

# LUISS



**Department of Business and Management**

**Chair of Organizational Design**

**“Sustainable Tourism and Service Design: how to  
address the phenomenon of overtourism and ensure a  
better experience for tourists and citizens”**

**Prof. Cinzia Calluso**

---

SUPERVISOR

**Prof. Youngah Guahk**

---

CO-SUPERVISOR

**Daniele Capozza**

**ID: 743321**

---

CANDIDATE

**A.A. 2022-2023**

## Table of Content

<b>Introduction.....</b>	<b>3</b>
<b>Chapter 1 – Overtourism.....</b>	<b>6</b>
<b>1.1 Numbers and incidence of tourism in the world and in Italy .....</b>	<b>6</b>
<b>1.2 Overtourism issue .....</b>	<b>9</b>
1.2.1 Negative implications of the phenomenon .....	12
1.2.2 Overtourism vs. Responsible Tourism .....	14
<b>1.3 Metrics for measuring the impact of tourism.....</b>	<b>14</b>
1.3.1 Doxey Irritation Index .....	16
1.3.2 Tourism Carrying Capacity Theory.....	17
1.3.3 Limits of acceptable change theory .....	19
<b>Chapter 2 – Available solutions against Overtourism .....</b>	<b>21</b>
<b>2.1 Available and currently developed solutions to counteract overtourism .....</b>	<b>21</b>
<b>2.2 Marketing .....</b>	<b>23</b>
2.2.1 Rebranding, repositioning, and marketing of alternative destinations .....	25
2.2.2 Demarketing .....	26
<b>2.3 Government policies and interventions .....</b>	<b>28</b>
2.3.1 Practical case studies in major tourist cities .....	31
<b>2.4 The role of technology .....</b>	<b>33</b>
2.4.1 Technological tools.....	34
2.4.2 Artificial Intelligence.....	36
2.4.3 Augmented Reality and Virtual Reality .....	38
<b>2.5 Platform based solutions .....</b>	<b>39</b>
2.5.2 Platforms’ Advantages and Drawbacks.....	43
2.5.3 Platforms and tourism.....	45
<b>Chapter 3 – Empirical Study.....</b>	<b>49</b>
<b>3.1 Research questions.....</b>	<b>49</b>
<b>3.2 Methodological Approach.....</b>	<b>50</b>
<b>3.3 Qualitative Research – Interviews.....</b>	<b>51</b>
3.3.1 Discussion.....	52
3.3.2. Results .....	61
<b>3.4 Quantitative Research – Methodology.....</b>	<b>63</b>
3.4.1. Procedure .....	63
3.4.2. Participants .....	64
3.4.3 Data analysis.....	65
3.4.4. Results .....	66
<b>3.5 Managerial Implications .....</b>	<b>72</b>
<b>3.6 Limitations.....</b>	<b>73</b>
<b>Conclusions .....</b>	<b>75</b>
<b>Bibliography .....</b>	<b>77</b>
<b>Sitography.....</b>	<b>91</b>
<b>Appendix.....</b>	<b>92</b>

## **Introduction**

Tourism is a key sector for the economy of several countries, often accounting for large slices of the national GDP, enabling job creation, economic revenue, and land enhancement through artistic and natural beauty and attractions that each nation can offer.

Overtourism consists of the overcrowding of tourist destinations, that is, when a given tourist site is visited at the same time by a high number of visitors, exceeding its carrying capacity (Avond et al. 2019). Moreover, the awareness of this phenomenon is increasing, indeed, it appears more in the media and scientific discourses. Moreover, the majority of tourists are aware of it having had direct experience with it (Szromek et al. 2019).

This phenomenon is particularly common in Europe and has a high influence on the level of the economy and citizens'/tourists' quality of life (Avond et al. 2019).

The main causes are related to the advance of globalization, which allows travel at much lower costs than in the past, and to the heavy pressure of arrivals on the tourism infrastructure as it finishes its saturation. A key role is also played by social media, which triggers mechanisms of envy and homologation among users. Particularly to cope with FOMO (fear of missing out), travel is conceived as a performance that empties places and travel itself of meaning.

Examples of limiting tourist flows can be found in the media. For example, in Italy, the city mayors of Rome, Milan, Venice, and Florence are asking the minister of culture to limit the influx of tourists by reducing their numbers. In the Philippines, on the other hand, local authorities have decided to close the island of Boracay to visitors for six months so that the natural environment can be regenerated. Similar action was taken in Thailand for Maya Bay beach on Phi Phi Leh Island (Kruczek 2019).

However, the level of awareness of citizens/tourists regarding their negative impact on the environment and society is not yet widespread (Szromek et al. 2019).

Instead, it is possible to detect three main categories of negative impact: environmental, economic, and socio-cultural. Regarding the first category, it is related to increased resource use and pressure on infrastructure, in fact, increased arrivals mean not only making the local environment overcrowded but resources overexploited (Peeters et al. 2018). Related to that, it is important also to stress the increase in demand for water and electricity, as well as noise and visual pollution (Îştin and Turpcu 2021).

The economic impact of overtourism is very much related to the phenomenon of gentrification. This leads to a change in housing prices and the cost of living, leading to a general rise in prices. In

particular, the economies of many countries where the phenomenon of overtourism is present are increasingly dependent on this sector while others may be sidelined. In addition, tourist congestion (i.e., overcrowded cities or tourists may feel disturbed) could adversely affect the tourist destination in question, resulting in damage to the local tourism-based economy.

Regarding socio-cultural effects, the increase in tourist inflow has brought tourists to neighborhoods that were once residential, and the resident population is neglected. In addition, negative effects include the loss of cultural identity resulting from the different behaviors, traditions, and culture of tourists, as well as the different values brought to other countries. In addition, some forms of tourism can attract misbehaving and crime, reducing the overall level of safety in the city and increasing the level of hostility among the local population (Peeters et al. 2018).

Consequently, this phenomenon is not only limited to overcrowding but is also counterproductive.

Given these premises, it is necessary to approach strategies and practices related to the implementation of sustainable tourism, that is, tourism that respects the environment, traditions, and local cultures (Statista Research Department 2021).

In this regard, the Italian NRP<sup>1</sup> also advocates for such practices so that this sector can be revitalized and enhanced. In fact, it provides for the allocation of nearly seven billion euros for the category "Tourism and Culture" within Mission 1, with the aim of creating a 4.0 tourism that can enhance and preserve the Italian national territory (i.e. creation of platforms for the national territory or the enhancement of alternative routes and attractiveness of villages) (Presidenza del Consiglio dei Ministri 2021).

Currently, management practices and technologies already exist to counteract the problem of tourist overcrowding, aiming to balance the rights of travelers with those of the residents in order to arrive at win-win solutions. More generally, it is possible to suggest measures for a greater planning and management measures that take into account both parties and that could have a positive impact on the environment (i.e., reduction of greenhouse gas emissions) (Szromek et al. 2019).

A more complex solution consists of the implementation of smart tourism, namely a strategic solution allowing to create smart cities through the exploitation of the currently available technologies, such as for example the usage of smartphones, radio frequency identification, websites, virtual and augmented reality (Hassan and Sharma 2021).

---

<sup>1</sup> National Recovery Plan

Consequently, the introduction of a *phygital* customer journey<sup>2</sup> could introduce significant advantages related to the experience of the tourist, so as to find the right compromise between tourist and citizen.

Other solutions are based on the usage of technological devices: for instance, the placement of sensor devices along the destination route could supply important information about the visitors' behavior, identifying the most crowded places and the peak hours (Loureiro 2019).

So, the previously cited practices can be used to offer alternative routes to tourists, so that it is possible to enhance some areas of the territory that are able to distribute excess tourist flows.

The thesis could be divided into three main sections. The first part discusses the issue of overtourism, specifically providing a theoretical framework, definition, data, negative implications, and theories. The second section of the paper reports on the state of the art of solutions put in place to deal with the phenomenon of overtourism; finally, the third part, aims to combine the first two parts to achieve concrete results.

This section is, therefore, divided into two main parts: the first one, is based on a qualitative analysis through interviews of eight startups operating in the sustainable tourism sector, in order to have a better look at the new business model and how companies are reacting to overtourism. In this way, it is possible to have a clearer view of what is the state of the art of the sector in Italy and observe its progress; in the second part, on the other hand, the focus is quantitative. Hence, a survey has been administered to tourists with the aim of understanding whether the strategic levers implemented by companies are actually being adopted by tourists, and whether and to what extent people are willing to use and pay for such sustainable options.

This made it possible to analyze the problem from the double perspective of supply and demand, using the research method that best suited the sample under consideration.

---

<sup>2</sup> Both Digital and Physical

# Chapter 1 – Overtourism

## 1.1 Numbers and incidence of tourism in the world and in Italy

The tourism industry plays a major role in several countries as it is a major source of income and creates new jobs, which is why it should be regarded as a resource to be exploited.

According to the World Tourism Organization<sup>3</sup>, tourism can be defined as “*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*” (UNWTO n.d.).

The tourism sector is facing extraordinary and constant growth, with the exception of the year 2020 of the Covid-19 pandemic crisis, starting from the end of the Second World War. For this reason, is possible to argue that the sector is highly dependent on the economic environment (Matheis 2022).

Indeed, the extraordinary importance of the sector and its dependence on economic factors could be explained by looking at the numbers in the tourism and travel field.

According to World Travel & Tourism Council (WTTC) data, between 2014 and 2019, 25% of the jobs created worldwide came from the tourism industry, rising to about 333 million employees (equal to 10% of global employment) in 2019. In the same year, the industry came to account for 10,3% of global GDP (equivalent to USD 9,630 trillion in absolute value). However, it is important to remember that there are also indirect benefits that can be extended to the entire travel ecosystem and other sectors through supply chain linkages.

Travel and Tourism sector was one of the hardest hit by the health crisis in 2020, losing 50,4% of its value relative to GDP as well as 62 million jobs and falling to 5,3% of global GDP. There was a slight improvement during 2021 due to the gradual easing of the restrictive measures adopted to counteract the pandemic; however, the recovery was mainly driven by domestic visitors while international tourism continued to feel the effects of the previous year (WTTC 2022).

Figure 1 illustrates these data; also graphically visible is the difference between the backlash experiences by T&T GDP Growth (-50,4%) compared to Economy GDP Growth (-3,3%).

---

<sup>3</sup> United Nations agency for the promotion of tourism.

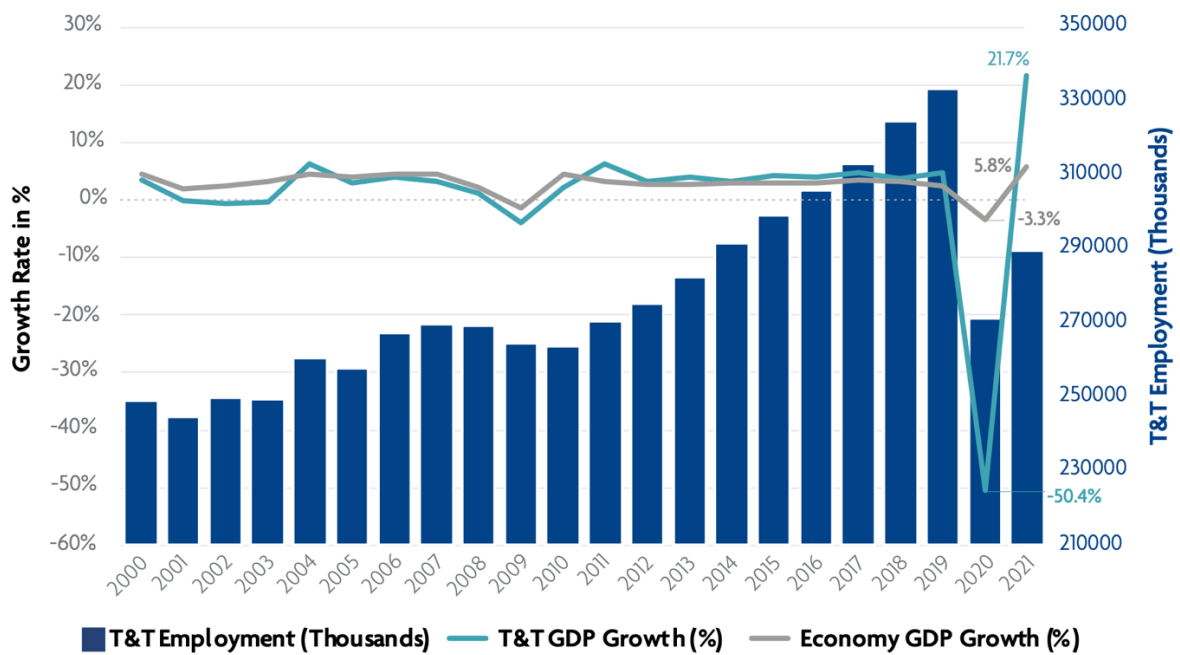


Figure 1 Economic impact timeline, 2000-2021. WTTC,2022.

Another event that underscores tourism’s dependence on the economic environment is the financial crisis of 2007, which reached its most acute phase in March 2009, when a 12% drop in international tourist arrivals was recorded. The crisis, as well as the fear of recession, possible layoffs, and rising inflation rates, caused travel plans to be canceled or changed, reducing travelers’ budgets (WTO 2013).

Furthermore, it is possible to identify the countries with the highest expenditure for international tourism. In the 2019-2021 period, the top three positions were occupied by China (USD 105,7 billion in 2021), the United States (USD 56,9 in 2021), and Germany (USD 51 billion in 2021) which share high GDP levels (year 2021), respectively of USD 17,73 trillion, USD 23,32 trillion and USD 4,26 trillion. (Statista Research Department 2023; World Bank national accounts data 2021).

With regard to the spending for each generation, it can be argued that millennials are willing to use their savings for experiences rather than luxurious goods, contributing to the increase in tourist market volume during the last decade (Matheis 2022). Gen Z, on the other hand, has the desire to do something meaningful and with a purpose for local people, such as undertaking volunteer activities or with a greater focus on sustainability. Their search for focuses on value-for-money and mid-range destinations and accommodations, consequently they are more price-sensitive than millennials (Ha 2022).

The tourism sector in Italy contributes a large slice of the national GDP. In 2019, it constituted about 7% of GDP and 6% of national employment, a higher value than in the previous 15 years, being able to count on growing figures thanks to the increased diffusion of online intermediation channels and the sharing economy as well as the competitive advantage derived from the national artistic and cultural heritage (Banca d'Italia 2019; Marasco et al. 2022).

As exhibited by global tourism trends, there has also been a sharp reduction in the sector in Europe in the first three quarters of 2020, the reduction in revenues has been more than 50% compared to 2019. Italy also recorded similar numbers with a 50,9% decline and 192 million fewer presences than in the previous year (ISTAT, 2020).

In 2021, tourism's share of Italian GDP stands at 4.0 %, marking a loss of 3.0 % in the previous two years. Weighing most heavily is the decline in international tourism in art cities, which has been offset by beach tourism driven by strong resident (Marasco et al. 2022). However, according to the UNWTO estimations, it has been forecasted an annual growth of 3,3% of the entire sector until 2030, a year in which are expected 1.8 billion tourist in total (UNWTO 2018a).

Tourism determines three types of impact on economy: direct, indirect, induced.

The first concerns the direct effect of tourist flows on the change in sales, revenues, employment level, tax revenues, and general income level in certain areas. They can then be identified as correlated with the spending levels of tourists.

The indirect impact affects sectors affiliated with tourism, as tourism revenues can be re-spent in other supply chain sectors (i.e., suppliers and service companies).

The induced impact is related to the change in household expenditures of incomes earned from tourism expenditures and thus can affect any sector. The total economic effect is the sum of the three categories of impacts mentioned above (Stynes 1997).

Besides the fluctuations and impact of the tourism sector, it can certainly be argued that tourism is an important means of economic growth and development since it allows to attract international tourists, increases the employment rate, improves the infrastructure, and provides new investment opportunities, coming from abroad as well (Li et al. 2018). However, it is also necessary to take into consideration the dangers and downsides that excessive development of tourist flows can bring about both on the experience of the tourists themselves and on the citizens residing in tourist areas.



## 1.2 Overtourism issue

Thus, tourism numbers have been growing strongly and contribute to the driving force of the local economy; however, the impact that increasing visitor numbers have on residents and the tourist experience should not be overlooked.

Indeed, the awareness of the phenomenon of overcrowding destinations is increasing, especially it is appearing more in the media and scientific discourses; moreover, the majority of tourists are aware of it having had direct experience with it (Szromek et al. 2019).

Such a phenomenon is that of overtourism, which will be explored in more detail throughout the chapter to clearly frame the phenomenon through its description, definitions available to date, and negative implications. Overtourism is a growing concern that is gaining the public discourse and the attention of the media and local politicians.

The term “*overtourism*” can be defined as a neologism, however, it is not a new concept as since the 70’s there has been research about the limits of tourism growth and its carrying capacity (Milano and Novelli, 2019). However, a clear and unique definition of overtourism is not available, for this reason, there have been reported below the most common definitions of this term found in the academic literature, so as to have a theoretical framework of reference. This phenomenon consists of a high concentration of visitors in a specific city, meaning that a massive volume of tourists pours into the most popular location having also a high impact in terms of local resource exploitation (Milano and Novelli 2019). The overcrowding in tourist destinations can be defined as the negative impact that tourist flows can have on the quality of life of local citizens and on the experience of visitors (Goodwin 2017a; UNWTO 2018a). Cheung and Li (2019), described overtourism as a “*massive and uncoordinated influx of tourists to popular destinations worldwide*”. Other authors instead, give a definition that is decoupled from the concept of the crowd but is linked to the feel of visitors and locals that there are too many visitors that could affect the whole experience. Thus, overtourism is not necessarily related to the big cities but depends on individual and personal perceptions of the situation (Verissimo et al. 2020). In line with the previous definitions is that of Namberger et al. (2021) according to which can be labelled as very high levels of tourism that are sought to be countered by demanding limitations on the phenomenon. Peeters et al.’s definition (2018) in the report required by TRAN<sup>4</sup> is more encompassing. In fact, the emphasis is on crossing the threshold of bearability of the impacts of the phenomenon from different perspectives: physical, ecological,

---

<sup>4</sup> European Parliament’s Committee on Transport and Tourism.

social, economic, psychological, or political. Finally, overtourism is the acceleration of growth from the supply and demand side, modifying and having an effect on the natural environment, cultural heritage, social and economic system (Mihalic 2020).

Given all these concepts and definitions, common elements can be highlighted. Overtourism has been mainly described as an issue related to the carrying capacity of a specific location as a massive influx of visitors pours into the same place at the same time. Other key elements are the negative implications of the phenomenon, particularly under the sustainability perspective (i.e., uncontrolled use of natural resources, waste of energy, waste production, etc.), the visitors' experience and the well-being of inhabitants that can be undermined by overtourism.

In order to have a better understanding of the nature of the phenomenon it is useful to analyze the cause that brings tourism, in some cases, to be perceived as negative and the exceeding carrying capacity of cities.

The physiological cause is without doubt the constant increase in the world population that has been an unparallel growth, being able to count on high connectivity and better well-being, which is reflected in the increase in visitor volumes, the expansion of the tourism industry, and the growth of tourist hotspots in popular cities that attract tourists (Milano et al. 2019; Peeters et al. 2018). In fact, the world population in 1960 was 3,03 billion, in 30 years reached 5.25 billion (+73,27%), reaching 7.83 billion (+49,14% and +158,42% compared to 1990) in 2021. A similar trend is shown by the international tourist flows: in 1990 they were 435 million, in 2000 they were equal to 674 million (+54,94%), in 10 years they reached 953 million (+41,39%), and in 2016 reached 1.235 million (+29,59% and + 183,91% compared to 1990) (Breban 2022). To this should be added that in the last decades, we are witnessing a rapid growth of urbanization. Indeed, during the '90s, 43% of the world's population lived in the cities, in 2015 it was equal to 54% and it is expected to continue to increase by 2030 to 60% and by 2050 to 70% (UNWTO 2018). Since the growth in arrivals is more than proportional to population growth, other factors must also be taken into account as causes.

These include the great development of globalization, a buzzword of 1990, which is the elimination of geographical barriers, enabling better communications, exchange of goods, and influences between different cultures but has also made it easier for people to move around. The reasons that brought the acceleration of globalization derive from the arising of 3 main drivers in the same time frame: economic, political, and especially technological improvement (Keller 2002). The elements

that contributed to its development are mainly related to the low cost of traveling and sharing economy platforms.

For example, low-cost airlines have been an important contributor to increasing the number of direct routes globally by 175%, allowing distant locations to be reached more cheaply than in the past, and being able to travel to more destinations and more frequently (Dodds and Butler 2019). The travel efficiency is not only limited on the economic side but is also linked to the reduction of travel time, being able to count on different solutions that are in competition with each other (i.e. high speed trains, airplanes, couches) (Dodds and Butler 2019; Peeters et al. 2018). As can be seen in Fig.2, the global low-cost air carrier market is expected to constantly grow and increase its size, forecasting to reach 254 billion U.S. dollars by 2027 (Statista Research Department 2020).

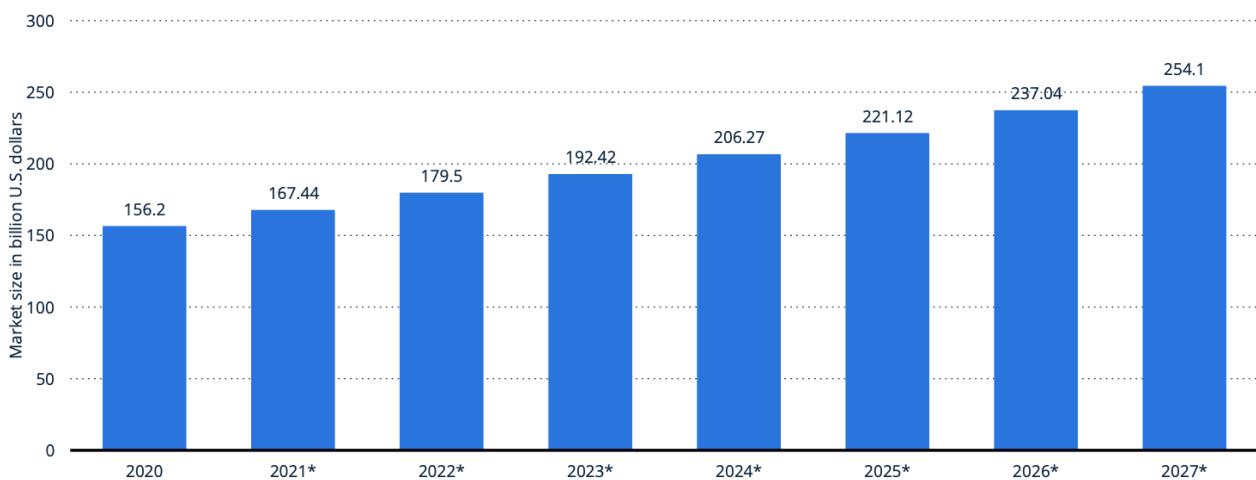


Figure 2 Forecasted size of low-cost carrier market (2020-2027). Statista Research Department 2020.

Regarding the sharing economy platforms, they consist of peer-to-peer platforms characterized by disintermediation, since demand and supply directly meet in the same place, making it easier to find accommodation, even for short time staying, at an affordable price (Atzori 2020).

New international and domestic tourist flows come also from emerging markets that lead to the growing demand for those experiences and it is expected that they will expand their market share by 2030 (European Commission n.d.; Peeters et al. 2018). An example of this is represented by the worldwide tourism expenditures in 2021 where China is in the first position, followed by India which is in the 10<sup>th</sup> position, and Russia in 14<sup>th</sup> (Statista Research Department 2023).

The expansion of the middle class, i.e., individuals who have the economic ability to travel, is also to be taken into account, and it has been estimated that in the five-year period between 2019- 2024 alone, there will be a total growth of 160 million (Dodds and Butler 2019).

Finally, the causes are attributable to behavioral aspects, such as the imitation effect. According to this trend, there is a high imitation of wealth and western tourist behavior from the emerging economies (Capocchi et al. 2019). This is linked to the increased usage of social media, such as Instagram (over 1 billion users), and the World Wide Web which influence the tourists' decision-making process since they can be aware and informed of the major attractions and locations of the moment (Atzori 2020; Dodds and Butler 2019). The result is having created a constant state of Fear of Missing Out<sup>5</sup> among users who are therefore driven to fulfill their needs created by the social media platform (Malani et al. 2020).

### ***1.2.1 Negative implications of the phenomenon***

This phenomenon is particularly common in Europe and has a high influence on the level of the economy and citizens'/tourists' quality of life (Avond et al. 2019).

However, the level of awareness of citizens'/tourists regarding their negative impact on the environment and society is not yet widespread (Szromek et al. 2019).

Instead, it is possible to detect three main categories of negative impact: environmental, economic, and socio-cultural.

- Environmental impact: Environmental preservation is now at the center of the political agendas of most developed states. In particular, goal no. 11 of the SDGs<sup>6</sup>, provides for the construction of cities with respect to environmental sustainability, through the reduction of resource and energy consumption, as well as pollution. In fact, cities, while occupying only 3% of the earth's surface, are responsible for 60-80% of energy consumption and most carbon emissions (ONU Italia 2019). Regarding this first category, it is related to increased resource use and pressure on infrastructure, in fact, increased arrivals mean not only making the local environment overcrowded but resources overexploited (Peeters et al. 2018). Related to that, it is important also to stress the increase in demand for water and electricity, as well as noise and visual pollution, since it is exceeded the carrying capacity of a specific location (Îştin and Turpcu 2021). The negative impact on the natural environment is considerable, as great pressure is placed on it, such as through soil erosion, increased waste, reduced biodiversity, modification of the landscape to ensure facilities, and can create damage to the natural environment, as in the case of coral reef destruction in exotic locations (Sunlu 2003; UNWTO 2018a). For instance, in the Philippines, local authorities have decided to close the island of

---

<sup>5</sup> Fear of being excluded from activities and events in which other people participate

<sup>6</sup> Sustainable Development Goals

Boracay to visitors for six months so that the natural environment can be regenerated. Similar action was taken in Thailand for Maya Bay beach on Phi Phi Leh Island (Kruczek 2019).

- The economic impact of overtourism is very much related to the phenomenon of gentrification. This leads to a change in housing prices and the cost of living, leading to a general rise in prices. A reason is related to the widespread of house-renting platforms as Airbnb or Booking, which have increased the number of offerings and have modified the renting price of residential neighborhoods too (Atzori 2020). In addition, also the retail landscape is affected since rather than local shops are preferred shopping and food shops which attract tourists (Koens et al. 2018). On a macro level, the economies of many countries where the phenomenon of overtourism is present, are increasingly dependent on this sector while others may be sidelined. In addition, tourist congestion (e.g. overcrowded cities or tourists may feel disturbed) could adversely affect the tourist destination in question, resulting in damage to the local tourism-based economy (Peeters et al. 2018).
- Social impact: negative effects include the loss of cultural identity resulting from the different behaviors, traditions, and culture of tourists, as well as the different values brought to other countries. Taking the case of Venice as an example, residents may be inclined to flee the tourist areas in favor of suburban and out-of-town areas; in the example of Venice, in fact, the population has halved to 55,000 in just 30 years (a phenomenon known as Ven-exodus) (Callahan 2018; Peeters et al. 2018). In addition, some forms of tourism can attract misbehavior and crime, reducing the overall level of safety in the city and increasing the level of hostility among the local population (Peeters et al. 2018). In particular, conflicts may arise between tourists and locals, as there are different needs in shared spaces and residents feel that there is a lack of respect for cultural norms by tourists, resulting in an increase of anti-tourist movements in Europe (Almeida-García et al. 2021; Kim and Kang 2020). An example of this is the protests that took hold in Europe in 2017 in San Sebastián, Mallorca, and Venice (Coldwell 2017).

However, there are also important negative implications on the tourists' travel experience since they have to deal with queues and large numbers of people that make visiting locations and monuments more difficult and do not allow them to be fully appreciated, leading to a degradation of the experience.

### ***1.2.2 Overtourism vs. Responsible Tourism***

The phenomenon of overtourism and its negative effects on the population and visitors have been described in detail in the previous sections, however, there is also an opposing current that sees tourist flows as an indispensable opportunity and a resource for local communities.

This is the case of responsible tourism, according to which, tourism can be used as a strategic tool to create a win-win situation between tourists and local inhabitants (Goodwin 2017a). It can be considered a way to implement sustainable solutions within this industry.

The challenge is to manage the continued flow of arriving and, at the same time, to manage the mainstream tourism problems, aiming to enhance the positive aspects and reduce the negative ones (Goodwin 2016). From a theoretical point of view, responsible tourism can be considered as the set of actions, along with the awareness of all the stakeholders, related to a sustainable journey according to the three sustainability pillars of environment, local community, and economy (Mondal and Samaddar 2021). Responsible Tourism moves in the opposite direction to tourist overcrowding and thus aims to safeguard the authenticity of a destination, as the uniqueness of the local culture and the environment of a destination. In particular, tourists can be considered as responsible, those people that seek information about a place before their arrival and use them to have a better understanding of the local context in order to be able to integrate and respect it (Mondal and Samaddar 2021). In this way, it is possible to avoid the natural environmental and social repercussions of overtourism, proving to be more like a travel approach than a typology of tourism literature. In other words, according to Responsible Tourism, it is, therefore, possible to intervene at the behavioral level of visitors and make changes so as to avoid the negative effects of the output of the tourist product (Sica et al. 2021). The aim is to enhance the quality of life of local citizens, improve the tourist experience and create great entrepreneurial opportunities related to this sector (Sica et al. 2021).

### **1.3 Metrics for measuring the impact of tourism**

Given all these premises, in order to have a more precise understanding of the size of the overcrowding phenomenon it is possible to use some metrics and indicators that are able to measure its dimension and impact. In this way, ad hoc solutions can be implemented for the targeted resolution and proper management of the aforementioned problem.

Traditional metrics rely on biased analyses that do not take into account the important socio-cultural, economic, and environmental implications, as well as the effect it has on the experience of tourists and the everyday lives of citizens.

The following are some examples of traditional metrics:

- Tourists' arrivals: it consists of a simple census of the number of tourists arrivals, that can be compared with other years.
- RevPAR (Revenue per Available Room): It is a performance indicator of the hotel industry. It consists of a ratio between the room revenue divided by the number of rooms available in a specific period of time (Costa et al. 2022; Lee et al. 2019). However, it does not consider the expenses and the revenues coming from other operating activities (for example Food & Beverage). For this reason, the GOPPAR (Gross Operating Profit per Available Rooms) index can be used as an adequate substitute that solves the two limitations previously mentioned (Lee et al. 2019).
- Tourism Gross Domestic Product: it represents the contribution of tourism toward the total GDP, representing the percentage that is attributable to that industry (Dupeyras and MacCallum 2013).
- Tourism intensity: it is the ratio between the number of overnight visitors and the number of residents. In this way, it is obtained the per capita level of visitors for each resident. In 2017 Macau got 28 visitors for each resident, in Iceland the ratio increased by 231% in the period between 2012-2017, moving from 2 to almost 7 visitors per person. Also, Malta and Bahrein registered an increase in the same time frame (Vagena 2018; WTTC 2018). What is demonstrated through this ratio is the pressure of tourism on different cities that depends on the size of the cities (Vagena 2018).
- Tourism density: this ratio represents the relationship between the annual number of overnights visitors per Km<sup>2</sup> (Peeters et al. 2018).
- Inbound tourism revenues per capita by source market: This information is useful to track the growth of tourism revenues divided by the market of origin, analyzing differences among the years (Dupeyras and MacCallum 2013).

However, such metrics have limitations since they mainly take into account quantitative aspects. In fact, overtourism can be monitored by taking into account objective metrics, while more qualitative aspects, such as misbehavior and population impacts, are more difficult to measure (Koens et al. 2018).

### 1.3.1 Doxey Irritation Index

Although traditionally the goal has always been to increase the number of tourists and metrics are used to track the quantitative aspect, less attention is paid to qualitative effects such as balancing the tourists' growth with disturbing factors of visitor-resident (Cheung and Li 2019).

In this regard, the Doxey Irritation Index model, considered one the most important tools for the visitor-resident relationship, can be employed in order to better analyze the negative sociocultural impact in terms of local citizens' irritation. It can be seen as a framework through which the change of citizens' attitudes over time is visible (Cheung and Li 2019). The model contains several stages in which there is a direct relationship between the increased impact of tourism and the negative reaction of locals toward it (Cheung and Li 2019; Haw et al. 2015). According to the model, residents' attitude toward tourism passes through the following stages, characterized by progressive annoyance as the number of tourists increases: Euphoria, Apathy, Irritation, and Antagonism (Fig.3)(Haw et al. 2015).

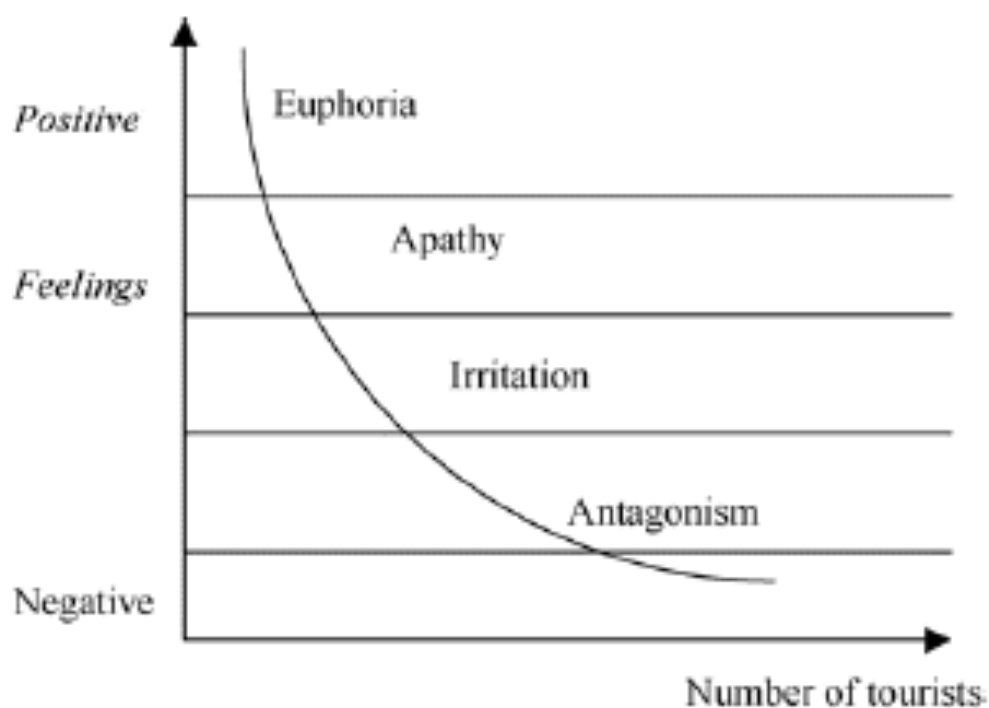


Figure 3 Doxey Irritation Index Model. Haw et al. (2015).

The main assumption of this model is that negative sociocultural impacts lead to the irritation of local inhabitants and the deterioration of their life quality (Portolan and Pavlic 2014).



In the first stage (euphoria), the number of tourists is low, and they are well-received and welcomed. Thus, the feeling is positive since it corresponds with the initial phase of tourism development in the location in question.

The second step is characterized by the feeling of apathy as the number of tourists increases and formal relationships between citizens and tourists begin to be established and they begin to be seen as a monetary and investment resource.

In the irritation step, locals begin to see the downsides of tourism, beginning to develop negative feelings toward them because of the increase in their arrivals as well as the competition for resources.

At this stage, the industry has almost reached saturation and the infrastructure needs expansion.

The final level is one of antagonism, where tourists are held responsible for everything negative that happens, and this sentiment is also expressed through public demonstrations (Portolan and Pavlic 2014; Zaidan and Kovacs 2017).

The last two stages can be considered as the direct sociocultural implication related to the overtourism phenomenon and are characterized by negative feelings.

Through the model, it is possible to understand how residents' attitudes change, and this information can be used to implement tourism management practices (Schönherr et al. 2023).

However, this model has limitations since it is not based on empirical studies and offers no solution to remedy the problem. It has also been criticized for being a simplistic model that does not take into account the multidimensionality of tourist impact as well as the complexity of the host community (Portolan and Pavlic 2014). In addition, even if the model stresses the complexity of the changing attitude of residents toward tourism there is not a clear explanation and evidence about the correlation between tourism impact and residents' attitude (Moore 2015).

### ***1.3.2 Tourism Carrying Capacity Theory***

The Tourism Carrying Capacity Theory (TCC) was developed as a response to the perception that tourism cannot keep growing steadily in a specific area without any negative implications. The theory has its roots in the 18<sup>th</sup> century and had different applications over time, for example, it was used in the ecology field to compute the number of plants and animals that a specific area can carry (Pásková et al. 2021). However, during the '60s was applied to tourism theory in order to reduce the influx of visitors attracted by tourist destinations and attractions (Navarro Jurado et al. 2013).

The TCC consists in defining the total number of visitors that a specific location can contain before being saturated (physical carrying capacity), before causing harm to the environment (environmental

carrying capacity), or before the visitor's experience is degraded (psychological carrying capacity) (Brown et al. 1995).

There is also evidence indicating that there is a close relationship between maximum carrying capacity levels and changes resulting primarily from tourism (Pásková et al. 2021). This means that when maximum containment levels are reached, changes in the target environment can be detected. The capacity of each destination depends on the structure of the destination systems and some parameters such as the stage of the life cycle, size, and destination type just to cite some on them (Pásková et al. 2021).

A trade-off emerges from this situation between the advantages, especially economic benefits, derived from tourism and the negative impact resulting from high visitor flows (Brown et al. 1995).

From a theoretical point of view, it is possible to implement ad hoc solutions when the carrying capacity of a location is exceeded. Thus, technological advancements and breakthrough innovations had already raised the carrying capacity in the past and technological optimists claim that technology is an unlimited source that enables counteract natural limits and negative implications on it (Abernethy 2001). It means that in order to increase the carrying capacity of a destination it is necessary to reduce its negative impacts on it and not only provide new physical spaces and facilities where some of the tourist streams can flow out. Some such solutions involve social and behavioral interventions. One example is to intervene in educating tourists so that they can reduce their impact on the environment and the local community. Another solution might involve a form of entry taxation that would improve the finances of the most popular resorts by being able to use them to protect their resource base. Other solutions involve containing the number of visitors to certain tourist areas in order to keep the resulting negative effects under control. Government support with a coordinating and enabler role from a bureaucratic and political standpoint must be encouraged for the implementation of such measures (Simon et al. 2004).

The difficulty of the theory lies in trying to identify a representative number of carrying capacity of each destination, as one may not have a specific and intrinsic capacity since the same piece of land can have a variety of uses and, consequently, its capacity varies accordingly (i.e. potentially, in the same space may arise either a stadium, golf course or a natural reserve with different carrying capacity) (Brown et al. 1995; Pásková et al. 2021; Simon et al. 2004). Another limitation is that there is not an accepted universal definition of carrying capacity and there are different social levels of

tolerance (Simon et al. 2004). In fact, the carrying capacity concept is dynamic and changeable over time, which means that it depends also on the speed of change (Simon et al. 2004).

### *1.3.3 Limits of acceptable change theory*

Given these weaknesses and the need to adapt to the changes in nature within the tourism industry, the Limits of Acceptable Change (LAC) provides a valid alternative to the TCC, since it is not just based on the number of visitors, but planners can use it in order to manage the issue (McCool 1994). The theory brings a shift from a numeric and quantity perspective to a more qualitative one, based on the perception that there is a limit to the changes that occur because of tourism (Komsary et al. 2018; Simon et al. 2004) LAC can be considered as an assessment of the extent to which residents are willing to accept and tolerate the effects of tourism; for example, in difficult financial periods, locals may be more permissive and tolerant toward tourists for the economic benefits that arise from visitors (Szromek et al. 2020).

It is possible to identify 9 stages related to the application of LAC and assess the changes in an area.

- 1) Identification of the main issues that can be used by all the stakeholders to have a broader view of the problems and take decisions about the action needed.
- 2) Identification of the main available categories of recreational opportunities.
- 3) Selection of parameters and indicators (from the biophysical and social environment) related to resources and social conditions for each parameter identified in the previous step. For example, the percentage of waste production attributable to tourism activity; tourism density; percentage of urban areas lost due to tourism.
- 4) Elaboration of current levels of resources and social conditions so to decide on actions to be taken based on them.
- 5) Definitions of standards for social and resource indicators so they can be used as benchmarks for assessments.
- 6) Identification of alternatives to allocate different management solutions.
- 7) Definition of management practices according to the status of acceptable change.
- 8) Evaluation of usage of alternative actions.
- 9) The actions are selected, implemented, and monitored.

The main aspect of this approach is that both quantitative and qualitative aspects are encompassed, and the scheme is useful to decide the managerial actions needed to solve the issue (Komsary et al. 2018).

Overall it is possible to claim that this 9 steps approach is useful to identify the main decision-making moves from a managerial perspective and aims to enhance the social and environmental condition of a specific place (Sullivan et al. 2009).

However, the main difficulty of this model is to individuate and agree on a number of basic elements from stakeholders (Dragovich and Bajpai 2022). Particular care must be taken in selecting the indicators to be considered, which must be: relevant, easy to understand, data must be able to be collected easily and inexpensively, and easy to manage (Siikamäki and Kangas 2009). Another danger related to the choice of indicators is that similar ones are chosen, generating data overlapping and data redundancy (Siikamäki and Kangas 2009).

## Chapter 2 – Available solutions against Overtourism

### 2.1 Available and currently developed solutions to counteract overtourism

Metrics can be used as a means of measuring the phenomenon and then attempting targeted problem solving by relying on accurate data. This is especially true for quantitative metrics, since they are based on objective criteria, while qualitative metrics require more caution.

It is important to emphasize that the phenomenon of overtourism does not depend on the rapid global expansion of the tourism industry, but concerns poor and incorrect management of such (Phi, 2020).

For this reason, it is necessary to approach strategies and practices related to the implementation of sustainable tourism, namely respecting the environment, traditions, and local cultures (Statista Research Department, 2021).

In this regard, the Italian NRP<sup>7</sup> also advocates for such practices so that this sector can be revitalized and enhanced. In fact, it provides for the allocation of nearly seven billion euros for the category "Tourism and Culture" within Mission 1, with the aim of creating a 4.0 tourism that can enhance and preserve the Italian national territory (i.e. creation of platforms for the national territory or the enhancement of alternative routes and attractiveness of villages) (PNRR 2021).

Currently, management practices and technologies already exist to counteract the problem of tourist overcrowding, aiming to balance the rights of travelers with those of the residents in order to reach win-win solutions. In fact, reaching sustainable tourism is possible only if are considered both tourists and locals in developing and managing solutions such as greater community engagement, careful planning accordingly to carrying capacity and seasonality or congestion management (UNWTO 2018b). An example of this is the organization of city experiences for residents and visitors, increased communications with local stakeholders, and dispersion of visitors to different times of the year or to neighboring cities to be enhanced (UNWTO 2018b). More generally, it is possible to suggest solutions for greater planning and management measures that take into account both parties and that could have a positive impact on the environment (i.e., reduction of greenhouse gas emissions) (Szromek et al. 2019).

From a managerial perspective, a solution that can have a positive impact on the local population, so as to counteract the negative ones, could be the collection of a direct or indirect tax from tourists (such as lodging tax, city tax, departure tax, sales tax). In general, as suggested by the economist

---

<sup>7</sup> National Recovery Plan

Pigou, taxation, subsidies or government intervention can be useful tools to counteract negative externalities (Nepal and Nepal 2021). It was found that around 22 countries have introduced tourism tax to use the gains for various solutions to the problem (Florida 2018).

Analyzing these aspects from an economic point of view, it can be found that the negative implications of overtourism (e.g., price increases in tourist areas; loss of cultural identity; environmental, noise, and visual pollution; gentrification; etc.) result as social costs on local residents that are not covered by the private costs of activity (i.e., the price that tourists pay) (Nepal and Nepal 2021).

Specifically, according to economist Pigou, inefficiencies that result in negative externalities can be corrected through taxation of the offending producer (i.e., tourists) (Nepal and Nepal 2021; Vernego et al. 2008). The taxation could also be modular, changing seasonally, according to the level of tourists in different periods of the year (Seraphin and Ivanov 2020).

According to Seraphin and Ivanov (2020), destinations need to focus on maximizing the triple bottom line (profits, people, and planet) and not the number of tourists. This objective can be achieved using management revenue tools, for example, price discrimination and dynamic pricing, that allow making travels more expensive and discourage mass tourism.

From a logistic and physical point of view, this phenomenon can be reduced by limiting the number of tourists that can have access to a given area or city; however, this approach is more difficult to apply since tourism is an economic resource and those who work in it would never want to see their revenues decrease, just as reducing the physical infrastructure and public transport would also harm the residents who use it (Butler and Dodds 2022).

Despite the effects mentioned above, tourist flows can be reduced through governments and local administrations that may grant fewer tourism-related activities, such as reducing the number of visas granted, reducing the allowable size of cruise boats, reducing the number of flights at local airports (Seraphin and Ivanov 2020). For example, in Iceland, tourism authorities have begun a marketing campaign aimed at promoting lesser-known cities, trying to divert tourists away from the capital Reykjavik. In addition, the construction of new hotels in the city center has been banned, introduced a bus service for tourists to the beaches increased controls against unregulated rentals. Another example is Amsterdam, where the focus is on limiting long stays and the construction of new hotels has been banned since 2005. In addition, to avoid flooding the streets with large groups of people, the number of people that each guide can have at the same time has been reduced from 60 to 20 (Gowreesunkar and Seraphin 2019).

It is, therefore, possible to mitigate the phenomenon through monetary and non-monetary tools with the aim of trying to provide the local community with economic returns that can compensate for the reduction in quality of life and correct the resulting negative effects through levers operated by governments and public institutions.

However, it should be kept in mind that there is no universal solution to the problem but it is necessary to evaluate and weigh the options on a case-by-case basis in each city (Pechianer et al. 2020).

Below there have been reported the main categories of currently available solutions to counteract the overcrowding phenomenon and underlining main characteristics and drawbacks: Marketing, Government intervention, Smart & Technology solutions.

## **2.2 Marketing**

This category refers to the market analysis on which the realization of tourism products is based (Pasquinelli and Trunfio 2020).

From a general point of view, it consists of a set of communication and enhancement activities to deliver value to customers and clients. The downside is that marketing, from a negative perspective, can be seen as a tool that encourages excessive and unnecessary consumption, with high persuasive power that can also be used for negative purposes, such as greenwashing, to mislead one's interlocutor (Font and McCabe 2017).

In particular, marketing activity can generate important results and persuade consumers, especially in the short term, making it a key strategy within various businesses, through the implementation of the conceptual framework of the 4Ps of the marketing mix that constitute the translation of marketing planning into actions and correspond to the following levers: product, price, place, promotion (Brooks and Simkin 2012; Chai Lee Goi 2009; Dominici 2009).

However, marketing can be used in relation to sustainability and tourism so that levers and tools can be leveraged to achieve positive results in terms of behavioral change, visitor awareness, and designing more sustainable tourism products, aiming for a better tourism experience and livability for citizens (Font and McCabe 2017).

The collaboration of these two aspects might seem counterintuitive as marketing refers to a competitive strategy, short-termism, and profit centered which seems in contrast with sustainability that is based on a long-time perspective and on the creation of a social advantage. However, it is possible to operate marketing levers on consumer behavior and consumer awareness so as to do the

interests of all stakeholders from a sustainability and long-term perspective (Font and McCabe 2017).

Given the aforementioned environmental and sociocultural issues related to tourism reported in Chapter 1, a form of social marketing from no-profit organizations or governments, can be used to increase awareness among tourists, change behaviors and attitudes aiming to reduce the impact of tourism (Pomering et al. 2011).

Since tourism is a complex combination of services, products, and activities, marketing is particularly efficient toward it, allowing to identify and differentiate it from competitors, implement its strategic objectives, and achieve a competitive position in the market by leveraging the marketing mix to allocate the tourism product and match it correctly with targeted consumers (Cirikovi 2014).

However, one criticism that can be made is the lack of versatility of traditional marketing frameworks, such as the marketing mix that could be supplemented by additional elements, as a result, new strategies are needed for the realization and enhancement of the new market needs that are emerging, particularly that of sustainability (Pomering et al. 2011).

Another risk relates to greenwashing, that is, using marketing tools related to sustainability as a mere means of propaganda to attract tourists by leveraging the apparent sustainability of destinations while in reality no such measures are taken; in this way, it is possible to attract travelers willing to pay more for eco-friendly trips with a lower environmental impact (Self et al. 2010).

It is remarkable that a way to counteract overtourism is based on the education of visitors through the combination of communication tools and marketing strategies. In this way, they can increase their awareness of the effects that arise from their behavior and the effect on the environment and sociocultural level (S raphin et al. 2020).

The overtourism education would allow having a better understanding of the public carrying capacity of a destination, minimizing the negative effects, encouraging more conscious behavior, providing a solution for the behavioral implications (S raphin et al. 2020). Generally, marketing is used to change the perception of destinations and not the behavior of those who visit them, however, efforts must be made to bring about change at the social and awareness level so as to achieve sustainable forms of tourism that has education and training as key ingredients (S raphin et al. 2020).



Other solutions, briefly proposed in the next subsections, include: marketing of alternative destinations, rebranding destinations, and demarketing (Gerstner et al. 1993; Pasquinelli and Trunfio 2022; Séraphin et al. 2019).

### ***2.2.1 Rebranding, repositioning, and marketing of alternative destinations***

Destination branding plays an important role in enhancing the value of a destination but at the same time encourages the phenomenon of overtourism. Such a tool, given the high potential to trigger consumer actions, can be used in a reverse way, namely to reduce the overcrowding in the main cities (Séraphin et al. 2019).

Through rebranding and repositioning activities, it is possible to give greater visibility and enhance certain aspects of locations that are experiencing situations of under-tourism in some areas. An example of such a practice is the island of Cyprus, a location known for its beaches and sea, but less known for more traditional and authentic alternatives (Litavniece et al. 2021). The result of such an example is that tourists, if other aspects of the island are enhanced, may also decide to visit Cyprus at different times of the year and in different areas than usual, allowing for a more homogeneous distribution of tourist flows throughout the year and across the territory.

In addition, through the rebranding of destinations, it is possible to leverage the aspects demanded by the market and build an appealing image for tourists, highlighting new locations that are able to offer them (Séraphin et al. 2019).

In addition, localities that are facing situations of under-tourism as a side effect of overtourism can capitalize some niche markets with specific targets leveraging the correct marketing levers (Séraphin et al. 2020). In addition, promotional tools can be used, emphasizing the safety and quietness of the location, so as to foster the demand for nature and landscape tourism with a specific target group of tourists (Blázquez-Salom et al. 2021). Traditional marketing strategies can be used for this purpose or the latest, such as influencer marketing, which is able to rapidly raise users' awareness and modulate their behaviors through social media (Femenia-Serra and Gretzel 2020); emblematic is the case of Braies Lake, a natural resort located in the Dolomites alps, Bolzano province, near the Austrian border. The now-famous resort has received extremely high visibility through an Italian television series and posts that have gone viral on Instagram, beginning to attract a large number of tourists (Cagnina et al. 2019). Another example is the 2020 visit of famous Italian influencer Chiara Ferragni to the Uffizi Gallery in Florence. After publishing the post on Instagram, the number of visits by young people under the age of 25 increased by 24.9 percent, underscoring the power of the current tools at disposal (Foschini 2021).

The result of these activities is to offer a greater variety of destinations and a greater range of choices related to the type of tourism to visitors who could then spread out among a greater number of destinations and at different times of the year.

Instead, for destinations suffering from overtourism, an alternative is a repositioning strategy that would allow them to continue to attract visitors but would reduce their volumes, as only tourists in line with the required target audience would go there (S raphin et al. 2019).

### ***2.2.2 Demarketing***

Demarketing is an unorthodox strategy that can be used to counteract and mitigate the negative effects of overtourism on a destination (G l sen et al. 2021). This strategy aims to discourage consumers from buying and demanding since it follows the opposite principle of marketing of creating utility and exchanges (Gerstner et al. 1993). The decision to use such a strategy depends not only on the destination's management, but on the long-term vision marked by sustainability and dynamic processes that stakeholders are eager to implement (Sharma and Hassan 2021)

Three types of demarketing can be identified, which can be differentiated according to the extent of the action:

- General demarketing: when the general level of demand is reduced by the seller.
- Selective demarketing: the demand is discouraged just from some targeted consumers.
- Ostensible demarketing: it is based on the artificial or perceived shortage of a product or service in order to make it more appealing to consumers (Gerstner et al. 1993).

The risk of this strategy is to produce an over-reduction of demand or create long-term damage to the relationship with customers, in particular with selective demarketing (Lawther et al. 1997).

As with any product or service that uses marketing as a strategic lever, demarketing can also be applied to the tourism product by attempting to discourage demand in the most in-demand and crowded areas and apply targeted marketing actions to areas that are less frequented to be enhanced such as villages. Demarketing is so a policy tool useful for a tourist destination to reach sustainability and try to respect the carrying capacity of a destination: for example, such practice has been used in the Arches National Park in Utah where the reduction of visitors was a priority (Beeton and Benfield 2002). In fact, one of the main reasons for demarketing is related to sustainability and managers of overcrowded tourist locations, looking at the long-term, it would be preferable to reduce the number of visitors even if it implies a decrease in profits. Another related reason is targeting and segmentation,

thus a destination could be made more appealing for a specific market segment and it would work as demarketing for another segment. Demarketing could also be used as a lever to reduce a seasonality effect, providing a more regular tourist flow (Gülşen et al. 2021).

For the realization of demarketing, there are some levers that can be implemented:

- Price: it is the most effective lever, as allows to manage the demand level discriminating or discouraging use. However, the public sector has a low influence on it in cases in which there is no public ownership, but it is a powerful tool in the hands of the commercial sector. In the tourism sector, this lever is used especially in flights and hotels since they face capacity constrain and need to increase prices to reach the supply-demand equilibrium (Sharma and Hassan 2021).
- Regulation: it is located at the institutional level, with greater power than local actions. This means that institutions, through this leverage can play an important role in the realization of sustainable tourism.
- Permits: for the regulation and preservation of natural and man-made resources, the use of permitting and more specifically use restriction can be used. Another example is reservation systems for tourist attractions and popular places, allowing for a more orderly management of tourist flows as it is restricted.
- Promotion: this lever, like pricing, is also particularly influential on the level of demand because it relies on various persuasion techniques. Such methods can also be used in demarketing, resulting in shifting demand at times of low turnout. In addition, at times of high turnout, the task of promotion is to either discourage visitation at certain times or raise awareness relative to excess demand and the fact that the tourist experience could be damaged or compromised. Such a strategy has been used by tourism authorities in Venice as an attempt to discourage visitation to the city, defining it as being overrun by tourists to the detriment of the city's physical and cultural beauty. However, this demarketing strategy has not had the desired effects (Beeton and Benfield 2002).

For these reasons, the conscious incorporation of demarketing as a tourism sector marketing strategy is also deemed necessary to proactively prevent problems that might arise with overtourism, especially for destinations struggling with mass tourism and that want to realize sustainable tourism forms (Beeton and Benfield 2002; Gülşen et al. 2021).

However, it is necessary to underline that has been conducted little research on demarketing applied to tourism sector, probably because marketers aim to increase demand and maximize profits (Sharma and Hassan 2021). In fact, an important risk, especially if price-based levers are used, could have

major negative implications on visitors and especially on the level of revenues (Beeton and Benfield 2002). Furthermore, although demarketing has been successful in health care, in tourism it is not always consciously used as a tool for managing tourism supply and demand (Beeton and Benfield 2002)

The implementation of such a strategy is also difficult to implement and ineffective in open-access public areas, which is why demarketing is useful for reducing tourism pressure on more vulnerable natural areas that need to be safeguarded from being damaged (Sharma and Hassan 2021). In fact, although at first glance, any tentative to reduce demand may be seen as confusing or illogical by consumers, it is considered a valuable solution when pursuing the restoration of acceptable limits or green objectives (Armstrong Soule and Reich 2015).

Overall, the strategy has the objective of generating a behavioral change in people during the decision-making process, in favor of a healthier and more sustainable way of consumption of the tourism product, such as encouraging the use of public transport (Armstrong and Kern 2011), but it has to deal with the implementation difficulties and the economic consequences of it. In particular, in order to be effective, it must go beyond traditional demarketing strategies, aiming for a long-term perspective, using educational tools, and be engaging to a wide range of stakeholders (Sharma and Hassan 2021). Finally, some negative aspects, such as the impact on revenues, could be dealt with by taking into consideration that demarketing is a branch of marketing and therefore the marketing mix can be altered to maintain a balance between economic aspects, sustainability, and visitor numbers (Beeton and Benfield 2002).

### **2.3 Government policies and interventions**

As said before, the pressure of tourism on urban areas, due to short-term rental, cheaper accommodation, and new marketing tools as social media, has brought to the attention of governments that need to address the problem in order to reduce negative consequences of social (e.g., loss of cultural identity, lower quality of life of citizens, increased crime), environmental (e.g., waste production, noise, and visual pollution), economic (e.g., gentrification, increased housing costs) (de la Calle-Vaquero et al. 2021).

Thus, interventions are needed to address the trade-off between tourism benefits, especially in economics and employment terms, and the pressure and congestion in urban centers (de la Calle-Vaquero et al. 2021). Indeed, over the years, there have been numerous attempts by government authorities to find solutions to the problem. For example, attempts have been made to regulate the

housing market to prevent residential housing from turning into short-renting businesses, just as congestion in urban centers is an important item on the agendas of public authorities (Zemła 2020). Local authorities in cities should not only be limited to using traditional strategies used in natural destinations, but ad hoc tools designed for cities should be used. However, in order to have positive results, tourism policy reforms are needed that aim to optimize tourist traffic (Zemła 2020).

The following are the main actions that governments can proactively take to reduce the phenomenon of overtourism.

- Urban planning: it consists of the use of city-level policies to curb the phenomenon of overtourism through the physical planning of cities that is organized by local governments. Such planning is fundamental to shaping a place as a tourist destination, yet tourism has only recently been seriously considered in planning and has led to difficulties in organizing urban configurations for the optimal management of tourist flows (de la Calle-Vaquero et al. 2021). An example of this comes from United States, where zoning is particularly used to sharply divide different neighborhoods and preserve their residential aspects and authenticity from the more tourist ones (de la Calle-Vaquero et al. 2021). However, this tool is not always usable, as through the emergence of short-time renting platforms, accommodations for tourists have sprung up in many private neighborhoods (Celata and Romano 2020).
- Short time renting regulation: for this reason, greater regularization and policies for short-term rentals could be a solution since accommodations posted on brokerage platforms such as Booking or Airbnb are residential apartments and are not subject to specific regulation that defines their criteria, mode of use, and any limitations. In addition, there is a lack of tools for control and monitoring that would be possible with new zoning regulations (Celata and Romano 2020).
- In this regard, it was necessary to take action on the negative externalities arising from short-term rental, also considering the growing awareness of the urgency of such action (Marques Pereira 2022). However, the actions to be taken must be different from those implemented until now, that is, focused on short-term to fragmented, with difficulties in monitoring the effectiveness of the actions taken (Moreno-Gil and Coca-Stefaniak 2020).
- From deepening knowledge of this new market, it is possible to reduce housing market pressure in urban centers, where prices are rising and supply for residents is insufficient, by updating longstanding regulatory approaches according to the current needs (de la Calle-Vaquero et al. 2021; Lindsay 2021).

An example of a regulatory approach related to short-term renting platforms can be based on three solutions: full prohibition, *laissez-faire* approach, and limitation.

Prohibition consists in banning short-term renting, but it would have a strong and negative economic impact; *laissez-faire* does not include concrete measures to curb the problem, however, commissions could be obtained on the brokerage activity of renting platforms; finally, limitations could allow the reduction of the amount of short time renting accommodation or the amount of times that an accommodation can be rented in a year. In alternative, limitations can be related to the density of accommodation in a specific location or confine accommodation in a determined zone of the city (Nieuwland and Melik 2020).

- Other tools: in general, part of tourist flows is only related to visa issuance, so more control, limitations, or fee requirement for relative issuance could help reduce tourist flows (Majdak et al. 2022). Also in this case, the downside is the damage to economic activity in the tourism sector.
- In addition, some art cities are also considering the use of more radical solutions, such as the implementation of closed city numbers so as to respect their carrying capacity, control tourist flows, and reduce their negative impacts on residents as well (Cammelli 2015; Corriere della Sera 2021). Alternatively, in cases where admissions can be easily controlled, one solution might be for the government to increase the cost of visitors so as to reduce demand to levels closer to those of supply (Frey and Briviba n.d.). In this way, extra-revenues from tourists could be used to preserve the sites and reinvest them in the tourism sector (Maurer and Siller 2019).

Finally, an original alternative that would increase supply without decreasing tourist demand is to faithfully replicate monuments, archaeological sites, and amusement parks in new locations other than the original one. In particular, in the case of historical sites, it is possible to have a faithful reproduction of how the site originally appeared, which is an additional and distinctive element to the original site. Although the creation of such structures requires great effort, as well as finding suitable locations for their implementation, it would be possible to reduce the pressure on the original locations (Frey and Briviba n.d.).

In general, the downside is that there is a need to balance the interests of different stakeholders, particularly tourism operators, and the quality of life of citizens. In fact, the former would see their activities downsized and more regulated, resulting in reduced economic revenues for the sector since, through such a strategy, it is difficult to find the right compromise between the parties involved.

Moreover, these are difficult operations because policies related to counteraction with overtourism are not yet widely implemented and theoretical background is lacking (Zemła 2020).

### ***2.3.1 Practical case studies in major tourist cities***

Given the strong pressure of tourist flows on major urban destinations, the agendas of municipal governments have begun to take the problem of tourism seriously, trying to find solutions to the negative effects of tourism. This is an issue that is widespread internationally and has already provoked in the 1990s some reactions in several countries such as Italy, Germany, Malta, Spain, and France (Milano 2018). Examples of some major European destinations are given below.

#### *- Venice case*

The coexistence of the city of Venice with heavy tourist flows and its impacts on the city goes back as early as the mid-nineteenth century generating local people's discontent, so much so that today more and more Venetians are deciding to leave their city and move to neighboring areas (González 2019; Hristov and Planning 2021). Venice is an Italian city with around 250.000 inhabitants which attracts more than 5 million tourists each year and is Italy's second largest visited city and is estimated to continue to grow (Bertocchi et al. 2020; ISTAT 2023). Given the high ratio between tourists and residents, the local governments have started in year 2014 a campaign under the label of “*Detourism*” aiming to promote alternative routes for tourism, spending 7000 euros on the project. The year after, the budget was doubled, meaning the greater attention that the topic is gaining year after year (Bertocchi et al. 2020).

The local government between the 1980s and 1990s attempted to solve the gentrification phenomenon by restricting the development of accommodation activities, but this only encouraged excursionism and new hotels and accommodations have been built in areas outside Venice at more competitive prices (Bertocchi et al. 2020).

As mentioned in section 1.2.1, the negative implications of overtourism issue are bringing local citizens to protest against tourism flows; an example of this is represented by the one labelled “*No Grandi Navi*” (i.e., No Big Ships) during which the *Giudecca* Canal was blocked by locals with small fishing boats in order to avoid the passage of six cruise ships (Hardy 2019). The aim is to safeguard the equilibrium of the lagoon since it is a temporary natural phenomenon that would have been deleted without adequate security measures and cruise tourism is responsible for negative implications such as alteration of the environment, pollution, and noise (González 2019; Hardy 2019). Furthermore, *Marittima* docks in Venice are not sufficient for all the cruises, thus, also the one in *Riva dei Sette Martiri* has been used; this latter, is particularly close to housing

resulting in disturbance to those who live there. A 2004 agreement stipulated that only 7 times a year cruises could dock there, nevertheless, such agreement has been repeatedly violated (González 2019).

However, the most recent public interventions have introduced a ban on larger cruise ships exceeding 25 thousand tons entering the lagoon (de Forcade 2022). Work has also been underway in recent years to upgrade facilities to allow cruise ships to dock safely in areas where the impact on citizens would be greatly reduced, such as the creation of widespread landings (de Forcade 2022).

Another measure that local governments can implement is to increase the tourist tax by up to 10 euros per night, however, only a few cities, where the number of tourists exceeds the number of residents by a factor of 20, benefit from this measure (D'Ambrosio 2022). The proceeds are used for interventions to support tourism and also, by increasing costs, could result in reducing the demand for tourism goods.

Another measure that came into effect in 2023 concerns the purchase of a ticket to access the city. Specifically, the ticket must be purchased by those making "*hit-and-run*" visits, that is, visiting the city during the day, while for those staying overnight, there is no additional payment beyond the tourist tax. The aim is to regularize tourist flows and increase the quality of tourists, favoring those who stay for longer periods of time (Bottazzo and Pasqualetto 2022; ilSole24ore 2022).

#### - *Measures taken in other cities*

As anticipated, the phenomenon of overcrowding is also widespread in various tourist locations. In Italy, it is particularly prevalent in cities such as Florence, Rome, and the Cinque Terre, and several solutions are being put in place by public governments.

In the case of Florence, the "*Feel Florence*" smartphone application has been launched, which consists of a handy guide to enhance and sponsor different activities for the city, lesser-known areas, and allows for the avoidance of areas with high tourist density, allowing for an improved overall visitor experience. The latter aspect turns out to be particularly useful and makes use of calculation systems based on arrival forecasts, access to the public Wi-Fi network, and especially cameras, while fully respecting privacy (Fattucchi 2020).

As for the Cinque Terre, they comprise five villages located on the Ligurian coast (Corniglia, Manarola, Monterosso, Riomaggiore, Vernazza) that draw tourists from all over the world, with an increase in 2023 of 15% over the number of tourists in 2019, jeopardizing the fragility of those



lands (Bompani 2023). For this reason, local mayors are calling for ad hoc legal tools to effectively intervene and protect the natural heritage (ANSA 2023). Although still debated at the time of writing the concern of closed numbers, the local government is inclined to reject this option but would prefer a greater distribution and better planning of tourist flows (Bertuccio 2023). This hypothesis is also being pursued in South Tyrol, a well-known tourist resort in northern Italy that attracts tourists at different seasons of the year, where they want to include a cap on available beds, as there are more beds than inhabitants in multiple localities in the area, resulting in increased living for citizens (Angelucci 2023).

Measures to combat overtourism have also been taken in the rest of Europe. For example, some cities such as Copenhagen have introduced some aggressive policies for the distribution of tourists, as well as banning the opening of new bars and restaurants (Goodwin 2017b; Zemła 2020).

Amsterdam is another heavily affected city, where it is experimenting with real-time display of wait times for the city's major attractions on its website. The Dutch city also has an app that sends notifications and alerts to users to warn them of waiting times and suggests alternative routes. The app also features a system using AI that suggests alternative destinations in line with users' social profiles by leveraging data from cell phones and motion-sensing cameras (Callahan 2018).

In addition, the beach area of Zandvoort, located in the proximity of the Dutch capital has been renamed Amsterdam Beach to distribute tourists by attracting it to areas outside the city as well. In this regard, the range of City card have been extended also in the areas outside the city (Goodwin 2017b).

A further concrete example supporting the solution presented above is the system implemented by the Abu Dhabi government, based on the collection of real-time tourism data from companies and government agencies. In addition to standard metrics (e.g., number of tourists, number of arrivals, occupancy levels), the system allows for the detection of when certain scenarios such as, for example, a sudden increase in tourist flows occur. This information can be used to adjust marketing offers in real-time and manage demand (Callahan 2018).

## **2.4 The role of technology**

Information technology tools play a key role in combating overtourism due to ongoing developments in the field, although further insights related to the use of Information Communication Technologies (ICTs) for this purpose are possible (Pasquinelli and Trunfio 2020). Technological tools applied in all the economic fields provides new possibilities to face the overtourism issue (Maurer and Siller 2019).

A more complex solution consists of the implementation of smart tourism, namely a strategic solution allowing to create smart cities through the exploitation of the currently available technologies, such as for example the usage of smartphones, radio frequency identification, websites, virtual and augmented reality (Hassan and Sharma 2021). The particular interest shown in smart cities, or innovative cities that make use of the latest technologies, can make an important contribution to social, environmental, and economic issues and increase the competitiveness of the destination, without compromising the quality of life of residents or the experience of tourists. In addition, the realization of smart destinations, would enable the optimization of resources and obtain more information that can be used to propose innovative solutions based on advanced technologies such as the Internet of Things, cloud computing, AI, open data, or mobile applications (Marasco et al. 2022). Specifically, smart cities consist of the convergence of technology in the traditional infrastructure of cities, controlled through digital technology. The effect of this is to increase the level of efficiency of decision making, being able to rely on accurate and precise information (Ahad et al. 2020).

#### ***2.4.1 Technological tools***

However, it is important to stress that there is a close link between smart cities and smart tourism, consisting of the application of smart city technologies to the tourism sector (Liu and Liu 2016).

Such solutions are based on the usage of technological devices: for instance, the placement of sensor devices along the destination route could supply important information about the visitors' behavior, identifying the most crowded places and the peak hours (Loureiro 2019).

Another example is given by the Gatewick airport, where have been installed 2000 iBeacons that are Location Based Services capable of sending a signal to a device when they enter a specific and predetermined area. Also in this case can be supplied information about the tourist flows and visitors' related behavior (Neuburger et al. 2018). In fact, sensor cameras or heat maps can be used to measure the density of visitors in certain areas, as well as information on the spatial distribution of people and monitoring of carrying capacity so that action can be taken in case of need such as facilitating emergency relief (İştin and Turpcu 2021; Liu and Liu 2016). Thus, the previously cited practices can be used to offer alternative routes to tourists, so that it is possible to enhance some areas of the territory that are able to distribute excess tourist flows.

Another technological tool is the combination of smart cameras and sensing devices that can offer information about the number of visitors to a location and consumer behavior if placed correctly along the route (Loureiro 2019).

For example, in the city of Dubrovnik, a Camera System has been set up at the six city gates that are able to count people entering that specific area. The information gathered, thanks to machine learning tools, is used to forecast tourist flows (Camatti et al. 2020).

Also in Italy, there have been plans to use technologies in this regard, such as in Venice, where plans are being made to install devices that can count the number of visitors in the most crowded areas and automatically send that data to social media so as to prompt tourists to change itineraries (Callahan 2018).

In general, the phenomenon of overtourism can be better monitored and thus kept under control through intelligent analytical systems that can determine the number of people in a destination so that corrective measures can be taken. In addition, the level of tourist activity can be monitored through tourist cards, number of users using city wi-fi, activity in socials in different locations, or monitoring of credit card spending (İştin and Turpcu 2021). In this way, it is possible to have several KPIs that can be monitored through information gathered by technological tools, allowing to have a general overview of the overcrowding level in specific locations and times. For example, in the aforementioned city of Dubrovnik, a push notification is sent to tourists in possession of the city card when they enter a particularly crowded area, and if the entry threshold of 4000 tourists is exceeded, a push notification is sent suggesting alternative itineraries and attractions (Camatti et al. 2020).

Thanks to Internet of Things (IoT)<sup>8</sup>, sharing and getting real-time information is increasingly feasible and simpler, such as forecasting consumption intentions or movements. For this reason, the information collected should not only be for statistical purposes of tracking numbers at tourist sites but also track the movements and real-time data of citizens and visitors (Zubiaga et al. 2019).

It is, therefore, necessary to provide for the smartification of tourism management systems in light of real-time activity tracking technologies.

Instead, an alternative solution is to use search data from search engine tools such as Google or Baidu, which can be collected based on keywords and number of searches on a specific topic or tourist location. Through such information, local policymakers could have a new way to track and monitor tourist flows that have high predictive power of tourist volumes and low cost (Yang et al. 2015).

---

<sup>8</sup> Transformation of real objects into smart ones (Madakam et al. 2015)

### ***2.4.2 Artificial Intelligence***

The term was originally coined in 1950s to indicate the intention to develop the human intelligence within the machines, arriving today to be reality and not just theory (Krueger et al. 2020).

Some examples consist of the evaluation of a large amount of data in a short-time period, personalized advertising, machine learning, autonomous driving cars, chatbot as the technology of Open AI (e.g., ChatGPT) as well as the advancement in the medicine field (Hamet and Tremblay 2017; Krueger et al. 2020). These tools make it possible to make certain activities in multiple areas easier or more precise by delegating them entirely or only in part to intelligent machines. In particular, given the complexity of decision-making processes during tourism planning, AI's assistance can be decisive (Zlatanov and Popesku 2019).

The following are some examples of AI applied to the tourism industry.

- Chatbots: they are computer programs that are able to simulate the usage of human natural language in a conversation with a real interlocutor. Their development is growing sharply as well as the economic value that attracts new investments (Zlatanov and Popesku 2019).  
Chatbots are able to fulfill the need of reliable source of information that is required by travelers in different phases of their trip, as during the booking of accommodation or in real-time to get some useful information (Zlatanov and Popesku 2019). From a general point of view, Chatbots enhance the user experience by providing real-time suggestions through several devices (e.g laptops or smartphones), however, it may happen also misunderstandings and lack of alignment, generating a reduction in trust from the user side (Pillai and Sivathanu 2020; Wilkinson 2002).
- Robotics: it consists of the development of AI based on a machine that is able of performing tasks for humans. Robotics in the hospitality sector is mainly used to enhance the customer engagement in several tourist locations such as hotels, restaurants, and in airport operations. The main advantage is to recognize and anticipate the tourists' needs and provide an effective service to fulfill their necessities, keeping the labor cost low, providing a quick service, and increasing the efficiency of the structures (Pillai and Sivathanu 2020).
- Machine Learning (ML): all the actors involved in the value chain and the stakeholders involved in the sector have to take decisions in the short and long term, based on the forecasting of tourism flows (Zhang et al. 2021). The application of ML to the hospitality sector, provides a specific tool that is able through its algorithm, to foster efficiency and forecast demand and prices (Pillai and Sivathanu 2020)

- Big data analysis: it consists of the collection, storage, and monitoring of a large amount of data. Those data can be related to tourist activity such as the duration of their stay, average expenditure, visitors' peak period, travel triggers, etc. Through this information, it is possible to predict tourist flows and act in advance with a well-defined management plan for the optimization and redistribution of visitors in order to promote the tourist product (Karpova et al. 2019).
- Recommender System, i.e., a technology that can offer suggestions to the user with the aim of diverting tourist flows based on customized solutions using less crowded areas as selection criteria (Malani et al. 2020). In recent years, several tourism Recommender Systems have emerged that can collect a large amount of information. Concrete examples include Tripadvisor, which collects and suggests the best locations and services for tourists, also having a social function through which visitors can express their opinions; DieToRecs, which supports the selection of tourism products; Heracles, which can filter a large amount of information for tourists (Gavalas et al. 2014). However, such interfaces, while very useful because of the large amount of information they offer, are unable to offer personalized suggestions. Therefore, there is a need for a combination of Recommender System and AI that would allow for the offering of information tailored to personal preferences, tastes, and conditions and at the same time able to divert tourist flows to alternative affine destinations (De Pessemier et al. 2019).

In addition, even large hi-tech companies such as Google already offer technology-based solutions such as a feature that allows users to obtain information on expected crowding for a wide range of destinations. Starting in 2016, the company began augmenting the feature with real-time data, selected from anonymous location data and user searches, on whether a destination is more crowded or quieter than usual (Callahan 2018).

An important data point for analysis is that the global number of smartphone owners has grown to 5 billion globally, and more and more tourists are using apps during their travels to such an extent that it has been recorded that more than 70% of hotel profits come from last-minute bookings from mobile apps (Malani et al. 2020). This implies that travelers are willing to use applications to use on the road that is able to offer real-time forecasting regarding queues, traffic levels, and parking, allowing them to schedule their personal activities based on that information (Huettermann et al. 2019). In addition, mobile applications provide an important touchpoint between tourism service providers and tourists themselves, enabling them to collect information about themselves and their

environment so that they can offer products, services, and experiences in line with user preferences (Maurer and Siller 2019).

### 2.4.3 Augmented Reality and Virtual Reality

In the last period, augmented reality and virtual reality are gaining momentum; they are able to add value to the real world, allowing to mix the physical and virtual worlds, also for tourist purposes.

In particular, the real and the virtual worlds are mixed together, and their boundaries are blurred, so as to create a *phygital* world where the two spheres co-exist (Neuburger et al. 2018).

As can be observed in Figure 4, reality and virtual reality are antithetical, and what there is in between (augmented reality and augmented virtuality) are the nuances of the two extremes. AR enriches the real world with virtual information whereas AV encompasses physical elements within a virtual environment (Doborjeh et al. 2022; Neuburger et al. 2018). Finally, the union of the two extremes generates the Mixed reality (Neuburger et al. 2018).

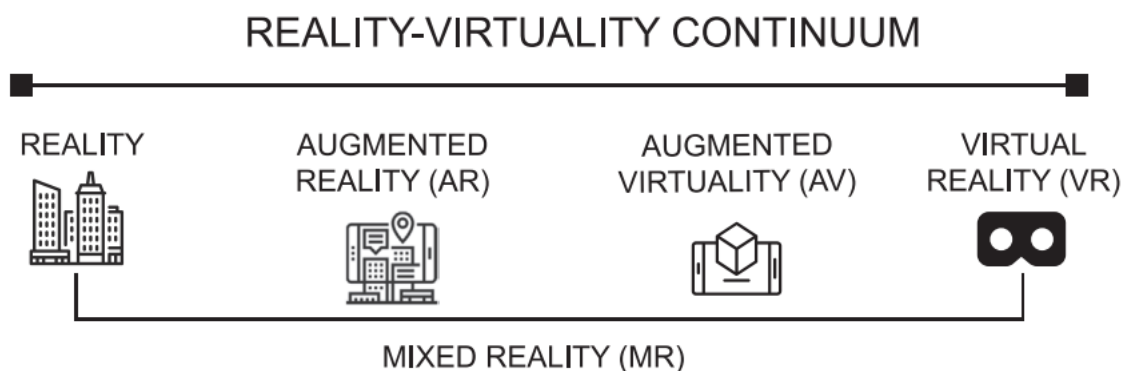


Figure 4 Reality-Virtuality Continuum. Neuburger et al. (2018).

Regarding the application in the tourism field, they provide a high contribution to the realization of sustainable tourism, giving the possibility to live a high-level and convincing travel experience without going or partially avoiding going near an attraction or point of interest (Hassan and Sharma 2021; Malani et al. 2020; Mandić and Petrić 2021). In fact, the Customer Journey could also not be necessarily *phygital*, but can be totally replaced by a virtual one (Neuburger et al. 2018). AR and VR are able to bring new revenue streams and keep the cultural authenticity of places, as well as the asset preservation (Bec et al. 2021). The result of this is that it is possible to create immersive experiences that are able to convey the essence of a location without necessarily moving and feeding the high tourist flows.

Consequently, the introduction of a *phygital* customer journey could introduce significant advantages related to the experience of the tourist, thus finding the right compromise between tourist and citizen. In terms of analysis from the perspective of major digital trends, social media plays a key role in the promotion and development of overcrowding destinations, however, it can also be leveraged to reach the solution, such as raising awareness on the topic and promoting forms of sustainable tourism behavior (Malani et al. 2020).

The VR has also a high potential related to marketing purposes, providing a trial of the experience before actually traveling to the destination, acting as a virtual brochure that can generate curiosity on the user that is experiencing the tool (Neuburger et al. 2018). In addition, the tool can help promote less visited and well-known destinations, allowing those places and experiences to be experienced virtually. Such an innovative marketing strategy has been applied by the international hotel chain Marriot, which offers an immersive travel experience through VR, through which users can experience certain places in an immersive manner including through the use of 4D elements (Neuburger et al. 2018). The VR provides complementary objects, using digital technologies, used mainly in hotels, museums, and amusement parks to deliver a distinctive element for the user experience (Karpova et al. 2019). It can be done also with an ancient site that does not exist anymore, allowing it to reproduce it and interact with it (Godovykh et al. 2022). The effect of virtual tours is that they can contribute to the reduction of the number of visitors to popular areas.

Another tool that is being used in different areas is related to gamification, namely enhancing the user experience through typical mechanisms of video games in a non-game setting (Malani et al. 2020; Roinioti et al. 2022). Based on the premise that tourism is an experience, gamification enriches it through a fun, interactive, and immersive experience within the context that one is visiting. This makes it possible to push tourists to perform actions or take certain routes in exchange for a reward within the game platform (Roinioti et al. 2022).

It is important to mention that only an overview of the possible applications of technology to the tourism sector has been offered within the paragraph, emphasizing that it is a tool to be pursued to reduce the issue under analysis.

## **2.5 Platform based solutions**

However, the solutions provided previously are isolated and fragmented and could instead be integrated into a single platform-based system where a benefit can be provided for all actors involved in the digital ecosystem.

An overview of such technology is provided below with a description of the main features and data so that their perimeter and scope can be better defined.

Platform-based businesses are growing and spreading more and more in recent years since allow to meet the needs of an increasingly diverse customer audience and represent a new way to organize economic and social activities (Asadullah et al. 2018; Fu et al. 2018). Such business models are the result of digital and social transformation and are emerging as among the most promising globally, increasing considerably their user number and economic value. For example, the economic value of Booking.com, despite having no physical assets, is more valuable than the Marriott hotel chain, which has more than 4000 properties spread worldwide (Logue and Grimes 2019; Ruggieri et al. 2018).

Generally, platforms are structures that enable the meeting in a single place of those who offer and those who demand a specific service (Pais 2019). They then play the intermediary role between different user groups by providing the intangible infrastructure to do so (Smicek 2017).

Platform-based services are nowadays widespread and cover several economic sectors, therefore a general declination of it is offered. Firstly, the distinction between labor-based and capital-based platforms: Labor-based platforms offer professional labor services based on a business model that avoids costs related to traditional forms of employment (e.g., social and pension contributions) providing a competitive advantage. Some examples of this category are represented by taxi platforms such as Uber and Lyft; delivery platforms such as Deliveroo, Glovo and JustEat; cleaning platforms such as ChoreRelif or more general task platforms such as Task Rabbit, namely a service of local handymen that can be chosen based on previous reviews (Gonza and Ellerman 2022; Pais 2019).

Regarding the capital-based platforms, they are intermediaries of all the other categories that do not require direct professional intervention. For example in the area of buying and selling (e.g. Etsy, Ebay), asset rentals (Booking, AirBnb), or even expense-sharing platforms such as Blablacar that allow users to share the expenses of car trips with other users (Pais 2019).

A further declination of platforms is to distinguish four dimensions based on resource ownership and different resource providers. This makes it possible to identify four quadrants that take into account the dimensions mentioned above (Fig 5.).

Regarding resource ownership, it refers to the title of the transfer of the goods offered in the platform. The transfer can be on a temporary basis, such as sharing economy platforms whose users can use the asset in question for a limited period equal to the duration of the service (e.g. Uber, Airbnb, ZipCar,



Wework). Alternatively, the transfer is outright, as in the case of Ebay, Etsy, or Amazon, and is a more traditional business model than the former.

As for the resource provider, it may be a peer, that is, another user who offers a good or service and the platform acts as a mere intermediary. Alternatively, the asset offered may be owned by the platform, which has its own inventory of assets to be given away temporarily or permanently (Wirtz et al. 2019).

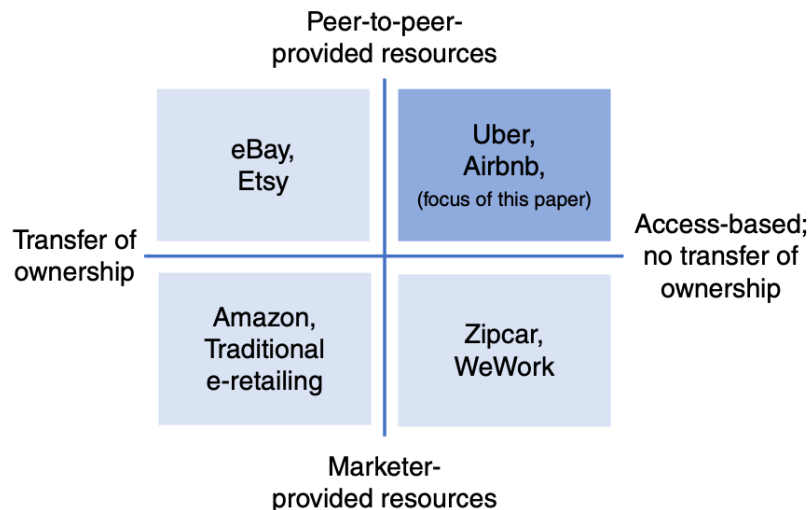


Figure 5 Platform dimensions – Wirtz et al. (2019) - Platforms in the peer-to-peer sharing economy. *Journal of Service Management*, 30(4), 452–483.

Through platforms businesses, it is possible to create high-valued exchanges based on the interaction between resources and several actors, such as producers, consumers, organizations, and government, having as key assets information and interaction enabling the value creation and competitive advantage in an interactive ecosystem (Ruggieri et al. 2018; Van Alstyne et al. 2016). In addition, the asset and the value created are outside the platform and depend on the ability to manage efficiently all the relationships and interactions created, through new disruptive business strategies, leadership style, or new service logic, having always a user-centric view (Ruggieri et al. 2018).

It is possible to claim that platforms have a common basic architecture base on technology and a core interface that arrange the activity of users in the platform periphery (Ametowobla and Kirchner 2022). Another important feature of platforms is their activity of open innovation, which means that platform participants themselves are both providers and users, allowing a constant improvement of it (Fu et al. 2018).

Regarding the structure in which the platform actors operate, it consists of two levels merged in a unique platform infrastructure: core and periphery. The former has formal rules, a hierarchical structure, and is arranged with employees (Ametowobla and Kirchner 2022). The main two actors are represented by owners, which own the intellectual property and set the governance of the platform, and Providers, which make available the interfaces for the touchpoint with the final users and manage the relationship with the core and periphery of the structure (Ametowobla and Kirchner 2022; Van Alstyne et al. 2016). In particular, interfaces have the fundamental role of regulating the inputs and outputs of the platform's system in order to decide to what extent the external users can participate in the platform itself (Ametowobla and Kirchner 2022). In some cases, another actor involved in the core structure is represented by Complementors that provide extra services that increase the overall value of the platform (Wirtz et al. 2019). The periphery does not have a precise structure and the actors are only partially tied with the core since they do not sign any agreement (Ametowobla and Kirchner 2022). The actors are represented by producers and consumers of products and services that can meet within the platform allowing demand and supply to be satisfied (Van Alstyne et al. 2016). In fig. 6 it is offered a synthetic overview of the structure and actors described above.

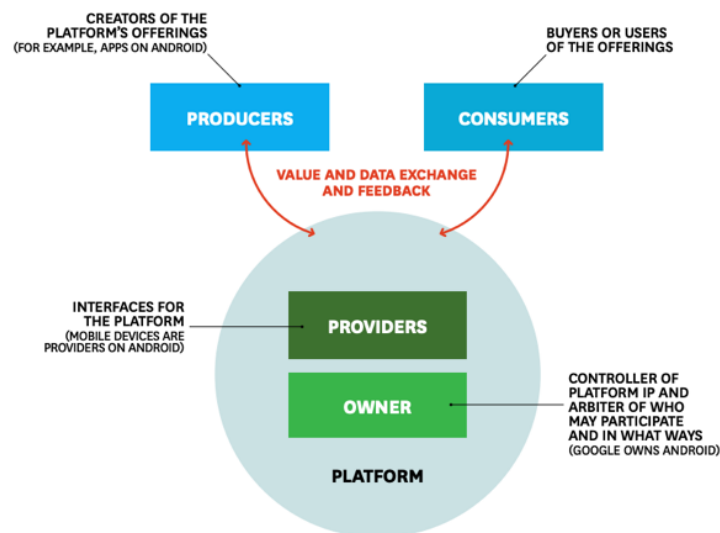


Figure 6 Players in a Platform Ecosystem - Van Alstyne et al. (2016) Pipelines, platforms, and the new rules of strategy. Harvard Business Review, 2016.

Platforms are opposed to traditional business models consisting of high fixed costs and linear flow of activities; instead, they are the place that facilitate the convergence and coming together of a set of heterogeneous actors who are the owners of the assets offered, creating value from their interactions. In fact, platforms are resource integrators that engage diverse actors for the co-creation of value and

whose resources are orchestrated within the platform with the goal of increasing value for the entire ecosystem and not for individual actors (Van Alstyne et al. 2016; Wirtz et al. 2019).

In addition, access to the platform is free for some parties, while revenue sources come from fees paid by other parties, thus generating multiple revenue streams (Zhao et al. 2020).

In terms of cost structure, fixed costs are confined mainly to platform maintenance and IT development, while marginal costs to serve each customer are close to zero as a result of intermediation. Given these fixed cost assumptions and the possibility of adopting dynamic pricing solutions, the offering is scalable based on demand on specific days, times, and locations. Uber, for example, changes ride prices based on expected demand at certain times so as to push its drivers to operate in those time slots and meet demand (Atasoy et al. 2020; Wirtz et al. 2019).

Innovation, in addition to coming from internal sources, also comes from external sources, so rapid innovation can be implemented through additional players who are part of the ecosystem, namely complementors. The result of this is a more difficult imitability by competitors (Wirtz et al. 2019).

In terms of scope of action, the new multi-sided models, on the other hand, mainly perform intermediation activities, with the aim of connecting actors from different sides of the market. In fact, multi-sided businesses do not own any resources or activities but depend on those provided by different actors in the platform (Zhao et al. 2020).

Related to this are Network effects, which are an important source of competitive advantage for platform firms (Zhao et al. 2020). It is based on the positive effect that the value of the platform to users and platform owner increases in relation to the increase in the total number of users, meaning that the ecosystem grows larger and stronger generating mutual benefit (Fu et al. 2017).

### ***2.5.2 Platforms' Advantages and Drawbacks***

The great advantage of platforms consists of the ability to connect the product/service provider with the final user in high-value exchanges. What makes them a strategic asset is the information they get and the interactions, allowing to offer a competitive advantage (Van Alstyne et al. 2016).

Furthermore, the platform-based services allow for saving considerable financial resources by minimizing transaction costs among the parties concerned. It is also important to stress that within the digital economies, this business model provides a high level of adaptability to complexity, rapid scale-up, and enables to easily capture value (Abdelkafi et al. 2019).

In fact, such a business model is based on the orchestration of resources and its added value is the community that is formed and the resources and capabilities with which everyone contributes, consequently, the network effect is the key element of the platforms. In fact, the greater the network, the better the matches between supply and demand (Van Alstyne et al. 2016).

The use of this business model is particularly advantageous for the final user as it facilitates interactions between the parties involved and allows the consumer to rely on a range of products and services to be able to find the perfect match between what is offered and what is requested by the consumer.

The end user can rely on a service that is quickly at hand and can often be accessed through mobile devices as well (Rahman and Thelen 2019). This allows the end user an easy use of the service, while also ensuring a high degree of flexibility and adaptability. Interactions with consumers are therefore high and allow the service to be tailored in relation to the end user, in fact, platform firms are characterized by concentration of power as they provide for the interests of consumers (Rahman and Thelen 2019).

In addition, by creating an ecosystem among all platform players, it makes it more difficult to imitate the system and thus generates a strong competitive advantage, increasing the overall value of the platform (Wirtz et al. 2019).

The great success of platforms has resulted in the rethinking and reorganization of strategies and business models to meet the new challenges and competition launched by the technological advancement that is leading to the emergence of Industry 4.0 (Ruggieri et al. 2018; Veile et al. 2022). For traditional organizations, this is only possible if digital technologies and their business models are aligned as well as the internal business process integration and the external digital opportunities, in order to gain a strategic advantage and not lose ground to more digitalized companies (Loonam et al. 2018).

This has consequently put existing organizations under pressure to change the way they operate since traditional business models have suffered from the rise of new ones (Ametowobla and Kirchner 2022; Van Alstyne et al. 2016). In fact, with the advancement of information technology, the need to own physical assets has been greatly reduced, and platforms have become scalable quickly and inexpensively (Van Alstyne et al. 2016).

One difficulty is that it is hard to bring users and service providers to the same place at the same time; they need to be as balanced as possible otherwise the platform will fail and users will stop using it, resulting in reduced network effects (Van Alstyne et al. 2016). Furthermore, due to the increase ease

of communication through the development of communication technology and due to economic frictions, the possibility of running into the risk of disintermediation is increasingly common (Gu 2022). It consists of the avoidance of the intermediation platform fees when the parties involved communicate with each other without the platform filter (Gu and Zhu 2021). The result is inevitably a significant reduction in revenues (Gu 2022). It poses a real risk and one that can involve large volumes; in fact, according to a survey conducted by ZBJ.com, i.e., the largest freelancer marketplace in China, 90% of transactions occur without the intermediation of the platform, after clients and freelancers are first put in contact by the platform. Another example is hotels and airlines that try to incentivize and push consumers to transact directly on their own sales channels (e.g., their own website or phone reservations), so they can avoid extra costs associated with brokerage fees. In the most serious cases, this issue has led to the failure of companies, as in the case of the online platform Homejoy, which went out of business because the transaction between user and service provider happened outside the platform (Gu and Zhu 2021).

Platform management requires new types of management styles, and their management is critical to their success. In fact, mismanagement of a platform-based business model can generate a negative network effect that results in reduced value (Van Alstyne et al. 2016). In fact, sometimes too many users within the platform could be a disturbance, so it is necessary to keep the platform balanced to provide the best possible experience (Abdelkafi et al. 2019).

### ***2.5.3 Platforms and tourism***

The advent of platform-based business models has changed the landscape of traditional business models in multiple industries such as hospitality, transportation, and software development (Asadullah et al. 2018).

Given the characteristics described and analyzed above, platforms can also be used as a tool to limit the *touristification* of popular destinations by leveraging the ease of interaction between stakeholders and the ecosystem created around them.

It is, therefore, possible to support tourists in all phases of the journey (i.e., pre, during, and post-phase) through the provision by service providers of the technological prerequisites that can enable tourists to carry out their experience in a connected, interactive, engaging, and more efficient manner. Visitors can rely on a multitude of platforms to refer to for the co-creation of their experience through the support of service providers (Tussyadiah 2015).

Through digital platforms, it is possible to make tourism smart, as it is possible to create interconnections among all stakeholders involved for the instantaneous sharing of information related to tourism activity. In addition, such rapid exchange of information has enabled the creation of large

data sets (i.e., Big Data) which if leveraged and analyzed properly can offer important revelations about potential tourism trends in the future. In smart tourism destinations, tourist service providers could leverage centralized information platforms in order to have a better understanding of the sector and take well-considered decisions (Tussyadiah 2015).

However, the difficulty is precisely in relating stakeholders to each other, as they are driven by different interests and are multiple in the tourism sector.

The following is provided a list of digital platforms that offer services to combat tourist overcrowding.

- *Crowdfunding*: Typical examples of platforms include crowdfunding platforms, which are a rapidly growing phenomenon in many countries and represents a rapidly growing market (Belleflamme et al. 2015). They consist of Internet-based platforms that simply connect fundraisers and funders in order to obtain from the crowd the capital needed to fund a project (Belleflamme et al. 2015; Gerber et al. 2012). The transactions happen through the existing payment system and web technologies, allowing anyone with an idea to tap easily into the capital to realize it (Gerber et al. 2012). Such platforms have the possibility to draw on a large pool of users since all it takes to access them is an Internet connection and potentially any kind of campaign can be created, e.g., real estate, business startup, peer-to-peer lending, donations. Among all the possible applications of this kind of platform, there is one related to campaigns to raise money for sustainable tourism projects that aims to have a positive impact on the environment and on the phenomenon of overtourism. In this way, it is possible to leverage the same channels and mechanisms to undertake solutions that can have a positive impact on citizens and tourists by funding projects that have such objectives.

Taking as an example the AIDA project (*Alta Italia Da Attraversare*), which is based on a cycling path that crosses and connects some major cities in the North of Italy, such as Turin, Verona, Venice and Milan, and the project plans to unify pre-existing paths instead of build new infrastructures. The goal was to meet the demand for cycle-tourist paths, connecting tourism attractions and fostering the use of bicycles by tourists during their travels, and demand for local mobility, since it crosses several big cities. The campaign was run on a crowdfunding platform aiming to collect the capital to cover the entire route with GPS, signals, and maintenance and it ended up having raised more than 40.000 Euros from 802 users that got in exchange a reward for their contribution (De Crescenzo et al. 2022).

Another example of crowdfunding is Garupa, which is a Brazilian community that aims to connect travelers seeking authentic experiences that have a low impact on the environment with

local entrepreneurs and communities that are able to offer sustainable tourism solutions. Garupa has also built Brazil's first crowdfunding platform for raising funds to finance sustainable tourism projects, raising about 280,000 Real from more than 750 donors to fund various sustainable tourism initiatives (Garupa Web Site).

It is arguable that these kinds of investments are socially responsible since those who participate in them are pursuing not only a personal return but also the development of the local community and social causes (De Crescenzo et al. 2022).

- *Booking platforms:* As anticipated in the previous chapter, among the main causes of overtourism is that of short-time rental platforms. However, the same mechanisms and firepower can be used to promote sustainable tourism activities. In recent years, tourism operators, are adapting to the increasing demands of customers related to more environmentally friendly (Galati et al. 2021). For this reason, some attempts have been made through the creation of online booking platforms that promote only "green" accommodations and destinations (Arzoumanidis et al. 2022). Below are some examples of platforms that are moving in this direction.

- **GreenPearls:** it is a communication and information platform that provides for the selection and sharing of green destinations and accommodations around the world for the promotion of sustainable tourism. It brings together within it various proposals of accommodations of different ranges scattered around the world that meet at least 80% of the sustainability requirements imposed by the platform, such as long-term management plan, reduced energy consumption, minimize disturbance of natural environment (GreenPearls Website).
- **EcoBnb:** it is a platform that brings together the best destinations and accommodations that promote the possibility of implementing sustainable forms of tourism that respect the environment and local host communities. Through the platform, it is then possible to book facilities that allow for a travel experience with the lowest possible impact and in harmony with the environment. In this case, the choice of partners for the platform takes into account a number of sustainability indicators, in particular, more than 80% waste recycling, organic and local food, 100% renewable energy, accessible car-free location, eco-friendly products, water flow reducers and virtuous reuse of rainwater, bio-architecture, solar panels and low energy consumption (Arzoumanidis et al. 2022; EcoBnB Website).

- Local alike: it is a channel that has been involved in the development and promotion of sustainable tourism respecting local communities for more than 10 years with different solutions and experiences to choose from to experience in Thailand bookable through the website. The portfolio of activities offered includes the possibility of staying in typical dwellings and living authentic experiences (Look Alike Website).
  - Fairbnb.com: it is a travel booking platform that offers travelers and hosts the opportunity to participate in creating responsible tourism experiences that fuel environmental sustainability projects and have positive social impacts on host communities. Part of the platform's commissions is redirected to solidarity projects of the tourist's choice in the area they are going to visit, while the remainder of the revenues are used to expand the BnB network and to the maintenance of the platform. Fairbnb.coop is thus a cooperative company that promotes an idea of ethical and responsible tourism and is present only in locations that accept the project and works closely with local governments (Fairbnb.coop Website)
- *Public administration platforms:* In addition to the trip planning stage, platforms can also operate in real-time, communicating with the tourist using it.

The Croatian city of Dubrovnik, for example, has launched an interactive web platform to easily and effectively connect citizens with administrative bodies, with the aim of allowing them to report any problems by attaching photos, event descriptions, and locations. The reports are then resolved and report back the adopted solution. Part of the reports are related to tourism, so a separate section or platform can be opened for the touristification issue, i.e., an interactive platform where users (citizens and tourists themselves) can open reports to take actions that can help improve the tourism experience, residents' living conditions, and proactively respond to the overtourism issue (Camatti et al. 2020). In the same Croatian city, there is also a platform that is still in the early stages of development that aims to create a network that includes different businesses, activities, and events (i.e. agrotourism destinations, souvenir shops, rural accommodations) and connect them with tourists who are interested in trying alternative activities to avoid the most crowded ones (Camatti et al. 2020).

Given such examples of platforms, it is possible to understand that the structure of platforms, which can connect heterogeneous actors, can be applied in different fields, including sustainable tourism. However, it represents a niche solution that needs to be properly promoted through appropriate marketing and citizen/tourist awareness activities.



## Chapter 3 – Empirical Study

### 3.1 Research questions

The first two chapters provided an overview and theoretical framework that can introduce overtourism, explaining its causes and implications for the environment, local citizens, and the tourist experience; in addition, the state of the art of currently implemented and implementable solutions were provided, with a strong focus on technological solutions and their features.

The objective of the empirical study is twofold, investigating on the one hand the more organizational and strategic aspects of the sustainable tourism sector, and on the other hand, an insight is offered from the consumer side, investigating the consumer's propensity toward sustainable issues and willingness to pay for sustainable services. This chapter is, therefore, divided into two main parts: in the first one, a qualitative analysis through interviews of eight startups operating in the sustainable tourism sector is provided, aiming to have a better look at the new business model and how companies are reacting to overtourism; in the second part, the focus is quantitative, and it has been administered a questionnaire to tourists to understand whether the strategic levers implemented by companies are actually being adopted by tourists, and whether and to what extent people are willing to use and pay for such sustainable options.

Despite the great relevance of the topic of tourism and the advancing phenomenon of overtourism, a gap has emerged in the literature related to the strategic levers that can be operated by innovative companies, as well as customer reactions related to those offers.

In this regard the research questions that are intended to be answered are the following:

- a) *How can alternative tourism models help mitigate the impact of overtourism in popular destinations?*
- b) *To what extent do tourists currently adopt or are willing to adopt sustainable tourism solutions in their travel choices?*

In addition, hypotheses were made regarding the role played by the trait variables considered in the quantitative analysis.

*H1a: Customers' environmental attitudes and behaviors have a positive effect on customers' willingness to use sustainable tourism solutions.*

*H1b: Customers' environmental attitudes and behaviors have a positive effect on customers' willingness to pay for sustainable tourism solutions.*

*H2a: Customers' price sensitivity has a negative effect on customers' willingness to use sustainable tourism solutions.*

*H2b: Customers' price sensitivity has a negative effect on customers' willingness to pay for sustainable tourism solutions.*

### **3.2 Methodological Approach**

Regarding the methodology, qualitative and quantitative analysis was used for the analysis, so that the methodology that best fits the sample to be investigated was used.

Using both methodologies allows the strengths of both to be combined so that better results can be obtained than using an isolated methodology, and providing a multidimensional insights related to the same topic (Mangan et al. 2004; Morgan 1998).

The methodology for qualitative research is mainly aimed at investigating the experiences and attitudes of the respondents, trying to answer questions regarding the reasons and ways referred to the phenomenon under study (McCusker and Gunaydin 2015). Moreover, in this mode of research, the personality of the researcher plays an important role in analyzing the data, and its subjectivity is evident since the data must then be interpreted (McCusker and Gunaydin 2015). For this reason, interviews make it possible to investigate reality from the interviewer's point of view and not in a perfectly objective manner as with the quantitative research method. The sample of this type of research is restricted, carefully selected, and analyzed through natural language by identifying patterns; data collection strategies are mainly based on interviews (structured, semi-structured, unstructured), participant observation, archival work, case studies, or conversation analysis (Crowther and Lauesen 2017; Moriarty and Moriarty 2014). The analysis is then focused on identifying classifications, patterns, and reflections on the data obtained, and the output consists of their interpretation and is represented in a more analytical key (Moriarty and Moriarty 2014).

Quantitative research, on the other hand, differs from the former in that it makes use of a large, random sample that is analyzed through statistical and numerical models that ensure the objectivity of the output. Generally, such research follows the scientific method, beginning with a theory proposed by the author or previously reported, which leads to a hypothesis that is tested through

empirical data, measured quantitatively, and analyzed analytically in predetermined ways (Kasim and Antwi 2015; Swanson and Holton 2005). In addition, the goal of quantitative research is to explain causal relationships among the variables under investigation through descriptive statistics, inferential statistics, or as inputs to predictive models (Kitchin 2014).

Descriptive statistics involves the use of techniques such as standard deviation and different types of graphs to get a concise overview of patterns and trends; inferential statistics, on the other hand, aims to check for relationships and patterns among data collected through surveys and questionnaires (Kitchin 2014).

One feature that is important to note is called the "*narrow-angle lens*," according to which the focus of research is directed toward only one or a few causal factors while all others that are not the subject of the study are kept constant through a rational research approach (Kasim and Antwi 2015).

However, the two methodologies are based on differing assumptions regarding the nature of knowledge and the way to obtain it, as well as a different sample of subjects, also pointing out that the use of both could be costly and time-consuming (McCusker and Gunaydin 2015; Morgan 1998). Regarding the positive aspects, the use of qualitative and quantitative methodology mixed allows to reduce the bias and limitations related to the use of a single methodology (Mangan et al. 2004).

### **3.3 Qualitative Research – Interviews**

Qualitative research was used here to capture aspects that elude quantification, seeking to capture emerging phenomena and individual perspectives of interviewees such as their value component, personal experience, motivations, and emotions. Thus, qualitative analysis allows for the investigation of complex and contextual aspects, leaving freedom of expression to the interviewee.

The objective of this research section is to verify and understand what solutions have been put in place by small Italian startups, to better understand in terms of feasibility and costs, the introduction of innovative systems, and new business models in the field of sustainable tourism. In this way, it is possible to have a clearer view of what is the state of the art of the sector in Italy and observe its progress.

As mentioned above, eight Italian startups operating within the sustainable tourism sector were interviewed for the qualitative part. The reasons related to the choice of these companies are related to their small size and flat corporate structure, making them easier to contact. Moreover, by their nature, startups are innovative and therefore able to offer interesting insights and alternative points of view compared to traditional solutions, especially to understand how such young companies are acting to gain market share and promote alternative forms of tourism.

The startups were identified among members of the Startup Tourism Association, which brings together more than 130 companies in the travel industry.

The interviews were conducted remotely via video call on Microsoft Teams and lasted an average of 45 minutes each, and the founders were contacted directly through the LinkedIn portal. To secure permission to process the data, an informed consent form was made for each company participating in the study to sign prior to the interview.

Interviews took place with only the company founder, with the exception of company 2 where both co-founders participated, and company 8, where in addition to the founder, a company representative participated.

The technique that was used refers to grounded theory, according to which a theory is built through gathering empirical data and information to develop a theory (Jørgensen 2001). Therefore, it is a bottom-up approach based on a careful analysis of the interview's topics, in order to reach a final general theory. Such theory has the advantage of articulating data collection and analysis in an analytical manner as well as correcting or omitting errors and omissions that arose during interviews (Jørgensen 2001).

### ***3.3.1 Discussion***

The interview in the form of a semi-structured discussion was based on 5 main topics: company overview, strategy, sustainability, economics, and market overview. Appendix A provides the list of questions, and the general structure of the semi-structured interviews; further, appendix B provides the transcripts of the interviews.

The following are the aspects that emerged for each of the categories, patterns, and any differences between the companies.

#### ***1) Company overview***

The companies interviewed belong to the same association of Italian startups specializing in the tourism sector that gathers a large and ever-expanding pool.

The companies taken into consideration are all very young and founded between 2017 and 2021, most of them born in the pre-Covid period. As can be seen from Figure 7, the entrepreneurial base of tourism companies is concentrated and most active in northern Italy, especially in Lombardy, with the exception of Company 2, which is located in Basilicata, as its location reflects its values.



Figure 7 Personal processing of the distribution of the locations of the startups under analysis

Half of the sample consists of companies that use and base their business on platform, particularly Companies 2, 4, 6, 7.

In Table 1 it is possible to observe the main characteristics of the startup's sample.

Table 1 Overview of the general information startup interviewed. Source: Aida

	Company 1	Company 2	Company 3	Company 4	Company 5	Company 6	Company 7	Company 8
Sector	Consulting	Tour Operator	Tour Operator	Tour Operator	Booking Platform	Tour Operator	Booking/ Consulting	Tour Operator
Revenues 2022 (K€)	126,1	10,5	n.a	385,7	128,1	273,9 <sup>9</sup>	< 0,5 <sup>7</sup>	< 0,5 <sup>7</sup>
Employees	n.a	0	n.a	1	6	3	0	3

<sup>9</sup> FY 2021

In general, the sectors covered are tour operators, booking service, and business consulting, however, despite the peculiarities of each, they share the common goal of enhancing the national territory, promoting the less known, hidden areas and real and more territorial forms of tourism. Only company 8 has a strategy that proposes a broader tourism offer that does not stop at national borders, but aims to generate well-being in the destination visited, with a focus toward lesser-known and tourist locations, avoiding those built ad-hoc for tourists and compromised by tourism and business logic. Its proposed initiatives and solutions mainly target the B2B and B2C markets. The former mainly concerns the relationship with public administration or business services and is characterized by greater viscosity and difficulty in getting one's offer received. The B2B sector sees a very broad target audience that includes - depending on the business - consumers of different age groups. Moreover, as pointed out by Company 3, the target audience of some tour operators includes a strong presence of international, medium-high-spending tourists with advanced cultural backgrounds and high level of awareness.

During the interview, each startup expressed the motivations that led them to start their business. What they have in common is the need to leave an added value to the tourist's experience, which stems from the interviewees' personal experiences, value component of the teams, and sensitivity to the topic. For example, Company 5 decided to start its own activity since it no longer wanted to witness the massification of tourism without responding.

Company 2, on the other hand, grew out of an experience the founders had, who saw the absence of information in certain locations acting as a deterrent to visitors. In this regard, they proposed the creation of a channel that could allow villages to be grouped together and sponsored, so as to avoid hit-and-run tourism in and around those destinations. Other startups, such as 3 and 6, highlighted the presence of inadequate and flat supply in Italy and the possibility of exploiting a competitive environment pulverized among different players without a clear market leader. Consequently, the motivations in the latter case are related to the presence of market opportunities that can be exploited and established by gaining market share in that specific area.

The analysis conducted also showed that they all shared experiences of challenge and difficulty, representing a recurring theme common to all. The difficulties mentioned ranged from strong pandemic arrests to more operational issues such as micro-team management and lack of experience. It was possible to identify a pattern related to the difficulties encountered, based on three main elements: pandemic, initial difficulties, and fundraising.

- Pandemic: the entire sample surveyed emphasized the strong negative impact that the Covid-19 pandemic caused on all the young companies that within a short time of their establishment saw their financial resources reduced; further, any possibility to expand was also compromised, as the tourism engine was completely at a standstill, generating a strong state of uncertainty. However, the 2020 period also had some positive implications, as the main drivers of sustainable tourism operators are tourism and sustainability, with the former being particularly affected while the latter has gained more awareness and hence standing at the center of large-scale discussions.

For example, one respondent stated "*we can't condemn it entirely*" since it has contributed significantly to speeding up processes, challenging classic models, and positioning of companies. In addition, it was possible to make the offer better assimilate and to modify it in light of new and renewed needs. Other respondents, however, are more cautious about the effects caused by the pandemic, as its negative impact has been strong and real, while the benefits will only be seen with time.

- Roll out phase: the initial stage of entering the market following the establishment of the company is a major obstacle. Overall, entrepreneurial inexperience on the topic of sustainable tourism has played an important role for some companies. In addition, the introduction of a new product or service comes up against the absence of benchmarks, making it complex to build an effective business model from the start.
- Fundraising: partially related to the pandemic years, sustainable tourism companies have experienced the difficulty of raising funds to develop and grow their business, while also considering the high costs of communication and marketing to raise company awareness and increase the conversion rate.

Businesses working with the public administration especially emphasized difficulties in communicating and getting their offerings received due to their lack of planning, and difficulties in getting people to understand the importance of digitizing and seizing the opportunities of the present. In addition, one company highlighted how the tourism industry is still very much anchored in the past, hence determining more resistance to adopting innovative solutions and, in general, more resistance to change.

It can be found that overall, the lack of stakeholder education and information, while not cited by all companies, is a common factor in that the absence of a renewed vision that is open to new development opportunities determines myopic vision for the long term, and as a result the importance of investment and the innovative offerings proposed by startups is not transposed in the present.

## 2) *Strategy*

It is possible to identify 3 macro-categories of solutions offered: tour operators, booking, and consulting.

What they have in common is the goal of educating and leaving an added value to consumers, in terms of education and training, through alternative tourism that is able to enhance and bring out Italy's cultural and artistic heritage outside the areas that suffer from overtourism. In addition, 3 companies are also involved in consulting in the field of sustainable tourism, two of which initially had another core business: company 3 has been doing consulting alongside its core business, although in the post-pandemic period, most of its revenues come from the ancillary business, while company 7 has totally replaced it, helping tourism businesses to become more sustainable by assessing them and offering customized solutions such as sustainability reports and carbon offsetting.

This suggests a growing demand for the support and guidance of other companies so that they can embrace the new opportunities that alternative and sustainable tourism are providing, responding to the changing trend and market demands by also demonstrating adaptability.

A constant and common element in the strategies adopted is collaboration among the different players, with the aim of creating a network of companies to capture demand. It was found that almost all companies collaborate with others belonging to the same network of sustainable tourism companies to which they belong. Human and professional relationships make it possible to cope with a highly fragmented market and to be able to specialize; in fact, being able to rely on other companies with specific knowledge of an area, is crucial, as it turned out that market players are linked to a specific area. Notably, partnerships are also formed with external players, especially with regard to technology, as none of the respondents stated that they take care of developments or have the appropriate expertise.

Another strategic entity to collaborate with is tour guides, thanks to their high level of expertise they are able to enhance and attract tourists, enriching their visit. Company's 1 words "*it is crucial to trigger mechanisms of connection and mutual opportunity, and not envy, it is something we strive for, and it is not always easy*" emphasizes how such interrelationships are crucial to succeed in business and enable business scalability, however, one must take into consideration dynamics that might make it more difficult to forge partnerships. For example, it is difficult to find reliable, long-term partners. Collaborations are a key element in ensuring business scalability because it allows the business to enrich its offerings and include ancillary services that an early-stage company could not afford to internalize right away; leveraging the external expertise, it is possible to specialize in a specific field



by providing a high level of service that can beat larger competitors. Overall, business scalability is ensured by two other main elements: marketing and technology. The former allows to attract potential consumers (e.g., e-mail marketing and adv that allow to attract a specific target audience) who are really interested in the offer and such a system has high response rates; the latter, allows a strong alleviation of internal operations and more automation, which is why this sample relies on technology solutions to develop the business and respond to market needs.

Companies in the sustainable tourism sector are distinguished by their deep knowledge and expertise within the industry. Each company differs in one specific element. Compared to the traditional tourism sector, startups that deal with travel arrangements, in general, differ in the experiences they offer, promoting environmental conservation and enhancement of local communities, as well as the smaller destinations they promote, going about enhancing them in an innovative and different key. Taking as an example the companies that use the platform as a business model, company 2 and company 6, both, within their respective market niche, show several distinctive elements as compared to their competitors. Company 2 is able to offer a tourism portal very quickly to municipalities, while Company 6's distinguishing element is the scope of its offerings, customization, and digitization. From this it can be seen that each market niche has certain characteristics that can be exploited by leveraging different features and strategies.

### **3) Sustainability**

The third category addressed during the interviews concerns the area of sustainability, exploring different motivations and points of view, and analyzing the role it plays in the tourism sector and the challenges related to it. The startups stressed the importance of sustainability as a strategic lever to achieve success in the tourism sector and at the same time the risk that it may degenerate into greenwashing. In fact, in the sector under analysis, misleading communications were found to promote zero-impact forms of tourism, when in fact "*zero impact does not exist [...] and it is easy to talk about it if all factors are not taken into account.*" For this reason, it was argued that tourism more than being sustainable must be conscious, that is, visitors must be aware of the impact of their actions and consequently choose to reduce it as much as possible.

Such strategic lever represents a response to market demands and needs that arose after the 2020 pandemic, especially of the B2C segment, for activities with a higher level of awareness and sustainability. Moreover, among the recurring motivations of the interviewees, the promotion and enhancement of sustainability stem from the value component of the startups, prompting them to develop solutions in relation to this element.

A common theme among the interviewees concerns the definition of sustainability, since, as stated by Company 8, "*the mistake is to link the term sustainability only to the environmental part, but other factors such as, for example, equity and social conditions should be taken into consideration.*" As a result, sustainability must be kept conceptually broader, as its main goal should be having a positive impact, not only on the environment, but also on the local community, citizens, society and tourists themselves. Company 8 has a particularly profound vision in this regard, promoting a form of regenerative tourism, which aims to change and transform the tourism product so that it can generate real and tangible change in both the tourist and the location visited, leaving it a better place than it was found in the beginning.

In general, sustainability is seen as an opportunity that, nonetheless, is not yet exploited and grasped by all; this is especially true for larger companies that are characterized by less adaptability and flexibility to respond to new market needs than smaller ones.

An additional aspect discussed in the interview was whether there is a trade-off between sustainability and business, that is, whether the presence of sustainability practices implies higher costs and lower margins for the company. It was pointed out that there is no trade-off, it is seen as a false myth that is the result of a myopic view that does not take all factors into account: "*there is no trade-off, the business world says so*". For some, sustainability could also lead to savings in the long run by being able to rely on more durable or cheaper facilities; however, training and education is needed to make people understand the real potential of this strategic lever and the cost benefits. Company 6 emphasized an important point, which is that sustainability should not be the driver of business, but they should travel on parallel tracks and intercept a need, so it is a strategic lever.

#### **4) *Economics***

Aspects related to the business model adopted and how funds are raised were also discussed with the sample of startups.

Companies that use the platform as their business model obtain part of the revenues through the percentage of sales made through the platform. Specifically, company 2 and 4, in addition to this variable portion, also have a fixed portion of revenues applied to other business users, resulting from payment of a fee to participate in the platform and sale of training and acceleration services, respectively. In such platform-based models, no additional fees are charged to the consumer, so that more consumers are attracted to the platform. This is possible through supply dumping activities. Company 6, while using a platform system, has a less complex business model, based on buying tour packages from other tour operators and applying a mark-up.

Only company 2 takes full advantage of the potential of a platform, also generating revenues through advertising and percentage of partner product sales.

For the rest of the sample, revenues are derived from travel sales, customized solutions to companies, and service offerings.

As mentioned in the overview section, one of the greatest difficulties for the companies surveyed, and for startups more generally, is raising funds.

The companies surveyed, in addition to equity capital, mainly use public tenders, but these offer small sums and require a great deal of effort and work to be obtained. Only 3 out of 8 startups had recourse to private investors and venture capital, while the others either failed to obtain capital or, as in the case of company 2, did not try to intercept it in order to prevent their project from being distorted and driven by profit logic. This is an indicator of how much private investors prefer to invest in other sectors than sustainable tourism, especially after the pandemic and the current macroeconomic shocks, while being more interested in the latest technology trends such as blockchain and artificial intelligence.

Moreover, as pointed out by Company 8, the difficulty in reaching private investors is related to the complexity of properly communicating one's mission and vision and getting the desired message across correctly. Two startups have resorted to institutional bank capital instead.

Thus, the difficulty of raising funds from outside is evident, especially due to difficulties related to communicating one's mission and the competition of technological innovations in recent years, as well as the lack of knowledge and experience in raising capital from private investors plays an important role.

### **5) *Market overview***

In the last part of the interview, an overview of the characteristics of the target market was briefly discussed. All the startups pointed out a great fragmentation of the market into very small players, each with its own characteristics, and peculiarities and sometimes anchored to a specific territory since the tourism legislature is regional.

There was a general tendency to form partnerships and to want to remedy this situation of small, pulverized realities for the Italian territory, as Company 7 pointed out, "*it is better to be partners and unite in a common action instead of being competitors*". This would allow them to join forces and be able to communicate their message to the market.

As mentioned in the general overview part, the startups interviewed are part of the same Italian startup association, so that they can create interactions with each other and collaborate, with the goal of creating a strong network of companies to overcome, through collaboration, the weaknesses of each. Nearly the entire sample agrees in affirming the great potential of platforms as a tool with a business aggregator function to reduce the negative effects of market fragmentation. "*Acting as a community and platform allows you to aggregate, support and tell the story of the things that many small organizations do better than larger ones*". Platforms have key functionalities, on the one hand as an aggregator of small players, and on the other hand as an important additional showcase available to promote one's offerings. Elements that would merit further investigation were also highlighted, such as the presence of common standards among different players, such as an equal level of engagement among platform participants, as well as margin sharing and the ability to properly communicate one's offer.

For Company 5, market fragmentation is not a negative element as it allows for a largely differentiated offering just as it does not consider it necessary and profitable to invest in a platform model that allows for the clustering of sustainable tourism micro-businesses.

The qualitative analysis revealed some preponderant aspects regarding startups operating in the sustainable tourism sector.

From the perspective of the market, it appears to be highly fragmented and made up of small players, mainly anchored to their own territory and without clear market leaders.

In this regard, collaboration plays a key role, as it allows companies to expand their offerings and obviate the fragmented nature of the market by sharing the same values and helping each other out. Companies make use of external expertise in what concerns the technological sphere, which is a key asset with a view to differentiation and to keep up with larger companies, allowing them to focus on their core business and to specialize, thus being able to rely on experts in the field to reduce risks and costs related to their in-house development. It is a constant and key element in the growth and scalability of each company interviewed, underscoring the importance of having technological expertise and innovative solutions within sustainable tourism. The pandemic has led to an acceleration of processes, especially in terms of sustainability and technology, which is why companies are investing in technology, trying to stay abreast of technological evolution and market demands.

In addition, technology, offers innovative solutions, such as the development of platforms that can have the function of an aggregator of the small and fragmented players in the market, with the possibility of creating synergies and positive network effects among its participants. Such a business

model can also potentially raise capital from different players at the same time (e.g., consumers, service providers, advertisers) and automate internal operations, facilitating business scalability. However, it emerged that further tests are needed to define its operation and reliability, such as establishing sustainability standards for member companies.

Finally, another key element that emerged is the difficulties faced by startups, part of which are common to all startups in general, such as lack of entrepreneurial expertise, organizational capabilities, and startup difficulties. Furthermore, it has been underlined that private investors prefer to invest in the more innovative sectors, such as blockchain and artificial intelligence, leading to difficulties in raising funds. On the other hand, the public sector offers, through public calls, the possibility to get funds, however, the amount provided is low, and the effort to get it is high.

Regarding what was said in the second chapter of the paper, some similarities and differences can be pointed out. First, there are no government activities outside of public calls and funding, consequently, there is no evidence of interventions such as the taxation of the offending producer proposed by Pigou. Also, there is no use of revenue tools such as price discrimination or dynamic pricing, but the strategies adopted are different.

The common elements are mainly marketing and the use of technology.

The former has been used to have a positive effect on customer behavior and raise the awareness regarding sustainable tourism and ways to counteract overtourism. In particular, an important aspect to consider is the education, not only of tourists but also of practitioners, to raise awareness of their impact and the possibility of enhancing product and service offerings that are in line with sustainable tourism.

Relative to the technology part, the companies in the surveyed sample use or are developing solutions in this regard, showing that they are in line with the trend highlighted in Chapter 2 regarding the increased use of technology within their business model. Startups offer some solutions for the implementation of smart cities, based on tools such as smartphones, platforms, and websites to increase the level of connection between users, service providers, and alternative tourist locations. However, none of the companies under review are involved in selling or producing dedicated tools such as iBeacons, smart cameras, VR, or AR.

### ***3.3.2. Results***

The qualitative analysis brought out aspects that help to have a clearer view of the state of the art related to the most popular alternative tourism modes that can mitigate the impact of overtourism and thus can answer the research question a) presented in paragraph 3.1.

The largest presence of innovative tourism startups is found in northern Italy, each belonging to a market niche and highly specialized, departing from the traditional tourism offer. The small size of the companies under consideration ensures high adaptability and flexibility to the changes required by the market, unlike larger and more structured companies that struggle to exploit supply gaps and market opportunities.

What emerges from the interviews is that efforts are being made to ensure that the consumer has a wide choice of activities and options, trying to expand the range of offerings available as much as possible. In addition, differentiated, innovative offerings that challenge the classic and traditional canons of tourism make it possible to capture demand from specific targets or consumers looking for new experiences.

Through expanding the offerings and making them as rich and varied as possible, it can enable consumers to have experiences other than the most common ones, so as to make equally good tourism alternatives available to cities suffering from overtourism, relieving them of visitor pressure. A key role in this regard was played by Covid-19. Indeed, despite generating disastrous economic consequences, it has been a strong accelerator and enabler of local and authentic tourism aimed at the rediscovery of lesser-known places in Italy, as well as the strong impetus of technology, which has become an indispensable element for sustainable tourism companies. The former has been a key element in the demand for sustainable tourism, which has seen more and more Italians requesting stays in neighboring locations, rediscovering proximity tourism with an increased focus on sustainability. Technology, on the other hand, has received a very strong boost as a result of the pandemic, allowing it to reach a very large and targeted audience with the offering.

In addition, the experiences offered are designed to leave an added value for those who experience them, actively involving them in the activities carried out and, at the same time, enhancing the Italian territory.

They can be regarded as educational experiences, with the goal of maturing in the tourist a high degree of awareness related to their impact on the environment and society, as well as the carrying capacity of destinations, fragility of the environmental balance, and presence of limited resources. In this way, tourists will increasingly be able to make informed and active choices that are able to improve the overall experience of tourists and residents, a proactive attitude, and, most importantly, one that has less impact on the environment and destination.

As pointed out in the previous section, collaboration among sustainable tourism startups allows each to specialize in one area and rely on others to expand their offerings. The result is the creation of a network of businesses that can capture demand through a heterogeneous offering that can meet market demands, meeting the trend of the green economy and sustainable tourism.

In summary, it can be said that such sustainable tourism models are able to relieve the pressure of overtourism on popular destinations and divert tourist flows through the extension of supply and the creation of activities with a high degree of differentiation and educational content. Moreover, given the constant growth and demand for sustainable tourism services, both B2B and B2C, the activities of such companies represent a concrete response to market demand for sustainable consumer services.

### **3.4 Quantitative Research – Methodology**

#### ***3.4.1. Procedure***

The study made use of the convenience sampling mode. It consists of a sampling approach that collects information from the population that is actually available to participate in the survey, due to a number of limitations such as cost, timing, and sample size (Mohaidin et al. 2017).

A survey was given to 163 people through Qualtrics, the world's leading experience management (XM) software for creating surveys. In conjunction with it, Prolific was used to obtain a large and qualified number of subjects for the sample. Prolific is a crowdsourcing platform that can customize the sample through specific criteria and obtain questionnaire responses in a short time.

To ensure the reliability of users, prerequisites for participation in the survey were included, a minimum of 2 participations in previous surveys, and a satisfaction rate of at least 50%.

In addition, the veracity of the sample is ensured by some control variables. In particular, it has been asked whether they knew about the phenomenon of overtourism, ecotourism destinations, and the frequency with which they travel in Italy in a year.

The survey has an estimated duration of 7 minutes, and each participant was paid £0.92. At the beginning of the survey, each participant gives informed consent and receives information about the task to be performed.

The analysis takes into consideration three main aspects: (1) willingness to use and pay for the offers available in the market and put in charge by the startups interviewed in the qualitative part of the paper, so as to verify whether the strategic levers proposed are actually in line with what consumers demand; (2) environmental responsibility, investigating the attitude and behavior of tourists, which constitute two sides of the same average. The objective here is to check whether attitudes and behavior are aligned or there is a discrepancy between what is stated and what is actually put into practice; (3) price sensitivity: through which the price importance and price search intention of the individuals who took part in the survey are taken into account.

The measurement mode included a 5-point Likert Scale for each of the categories, except for willingness to pay for services offered by startups where instead the Likert Scale is 7 points.

The first section on tourism offerings of startups and present in the market includes 9 statements, rated by participants through a Likert scale from 1 (completely disagree) to 5 (completely agree):

1. I am willing to make reservations at sustainable facilities.
2. I am willing to try VR and/or AR to virtually visit crowded cities, without traveling to the site in person.
3. I am willing to arrange a vacation in an Italian village.
4. I support the inclusion of smart cameras in the most crowded cities that can map tourist flows and send notifications to divert flows to less crowded areas and times.
5. I am willing to avoid visiting a city that suffers from overtourism and choose a stay surrounded by nature.
6. I am in favor of implementing closed numbers in the most crowded art cities.
7. I am willing to visit reconstructions of monuments and archaeological sites instead of going directly to the location in question.
8. I am willing to experience regenerative tourism, that is, tourism that can offset the negative impact of tourism and improve the social and environmental conditions of the host destination.
9. I am interested in *cyclotourism* experiences, that is, based on travel and excursions by bicycle.

Participants also measured their willingness to pay relative to the same sustainable services based on a Likert scale from 1 (1% to 5% less) to 7 (more than +20%).

The second and third sections of the survey were based on scales taken from existing literature and partly supplemented with scales from different existing authors for a better fit with the topic under analysis (Yue et al. 2020).

The environmental responsibility, divided into environmental attitude and behavior, had been researched using the scale from Ceylan 2019 and slightly integrated with items from Kang et al. 2012, and measured through a 5-point Likert Scale.

Regarding price sensitivity, the scale presented by Yue et al. 2020 consists of 8 items, divided into two macro-categories: price importance and price search intention.

Details of the used scale can be found in the Appendix C.

### ***3.4.2. Participants***

The sample includes 163 individuals, divided evenly, with 49% male participants (N = 80), 49% female participants (n = 80), and 2% non-binary gender (N = 3). The mean age is 33.85 years and a standard deviation of 13.54, suggesting that there is a wide variety and heterogeneity in the sample with results that also deviate widely from the mean. The predominant nationality is Italian, accounting



for almost the entirety of the sample (N = 160), with the remaining three being Polish, Brazilian, and Canadian.

Looking at the responses regarding the level of education, the sample is heterogeneous in this aspect as well, including a balanced number of individuals with high school diplomas, bachelor's degrees, and master's degrees, 31% for the first two and 33% for the master's degree respectively; only 2% has middle school as the highest educational qualification whereas the remaining 3% is represented by PhDs.

The income of individuals encompasses various brackets, concentrating mainly in the under €20000 bracket accounting for 49% of the sample; followed by the €20000-€39999 bracket (39%); €40000-€59999 (7%); while €60000-€69999 and more than €70000 both cover 2%.

The representativeness of the sample is ensured by the control variables. In particular, 82% of the sample stated that they were aware of the overtourism issue, emphasizing that the sample is representative. Regarding awareness of sustainable destinations in Italy, the respondents are perfectly divided into two halves.

Information was included regarding the number of trips taken on average in a year and was categorized as follows: 0 trips (7%); 1-3 (37%); 4-7 (27%); 8-15 (23%); and 20 or more (5%). This suggests that again the sample is representative and consists of people who travel and thus may have experienced overtourism, while people who do not are only 12 out of the total.

### **3.4.3 Data analysis**

The first part of the quantitative analysis provides a general description of the sample of study participants, offering an overview of what services people are willing to use and how much they are willing to pay. In this way, it is possible to get a general picture of which services constitute a strategic lever to focus on. Hence the first part of the data analysis, is based on a series of descriptive statistics. The values of *Willingness to Use*, *Willingness to Pay*, *Environmental Attitude*, *Environmental Behavior*, *Price Importance*, *Price Search Intentions* were transformed into Z points, i.e., a score with mean 0 and standard deviation equal to 1 to allow for homogeneity in range, bringing them back to the same score distribution.

Secondly, some exploratory analyses have also been conducted. In particular, in order to explore the relationships across the variables a series of Pearson's correlations have been conducted.

Finally, in order to test the hypotheses, a series of multiple linear regressions have been conducted. In these analyses, the willingness to use and willingness to pay scores have been used as dependent variables, while the scores obtained by the measurement of the trait attitudes - i.e., environmental attitude, environmental behavior, price importance, and price search intentions – were used as

regressors. Further, a series of control variables were also included in the analyses as covariates, namely age, gender, education, income, number of travels, awareness of overtourism issue, and knowledge of sustainable destinations.

### 3.4.4. Results

#### *Descriptive analyses*

Table 2 shows the services available in the market and their *willingness to use* (green section) and *willingness to pay* (blue section).

Table 2 Descriptive statistics computed on the Willingness to Use and Willingness to Pay.

Sustainable Tourism Services									
	m	s.d.	-1-5%	0%	1-5%	6-10%	11-15%	16-20%	+ 20%
Sustainable accommodations	4,11	0,81	4%	13%	48%	21%	11%	2%	0%
VR-AR	2,34	1,10	41%	36%	13%	4%	4%	1%	1%
Urban Village	3,94	0,84	6%	31%	30%	20%	7%	6%	1%
Smart cameras	3,62	1,15	16%	29%	32%	12%	7%	2%	1%
Staying in nature	4,06	0,90	9%	23%	33%	18%	10%	6%	1%
Closed number in cities	3,31	1,10	9%	28%	28%	20%	11%	4%	1%
Reconstruction of monuments	2,29	1,17	39%	32%	17%	5%	3%	2%	1%
Regenerative tourism	3,86	0,87	6%	22%	38%	21%	9%	4%	0%
Cyclo-tourism	3,11	1,26	12%	42%	23%	15%	4%	3%	1%
tot	30,57	4,94	16%	28%	29%	15%	7%	3%	1%

Each service is characterized by a *willingness to use* score with a range of 1 to 5 and different ranges related to willingness to pay, from negative values up to a maximum of +20%. As shown in Table 2, respondents are more likely to use sustainable accommodation (4.11) and prefer to stay surrounded by nature rather than go to locations that suffer from overtourism (4.06). They are also characterized by a low standard deviation, indicating a high level of agreement within the sample. For sustainable accommodations, most individuals (82%) are willing to pay more, especially between 1% and 5% more. For immersed in nature stays, most people are also willing to pay more, although slightly less (68%), however, 23% would keep the cost unchanged. The third highest score for *willingness to use* (3.94) and a standard deviation in line with the first two, is represented by tourism in Italian villages, for which 31% of the sample would not be willing to pay an extra amount of money, however, while 50% would spend up to 10% more. Regenerative tourism recorded very similar willingness to use

and standard deviation values to those of the previous service, however, more people (72%) are willing to pay a higher price.

In terms of interventions in cities, the introduction of numeracy and smart cameras score 3.31 and 3.62, respectively, with high standard deviations, a symptom of a highly debated topic.

Among the services offered by the startups mentioned above, the one with the lowest score is related to cyclo-tourism (3.11) and a standard deviation of 1.26, the highest in the table, suggesting very heterogeneous responses to each other. For that service, nearly half of the respondents (42%) are unwilling to pay an extra price.

The worst results in terms of willingness to use are represented by Virtual Reality - Augmented Reality applied to tourism and reconstruction of monuments without having to go directly to the site. In both cases, most people would prefer to pay for such services less or equally.

The total *willingness to use* of 30.57 out of 45, which suggests a general willingness on the part of respondents to use the services on the market and offered by the startups in Section 3.2.

### *Trait Variables*

The scale of environmental attitude consists of thirteen items that were measured by a Likert Scale from 1 to 5 and recorded a mean score of 38.98 and a standard deviation of 5.54. This suggests a positive attitude toward environmental issues, and the standard deviation value reflects the variation of individual scores from the sample mean and indicates a diversity of attitudes toward nature. As for actual behavior toward nature, measured via the environmental behavior scale, which consists of eleven items with a mean score of 34.42 while the standard deviation of 7.02 underscores an even wider dispersion of results and a generally positive trend toward positive behaviors.

As for the other two trait variables, *Price Importance* and *Price Search Intention* add an additional level of depth to the sample's understanding and consist of four items each and have a mean score of 12.21 and 13.04, respectively, out of 20. The values, which are not particularly high, suggest a moderate focus of respondents on price and looking for the best price, while the standard deviation values indicate that opinions may differ considerably from the mean among respondents.

At an exploratory level, Pearson's correlations were conducted among all the variables of interest, creating a correlation matrix in which the correlation coefficient (between -1 and 1) and the statistical significance index are present (see Table 3 for detailed results).

By analyzing the correlations between the control variables with the dependent variables (*Willingness to Use and Willingness to Pay*) and the other trait variables (*Environmental Attitude, Environmental*

*Behaviour, Price Importance, and Price Search Importance*, the following main aspects can be noted. *Gender*, identified as 1 "male" and 2 "female," correlates positively with the *Environmental Attitude* ( $r = 0.17, p = 0.03$ ), i.e., females have a higher *Environmental Attitude* than men. Furthermore, the *environmental attitude appears* also to be correlated with *age* ( $r = 0.21, p = 0.01$ ), meaning that as age increases, individuals' attitude toward nature improves, while, on the other hand, *Price Importance* decreases ( $r = -0.29, p = 0.00$ ), given also an increase in income level ( $r = 0.40, p = 0.00$ ). *Education* shows a positive marginally significant correlation ( $r = 0.14, p = 0.08$ ) with *Willingness to Use*, i.e., people with higher educational qualifications are more likely to use sustainable services, given greater awareness of the problem of overtourism and sustainability and higher income levels. In addition, as education level increases, there is an increase in the *number of trips* ( $r = 0.15, p = 0.05$ ) and higher *income* ( $r = 0.25, p = 0.00$ ).

Furthermore, income is also negatively correlated with *price importance* ( $r = -0.18, p = 0.02$ ), since higher earnings correspond to less and less attention to price.

A marginal positive correlation is found between the *number of trips* made by an individual and the inclination to use more sustainable solutions and services ( $r = 0.14, p = 0.07$ ).

Focusing on *willingness to use*, it correlates positively with *willingness to pay* ( $r = 0.43, p = 0.00$ ), i.e., the more people use sustainable services, the more they are inclined to pay more to use them. In particular, this variable correlates positively with *environmental attitude* ( $r = 0.16, p = 0.04$ ) but especially with *environmental behavior* ( $r = 0.41, p = 0.00$ ). This means that those who use such services not only have an attitude toward sustainability but actually practice behaviors that go in that direction.

A similar reasoning can be made for willingness to pay, which correlates similarly with *Environmental Attitude* ( $r = 0.22, p = 0.00$ ) and *Environmental Behaviour* ( $r = 0.27, p = 0.00$ ).

One thing to note is that *Willingness to Use* and *Willingness to Pay* do not correlate with *Price Importance*, i.e., attention to price is not a key factor in sustainable tourism, but attention to sustainability is, both in terms of attitude and at the level, most importantly, of behavior.

Table 3 Results of the Pearson's correlation among variables under analysis.

Correlations												
		Gender	Age	Education	Income	N. trips	Willingness to use	Willingness to pay	Environmental Attitude	Environmental Behaviour	Price Importance	Price Search Intention
Gender	r		0,10	0,12	-0,11	-0,03	0,07	0,05	0,17	0,01	-0,05	-0,06
	p		0,22	0,12	0,16	0,71	0,36	0,50	0,03	0,85	0,51	0,45
Age	r	0,10		0,07	0,40	0,07	0,08	0,00	0,21	0,09	-0,29	0,07
	p	0,22		0,39	0,00	0,39	0,32	0,96	0,01	0,24	0,00	0,39
Education	r	0,12	0,07		0,25	0,15	0,14	0,10	0,10	0,03	0,00	-0,03
	p	0,12	0,39		0,00	0,05	0,08	0,22	0,22	0,71	0,97	0,74
Income	r	-0,11	0,40	0,25		0,13	0,05	0,04	-0,01	0,09	-0,18	0,03
	p	0,16	0,00	0,00		0,10	0,51	0,61	0,86	0,23	0,02	0,75
N. trips	r	-0,03	0,07	0,15	0,13		0,14	0,10	-0,07	0,00	0,00	0,01
	p	0,71	0,39	0,05	0,10		0,07	0,21	0,37	0,97	0,96	0,86
Willingness to use	r	0,07	0,08	0,14	0,05	0,14		0,43	0,16	0,41	0,01	0,04
	p	0,36	0,32	0,08	0,51	0,07		0,00	0,04	0,00	0,86	0,63
Willingness to Pay	r	0,05	0,00	0,10	0,04	0,10	0,43		0,22	0,27	-0,03	-0,07
	p	0,50	0,96	0,22	0,61	0,21	0,00		0,00	0,00	0,75	0,36

The analysis performed so far allows an overview of the data and is descriptive in nature necessary to get a snapshot of consumer habits with respect to sustainable tourism services.

### Regression analysis and Hypotheses testing

In the second part of the analysis, however, multiple regressions were performed using the *Willingness to Use* and *Willingness to Pay* as dependent variables, the trait variables as regressors, and the control variables as covariates, so as to have a single model correct for multiple controls, since the more variables a model has, the more restrictive it is and needs greater statistical power. For each of the two variables of interest, an attempt was made to understand how all available variables affect the disposition to use and pay, so as to understand which would be the ideal consumer to target.

The regression model conducted on the *Willingness to use* is generally statistically significant. The analysis shows that the model related to *Willingness to Use* is marginally driven by the *number of trips* ( $\beta = 0.13$ ,  $t = 1.67$ ,  $p = 0.10$ ), while the effect of *Environmental Behaviour* was found statistically significant ( $\beta = 0.38$ ,  $t = 4.95$ ,  $p < 0.001$ ) (see Figure 8, yellow line), i.e., individuals who are not only interested in environmental issues, but objectively assumes a range of behaviors aimed at sustainability, show a higher disposition to use sustainable tourism services. On the other hand, the variable *Environmental Attitude* does not survive multiple comparison ( $\beta = 0.09$ ,  $t = 1.13$ ,  $p = 0.26$ ; Figure 8, blue line).

The rest of the variables are not statistically significant (see Table 4).

Table 4 Results of the regression model conducted on the dependent variable Willingness to Use.

Regression model: Willingness to Use				
	Standardized Beta	t	p	
Gender	0,05	0,65	0,51	
Age	0,02	0,18	0,86	
Education	0,08	1,04	0,30	
Income	-0,01	-0,17	0,86	
Knowledge about Overtourism	0,00	0,00	1,00	
Knowledge sustainable accomodations	-0,09	-1,20	0,23	
Number of trips per year	0,13	1,67	0,10	
Environmental Attitude	0,09	1,13	0,26	
Environmental Behaviour	0,38	4,95	0,00	
Price Importance	0,07	0,82	0,41	
Price Search Importance	-0,04	-0,49	0,63	

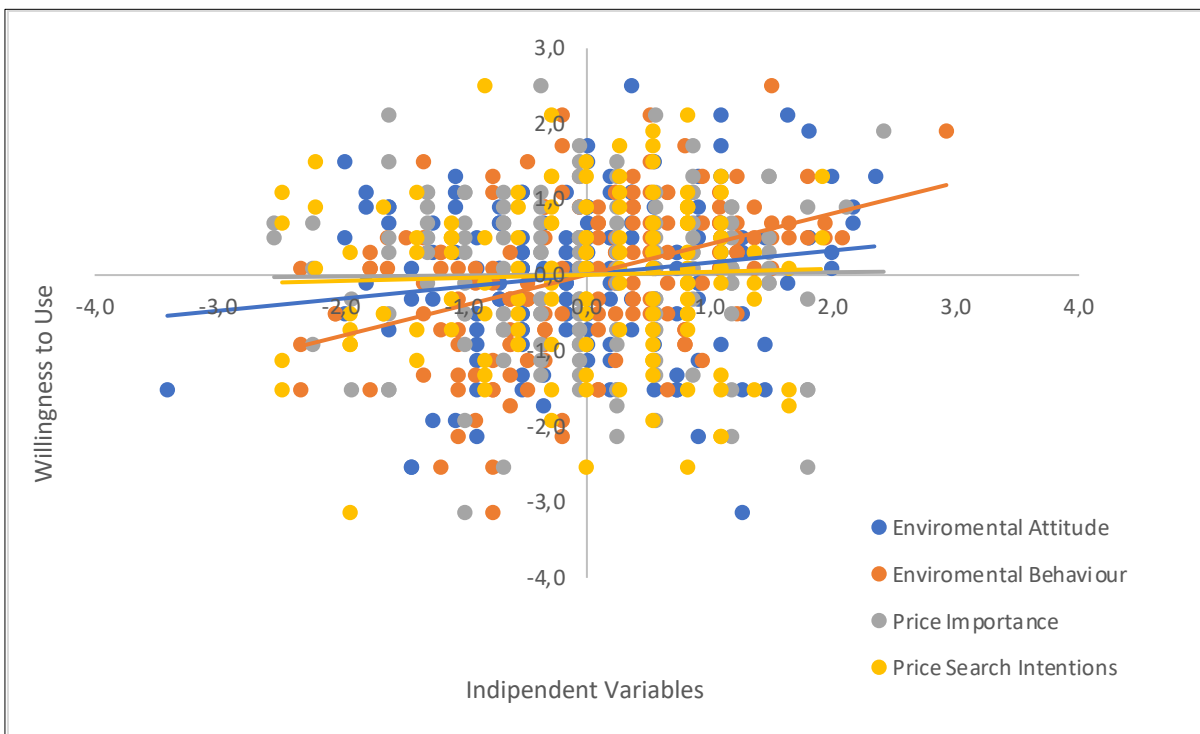


Figure 8 Results of the linear regression using as dependent variable the Willingness to Use.

The second linear regression was conducted using the *Willingness to Pay* as the dependent variable, while the other independent variables and covariates of interest remain the same as in the previous regression.

Statistical significance is recorded for the independent variables *Environmental Attitude* ( $\beta = 0.20$ ,  $t = 2.45$ ,  $p < 0.05$ ) and *Environmental Behavior* ( $\beta = 0.27$ ,  $t = 3.32$ ,  $p < 0.002$ ), represented by the blue and orange line in Figure 9, respectively. This result indicated that people who have a better positive environmental attitude, and actually engage in environmental behaviors are those who show a higher

willingness to pay for sustainable touristic solutions. In this case, no statistically significant effect or trend was found among the control variables (see Table 4 for detailed results).

Table 4 Results of the regression model conducted on the dependent variable Willingness to Pay.

Regression model: Willingness to Pay			
	Standardized Beta	t	p
Gender	0,02	0,21	0,84
Age	-0,09	-0,99	0,32
Education	0,06	0,68	0,49
Income	0,04	0,51	0,61
Knowledge about Overtourism	0,12	1,51	0,13
Knowledge about sustainable accomodations	-0,04	-0,47	0,64
Number of trips per year	0,12	1,51	0,13
Environmental Attitude	0,20	2,45	0,02
Environmental Behaviour	0,27	3,32	0,00
Price Importance	0,03	0,29	0,77
Price Search Importance	-0,11	-1,20	0,23

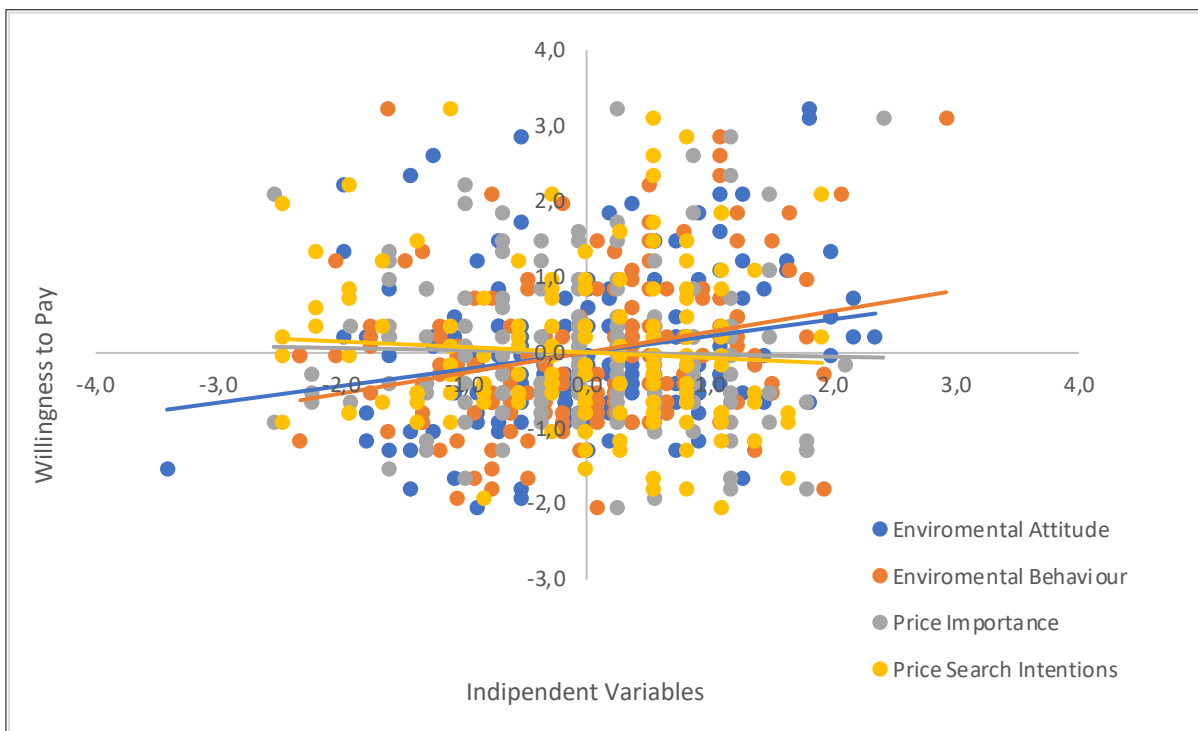


Figure 9 Results of the linear regression using as dependent variable the Willingness to Pay.

To answer research question b) and thus the extent to which they are willing to adopt sustainable solutions in their travels, it is possible to conclude with the following. From the point of view of trait variables, in the case of *Willingness to Use* the key factor is dictated by attention to environmental

sustainability issues but only when this attention is translated into actual behaviors, that is, concrete actions characterized by effort.

For the *Willingness to Pay*, both variables, that is, both general attention to sustainability and sustainable behaviors are important variables that lead individuals to pay more to use sustainable services. This is important since such a type of service often costs more than a standard vacation.

Importantly, none of the dependent variables were observed to be affected by people's attention to price, namely, the search for low prices and price sensitivity does not appear to play a role in the willingness to use or pay for sustainable tourism solutions.

Hence, while hypothesis H1a and H1b can be accepted, hypotheses H2a and H2b must be rejected as they did not find any statistical confirmation.

### **3.5 Managerial Implications**

Following the quantitative and qualitative analysis carried out, the following section is devoted to the practical and managerial implications arising from the study. The evidence gathered is divided into two main clusters, namely demand and supply.

On the demand side, the analysis mainly focuses on consumers'/tourists' attitudes and behaviors toward sustainability, as well as their price sensitivity. This provides important insights regarding the strategic levers most in demand in the market and capturing sustainable consumer demand. The second macro-bucket of offerings provides insight into what Italian startups are implementing and offering to the market in terms of experiences, services, and, above all, novelty compared to tradition. From an organizational and managerial point of view, it is possible to claim that consumers are looking for authentic and concrete experiences, consequently, companies should reduce the provision of artificial experiences such as the use of virtual reality or reconstruction of monuments in cities other than the original one, for which services the customers might even be willing to pay less than the real experience. Instead, there is a need to focus on solutions that put sustainability at the heart of facilities and connection with the natural environment.

The following are the main managerial implications that emerged:

#### *Tailored audience*

Important information can be drawn about the audience to be targeted for such experiences so as to maximize the conversion rate and profit level.



In particular, those with a high attitude toward sustainability, as well as those with sustainable behaviors, should be the ones to target. Not only do such consumers have an interest in sustainability, but they are also willing to pay higher amounts of money to have alternative and more sustainable tourism experiences than traditional ones.

In addition, targeting travelers with more experience and a high frequency of departures could induce them to use sustainable services when traveling, as demonstrated in the data analysis section.

Regarding the profit aspect, sustainable consumers have low price elasticity and are willing to pay more for those services, suggesting that higher margins are possible in this area, even in light of what the companies surveyed said about the absence of a tradeoff between sustainability and business.

### *Price sensitivity*

Although individuals with a high degree of environmental responsiveness have low price elasticity, the importance of price leverage must be taken into consideration to make the tourism offer under consideration appealing to those who do not have a sustainable attitude and/or behavior. In particular, by using price leverage, demand could be captured from those who are indifferent toward sustainability efforts but are more price sensitive. For such individuals, it would then be appropriate to identify different price ranges to increase the adoption rate and the spectrum of travelers involved.

### *Public fundings and policymakers*

In terms of implications for policymakers, sustainable tourism is a growing trend, with numbers on the rise and more and more consumers looking for alternative experiences away from the chaos of mass tourism. In addition, companies are constantly looking for funds to develop their businesses and scale them rapidly, consequently there is room for policymakers and public investment to play the role of enablers of this shift toward sustainability.

In addition, policymakers would have the opportunity to raise awareness of tourism sustainability through *ad hoc* campaigns so that consumers are informed of their impact on destinations.

## **3.6 Limitations**

Although the analysis performed was done in a rigorous manner it has some limitations that can be further explored in future research.

In particular, the qualitative analysis was based on interviews with young innovative startups operating in the sustainable tourism sector. To explore the topic in a more comprehensive manner, it

would be possible to interview more established companies in the tourism landscape and more structured companies, so as to get a perspective from this type of company as well. In addition, given the difficulty of creating a large sample of companies, the qualitative research method was used. Alternatively, a quantitative approach could be used using a large sample of companies operating in sustainable tourism, so as to have a totally objective analysis.

As for the quantitative analysis part, future research could consider additional strategic levers beyond those in this study.

## Conclusions

The paper looked at the supply and demand sides to analyze how consistent and aligned these two aspects are with each other. The qualitative analysis emphasized the presence of new and innovative companies that are striving to create alternative and original tourism solutions to traditional canons. In this way, through the creation of an alternative and more specialized offer, it is possible to divert tourists from the most crowded attractions and locations. What is offered is a different and authentic experience that is not only meant to entertain but to leave an added value in tourists.

Indeed, they can be considered as educational experiences whose goal is to mature a high degree of awareness in tourists related to their impact on the environment and society, as well as the carrying capacity of destinations, the fragility of the environmental balance, and the presence of limited resources. In this way, tourists will increasingly be able to make informed and active choices that are able to improve the overall experience of tourists and residents, a proactive attitude, and, most importantly, one that has less impact on the environment and destination.

These companies have an increased focus on sustainability, as it is seen as an important strategic lever that is increasingly demanded by the market, and the small size of the companies considered allows for greater flexibility and adaptability to these growing needs.

Through expanding the offerings and making them as rich and varied as possible, it can enable consumers to have experiences other than the most common ones, so as to make equally good tourism alternatives available to cities suffering from overtourism, relieving them of visitor pressure, capturing demand from specific targets or consumers looking for new experiences.

Although Italian sustainable tourism companies are growing and gaining market share thanks to the rediscovery of proximity tourism as a result of Covid-19, their development is highly dependent on the availability of funders, the network of companies and collaborations they manage to set up, and the technological development in order to scale their business.

In the quantitative section devoted to the analysis from the demand side of tourists, the variables of willingness to use and pay towards sustainable tourism services were taken into account, so that it was possible to assess how interested consumers really are in using the services introduced to the market by innovative startups. In particular, it turned out that those with environmental attitudes and behavior only those who are less price-sensitive and therefore willing to pay higher prices for sustainable tourism services, also considering that such activities generally have higher costs than standard vacations. Furthermore, tourists with the highest levels of adoption are those who not only have an environmental attitude, but rather those who actually translate those attitudes into real sustainable behavior.

The result of this is the market's confirmation that it is also possible to focus tourism offerings on alternative resorts and activities for which, the more environmentally conscious individuals are willing to use and pay more, generating on the one hand, reduced pressure on tourists locations, on the other hand, higher profit margins for companies.

This implies, from a managerial point of view, the possibility of targeting a specific audience to capture the demand of such type of tourists, while that of those who are indifferent to sustainability but are price-sensitive can be captured by using the strategic lever of price to make the offer more appealing. Finally, in order to address the difficulty of alternative tourism startups, the attention of policymakers and public agencies must necessarily be drawn, as it represents a growing sector that nevertheless needs adequate resources to establish itself stably in the market.

## Bibliography

- Abdelkafi, N., Raasch, C., Roth, A., & Srinivasan, R. (2019). Special issue on Multi-sided platforms. *Electronic Markets*, 29(4), 553–559.
- Abernethy, V. D. (2001). Carrying capacity: The tradition and policy implications of limits. *Ethics in Science and Environmental Politics*, 1(1), 9–18. <https://doi.org/10.3354/ese001009>
- Ahad, M. A., Paiva, S., Tripathi, G., & Feroz, N. (2020). Enabling technologies and sustainable smart cities. *Sustainable Cities and Society*, 61(May), 102301. <https://doi.org/10.1016/j.scs.2020.102301>
- Almeida-García, F., Cortés-Macías, R., & Parzych, K. (2021). Tourism impacts, tourism-phobia and gentrification in historic centers: The cases of Málaga (Spain) and Gdansk (Poland). *Sustainability (Switzerland)*, 13(1), 1–25. <https://doi.org/10.3390/su13010408>
- Ametowobla, D., & Kirchner, S. (2022). The organization of digital platforms Architecture and interfaces in a partial organization perspective. *Working Paper “Fachgebiet Digitalisierung der Arbeitswelt,”* 04(February).
- Angelucci, M. (2023). Bolzano e il numero chiuso contro l’invasione dei turisti: troppe eccezioni, si aspetta l’esito del censimento. *Corriere della Sera*.
- ANSA. (2023). Boom per il turismo ligure, le 5 Terre rischiano il collasso. *Ansa*.
- Armstrong, E. K., & Kern, C. L. (2011). Demarketing manages visitor demand in the Blue Mountains National Park. *Journal of Ecotourism*, 10(1), 21–37. <https://doi.org/10.1080/14724040903427393>
- Armstrong Soule, C. A., & Reich, B. J. (2015). Less is more: is a green demarketing strategy sustainable? *Journal of Marketing Management*, 31(13–14), 1403–1427. <https://doi.org/10.1080/0267257X.2015.1059874>
- Arzoumanidis, I., Petti, L., & Raggi, A. (2022). Online booking platforms: Towards making more sustainable choices. *Cleaner Production Letters*, 3(January), 100009. <https://doi.org/10.1016/j.clpl.2022.100009>
- Asadullah, A., Faik, I., & Kankanhalli, A. (2018). Digital platforms: A review and future directions. *Proceedings of the 22nd Pacific Asia Conference on Information Systems - Opportunities and Challenges for the Digitized Society: Are We Ready?, PACIS 2018*, (September).
- Atasoy, B., Schulte, F., & Steenkamp, A. (2020). Platform-Based Collaborative Routing using Dynamic Prices as Incentives. *Transportation Research Record*, 2674(10), 670–679. <https://doi.org/10.1177/0361198120935116>
- Atzori, R. (2020). Destination stakeholders’ perceptions of overtourism impacts, causes, and

- responses: The case of Big Sur, California. *Journal of Destination Marketing and Management*, 17(April), 100440. <https://doi.org/10.1016/j.jdmm.2020.100440>
- Avond, G., Bacari, C., Limea, I., Seraphin, H., Gowreesunkar, V., & Mhanna, R. (2019). Overtourism: a result of the Janus-faced character of the tourism industry. *Worldwide Hospitality and Tourism Themes*, 11(5), 552–565. <https://doi.org/10.1108/WHATT-06-2019-0039>
- Banca d'Italia. (2019). Questioni di Economia e Finanza - Turismo in Italia: numeri e potenziale di sviluppo.
- Bec, A., Moyle, B., Schaffer, V., & Timms, K. (2021). Virtual reality and mixed reality for second chance tourism. *Tourism Management*, 83(July 2020), 104256. <https://doi.org/10.1016/j.tourman.2020.104256>
- Beeton, S., & Benfield, R. (2002). Demand control: The case for demarketing as a visitor and environmental management tool. *Journal of Sustainable Tourism*, 10(6), 497–513. <https://doi.org/10.1080/09669580208667184>
- Belleflamme, P., Omrani, N., & Peitz, M. (2015). The economics of crowdfunding platforms. *Information Economics and Policy*, 33, 11–28. <https://doi.org/10.1016/j.infoecopol.2015.08.003>
- Bertocchi, D., Camatti, N., Giove, S., & van der Borg, J. (2020). Venice and overtourism: Simulating sustainable development scenarios through a tourism carrying capacity model. *Sustainability (Switzerland)*, 12(2). <https://doi.org/10.3390/su12020512>
- Bertuccio, P. (2023). Troppi turisti alle Cinqueterre? No al numero chiuso, basta programmare i gruppi. *Rai*.
- Blázquez-Salom, M., Cladera, M., & Sard, M. (2021). Identifying the sustainability indicators of overtourism and undertourism in Majorca. *Journal of Sustainable Tourism*, 0(0), 1–25. <https://doi.org/10.1080/09669582.2021.1942478>
- Bompani, M. (2023). Cinque Terre, l'assalto: più 15% rispetto al 2019. E il numero chiuso divide. *la Repubblica*.
- Bottazzo, F., & Pasqualetto, A. (2022). Venezia, si entra su prenotazione. E dal 2023 scatta il ticket d'ingresso. *Corriere della Sera*.
- Breban, M. (2022). *OVERTOURISM: DEFINITIONS, CAUSES, SOLUTIONS*.
- Brooks, N., & Simkin, L. (2012). Judging marketing mix effectiveness. *Marketing Intelligence & Planning*, 30(5), 494–514. <https://doi.org/10.1108/02634501211251025>
- Brown, K., Turner, R. K., Hameed, H., & Bateman, I. (1995). Tourism and sustainability in environmentally fragile areas: case studies from the Maldives and Nepal. *Working Paper -*

*Centre for Social & Economic Research on the Global Environment*, (GEC 95-30).

- Butler, R. W., & Dodds, R. (2022). Overcoming overtourism: a review of failure. *Tourism Review*, 77(1), 35–53. <https://doi.org/10.1108/TR-04-2021-0215>
- Cagnina, M. R., Cicero, L., Osti, L., & Pizzuto, L. (2019). Uncontrolled positive promotion and tourists' satisfaction. *Marketing 4.0: le sfide della ...*, 1–5. <https://bia.unibz.it/esploro/outputs/conferenceProceeding/Uncontrolled-positive-promotion-and-tourists-satisfaction/991005772399901241%0Ahttps://bia.unibz.it/esploro/fulltext/conferenceProceeding/Uncontrolled-positive-promotion-and-tourists-satisfaction/9>
- Callahan, D. (2018). Coping with Success: Managing overcrowding in tourism destination. In *Search of the Good*. <https://doi.org/10.7551/mitpress/9483.003.0007>
- Camatti, N., Bertocchi, D., Carić, H., & van der Borg, J. (2020). A digital response system to mitigate overtourism. The case of Dubrovnik. *Journal of Travel and Tourism Marketing*, 37(8–9), 887–901. <https://doi.org/10.1080/10548408.2020.1828230>
- Cammelli, M. (2015). Citta d'arte tra autonomia e regimi speciali. <https://doi.org/10.7390/80799>
- Capocchi, A., Vallone, C., Pierotti, M., & Amaduzzi, A. (2019). Overtourism: A Literature Review to Assess Implications and Future Perspectives. *Sustainability*, 11(12), 3303. <https://doi.org/10.3390/su11123303>
- Celata, F., & Romano, A. (2020). Overtourism and online short-term rental platforms in Italian cities. *Journal of Sustainable Tourism*, 30(5), 1–20. <https://doi.org/10.1080/09669582.2020.1788568>
- Ceylan, Ö. (2019). Knowledge, attitudes and behavior of consumers towards sustainability and ecological fashion. *Textile and Leather Review*, 2(3), 154–161. <https://doi.org/10.31881/TLR.2019.14>
- Chai Lee Goi. (2009). A review of marketing mix: 4Ps or more? *International Journal of Marketing Studies*, 1(1), 2–16.
- Cheung, K. S., & Li, L. H. (2019). Understanding visitor–resident relations in overtourism: developing resilience for sustainable tourism. *Journal of Sustainable Tourism*, 27(8), 1197–1216. <https://doi.org/10.1080/09669582.2019.1606815>
- Cirikovi, E. (2014). Marketing Mix in Tourism, 3(2), 111–116. <https://doi.org/10.5901/ajis.2014.v3n2p111>
- Coldwell, W. (2017). First Venice and Barcelona: now anti-tourism marches spread across Europe. *The Guardian*.
- Corriere della Sera. (2021). Overtourism, Amsterdam dice basta al turismo di massa: numero chiuso

agli arrivi in città. *Corriere della Sera*.

- Costa, J., Varum, C., Montenegro, M., & Gomes, J. (2022). Measuring tourism success: are we on the brink of a new paradigm? *Worldwide Hospitality and Tourism Themes*, 14(1), 3–7. <https://doi.org/10.1108/WHATT-10-2021-0130>
- Crowther, D., & Lauesen, L. M. (2017). Qualitative methods. *Handbook of Research Methods in Corporate Social Responsibility*, 225–229. <https://doi.org/10.1177/0309132515596880>
- D’Ambrosio, A. (2022). Tassa di soggiorno fino a 10 euro a Firenze, Pisa, Rimini, Venezia e Verbania. *ilsole24ore*.
- De Crescenzo, V., Simeoni, F., Ulrich, K., & Ribeiro Navarrete, S. (2022). Searching for the crowd in sustainable tourism and leisure projects. *European Journal of Innovation Management*, 26(7), 110–126. <https://doi.org/10.1108/EJIM-02-2022-0095>
- de Forcade, R. (2022). Crociere, Venezia punta sugli scali diffusi. *ilsole24ore*.
- de la Calle-Vaquero, M., García-hernández, M., & de Miguel, S. M. (2021). Urban planning regulations for tourism in the context of overtourism. Applications in historic centres. *Sustainability (Switzerland)*, 13(1), 1–21. <https://doi.org/10.3390/su13010070>
- De Pessemier, T., Dhondt, J., Vanhecke, K., & Martens, L. (2019). TravelWithFriends: a Hybrid Group Recommender System for Travel Destinations. *9th ACM Conference on Recommender Systems*.
- Doborjeh, Z., Hemmington, N., Doborjeh, M., & Kasabov, N. (2022). Artificial intelligence: a systematic review of methods and applications in hospitality and tourism. *International Journal of Contemporary Hospitality Management*, 34(3), 1154–1176. <https://doi.org/10.1108/IJCHM-06-2021-0767>
- Dodds, R., & Butler, R. (2019). The phenomena of overtourism: a review. *International Journal of Tourism Cities*, 5(4), 519–528. <https://doi.org/10.1108/IJTC-06-2019-0090>
- Dominici, G. (2009). From Marketing Mix to e-Marketing Mix: a literature overview and classification. *International Journal of Business and Management*, 4(9), 1996–2002. <https://doi.org/10.5539/ijbm.v4n9p17>
- Dragovich, D., & Bajpai, S. (2022). Managing Tourism and Environment—Trail Erosion, Thresholds of Potential Concern and Limits of Acceptable Change. *Sustainability (Switzerland)*, 14(7). <https://doi.org/10.3390/su14074291>
- Dupeyras, A., & MacCallum, N. (2013). Indicators for Measuring Competitiveness in Tourism. *Competitiveness in Research and Development*. <https://doi.org/10.4337/9781845428273.00007>
- European Commission. (n.d.). Internal Market, Industry, Entrepreneurship and SMEs. *Internal Market, Industry, Entrepreneurship and SMEs*.



- Fattucchi, M. (2020). Turismo, arriva la App per evitare le code e alleggerire la città. *Corriere della Sera*.
- Femenia-Serra, F., & Gretzel, U. (2020). *Influencer Marketing for Tourism Destinations: Lessons from a Mature Destination*. *Information and Communication Technologies in Tourism 2020*. [https://doi.org/10.1007/978-3-030-36737-4\\_6](https://doi.org/10.1007/978-3-030-36737-4_6)
- Florida, R. (2018). The Global Tourism Backlash. *Bloomberg*.
- Font, X., & McCabe, S. (2017). Sustainability and marketing in tourism: its contexts, paradoxes, approaches, challenges and potential. *Journal of Sustainable Tourism*, 25(7), 869–883. <https://doi.org/10.1080/09669582.2017.1301721>
- Foschini, C. (2021). Effetto Ferragni sugli Uffizi, boom di visite dei più giovani. Il direttore Schmidt: “Crescita stabile per la fascia 19-25 anni.” *la Repubblica*.
- Frey, B. S., & Briviba, A. (n.d.). Cultural Overtourism : A Radical Proposal Undertourism and Overtourism, 1–9.
- Fu, W., Wang, Q., & Zhao, X. (2017). The influence of platform service innovation on value co-creation activities and the network effect. *Journal of Service Management*, 28(2), 348–388. <https://doi.org/10.1108/JOSM-10-2015-0347>
- Fu, W., Wang, Q., & Zhao, X. (2018). Platform-based service innovation and system design: a literature review. *Industrial Management and Data Systems*, 118(5), 946–974. <https://doi.org/10.1108/IMDS-03-2017-0129>
- Galati, A., Thrassou, A., Christofi, M., Vrontis, D., & Migliore, G. (2021). Exploring travelers’ willingness to pay for green hotels in the digital era. *Journal of Sustainable Tourism*, 1–18.
- Gavalas, D., Konstantopoulos, C., Mastakas, K., & Pantziou, G. (2014). Mobile recommender systems in tourism. *Journal of Network and Computer Applications*, 39(1), 319–333. <https://doi.org/10.1016/j.jnca.2013.04.006>
- Gerber, E. M., Hui, J. S., & Kuo, P.-Y. (2012). Crowdfunding: Why people are motivated to post and fund projects on crowdfunding platforms. *Proc. of the International Workshop on ...*, (February), 10. [http://juliehui.org/wp-content/uploads/2013/04/CSCW\\_Crowdfunding\\_Final.pdf](http://juliehui.org/wp-content/uploads/2013/04/CSCW_Crowdfunding_Final.pdf)
- Gerstner, E., Hess, J., & Chu, W. (1993). Demarketing as a differentiation strategy. *Marketing Letters*, 4(1), 49–57. <https://doi.org/10.1007/BF00994187>
- Godovykh, M., Baker, C., & Fyall, A. (2022). VR in Tourism: A New Call for Virtual Tourism Experience amid and after the COVID-19 Pandemic. *Tourism and Hospitality*, 3(1), 265–275. <https://doi.org/10.3390/tourhosp3010018>
- Gonza, T., & Ellerman, D. (2022). Using ESOPs to Democratize Labor-Based Platforms.

- Challenge*, 65(1–2), 34–48. <https://doi.org/10.1080/05775132.2022.2038887>
- González, A. T. (2019). Venice: the problem of overtourism and the impact of cruises. *Investigaciones Regionales*, 2019(42), 35–51.
- Goodwin, H. (2016). *Responsible Tourism: Using Tourism for Sustainable Development* (Second Edi.). Goodfellow Publishers Ltd.
- Goodwin, H. (2017a). The Challenge of Overtourism. *Responsible Tourism Partnership Working Paper 4*, (October).
- Goodwin, H. (2017b). Responsible Tourism Partnership: The Challenge of Overtourism, (October).
- Gowreesunkar, V., & Seraphin, H. (2019). Introduction: What smart and sustainable strategies could be used to reduce the impact of overtourism? *Worldwide Hospitality and Tourism Themes*, 11(5), 484–491. <https://doi.org/10.1108/WHATT-06-2019-0044>
- Gu, G., & Zhu, F. (2021). Trust and disintermediation: Evidence from an online freelance marketplace. *Management Science*, 67(2), 794–807. <https://doi.org/10.1287/mnsc.2020.3583>
- Gu, Y. (2022). Technology and Disintermediation in Online Marketplaces. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.4150094>
- Gülşen, U., Yolcu, H., Ataker, P., Erçakar, İ., & Acar, S. (2021). Counteracting overtourism using demarketing tools: A logit analysis based on existing literature. *Sustainability (Switzerland)*, 13(19). <https://doi.org/10.3390/su131910592>
- Ha, M. A. (2022). *Meeting the High Expectations of the Gen Z Traveler: New Report*. <https://skift.com/2022/06/21/meeting-the-high-expectations-of-the-gen-z-traveler-new-report/>
- Hamet, P., & Tremblay, J. (2017). Artificial intelligence in medicine. *Metabolism: Clinical and Experimental*, 69, S36–S40. <https://doi.org/10.1016/j.metabol.2017.01.011>
- Hardy, P. (2019). Sinking city: how Venice is managing Europe’s worst tourism crisis. *The Guardian*.
- Hassan, A., & Sharma, A. (2021). *Overtourism, Technology Solutions and Decimated Destinations*. *Overtourism, Technology Solutions and Decimated Destinations*. <https://doi.org/10.1007/978-981-16-2474-2>
- Haw, N., Lun, F., & Labonne, C. (2015). A Research On A Contemporary Issue/Challenge On Sustainable Tourism That Either The Developed Or Developing Countries/SIDS Are Facing And Provide Appropriate Practical Solutions., (September). <https://doi.org/10.13140/RG.2.1.3415.4721>
- Hristov, M., & Planning, S. (2021). Impact of overtourism on urban life, (45), 59–66.
- Huettermann, M., Thimm, T., Hannich, F., & Bild, C. (2019). Requirements for future digital visitor flow management. *Journal of Tourism Futures*, 5(3), 241–258.

<https://doi.org/10.1108/JTF-03-2019-0023>

ilSole24ore. (2022). Venezia, ticket d'accesso nel 2023: sconti per chi prenota. *ilsole24ore*.

ISTAT. (2020). Report Turismo - MOVIMENTO TURISTICO IN ITALIA | GENNAIO-SETTEMBRE 2020. <https://www.istat.it/it/archivio/252091>

ISTAT. (2023). Popolazione residente al 1° Gennaio: Veneto. *Istat*.  
<http://dati.istat.it/Index.aspx?QueryId=18549>

İştin, A. E., & Turpcu, E. (2021). Technology Application to Manage Overtourism in Turkey. *Overtourism, Technology Solutions and Decimated Destinations*, 275–292.  
[https://doi.org/10.1007/978-981-16-2474-2\\_18](https://doi.org/10.1007/978-981-16-2474-2_18)

Jørgensen, U. (2001). Grounded theory: Methodology and Theory Construction. *International Encyclopedia of the Social & Behavioral Sciences*, 1, 6396-6399.  
[http://rincondpaco.com.mx/rincon/Inicio/Seminario/Documentos/Met\\_otros/Docs\\_Dra\\_Fleiz/Lecturas\\_sugeridas/Charmaz\\_grounding\\_theory-methodology\\_and\\_theory.pdf](http://rincondpaco.com.mx/rincon/Inicio/Seminario/Documentos/Met_otros/Docs_Dra_Fleiz/Lecturas_sugeridas/Charmaz_grounding_theory-methodology_and_theory.pdf)

Kang, K. H., Stein, L., Heo, C. Y., & Lee, S. (2012). Consumers' willingness to pay for green initiatives of the hotel industry. *International Journal of Hospitality Management*, 31(2), 564–572. <https://doi.org/10.1016/j.ijhm.2011.08.001>

Karpova, G. A., Kuchumov, A. V., Testina, Y. S., & Voloshinova, M. V. (2019). Digitalization of a Tourist Destination. *ACM International Conference Proceeding Series*.  
<https://doi.org/10.1145/3372177.3373342>

Kasim, H., & Antwi, S. K. (2015). Qualitative and quantitative research paradigms in business research: A philosophical reflection. *European Journal of Business and Management(Online)*, 7(3), 217–225. [https://www.researchgate.net/profile/Hamza-Kasim/publication/295087782\\_Qualitative\\_and\\_Quantitative\\_Research\\_Paradigms\\_in\\_Business\\_Research\\_A\\_Philosophical\\_Reflection/links/56c7587108ae5488f0d2cd62/Qualitative-and-Quantitative-Research-Paradigms-in-Business-Research-A-Philosophical-Reflection](https://www.researchgate.net/profile/Hamza-Kasim/publication/295087782_Qualitative_and_Quantitative_Research_Paradigms_in_Business_Research_A_Philosophical_Reflection/links/56c7587108ae5488f0d2cd62/Qualitative-and-Quantitative-Research-Paradigms-in-Business-Research-A-Philosophical-Reflection/links/56c7587108ae5488f0d2cd62/Qualitative-and-Quantitative-Research-Paradigms-in-Business-Research-A-Philosophical-Reflection)

Keller, P. (2002). *Trends in Outdoor Recreation, Leisure and Tourism*. *Annals of Tourism Research* (Vol. 29). [https://doi.org/10.1016/s0160-7383\(01\)00094-9](https://doi.org/10.1016/s0160-7383(01)00094-9)

Kim, S., & Kang, Y. (2020). Why do residents in an overtourism destination develop anti-tourist attitudes? An exploration of residents' experience through the lens of the community-based tourism. *Asia Pacific Journal of Tourism Research*, 25(8), 858–876.  
<https://doi.org/10.1080/10941665.2020.1768129>

Kitchin, R. (2014). Explanation - Understanding. *Introducing Human Geographies*, 117–129.

Koens, K., Postma, A., & Papp, B. (2018). Is overtourism overused? Understanding the impact of tourism in a city context. *Sustainability (Switzerland)*, 10(12), 1–15.

<https://doi.org/10.3390/su10124384>

- Komsary, K. C., Tarigan, W. P., & Wiyana, T. (2018). Limits of acceptable change as tool for tourism development sustainability in Pangandaran West Java. *IOP Conference Series: Earth and Environmental Science*, 126(1). <https://doi.org/10.1088/1755-1315/126/1/012129>
- Kruczek, Z. (2019). Ways to counteract the negative effects of overtourism at tourist attractions and destinations. *Annales Universitatis Mariae Curie-Sklodowska. Sectio B*, 74, 45–57. <https://doi.org/10.17951/b.2019.74.45-57>
- Krueger, C., Bini, S., Helm, J. M., Swiergosz, A. M., Haeberle, H. S., Karnuta, J. M., et al. (2020). Machine Learning and Artificial Intelligence: Definitions, Applications, and Future Directions. *Current Reviews in Musculoskeletal Medicine*, 13(1), 69–76.
- Lawther, S., Hastings, G. B., & Lowry, R. (1997). De-marketing: Putting kotler and levy's ideas into practice. *Journal of Marketing Management*, 13(4), 315–325. <https://doi.org/10.1080/0267257X.1997.9964475>
- Lee, S., Pan, B., & Park, S. (2019). RevPAR vs. GOPPAR: Property- and firm-level analysis. *Annals of Tourism Research*, 76(July), 180–190. <https://doi.org/10.1016/j.annals.2019.04.006>
- Li, K. X., Jin, M., & Shi, W. (2018). Tourism as an important impetus to promoting economic growth: A critical review. *Tourism Management Perspectives*, 26(April 2016), 135–142. <https://doi.org/10.1016/j.tmp.2017.10.002>
- Lindsay, M. (2021). Munich Personal RePEc Archive Why Existing Regulatory Frameworks Fail in the Short-term Rental Market : Exploring the Role of Regulatory Fractures, (106712).
- Litavniece, L., Silicka, I., Garanti, Z., Berjozkina, G., & Kolongou, S. (2021). Under-tourism regions and destinations: what are their opportunities to succeed? *Worldwide Hospitality and Tourism Themes*, 13(6), 763–772. <https://doi.org/10.1108/WHATT-07-2021-0097>
- Liu, P., & Liu, Y. (2016). Smart Tourism via Smart Phone, (3), 129–132. <https://doi.org/10.2991/cimns-16.2016.33>
- Logue, D., & Grimes, M. (2019). Platforms for the people: Enabling civic crowdfunding through the cultivation of institutional infrastructure. *Strategic management Journal*, 43(3), 663–693.
- Loonam, J., Eaves, S., Kumar, V., & Parry, G. (2018). Towards digital transformation: Lessons learned from traditional organizations. *Strategic Change*, 27(2), 101–109. <https://doi.org/10.1002/jsc.2185>
- Loureiro, A. (2019). Innovation and technology – the only answer for sustainable tourism growth. *Worldwide Hospitality and Tourism Themes*, 11(6), 743–747. <https://doi.org/10.1108/WHATT-09-2019-0055>
- Madakam, S., Ramaswamy, R., & Tripathi, S. (2015). Internet of Things (IoT): A Literature

- Review. *Journal of Computer and Communications*, 03(05), 164–173.  
<https://doi.org/10.4236/jcc.2015.35021>
- Majdak, P., Manuel, A., & Almeida, M. De. (2022). Pre-Emptively Managing Overtourism by Promoting Rural Tourism in Low-Density Areas : Lessons from Madeira, 1–20.
- Malani, P., Gupta, S., & Chaturvedi, A. (2020). Digital Trends: A Problem or a Solution for Overtourism. *Gedrag & Organisatie Review*, 33(03), 309–326.  
<https://doi.org/10.37896/gor33.03/430>
- Mandić, A., & Petrić, L. (2021). *Mediterranean Protected Areas in the Era of Overtourism: Challenges and Solutions*. *Mediterranean Protected Areas in the Era of Overtourism: Challenges and Solutions*. <https://doi.org/10.1007/978-3-030-69193-6>
- Mangan, J., Lalwani, C., & Gardner, B. (2004). Combining quantitative and qualitative methodologies in logistics research. *International Journal of Physical Distribution and Logistics Management*, 34(7), 565–578. <https://doi.org/10.1108/09600030410552258>
- Marasco, A., Maggiore, G., Morvillo, A., & Becheri, E. (2022). *Rapporto sul turismo italiano*. CNR.
- Marques Pereira, S. (2022). Regulation of short-term rentals in Lisbon: strike a balance between tourism dependence and urban life. *Urban Research and Practice*, 15(4), 477–504.  
<https://doi.org/10.1080/17535069.2020.1842901>
- Matheis, C. (2022). Travel & Tourism - Market Data Analysis & Forecast. *Statista*, (December).  
<https://www.statista.com/study/40460/travel-tourism/>
- Maurer, C., & Siller, H. (2019). *ISCONTOUR 2019 Tourism Research Perspectives: Proceedings of the International Student Conference in Tourism Research*.
- McCusker, K., & Gunaydin, S. (2015). Research using qualitative, quantitative or mixed methods and choice based on the research. *Perfusion (United Kingdom)*, 30(7), 537–542.  
<https://doi.org/10.1177/0267659114559116>
- Mihalic, T. (2020). Conceptualising overtourism: A sustainability approach. *Annals of Tourism Research*, 84(July). <https://doi.org/10.1016/j.annals.2020.103025>
- Milano, C. (2018). OVERTOURISM AND TOURISMPHOBIA : Global trends and local contexts, (September 2017). <https://doi.org/10.13140/RG.2.2.13463.88481>
- Milano, C., & Novelli, M. (2019). Overtourism, 413–416.
- Mohaidin, Z., Wei, K. T., & Ali Murshid, M. (2017). Factors influencing the tourists' intention to select sustainable tourism destination: a case study of Penang, Malaysia. *International Journal of Tourism Cities*, 3(4), 442–465. <https://doi.org/10.1108/IJTC-11-2016-0049>
- Mondal, S., & Samaddar, K. (2021). Responsible tourism towards sustainable development:

- literature review and research agenda. *Asia Pacific Business Review*, 27(2), 229–266.  
<https://doi.org/10.1080/13602381.2021.1857963>
- Moore, M. A. (2015). Moore, M. A. (2015). An essay on D oxe y ’ s ( 1975 ) Irridex ; A p ’ s ( 1992 ) Social Exchange Process ; and Gursoy and Rurhterford ’ s ( 2004 ) Determinants of Community Support theories . Mphil document , University of Cape Coast ,.
- Moreno-Gil, S., & Coca-Stefaniak, J. A. (2020). Overtourism and the sharing economy – tourism cities at a crossroads. *International Journal of Tourism Cities*, 6(1), 1–7.
- Morgan, D. L. (1998). Practical strategies for combining qualitative and quantitative methods: Applications to health research. *Qualitative Health Research*, 8(3), 362–376.  
<https://doi.org/10.1177/104973239800800307>
- Moriarty, J., & Moriarty, J. (2014). *Methods Review 1 Qualitative Methods Overview*.
- Navarro Jurado, E., Damian, I. M., & Fernández-Morales, A. (2013). Carrying capacity model applied in coastal destinations. *Annals of Tourism Research*, 43, 1–19.  
<https://doi.org/10.1016/j.annals.2013.03.005>
- Nepal, R., & Nepal, S. K. (2021). Managing overtourism through economic taxation: policy lessons from five countries. *Tourism Geographies*, 23(5–6), 1094–1115.  
<https://doi.org/10.1080/14616688.2019.1669070>
- Neuburger, L., Beck, J., & Egger, R. (2018). The “phygital” tourist experience: The use of augmented and virtual reality in destination marketing. *Tourism Planning and Destination Marketing*, (December 2021), 183–202. <https://doi.org/10.1108/978-1-78756-291-220181009>
- Nieuwland, S., & Melik, R. Van. (2020). Current Issues in Tourism Regulating Airbnb : how cities deal with perceived negative externalities of short-term rentals Regulating Airbnb : how cities deal with perceived negative externalities of short-term rentals, 3500.  
<https://doi.org/10.1080/13683500.2018.1504899>
- ONU Italia. (2019). Obiettivo 11: Rendere le città e gli insediamenti umani inclusivi, sicuri, duraturi e sostenibili. *Centro Regionale di Informazione delle Nazioni Unite*.
- Pais, I. (2019). The platform economy: Methodological issues and research perspectives. *Polis (Italy)*, 33(1), 143–159. <https://doi.org/10.1424/92922>
- Pásková, M., Wall, G., Zejda, D., & Zelenka, J. (2021). Tourism carrying capacity reconceptualization: Modelling and management of destinations. *Journal of Destination Marketing and Management*, 21(November 2020).  
<https://doi.org/10.1016/j.jdmm.2021.100638>
- Pasquinelli, C., & Trunfio, M. (2020). Reframing urban overtourism through the Smart-City Lens. *Cities*, 102(August 2019). <https://doi.org/10.1016/j.cities.2020.102729>

- Pasquinelli, C., & Trunfio, M. (2022). The missing link between overtourism and post-pandemic tourism. Framing Twitter debate on the Italian tourism crisis. *Journal of Place Management and Development*, 15(3), 229–247. <https://doi.org/10.1108/JPMD-07-2020-0073>
- Pechianer, H., Innerhofer, E., & Erschbamer, G. (2020). *Overtourism: Tourism Management and Solutions*.
- Peeters, P., Gössling, S., Klijs, J., Milano, C., Novelli, M., Dijkmans, C., et al. (2018). Research for TRAN Committee-Overtourism: impact and possible policy responses. *Research for TRAN Committee - Overtourism: impact and possible policy responses*, (October), 1–255. [http://www.europarl.europa.eu/thinktank/en/document.html?reference=IPOL\\_STU\(2018\)629184](http://www.europarl.europa.eu/thinktank/en/document.html?reference=IPOL_STU(2018)629184)
- Phi, G. T. (2020). Framing overtourism: a critical news media analysis. *Current Issues in Tourism*, 23(17), 2093–2097. <https://doi.org/10.1080/13683500.2019.1618249>
- Pillai, R., & Sivathanu, B. (2020). Adoption of AI-based chatbots for hospitality and tourism. *International Journal of Contemporary Hospitality Management*, 32(10), 3199–3226. <https://doi.org/10.1108/IJCHM-04-2020-0259>
- Pomering, A., Noble, G., & Johnson, L. W. (2011). Conceptualising a contemporary marketing mix for sustainable tourism. *Journal of Sustainable Tourism*, 19(8), 953–969. <https://doi.org/10.1080/09669582.2011.584625>
- Portolan, A., & Pavlic, I. (2014). Encyclopedia of Tourism. *Encyclopedia of Tourism*. <https://doi.org/10.1007/978-3-319-01669-6>
- Presidenza del Consiglio dei Ministri. (2021). Piano nazionale di ripresa e resilienza, 269. <https://italiadomani.gov.it/it/home.html>
- Rahman, K. S., & Thelen, K. (2019). The rise of the platform business model and the transformation of twenty-first-century capitalism. *Politics and Society*, 47(2), 177–204. <https://doi.org/10.1177/0032329219838932>
- Roinioti, E., Pandia, E., Konstantakis, M., & Skarpelos, Y. (2022). Gamification in Tourism: A Design Framework for the TRIPMENTOR Project. *Digital*, 2(2), 191–205. <https://doi.org/10.3390/digital2020012>
- Ruggieri, R., Savastano, M., Scalingi, A., Bala, D., & D’Ascenzo, F. (2018). The impact of Digital Platforms on Business Models: An empirical investigation on innovative start-ups. *Management and Marketing*, 13(4), 1210–1225. <https://doi.org/10.2478/mmcks-2018-0032>
- Schönherr, S., Bichler, B. F., & Pikkemaat, B. (2023). Attitudes not set in stone: Existential crises changing residents’ irritation. *Tourism Management*, 96(December 2022). <https://doi.org/10.1016/j.tourman.2022.104708>

- Self, R. M., Self, D. R., & Bell-Haynes, J. (2010). Marketing Tourism In The Galapagos Islands: Ecotourism Or Greenwashing? *International Business & Economics Research Journal (IBER)*, 9(6), 111–126. <https://doi.org/10.19030/iber.v9i6.590>
- Séraphin, H., Gladkikh, T., & Thanh, T. V. (2020). *Overtourism causes, implications and solutions. Overtourism: Causes, Implications and Solutions*. <https://doi.org/10.1007/978-3-030-42458-9>
- Seraphin, H., & Ivanov, S. (2020). Overtourism: a revenue management perspective. *Journal of Revenue and Pricing Management*, 19(3), 146–150. <https://doi.org/10.1057/s41272-020-00241-7>
- Séraphin, H., Zaman, M., Olver, S., Bourliataux-Lajoinie, S., & Dosquet, F. (2019). Destination branding and overtourism. *Journal of Hospitality and Tourism Management*, 38(November 2018), 1–4. <https://doi.org/10.1016/j.jhtm.2018.11.003>
- Sharma, A., & Hassan, A. (2021). Overtourism as Destination Risk: Impacts and Solutions. *Overtourism as Destination Risk: Impacts and Solutions*, 1–288. <https://doi.org/10.1108/9781839097065>
- Sica, E., Sisto, R., Bianchi, P., & Cappelletti, G. (2021). Inclusivity and responsible tourism: Designing a trademark for a national park area. *Sustainability (Switzerland)*, 13(1), 1–11. <https://doi.org/10.3390/su13010013>
- Siikamäki, P., & Kangas, K. (2009). *Limits of acceptable change as a tool for protected area management - Oulankas National Park as an example*.
- Simon, F. J. G., Narangajavana, Y., & Margués, D. P. (2004). Carrying capacity in the tourism industry: A case study of Hengistbury Head. *Tourism Management*, 25(2), 275–283. [https://doi.org/10.1016/S0261-5177\(03\)00089-X](https://doi.org/10.1016/S0261-5177(03)00089-X)
- Smicek, N. (2017). *Platform Capitalism*.
- Statista Research Department. (2020). Low-cost carrier market worldwide.
- Statista Research Department. (2021). Sustainable Tourism in Italy. <https://ecobnb.com/blog/2014/10/sustainable-tourism-italy-benefits/>
- Statista Research Department. (2023). *Countries with the highest outbound tourism expenditure worldwide from 2019 to 2021*.
- Stynes, D. J. (1997). Economic impacts of tourism. *Citeseer*, 95–108. <https://doi.org/10.4324/9781351025102-8>
- Sullivan, L., Schuster, R., Diane, K., Donible, C., & Morais, D. (2009). BUILDING SUSTAINABLE COMMUNITIES USING SENSE OF PLACE INDICATORS IN THREE HUDSON RIVER VALLEY, NY, TOURISM DESTINATIONS: AN APPLICATION OF THE LIMITS OF ACCEPTABLE CHANGE PROCESS.



- Sunlu, U. (2003). Environmental impacts of tourism. *Séminaires Méditerranéens*, 57, 263–270.  
<http://om.ciheam.org/article.php?IDPDF=4001977><http://www.ciheam.org/%5Cnhttp://om.ciheam.org/>
- Swanson, R., & Holton, E. (2005). *Research in Organization. Foundations and methods of inquiry*.
- Szromek, A. R., Hysa, B., & Karasek, A. (2019). The Perception of Overtourism from the Perspective of Different Generations. *Sustainability (Switzerland)*, 11(24).  
<https://doi.org/10.3390/su11247151>
- Szromek, A. R., Kruczek, Z., & Walas, B. (2020). The attitude of tourist destination residents towards the effects of overtourism-Kraków case study. *Sustainability (Switzerland)*, 12(1), 1–17. <https://doi.org/10.3390/SU12010228>
- Tussyadiah, I. (2015). *Information Communication Technologies in Tourism 2015*. Springer.  
[https://doi.org/DOI 10.1007/978-3-319-14343-9](https://doi.org/DOI%2010.1007/978-3-319-14343-9)
- UNWTO. (n.d.). Glossary of tourism terms. [https://www.unwto.org/glossary-tourism-terms#:~:text=Tourism is a social%2C cultural,personal or business%2Fprofessional purposes.](https://www.unwto.org/glossary-tourism-terms#:~:text=Tourism%20is%20a%20social%20cultural,personal%20or%20business%20professional%20purposes.)
- UNWTO. (2018a). ‘Overtourism’? – Understanding and Managing Urban Tourism Growth beyond Perceptions, Executive Summary. *‘Overtourism’? – Understanding and Managing Urban Tourism Growth beyond Perceptions, Executive Summary*.  
<https://doi.org/10.18111/9789284420070>
- UNWTO. (2018b). ‘Overtourism’? – Understanding and Managing Urban Tourism Growth beyond Perceptions, Executive Summary. *‘Overtourism’? – Understanding and Managing Urban Tourism Growth beyond Perceptions, Executive Summary*.  
<https://doi.org/10.18111/9789284420070>
- Vagena, A. (2018). ACADEMIA Letters OVERTOURISM : Definition and Impact, (June 2021), 1–6.
- Van Alstyne, M. W., Parker, G. G., & Paul Choudary, S. (2016). Pipelines, platforms, and the new rules of strategy. *Harvard Business Review*, 2016(April).
- Veile, J. W., Schmidt, M. C., & Voigt, K. I. (2022). Toward a new era of cooperation: How industrial digital platforms transform business models in Industry 4.0. *Journal of Business Research*, 143(March 2021), 387–405. <https://doi.org/10.1016/j.jbusres.2021.11.062>
- Veríssimo, M., Moraes, M., Breda, Z., Guizi, A., & Costa, C. (2020). Overtourism and tourismphobia. *Tourism*, 68(2), 156–169. <https://doi.org/10.37741/t.68.2.4>
- Vernengo, M., Caldentey Perez, E., & Rosser Jr, B. J. (2008). Pigouvian taxes. In: *The New Palgrave Dictionary of Economics*. In *Palgrave Macmillan*. London.  
[https://doi.org/https://doi.org/10.1007/978-1-349-58802-2\\_1286](https://doi.org/https://doi.org/10.1007/978-1-349-58802-2_1286)

- Wilkinson, P. F. (2002). *Information and Communication Technologies in Tourism 2000*. *Annals of Tourism Research* (Vol. 29). [https://doi.org/10.1016/s0160-7383\(01\)00025-1](https://doi.org/10.1016/s0160-7383(01)00025-1)
- Wirtz, J., So, K. K. F., Mody, M. A., Liu, S. Q., & Chun, H. E. H. (2019). Platforms in the peer-to-peer sharing economy. *Journal of Service Management*, 30(4), 452–483. <https://doi.org/10.1108/JOSM-11-2018-0369>
- World Bank national accounts data. (2021). GDP (current US\$). *The World Bank*.
- WTO. (2013). *Economic Crisis, International Tourism Decline and its Impact on the Poor*. World Tourism Organization. <https://doi.org/doi:10.18111/9789284414444>
- WTTC. (2018). Travel & Tourism. Global economic Impact & Issues 2018. *WTTC*.
- WTTC. (2022). Economic Impact 2022, 1–36. <https://wtcc.org/Portals/0/Documents/Reports/2022/EIR2022-Global Trends.pdf>
- Yang, X., Pan, B., Evans, J. A., & Lv, B. (2015). Forecasting Chinese tourist volume with search engine data. *Tourism Management*, 46, 386–397. <https://doi.org/10.1016/j.tourman.2014.07.019>
- Yue, B., Sheng, G., She, S., & Xu, J. (2020). Impact of consumer environmental responsibility on green consumption behavior in China: The role of environmental concern and price sensitivity. *Sustainability (Switzerland)*, 12(5), 1–16. <https://doi.org/10.3390/su12052074>
- Zaidan, E., & Kovacs, J. F. (2017). Resident Attitudes Towards Tourists and Tourism Growth: a Case Study From the Middle East, Dubai in United Arab Emirates. *European Journal of Sustainable Development*, 6(1), 291–307. <https://doi.org/10.14207/ejsd.2017.v6n1p291>
- Zemła, M. (2020). Reasons and consequences of overtourism in contemporary cities-Knowledge gaps and future research. *Sustainability (Switzerland)*, 12(5). <https://doi.org/10.3390/su12051729>
- Zhang, Y., Li, G., Muskat, B., & Law, R. (2021). Tourism Demand Forecasting: A Decomposed Deep Learning Approach. *Journal of Travel Research*, 60(5), 981–997. <https://doi.org/10.1177/0047287520919522>
- Zhao, Y., von Delft, S., Morgan-Thomas, A., & Buck, T. (2020). The evolution of platform business models: Exploring competitive battles in the world of platforms. *Long Range Planning*, 53(4), 101892. <https://doi.org/10.1016/j.lrp.2019.101892>
- Zlatanov, S., & Popescu, J. (2019). Current Applications of Artificial Intelligence in Tourism and Hospitality, 84–90. <https://doi.org/10.15308/sinteza-2019-84-90>
- Zubiaga, M., Izkara, J. L., Gandini, A., Alonso, I., & Saralegui, U. (2019). Towards smarter management of overtourism in historic centres through visitor-flow monitoring. *Sustainability (Switzerland)*, 11(24). <https://doi.org/10.3390/SU11247254>

## Sitography

*Garupa Website*. Available at: <https://garupa.org.br/> (Accessed: 14 May 2023).

*Fairbnb.coop Website* . Available at: <https://fairbnb.coop/> (Accessed: 14 May 2023).

*EcoBnb Website*. Available at: <https://ecobnb.com/> (Accessed: 14 May 2023).

*Green Pearls Website*. *Green Pearls - the future of traveling*. Available at:  
<https://www.greenpearls.com/> (Accessed: 14 May 2023).

*Look alike Website Local Alike*. Available at: <https://localalike.com/> (Accessed: 14 May 2023).

# Appendix A

<b>Overview</b>
Introduce briefly your company
What are the main motivations behind the creation and development of your company and how did the idea come about?
Number of users using the service offered and who is the target user?
What are the main difficulties you have and/or are facing in implementing your business?
What effects has Covid-19 generated on your business?
<b>Strategy</b>
What strategies and solutions do you offer to mitigate the phenomenon of overtourism?
How did you select the solution you offer?
Do you use collaboration with other players to implement your solutions? If not, do you believe that future collaboration with other players in the industry can help you achieve the goal of sustainability?
How do you think you can scale your business and reach more users?
Who are the stakeholders you involve in your business?
How does your offering differ from other players in sustainable tourism?
<b>Sustainability</b>
Why did you decide to go for sustainability?
Do you believe that sustainability and business are two elements that can coexist or should they be considered as trade-offs?
<b>Economics</b>
From an operational perspective, what does your business model consist of and how does it work? Specifically, the sources of revenue and how the end consumer is reached
What are the main sources of funding for your business? (public funding, business angel, venture capital, private equity, equity capital, etc.)
<b>Technology</b>
Would you be willing to use technology solutions, such as platforms, to collaborate with other players in the industry? For example, a structure in which multiple services are aggregated

# Appendix B

Overview			
	General	Motivations	Difficulties
Company 1	<p>Company: boutique consulting firm in the field of Destination Marketing and Management</p> <p>Audience: public administration, municipalities and to a lesser extent private individuals</p> <p>Founded in 2017, in Macerata (Marche)</p> <p>Do not operate in areas where there is overtourism, but aim to enhance lesser-known areas</p>	<p>The earthquake that struck Marche in 2016 created union of meetings, collaborations, and ideas to intervene on identity aspects and create opportunities for rebirth to escape the climate of distrust and devastation in those areas at that time</p>	<p>First years were extremely complicated and tourism sector is omnipresent</p> <p>Difficulties of the beginning: founder had to manage microteams not having a direct background from the tourism point of view, but had a general background in Management. It was necessary to study a lot and do in-depth studies. 2nd challenge: creating something new that did not exist in the area, so there was no benchmark. 3rd difficulty: viscosity of the Public Administration, difficulty in communicating and getting the offer received.</p> <p>Pandemic was a major brake on the company's development, especially because it came at the initial stage, reducing financial resources considerably. One could not talk about tourism development when the intensive care units were full. However, the pandemic allowed the company to organize itself, reposition itself, define who they were, where they wanted to go, and how to do it. The Covid had cleared the latest trends that need to be grasped, e.g., proximity tourism, renewed awareness of small towns</p>
Company 2	<p>Company: village tourism platform. Established in 2019 and the platform was launched in February 2020 in Yggiano, Basilicata.</p> <p>Target: all municipalities up to 20,000 inhabitants, including their businesses and artisans. The end user of the service is the tourist. It is possible to visualize the 360° offer of the village as well as that of neighboring villages, creating benefits for the local economy.</p> <p>Numbers: at the moment 300 municipalities have joined, and last year the number of users peaked at 200,000. It is estimated they may double this year. Users at the moment are also organic and no longer coming from adv</p>	<p>The idea was born out of a personal need. During a tour in Basilicata, they realized that they were constantly asking Google what to do and where to go. "We spent most of our time with our smartphones in hand searching for information, finding the absence of a single, authoritative site." The fact that there is not as much information acts as a deterrent. Need to equip destinations with channels through which to sponsor themselves, grouping villages together</p> <p>The goal is to help villages offer experiences to tourists, reducing hit-and-run tourism. Specifically, the platform aims to collect fragmented information in one place to organize and coordinate the tourism offerings of villages that are not currently in the tourism virtuous</p>	<p>Pandemic: initially, it was a big obstacle, because it stopped the activity of the tourism platform in the bud, morally and economically difficult to deal with. On the positive side, however, tourists had more time to take in the offer and evaluate it. More feedback was recorded from the pro loco, which was completely at a standstill at that time. Another important element is grouping the villages, their stories, services to create a single usable area</p> <p>Viscosity of public administration and lack of planning of municipalities, difficulty in conveying their offer and communicating it to tourists to attract them</p> <p>Viscosity of municipalities to be involved, as well as making them understand the importance of digitizing and making them understand the difference of the service offered compared to simple social channels. The difference is that on social channels you type in a destination if you know it.</p> <p>Content management, necessary quality checks regarding what is uploaded to the platform. Trusting the tourist so that they perceive the site as authoritative and reliable for organizing</p> <p>Pandemic: between 2020-2021 damage was large; in 2022-2023 slight recovery especially for luxury-related tours. However, Covid functioned as an accelerator of topics that the company had already anticipated, causing it to lose innovative value and competitive advantage</p> <p>High costs in communication and marketing. Digital marketing is very expensive</p> <p>Difficulty in raising funds</p>
Company 3	<p>Company: company born in the pre-Covid period in Milan, in 2019, and is a tour operator offering niche experiences with high educational and cultural content</p> <p>Target audience: discerning travelers, international client, especially during the pre-Covid period, medium to high spenders, with high cultural background</p>	<p>Idea stems from the observation that in Italy the supply is flat while the demand for such type of travel it is various</p> <p>Objective is to bring, through passions, tourists out of the most popular places</p> <p>The company was born in response to a lack that was detected in the market</p>	<p>High costs in communication and marketing. Digital marketing is very expensive</p> <p>Difficulty in raising funds</p>
Company 4	<p>Company: founded in 2018 in Brescia and deals with innovation associated with tourism. They are positioned as the reference community that gathers 4000 subjects between companies and individuals. They deal with transformative or educational experiences through which people have the opportunity to make a personal growth path; it is a very specific field. Once companies in line with the vision of company 4 are identified, they are welcomed into the community within which events, webinars, gatherings are held on a weekly basis. This allows companies to connect with Company 4 and rely on them to accelerate their growth. The community fosters meetings, collaborations, and partnerships that are critical for growth. In general, it is a tour operator specializing in cultural activities, has booking technology platform to manage and sell the products that are made</p>	<p>Company made for deep-rooted, almost political reasons. Having an experience can be a pivotal moment for an individual, as an experience can transform an individual's life and has a very strong educational impact. Producing such an impact is the motivation that drives the company and the people who are part of the community to continue their activities</p>	<p>The Covid-19 from a technological point of view has slowed down operations. The release of the marketplace has been postponed. Covid has taken away the resources needed to continue investing in technology</p> <p>Ordering operations that started before the pandemic and that post-Covid make less sense is an internal challenge of organization</p> <p>The other challenge is to remain attractive and return to receiving capital</p>

Strategy		
Offering	Collaboration	Scalability
<p>The programs offered are not top-down but are brought to life from the bottom up. The role of the company is as a facilitator and guide for positioning of destinations, who to attract and how to do it</p>	<p>Being able to trigger mechanisms of connection and mutual opportunity, and not envy, is something we strive for, and it is not always easy, because personal dynamics intervene, especially in small enterprises where we all know each other a bit</p> <p>We make use of partnerships and collaborations especially for tools and technological advancements. Everyone has to focus and specialize on what they have the most know-how and expertise in. We go for turnkey solutions from the market or we co-design it</p> <p>Key to success business strategy: before they went joint by joint to communicate the offering. Now they have decided to tie up with planning bodies that don't chew on tourism jargon but have strong relationships with administrations and are in contact with mayors. The added value is to be able to help them with the tourism part of their projects, since if those projects are funded, those entities would be the executors of those activities. This creates synergies, combining the close relationships of the planning bodies with the municipalities and the content-level expertise of the startup itself</p> <p><i>Management and involvement of citizens so that their passions and skills can be</i></p>	<p>PNRR represents an opportunity, if you are able to seize it, to engage and initiate interesting new projects</p> <p>Technological solutions make it possible to scale processes that would be difficult with consulting alone. E.g.: it is possible to do surveys and tests directly from the computer without physically traveling to the site</p> <p>Increase the network of professionals (i.e., design entities) with whom they collaborate and share shared programming</p>
<p>The actors involved receive, after registration, credentials to their own reserved area within which they enter their tourism offer, creating a tourism portal.</p> <p>A platform built to contain different services</p> <p>Objective: to bring out the immense Italian heritage outside of areas suffering from overtourism. The ambition of the platform is that of sustainability and making its inhabitants believe in their territory</p> <p>Offering: enhancement of the national territory and especially the lesser-known areas: introduction of experiences for tourists through a partnership signed with a tourist experience provider; printing and sale of postcards in collaboration with another company that also serves as a marketing mechanism; the village is given the opportunity to have its own independently managed tourist portal; possibility to manage the portal content; in the development phase the integration of tourist guides; reconciling supply and demand</p>	<p>Partnerships with other companies in the Startup Tourism Association. Integration within its offerings of services provided by other companies, such as selling and shipping postcards and tourism experiences. Goal is to intercept demand</p> <p>The company, being located in a village, has a constant and daily confrontation and engagement of local citizens; possibility to interact with the company through social channels or even through special section on the site for any feedback</p>	<p>Through quality content to be increasingly authoritative and become a virtual library.</p> <p>Investments in marketing are key, explaining to municipalities how to interact with the platform. Tourist loyalty is also fundamental: fostering the creation of alliances between villages and with economic actors in the tourism sector</p> <p>Ability to create a tourism portal in a short time</p>
<p>All trips are organized to take tourists out of major centers</p> <p>They are tour operators and also offer consulting services to businesses</p> <p>The offer is a response to a lack</p>	<p>For all technological solutions we use the collaboration of other players</p> <p>In building the product, we have formed collaborations with other companies in the Startup Tourism Association, with companies related to a specific territory</p> <p>Collaborations also with local guides, a very competent but undervalued figure</p> <p>Strong interrelationships and networks among companies in the Startup Tourism Association</p> <p>Very high involvement of smaller destinations, although there is often resistance from them</p>	<p>In the process of implementing the automation part of e-mail marketing</p> <p>Slow transformation of the website into e-commerce for ease of use</p> <p>Investments in traditional activities, such as press office, have high positive feedback, especially in terms of reputation</p>
<p>Community brand</p> <p>Accelerator of companies belonging to the community</p> <p>Selling products and services through platform</p> <p>Marketplace under development</p>	<p>The key to the company lies in community building, allowing it to scale the business and lighten the load of internal operations. They currently collaborate with 40 individuals who in some cases represent companies</p>	<p>During the pandemic they could not talk about scaling up. To date they have been able to scale the community, telling what they are and what they do</p> <p>The implementation of the marketplace, i.e., self-actualized, self-service technology platform, populating it with products and services from several different creators would allow the level of internal operations to be reduced</p> <p>Business is also scaled through the community, as some community members who are not employees, collaborate with the company on project implementation and marketplace development. Part of operations is delegated to community members. Effort can be distributed among a <b>large number of users</b></p>

		Sustainability		Economics	
Technology	Differentiation	Overview	Trade-Off	Business Model	
<p>Sentiment detection tools</p> <p>Under development 3D tool capable of giving dynamic land assessment and analysis. Tool for testing, predicting, planning and simulating even possible impacts and doing surveys without going directly to the field.</p>	<p>Human attitude to the protection and promotion of small towns. Many have started projects for sustainable tourism in the villages, but it is the close ties and relationships with those in the tourism industry that make the difference. Most people take tourism to big centers, made up of relationships, in which smaller and more hidden centers are valued.</p>	<p>Because sustainability: "is part of our individual value component". We have always positioned ourselves as a company available, not so much to the large centers, but to the inland, rural areas; to that hidden Italy, where tourism can become an important lever of regeneration.</p>	<p>There is no trade-off between sustainability and business, the business world says. In Northern Europe they are ahead of Italy, in understanding it. Sustainability is not a label, it is not a marketing lever but it is a reality that is emerging but not everyone has grasped it and not everyone is ready</p>	<p>90% of revenues come from public assignments, 70% of which are brokered by planning agencies. The remaining 10% comes from tourism and culture-related activities for private individuals</p>	
<p>Use of a platform designed for mobile use to meet consumer needs.</p> <p>Well-indexed platform positioned through link building activities with authoritative sites, giving the opportunity to appear among the very first results in web searches. This allows to intercept audience organically and not only through Adv</p>	<p>Other village promotion platforms are static and do not offer the municipality the possibility of its own management.</p> <p>The reserved area is modular and customizable.</p> <p>Events are made public and visible only at the time they are active and have yet to begin, creating opportunities to visit the hamlet and have people spend on that area</p> <p>The possibility is given for the municipality to have a tourism portal in a few days. There is no portal in Europe that allows such an operation. There are no exclusion criteria, but any</p>	<p>The goal is to build a quality structure so as to reconcile and make the enterprise sustainable. "We were born to add value, we strongly believe in our sustainability and we strongly believe they can travel in the same track."</p>	<p>There is a certain balance between sustainability and business. We ask for a three-year subscription from the municipality, which is the spokesperson for the service for other stakeholders, so one thing is not at the expense of the other. It is a slow process because communication with the municipality has several steps. The cash flow is not generated immediately, but the service is first tested to the municipality, which then has to convene a meeting, and eventually implement it with the various sustainability solutions offered.</p>	<p>Requested fees from municipalities for a minimum commitment of 3 years. Initially it was planned to require a fee from businesses as well, but after the pandemic it was decided to withdraw it. Users do not pay for the service.</p> <p>Other revenue sources come from advertising on the platform and percentage of experience sales (in partnership) and postcard sales (in partnership)</p>	<p>Before Covid, the sources of profit came only from the tour operator business. Subsequently, the communications consulting business was added.</p> <p>In 2022, the majority of revenues came from consulting services. In 2023 it is returning to a balance</p>
<p>Technology aspect is mainly related to marketing. By now it has become easy to identify communities. It is possible to target in an easy way, especially through email marketing, which makes it possible to send communications to the target audience and send the offer to those who are really interested, anywhere in the world. High response rates through this mechanism.</p> <p><i>Technology and provide great ease</i></p>	<p>The offer has a strong emphasis on cultural aspects. Differentiation is with other Italian tour operators, whereas are in line with foreign ones</p>	<p>The focus on sustainability stems from the team's personal stories. Now sustainability has become a trend. The company stands as a pioneer of sustainability issues, where only today are large companies focusing on it because it is demanded by the market</p> <p>The sustainability discourse needs to be kept broader, not just talking about sustainability but also having an impact</p> <p>Tourism cannot be 100% sustainable but</p>	<p>Tourism in fact cannot be 100% sustainable. Tourism should first of all be conscious, that is, you have to be aware with respect to the fact that you will pollute.</p> <p>Surely there is a trade-off, it is impossible to make it 100% sustainable, however, it could be conscious</p>	<p>Greenwashing has created a patina such that companies proclaim sustainability even though they often are not.</p> <p>As of today we are at a stage where there is no trade-off; there probably was before. Today sustainability can be seen as a multiplier. There will hopefully come a third phase, where the critical capacity of consumers will be able to discriminate between those who really do sustainable practices and those who use it as marketing leverage</p>	<p>Old revenue model: Software for managing and selling products and services. Revenues came from a 3% retain on sales.</p> <p>Current business model is based on Revenue sharing with collaborating community creators. 10% + VAT of their revenues is retained. In addition, various training services and incubation programs are also sold.</p> <p>Business model thus consists of a part from the services and a variable part that depends on the revenue of those who collaborate with the</p>
<p>Under development is a marketplace where products made by community members can be sold</p>	<p>Act as a Community</p>	<p>Sustainability is to be understood in a broad sense. Social sustainability means having a positive impact, not only in the environment, but also on communities and people</p>			

	Market Overview	
	Market Overview	
Funding	Market Overview	
<p>The PNRR offers an opportunity to return some of the financial resources blocked during Covid, through European programming that offers interesting calls. It is a fertile period from this point of view, some we have been able to take advantage of.</p> <p>They do not resort to the world of investors but everything is done through internal resources. Some investments are public. For example, a call was won to increase the capitalization of companies, i.e., in case of equity investment, 50 percent was donated by the Marche region and had to be put on the balance sheet as a reserve. Another notice won was about €7000 for the startup's</p>	<p>There is a huge fragmentation of destination marketing management companies, most are very small and territorial. They set up collaborations with other small companies, in order to reach territories other than the original one. Fragmentation is also seen again in the sustainable tourism companies in general, each with its own peculiarities and characteristics. Privileged relationship with other companies in the Startup Tourism Association," Interesting to think of a club of realities that share values and can be of mutual help</p> <p>A platform that encompasses such small companies could be interesting because it represents an extra showcase. There are already examples. However, its conditions need to be evaluated, such as margins and <i>revenues on sales. It could drive viability</i></p>	
<p>Initially only equity and reinvestment of what was generated by the platform</p> <p>Public funds</p> <p>No private investors were used in order to prevent the project from being distorted and there could be a risk that it would be driven solely by profit rationale</p>	<p>The market is highly fragmented</p> <p>The company has designed its platform precisely to address this situation. Ability to create a marketplace to make businesses dynamic and allow them to sell their typical products anywhere</p>	
<p>No funding has ever been received. Attempts were made with private investors but were unsuccessful.</p> <p>They were not sought particularly much, emphasized lack of ambition among the causes by the founder.</p> <p>Public tenders offer very low amounts or consulting services, in the Italian market knowledge is crucial in this respect</p>	<p>There is a huge fragmentation of players. Tourism legislature is regional, and companies don't want to give away shares to outside players. Suggested going through platforms that have the function of a showcase and then reaching the owned site. It is implausible for tourists to reach the institutional site of a small city.</p> <p>Platforms today are used as research tools. Bookings through OTAs are shrinking in favor of bookings on direct sites. New technology makes it possible to support even the smallest businesses</p>	
<p>Investor network, especially during the pandemic, was particularly timid. Investors preferred to focus on other sectors that were growing exponentially at the time, such as online meetings or distance education</p> <p>Raised €450,000, including €400,000 in 2019 obtained from two lead investors, L Venture Group and Angels for Growth. In addition to venture capital, they obtained €100,000 with a loan from Banca Etica. The corporate structure is also composed of a number of Business Angels</p>	<p>There is a great fragmentation of the market.</p> <p>There are a lot of people offering and doing interesting things, acting as a community and platform allows for aggregation, support, and storytelling initiatives that so many small organizations do better than larger ones</p>	

	Overview	
	General	
Company 5	<p>Company: established in June 2020 in Friuli Venezia Giulia, Udine</p> <p>Goal: slow tourism, less invasive, more authentic, territorial and respectful to make tourists experience a more intimate and real relationship with nature</p> <p>Target user: between 20 and 40 years old</p> <p>Number of clients: 3-400 per room</p> <p>6 employees in total</p>	
Company 6	<p>Company: founded January 1, 2020 in Modena, Italy. It is a tour operator specializing in bicycle travel and cycle tourism in general. It is a platform with the goal of making it easy and fast to purchase bicycle trips</p> <p>Part of the team comes from the tech sector and others from the tourism sector</p> <p>In 2022, 250 transactions have been recorded and the average shopping cart includes 3.2 people per transaction, measured through special dashboard KPIs</p>	
Company 7	<p>Company: formed by two partners in 2021, post-covid, in Monza</p> <p>Started as a sustainable housing booking company, now a full-fledged consulting firm</p> <p>Team with heterogeneous skills</p> <p>Target audience: B2B and B2C</p>	
Company 8	<p>Company formed in October 2019 in Venice with a team that comes from the world of tourism. Right from the start it wanted to be something different with a footprint close to sustainability</p> <p>Sector: regenerative tourism to help create something for the destination and the focus is its well-being. The company has a strong internal footprint toward sustainability or to be able to spread the message you have to start from your own company</p> <p>Founding values: C.A.R.E. -&gt; 1) values based on a sense of community that must be known and protected 2) Respect for the environment 3) culture 4) equity, i.e. redistribution of the economic part in favor of the destination visited</p> <p>The goal should not be big numbers but the well-being of the destination.</p> <p><u>Society wants to play an active role within the change</u></p>	



	<p>Motivations</p> <p>The main motivation is to witness a massification of tourism and to witness realities with which we do not agree and cannot bring man and nature to benefit</p>	<p>Strategy</p> <p>Offering</p>
	<p>Difficulties</p> <p>Covid on the one hand has been a limitation, on the other hand it has been a push for people to rediscover and question classical models. "We cannot totally condemn it."</p> <p>The difficulties are those typical of any startup. The expansion and growth of a company has consequences, such as: new roles to be filled, operations to be automated, new activities.</p>	<p>Alternative housing surrounded by nature. These are mini-mobile homes placed on private land and in green areas for people to experience an intimate relationship with nature</p>
<p>Wanting to exploit a market niche that was growing strongly and would continue to grow according to estimates and market data. That of bicycle tourism is an extremely pulverized slice of the market among small and medium-sized entrepreneurs, with no clear market leaders and where there is a clear problem of ease of use.</p> <p>Organizing a cycling tourism vacation is complex, for example, because of the logistical hurdle that needs to be addressed.</p> <p>In particular, these are pulverized and tiny realities with very low digitization, implying long interactions by e-mail</p>	<p>Covid represented a major blow, the effects of which will be understood in a decade or so. Covid had very negative consequences because of limited mobility. It mainly affected tourism operators, even the well-positioned ones. It could also have a positive side, accelerating processes and giving us a competitive advantage as we digitized before others. The impact of Covid is certain, the benefits will be seen if they come with time</p> <p>Difficulty in finding human and financial resources: finding rounds are very difficult, especially for early-stage companies. Venture capital sector is not alive in Italy, especially in our area (Modena), difficulty interacting with banks.</p> <p>Human resources: difficult to group, especially the more technical figures.</p> <p>Another barrier is bureaucracy, as well as high tax burdens and barriers to entry as a very fragmented market</p> <p>Difficulty in obtaining Covid reliefs, as they are based on previous years' revenue history</p>	<p>Tour operators bicycle tourism sector</p> <p>Packages for tourists</p> <p>Initial idea was to create a "Sustainability Booking," then the core was shifted to the consulting part to support, monitor corporate performance to improve sustainability</p> <p>Supporting companies in sustainability budgeting</p> <p>Strategic marketing leverage set to encourage undertourism and marketing campaigns are stopped during the busiest periods. Strong direct marketing activities, end user side is easier. B2B sector is more difficult</p> <p>Identification of accommodations in 3 targets following administration of questionnaire of about 30 questions, after which a score is obtained. Based on the score obtained, specific services are offered: low end -&gt; identification of gaps and highly customized consulting actions. Intermediate score -&gt; identification of areas where action is needed, offsetting of own emissions and calculation of CO2 emissions and publication on the company's site. High score -&gt; publication on the site and</p>
<p>Motivations stem both from strong personal motivations and sensitivity to the topic of sustainability on the part of the founders.</p>	<p>Covid: sustainable tourism operators have two drivers: tourism and sustainability. Covid helped the sustainability part by accelerating the processes. It is a highly developed and discussed driver in the post-Covid period. From the consulting point of view, at this stage accommodations prefer not to invest in consulting and projects. 2023 is a strong recovery year for that sector</p> <p>Difficulty in finding public funding</p> <p>Difficulty in finding reliable suppliers</p> <p>Mistakes dictated by entrepreneurial inexperience</p> <p>Great difficulties in the part of training and education of all stakeholders, training activities are needed to make people understand the potential of sustainability. Companies do not yet feel the need for sustainability, because facilities lack adequate training and education</p>	<p>Offering activities and solutions that go beyond just protecting destinations from an environmental point of view. Regenerative tourism is offered, meaning that destinations must be regenerated through the actions of the tourists themselves within the destination visited</p>
<p>Stems from personal awareness. Strong sensitivity and proximity to climate change issues. The basis was climate change. A strong impetus came from reading a text by Tiziano Terzani</p>	<p>Difficulty in spreading the message of sustainability without adequate training and education of stakeholders</p> <p>Although travel was blocked during the pandemic, it also represented a form of opportunity in that it led the founder and even the tourists themselves to do some thinking</p> <p>Little information and education. There was a lot of misuse of the terms "sustainability" and "digital"</p> <p>Still being in an industry anchored in the past and not seeing sustainability as an opportunity to be seized</p> <p>In general, fundraising in the tourism sector is complex; however, there are some institutions or finances that look at sustainability with an eye toward it</p> <p>Marketing and communication is an expensive business</p>	<p>70% of tourists would like to travel sustainably but cannot find the offer, and 20% of them are willing to pay up to 20% more</p> <p>Create itineraries that are still under-trodden by mass tourism. You want to give tourists an authentic and real experience by doing good to the destination visited, having a connection with the area visited. Needed education and awareness of tourists to make them understand the message of regenerative tourism</p>

	Scalability	Technology	Differentiation
<p>Collaboration</p> <p>Collaboration and technology sharing is extremely important to understand solutions that are increasingly high-performance, relying on external expertise. E.g., energy efficiency or environmental impact reduction</p> <p>External expertise for technology through consulting activity, know-how, designs</p>	<p>Like any startup, the business model is being refined to make it scalable and by seeking capital</p>	<p>External expertise, particularly rely on for advice, know-how, design</p>	<p>Unmassified model that goes against this concept. "We are a white fly compared to the rest". However, even though we are different, the companies involved in this type of tourism are moving in the same direction and with a common goal</p> <p>The exagerrated the concept of nature, disconnection and respect. They are 100% reversible, leaving no trace of their passage. Respect for nature and their reversibility is taken to extremes</p>
<p>Strong competitive advantage are human relationships and collaborations, to cope with a highly fragmented market</p> <p>Collaborations are only with tour operators from whom packages are purchased. No other collaborations are conducted outside of these parties, but there have been no opportunities to forge them</p>	<p>Trying to intercept as much supply as possible and bundling the supply, as it is highly fragmented and low digitization</p> <p>Key to scalability is technology, which can optimize internal processes and have a high-performance platform that can handle marketing automation, automated testing, interface with suppliers</p> <p>Strong investment in marketing, because in such a fragmented market with no market leaders, the battle is won on volume</p>	<p>Platform</p>	<p>High digitization compared to competitors and strong ties with other companies and tour operators to source the fragmentation of the market</p> <p>Extremely broad offering</p> <p>In the long run, differentiation will increase, allowing trips to be fully customizable. This is already present in part even today, however it is done manually and is not yet automatable</p> <p>There are no exclusive arrangements with a particular</p>
<p>Collaboration with operational partners, e.g., installation of equipment needed to increase housing sustainability. For example, partners for waste management, rainwater recovery, installation of photovoltaic panels. Other services such as CO2 calculation, video courses, sustainability reports are provided in-house</p>	<p>Through partnerships that allow for the creation of a dense network of relationships</p> <p>Marketing activities, especially e-mail marketing</p> <p>Partnerships with European tour operators</p>	<p>Use of a platform. First block involves heavy investment on site and platform for brokering green accommodations</p> <p>Under production and release, second block for e-commerce and then sale of services and videocourses</p> <p>Technology is highly expensive. More will be implemented in the future</p>	<p>There is no player in the market that offers what the company does. For example, the score that is assigned after the questionnaire is administered, that is, the quantification of the level of sustainability</p>
<p>Local associations that allow for connection and contact with the local area</p> <p>Local communities get involved. Message is to go to the routes less traveled by tourists, because these are areas built for tourists</p>		<p>Under strong development of the technological part. Additional details absent</p>	<p>In Italy they are the only ones doing regenerative tourism and have a mission vision based on C.A.R.E. which are the pillars of ESG</p> <p>Not only is the environmental or cultural part touched, but there is an economic part that affects the destination</p>

Sustainability		Economics	
Overview	Trade-Off	Business Model	Funding
<p>Sustainability should not be understood as a driver of business, but is a parallel driver</p>	<p>There is no trade-off. Building sustainably could also be cheaper. Before the sustainability fad, building sustainably meant building sustainably over time. There is no evidence of a direct correlation between the two. It is a false myth that comes from a myopic view that does not consider all aspects of when evaluating a project</p>	<p>Only source of revenue comes from housing rental</p>	<p>The company has paid in only the share capital required by the corporate form. Main recourse to private investors and public lenders.  In the first part public lenders were used, in the second phase private investors</p>
<p>In recent years, the phenomenon of greenwashing is increasingly present</p>	<p>We have as a benchmark the bio products that are more expensive. Sustainability means being aware of one's costs, as well as the impact they have on the environment. In this way, it is possible to intervene and apply their optimization  Sustainability does not have an additional cost; on the contrary, it can lead to savings if applied correctly. Need strong educational training activities to make people understand the potential of sustainability and the benefits in terms of cost <i>advantages</i></p>	<p>Revenues are mainly derived from the sale and provision of services such as carbon footprint calculation, sustainability report, and publication on the platform. Soon it will be introduced the videocourse activity, some of which is charged  Revenues also derive from tour operator activity and tour operator research mandates. Percentage on realization of projects. The consumer pays no fee when booking through the platform, revenue is derived from <i>the above activities</i></p>	<p>Public funding and calls, refinancing, however were obtained with enormous work behind  Company accelerated by Venture Group, board of advisors that made it possible to arrive at crowdfunding solutions  High equity and a lot of institutional capital (banks)  Has become easier to raise capital as the platform started to get into gear and increase revenues  Venture capital fabric, especially in the tourism sector, very weak; fads are being followed, moved from blockchain to artificial intelligence</p>
<p>You cannot talk about sustainability without awareness. Sustainability means reducing the impact that tourists have in a destination. Regenerative tourism is based on changing the construction of the tourism product  The mistake is to link the term sustainability to the environmental part, but other factors must be taken into consideration, as for example equity, social conditions  Consumers are willing to pay more to travel sustainably  Zero impact does not exist, and tour operators who sponsor it do not give correct information but are misleading. It is easy to say that a trip is sustainable if many factors are not taken into account  Sustainability is an opportunity that is still not seized by many. Need real and tangible change to embrace it in their business strategies. Change more difficult for large players. Small size is an advantage for flexibility</p>	<p>Sustainability, if implemented properly, allows for higher margins. There are many factors to consider in order to say whether sustainability generates higher costs.</p>	<p>Main sources of revenue for the company is the sale of travel</p>	<p>At the moment it is used equity capital, however it has limitations. It may be time to access new sources of capital. To do this there needs to be a great deal of communication activity to get the message across correctly</p>

Market Overview	
Market Overview	
The market is fragmented, but the more supply the better. Creating a platform I don't see it as something to invest time and money in as the risk is to create too small a niche	
Market composed of pulverized, low-digitalization entities with no clear market leader	
Use of a platform as an aggregator entity needs testing to understand its effectiveness and potential	
"It is better to be partners and unite in joint action instead of being competitors." Precisely because of the fragmented nature of the market, we are forming partnerships	
A platform to overcome such fragmentation could be a solution that needs some testing. We are noticing a strong return to direct booking and word of mouth. This also allows for proper communication about one's facility. To be successful, the platform should enable this	
The market is fragmented because in Italy, which is characterized by many small firms, there is one big player and the others have had to carve out a space for themselves. But the small players do not have the strength to communicate it and have their own limited niche even if the product is the same In part, the platform could remedy this fragmentation, but it does not completely agree. They still remain products that need attention. It could be a combination. You would need to understand what control is at the base, because you don't have clear information on the actual preparation of the other players. They don't have the same preparation at the sustainability level. A platform could work more if there was an equal level of preparation. Need real control and certifications of the supply chain to support that products are indeed sustainable. Needed regulation for more control of platform participants	

## Appendix C

Construct	Measurement item	Source
Environmental responsibility	<ol style="list-style-type: none"> <li>1. People must be in harmony with nature to survive</li> <li>2. People are indifferent to nature</li> <li>3. We are approaching the limit of the number of people the earth can accommodate</li> <li>4. Man has the right to modify the natural environment to suit his needs</li> <li>5. When humans interfere with nature, the consequences are often disastrous</li> <li>6. I am careful with regard to nature</li> <li>7. The balance of nature is fragile and delicate</li> <li>8. People do not need to adapt to the natural environment, since they can change it according to their needs</li> <li>9. People have the right to change the natural environment according to their needs</li> <li>10. I am keenly aware of environmental problems</li> <li>11. The earth is like a spaceship that has a limited amount of resources</li> <li>12. When people interact with nature, the result is disastrous</li> <li>13. The human species is destined to dictate towards the natural environment</li> </ol>	(Ceylan 2019; Kang et al. 2012)
Environmental Behaviour	<ol style="list-style-type: none"> <li>1. I prefer to purchase more durable products</li> <li>2. I reduce gas emission using public transport</li> <li>3. I return bottles, cans and/or glass to a recycling center</li> <li>4. I buy recycled products and/or packed products with recycled packing</li> <li>5. I used products with refilling option</li> <li>6. I purchase in gross and/or big amounts</li> <li>7. I recycle newspapers;</li> <li>8. I read the tags on the product to see if the content is environmentally friendly</li> <li>9. I avoid buying products of companies ignorant to environmental issues</li> <li>10. I donate to environmental groups and/or organizations</li> <li>11. I write to a politician about environmental issues and topics</li> </ol>	(Ceylan 2019; Kang et al. 2012)
Price Importance	<ol style="list-style-type: none"> <li>1. When I choose a product, price is the most important factor</li> <li>2. I rely on price to judge the value of what I buy</li> <li>3. When I buy a product, I select the cheapest</li> <li>4. I always buy the product with the lowest price</li> </ol>	(Yue et al. 2020)
Price Search Importance	<ol style="list-style-type: none"> <li>1. Before making a purchase decision, I go into more than one store to compare prices in order to find a lower price</li> <li>2. I think it is worth spending energy in many stores to find low-priced products</li> <li>3. I think it is worth spending time going into a number of stores to look for a low-priced product</li> <li>4. Before making a purchase decision, I need to gather a lot of information about the price of the product.</li> </ol>	(Yue et al. 2020)