (F)	SD	0	0	1	0	1	2
	D	2	1	0	1	0	4
	U	0	3	7	17	5	32
	A	0	5	7	20	10	42
	SA	0	1	3	12	4	20
Total		2	10	18	50	20	100

**Table 4.12**

**Crosstabulation: The point has been reached when no more growth should be permitted in this area Vs Tourism is this area's big advantage over other parts of Crete**

**Crosstab**

Count

		Tourism is this area's big advantage over other parts of Crete. (F)					Total
		SD	D	U	A	SA	
The point has been reached when no more growth should be permitted in this area. (NF)	SA	0	0	2	2	0	4
	A	2	1	3	5	1	12
	U	0	1	8	12	5	26
	D	0	6	5	22	8	41
	SD	0	2	0	9	6	17
Total		2	10	18	50	20	100

**Table 4.13**

**Crosstabulation: How satisfied are you with the sports facilities and recreational amenities available in Paleochora? Vs Tourism is this area's big advantage over other parts of Crete**

**Crosstab**

Count

		Tourism is this area's big advantage over other parts of Crete. (F)					Total
		SD	D	U	A	SA	
How satisfied are you with the sports facilities and recreational amenities available in Paleochora?	Not at all	0	6	12	39	16	73
	Moderately	2	2	6	11	4	25
	Very	0	2	0	0	0	2
Total		2	10	18	50	20	100

**4.3.4.3 “The truly local people do not benefit much from the tourist industry”**

Out of all demographic data it seems that only the origin of the respondents influences the perception “The truly local people do not benefit much from the tourist industry”. As shown in Table 4.14, the majority of people who recognize the benefits of tourism, are natives of Paleochora. Correspondingly, the majority of people who identify the tourism as a factor

influencing the emergence of new facilities are also natives of Paleochora. Consequently, the alternative hypothesis - that the origin and the perception on the benefits tourism industry brings to natives - is accepted.

**Table 4.14**

**Crosstabulation: Origin Vs The truly local people do not benefit much from the tourist industry**

**Crosstab**

Count

		The truly local people do not benefit much from the tourist industry. (NF)					Total
		SA	A	U	D	SD	
Origin	Paleochora	0	0	10	32	24	66
	Regional Unit of Chania	0	1	0	9	1	11
	The rest of Greece	0	1	0	2	6	9
	Other country of the EU	0	1	1	5	1	8
	Third Country	1	1	0	3	1	6
Total		1	4	11	51	33	100

Additionally, it emerges from the data, that respondents who recognize that local population benefits from the tourism industry are more likely to evaluate newcomers as a significant part of the local community (Table 4.15). This approach may imply that residents possibly believe in the contribution of newcomers to tourism development. This opinion might be influenced by the data in Tables 4.16 and 4.17, where it is clearly expressed that coexistence of residents with newcomers is harmonious and do not make local population feel uncomfortable with their presence in Paleochora. Actually, it is confirmed that residents are open to host more new people.

**Table 4.15**

**Crosstabulation: Newcomers have become a valuable part of this community Vs The truly local people do not benefit much from the tourist industry**

**Crosstab**

Count

		The truly local people do not benefit much from the tourist industry. (NF)					Total
		SA	A	U	D	SD	
Newcomers have become a valuable part of this community. (F)	SD	0	1	0	0	1	2
	D	0	2	0	2	0	4
	U	0	0	4	16	12	32
	A	0	1	5	25	11	42
	SA	1	0	2	8	9	20
Total		1	4	11	51	33	100

**Table 4.16**

**Crosstabulation: I sometimes feel like a stranger in my own community because of all the newcomers Vs The truly local people do not benefit much from the tourist industry**

**Crosstab**

Count

		The truly local people do not benefit much from the tourist industry. (NF)					Total
		SA	A	U	D	SD	
I sometimes feel like a stranger in my own community because of all the newcomers. (NF)	SA	1	0	0	1	0	2
	A	0	2	4	6	3	15
	U	0	2	3	9	3	17
	D	0	0	3	29	18	50
	SD	0	0	1	6	9	16
Total		1	4	11	51	33	100

Furthermore, the majority of respondents believe that Paleochoira has not yet reached the point where further development should be stopped. This opinion influences the connection between tourism and the quality of resident’s lives, with most acknowledging that local people benefit from tourism (Table 4.18). Hence, according to Table 4.19, there is a disagreement regarding whether tourism benefits local people or harms the environment. However, it seems that respondents tend to justify any degradation, with the majority of those uncertain about the impacts of needless development believing it would benefit the local residents.

**Table 4.17**

**Crosstabulation: If we get a lot of new people moving here it will spoil things for everyone Vs The truly local people do not benefit much from the tourist industry**

**Crosstab**

Count

		The truly local people do not benefit much from the tourist industry. (NF)					Total
		SA	A	U	D	SD	
If we get a lot of new people moving here it will spoil things for everyone. (NF)	SA	1	0	0	0	0	1
	A	0	3	4	5	3	15
	U	0	0	6	23	5	34
	D	0	0	1	18	18	37
	SD	0	1	0	5	7	13
Total		1	4	11	51	33	100

**Table 4.18**

**Crosstabulation: The point has been reached when no more growth should be permitted in this area Vs The truly local people do not benefit much from the tourist industry**

**Crosstab**

Count

		The truly local people do not benefit much from the tourist industry. (NF)					Total
		SA	A	U	D	SD	
The point has been reached when no more growth should be permitted in this area. (NF)	SA	1	1	1	1	0	4
	A	0	2	2	4	4	12
	U	0	1	5	15	5	26
	D	0	0	2	25	14	41
	SD	0	0	1	6	10	17
Total		1	4	11	51	33	100

Regarding residents' involvement in decision-making processes at the administrative level, it appears that residents tend to declare moderately satisfied with (Table 4.20). This may indicate a social demand for a more comprehensive strategy of tourism development as the majority perceives benefits from it.



**Table 4.19**

**Crosstabulation: Much of what was the best of Paleochora has already been ruined by needless growth Vs The truly local people do not benefit much from the tourist industry**

**Crosstab**

Count

		The truly local people do not benefit much from the tourist industry. (NF)					Total
		SA	A	U	D	SD	
Much of what was the best of Paleochora has already been ruined by needless growth. (NF)	SA	1	1	0	1	3	6
	A	0	2	6	14	8	30
	U	0	1	5	18	4	28
	D	0	0	0	17	15	32
	SD	0	0	0	1	3	4
<b>Total</b>		1	4	11	51	33	100

**Table 4.20**

**Crosstabulation: How satisfied are you with the way the Local Government takes into account the opinions of local residents in the decision-making process? Vs The truly local people do not benefit much from the tourist industry**

**Crosstab**

Count

		The truly local people do not benefit much from the tourist industry. (NF)					Total
		SA	A	U	D	SD	
How satisfied are you with the way the Local Government takes into account the opinions of local residents in the decision-making process?	Not at all	0	1	5	11	11	28
	Moderately	0	3	6	38	20	67
	Very	1	0	0	2	2	5
<b>Total</b>		1	4	11	51	33	100

**4.3.4.4 “Tourism can be thanked for bringing good facilities”**

The quality of facilities is mostly attributed to tourism development. However, while most residents of Paleochora support this opinion, a significant portion of the natives remains uncertain. Additionally, non-natives residents tend to agree that the emergence of good facilities is due to tourism development (Table 4.21). This relationship suggests criticism from the natives of Paleochora towards the perceived benefits of tourism or the perception that other factors may be contributing to the enhancement of the local infrastructure.

A strong relationship between the view that tourism brings good facilities and the concern for environmental protection is highlighted in Table 4.22. As shown, residents who believe that not enough environmental measures have been implemented, tend to agree with infrastructural benefits of tourism. This connection can be interpreted as the environmental consciousness of residents. In addition, this tendency may imply a demand for the implementation of projects that contribute to both tourism development as well as conservation and the reduction of the environmental footprint.

**Table 4.21**

**Crosstabulation: Origin Vs Tourism can be thanked for bringing good facilities**

**Crosstab**

Count

		Tourism can be thanked for bringing good facilities. (F)					Total
		SD	D	U	A	SA	
Origin	Paleochora	2	10	17	33	4	66
	Regional Unit of Chania	0	3	1	6	1	11
	The rest of Greece	1	2	2	2	2	9
	Other country of the EU	0	0	1	7	0	8
	Third Country	0	0	1	1	4	6
Total		3	15	22	49	11	100

**Table 4.22**

**Crosstabulation: Not nearly enough has been done to protect our attractive countryside Vs Tourism can be thanked for bringing good facilities**

**Crosstab**

Count

		Tourism can be thanked for bringing good facilities. (F)					Total
		SD	D	U	A	SA	
Not nearly enough has been done to protect our attractive countryside. (F)	D	0	1	0	2	3	6
	U	0	2	2	11	1	16
	A	0	7	12	26	3	48
	SA	3	5	8	10	4	30
Total		3	15	22	49	11	100

Moreover, a strong relationship is observed between the positive attitude towards the value of newcomers as new members of the society of Paleochora and the opinion that tourism brings good facilities. It seems that there is a portion of residents who are in favor of the social and economic development of the area. In addition, as residents become more negative or uncertain about the value of newcomers, they tend to be more cautious about tourism as a factor that enhances infrastructure (Table 4.23).

**Table 4.23**

**Crosstabulation: Newcomers have become a valuable part of this community  
Vs Tourism can be thanked for bringing good facilities**

Count		Crosstab					Total
		Tourism can be thanked for bringing good facilities. (F)					
		SD	D	U	A	SA	
Newcomers have become a valuable part of this community. (F)	SD	0	0	2	0	0	2
	D	1	0	0	2	1	4
	U	2	6	6	18	0	32
	A	0	5	11	22	4	42
	SA	0	4	3	7	6	20
Total		3	15	22	49	11	100

Besides, the opinion that tourism brings good facilities is related to residents’ perceptions of the consequences of the needless growth in Paleochora. There seems to be a significant intersection between those who believe much of the best of Paleochora has been ruined by needless growth and those who do not, while a considerable portion of respondents remains uncertain. This relationship may suggest that some residents view tourism development negatively, are uncertain about its benefits, or even blame it for environmental degradation. Conversely, those who favor the infrastructural benefits of tourism are more likely to not consider environmental footprint (Table 4.24).

**Table 4.24**

**Crosstabulation: Much of what was the best of Paleochora has already been ruined by needless growth Vs Tourism can be thanked for bringing good facilities**

**Crosstab**

Count

		Tourism can be thanked for bringing good facilities. (F)					Total
		SD	D	U	A	SA	
Much of what was the best of Paleochora has already been ruined by needless growth. (NF)	SA	1	0	1	2	2	6
	A	0	6	11	11	2	30
	U	0	6	7	14	1	28
	D	1	3	2	22	4	32
	SD	1	0	1	0	2	4
Total		3	15	22	49	11	100

Finally, residents’ satisfaction with the way Paleochora is changing appears to be linked to their perception of tourism benefits. Thus, as highlighted in Table 4.25, residents who are moderately or very satisfied with changes in Paleochora tend to acknowledge tourism benefits. On the other hand, less satisfied respondents seem to hold more negative-to-uncertain attitude towards tourism advantages.

**Table 4.25**

**Crosstabulation: How satisfied are you with the way Paleochora is changing? Vs Tourism can be thanked for bringing good facilities**

**Crosstab**

Count

		Tourism can be thanked for bringing good facilities. (F)					Total
		SD	D	U	A	SA	
How satisfied are you with the way Paleochora is changing?	Not at all	1	5	3	4	0	13
	Moderately	2	7	17	40	6	72
	Very	0	3	2	5	5	15
Total		3	15	22	49	11	100

### 4.3.5 Analysis of tourism development indicators

The measurement of the level of tourism development was conducted by comparing the data from 2011 and 2021. As shown in Table 4.26, the Defert and Baretje–Defert indexes decreased by 13.49% over that decade, while the Charvat’s index followed an upward trend, increasing by 15.70%.

Regarding the intensity of tourist traffic in the study area, the Charvat’s index indicates that the number of overnights per 100 residents has increased. Since there is no specific scale for interpreting this index, it must be analyzed in terms of local characteristics. This result may imply an advanced level of urbanization in Paleochora, as well as higher revenues generated by the tourism industry. However, this index only calculates the number of visitors who spent at least one night in Paleochora, excluding excursionists.<sup>100</sup>

Table 4.26. Tourism development indexes, 2011-2021

Municipal District of Paleochora Data			
	2011	2021	
Overnights	41.965	56.128	
Population	1.891	2.186	
Number of beds	3.000	3.000	
Study area (km <sup>2</sup> )	55,20	55,20	
Tourism development indexes			
	2011	2021	% change
DTFI	158,65	137,24	-13,49%
DBTFI	2,87	2,49	-13,49%
Tch	2219,20	2567,61	15,70%

Source: Hellenic Statistical Authority

Regarding tourism development measures, both the Defert and Baretje–Defert indexes showed a downward trend from 2011 to 2021. These indexes are used to indicate the impacts of tourism on the local population, the attractiveness of the area, and the expansion of tourism infrastructure. The Defert index demonstrates that despite the increase in the local population, the hospitality sector did not develop, as the number of beds remained unchanged. In addition, the Baretje–Defert index confirms that the density of tourism infrastructure did not grow in terms of spatial expansion. Overall, it seems that despite the rise in overnights spent in

<sup>100</sup> Grzelak, M. M.; Roszko-Wójtowicz, E. ‘Tourist attractiveness of voivodeships in Poland in the light of selected indicators: a dynamic approach’

Paleochora, the tourism infrastructure remained at same levels. Thus, as the accommodation capacity remains the same, combined with more overnights, this may imply more stressful conditions for the local residents and increased economic gains.

As proposed by Warszyńska (1985), the tourism function can be defined in the following five-grade scale: 0 – the process of tourism function development has not commenced (index value  $< 0.78$ ), 1 – initial stage of development (index value  $0.78-6.25$ ), 2 – additional function (index value  $6.25-25.00$ ), 3 – equal or supplementary function (index value  $25.00-50.00$ ), 4 – basic or one of the basic functions (index value  $> 50.00$ ).<sup>101</sup> Consequently, Paleochora is considered to be at the initial stage of tourism development.

#### **4.4 Conclusions**

Paleochora is a picturesque cosmopolitan town of the Region of Chania. During the last two decades the pace of social and economic changes has extremely increased, enhancing the evolution of an agricultural village to a tourist destination.

In this study an attempt was made to evaluate tourism carrying capacity of Paleochora in terms of sustainable development, focusing more closely on the social aspect of the topic. Thus, two methodologies were implemented in order to assess residents' perceptions on tourism and its further development, as well as their coherence towards those topics. Moreover, the most crucial factors were identified and interpreted in the light of interconnectedness with the dimension of tourism.

The current study reveals that Paleochora yet is at the initial stage of development as tourism destination. Being at this point of evolution allows authorities to choose more sustainable strategy of development. The issue of sustainability seems to be of a significant importance to residents, since they declare environmentally conscious and demonstrate more conservative attitudes towards reckless growth, being eager even to sacrifice economic gains

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<sup>101</sup> Widz, M. 'Application of Tourist Function Indicators in Tourism Development. Case Study of Tunisia'

due to environmental protection. Furthermore, degradation of the natural resources appeared to be the most ambivalent topic, intensively polarizing the public opinion.

Regarding the economic aspects, tourism is considered as a major factor and a significant asset of Paleochora over other parts of Crete. Residents tend to believe that tourism brings both infrastructure upgrade and socio-economic development. Since the infrastructure is strongly linked to residents' approval of further growth and change, it can be acclaimed that residents acknowledge the positive impacts of tourism and expect further development. However, the majority of the questionnaire respondents declared moderate-to-positive satisfaction with the quality of live in Paleochora, healthcare facilities and recreational and sports amenities was the only one topic with the lowest satisfaction levels.

Observing the analysis results from the social perspective, newcomers are considered as a valuable part of the society of Paleochora. Residents recognize the relationship between the tourism development and newcomers' contribution to it. Moreover, it seems to be clear that economic interrelationships influence that condition. Generally, it appears that the social system of Paleochora bases on harmonious coexist of the natives and newcomers.

In conclusion, regarding the integrated concept of tourism carrying capacity it seems that residents not only approve further tourism development and evaluate positively its impacts on various aspects of their lives, but also pursue a more intense tourists' presence. This attitude indicates that the thresholds are not exceeded. On the other hand, the lack of respectful behavior of the visitors could change this attitude.





# ANNEX

## (I) QUESTIONNAIRE

Fill in your gender:

- Male
- Female

Fill in your age:

- 10-19
- 20-29
- 30-39
- 40-49
- 50-59
- 60-69
- 70-79
- 80+

Fill in your origin:

- Paleochora
- Region of Chania
- The rest of Crete
- The rest of Greece
- Other country of the EU
- Other

Fill in the years of residence in Paleochora:

- 1-5
- 6-10
- 11-15
- 16-20
- 20+
- Other

Do you work in the tourism industry?

- Yes
- No
- Other

1. We must protect wildlife even at the expense of some development. (F)

- Strongly Agree
- Agree
- Uncertain
- Strongly Disagree
- Disagree

2. Not nearly enough has been done to protect our attractive countryside. (F)

- Strongly Agree
- Agree
- Uncertain

- Strongly Disagree
  - Disagree
3. It is good to see this District attract ambitious people to live here. (F)
- Strongly Agree
  - Agree
  - Uncertain
  - Strongly Disagree
  - Disagree
4. Newcomers have become a valuable part of this community. (F)
- Strongly Agree
  - Agree
  - Uncertain
  - Strongly Disagree
  - Disagree
5. I sometimes feel like a stranger in my own community because of all the newcomers. (NF)
- Strongly Agree
  - Agree
  - Uncertain
  - Strongly Disagree
  - Disagree
6. If we get a lot of new people moving here it will spoil things for everyone. (NF)
- Strongly Agree
  - Agree
  - Uncertain
  - Strongly Disagree
  - Disagree
7. The point has been reached when no more growth should be permitted in this area. (NF)
- Strongly Agree
  - Agree
  - Uncertain
  - Strongly Disagree
  - Disagree
8. Much of what was the best of Paleochora has already been ruined by needless growth.(NF)
- Strongly Agree
  - Agree
  - Uncertain

- Strongly Disagree
- Disagree

9. Tourism brings money and jobs and that is more important than the nuisance it cause. (F)

- Strongly Agree
- Agree
- Uncertain
- Strongly Disagree
- Disagree

10. Tourism is this area's big advantage over other parts of Crete. (F)

- Strongly Agree
- Agree
- Uncertain
- Strongly Disagree
- Disagree

11. The truly local people do not benefit much from the tourist industry. (NF)

- Strongly Agree
- Agree
- Uncertain
- Strongly Disagree
- Disagree

12. Tourism can be thanked for bringing good facilities. (F)

- Strongly Agree
- Agree
- Uncertain
- Strongly Disagree
- Disagree

13. How satisfied are you with the way the Local Government takes into account the opinions of local residents in the decision-making process?

- Very
- Moderately
- Not at all

14. How satisfied are you with your current job position?

- Very
- Moderately
- Not at all

15. How satisfied are you with the way Paleochora is changing?

- Very
- Moderately
- Not at all

16. Do you agree that Paleochora is a good place to raise children?

- Very
- Moderately
- Not at all

17. How satisfied are you with the healthcare services in Paleochora, compared to the rest of Greece?

- Very
- Moderately
- Not at all

18. How satisfied are you with the sports facilities and recreational amenities available in Paleochora?

- Very
- Moderately
- Not at all

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