

# DIAMOND MODEL: A theoretical framework for the sustainable development of tourism



Volume 3 Issue 1 - 2019

**Ramón Adillón**

Department of Tourism at HAC Business School & University, Country

**Correspondence:** Ramón Adillón, Director of the Academic Department of Tourism at HAC Business School & University, Spain, Email [ramon\\_adillon@yahoo.com](mailto:ramon_adillon@yahoo.com)

**Received:** May 03, 2018 | **Published:** January 11, 2019

## Abstract

The paper presents the diamond sustainable tourism development model, a model that aims to provide objective criteria to help organizations to take the necessary decisions about controlling the number of visitors of a tourism destination or attraction in order to ensure an adequate development of the tourism activity that does not jeopardize the future of the tourism product itself.

This paper reviews academic literature on potential negative tourism impacts and examines several models used to address the problem of tourism congestion management. The study also argues that it is necessary to give a more specific consideration to a few key elements that should be born in mind: destination carrying capacity, resident community quality of life and tourist experience.

**Keywords:** sustainable development of tourism, tourism impacts, tourism congestion management, tourism carrying capacity, over tourism



Ramón Adillón is a professional with a solid experience of 20 years in positions of increasing responsibility in the tourism industry, particularly in Hospitality Management (Hotel General Manager of several Hotels and Corporate Executive Positions in Hotel Chains Headquarters), Tourism Public Administration (developing policies for mature tourism destinations and implementation of sustainable measures in tourism destinations management) and in Consultancy and Education in hospitality and tourism topics.

Ramón has a BA in Business and Tourism for the University of the West of England, Bristol, UK and a Master in Tourism Enterprises Management with IE, Instituto de Empresa, Madrid, Spain. He is a certified consultant in SICTED (System for the Quality of Tourism Destinations) and in PM4ESD (Project Management for European

Sustainable Development) and member of the Panel of Experts in Tourism of the United Nations World Tourism Organization.

Adillon is currently, among other tasks, Director of the Academic Department of Tourism at Hispanic American College Business School & University and Lecturer of the Business Studies Department at UNIR (Universidad Internacional de La Rioja).

## Aims and objectives

**Aims:** The overall purposes of the academic paper are the following:

- To raise awareness not only of the facts, but also of the challenges that, nowadays, tourism destinations are facing in terms of controlling the influx of tourists.
- To present the diamond sustainable tourism development model as a theoretical framework to approach and manage those challenges.

**Objectives:** The objectives formulated to achieve the aims are the following:

- To introduce the current situation of some of the mature tourism destinations worldwide
- To compile a short list of the main causes of congestion in tourism destinations
- To gather a number of real cases of negative impacts of excessive tourism
- To explain the seven key elements that compound the DIAMOND MODEL

- To review academic research done by renowned authors related to each of the points stated above

## Research methodology

The type of research used in this paper was the problem oriented research, in order to know the nature of the problem or situation needed to be solved.

In this case “problem” was understood not as a problem in its strict sense, but as a particular situation that implies a decision making dilemma.

To undertake the necessary research to write the paper, three perspectives of research methodology types were taken into consideration: the nature of the study, the purpose of the study and the research design of the study<sup>1</sup>.

According to the nature of the study, the type of research methodology used was the descriptive research, looking for the description of the state of affairs at the present time.

According to the purpose of the study, the type of research methodology used was the fundamental research, where several disciplines worked together to solve the problem and individual cases were researched without the aim to generalise.

Finally, according to the research design, the type of research methodology chosen was the exploratory research, where the methodology was flexible, did not involve testing of hypotheses and did not attempt to offer final and conclusive answers.

## Context

Tourism activity has a very positive impact on the development - in social and economic terms – of communities. Tourism helps the communities from all over the world to progress and it is currently one of the most important industries worldwide.

Today, the business volume of tourism equals or even surpasses that of oil exports, food products or automobiles.

Tourism has become one of the major players in international commerce, and represents at the same time one of the main income sources for many developing countries. This global spread of tourism in industrialised and developed states has produced economic and employment benefits in many related sectors - from construction to agriculture or telecommunications.<sup>2</sup>



Figure 1 Why Tourism Matters.

Also in the developed countries tourism plays a significant role in

the economy as provider of jobs and as contributor to the GDP as well as an important agent for improving the standard of living of the host community population.<sup>3</sup>

Tourism destinations experiment a process of development throughout the years, a process affected by many agents both endogenous and exogenous.

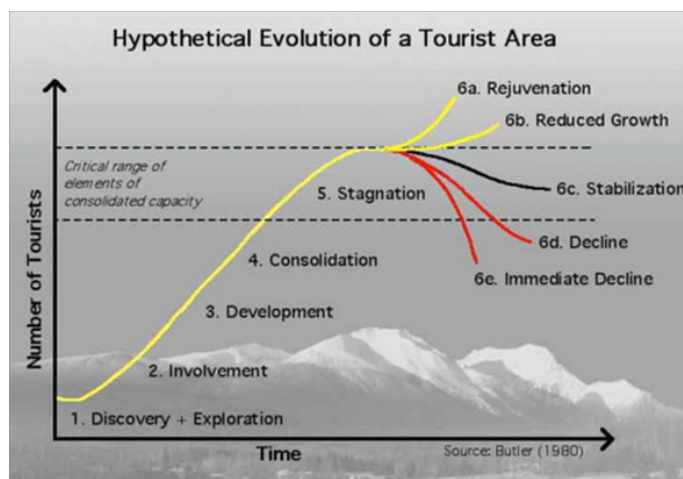


Figure 2 Evolution of a Tourist Area.

Once a tourism destination has reached a certain stage of development, different scenarios are open. Some destinations struggle to survive and grow, while others find success very easily.

The development of tourism destinations faces different challenges, being among the most important ones the loss of competitiveness of the tourism destination as a result of bad management actions or due to a change of the demand's motivations.

The relationship between supply and demand has been based largely on people's perceptions, expectations, attitudes and values. The motivations for travel are very closely linked to the concept of image and status and they can change quite rapidly.<sup>4</sup>

As a result of his studies on the development of tourism destinations, Butler identifies a battleground between two very powerful forces, those of inertia and those of dynamism. The continuous and varying tension between these two agents affecting a destination's process of development is what makes each destination unique.<sup>5</sup>

In further steps of development, some consolidated or mature destinations manage to reinvent themselves and continue to attract visitors, whereas others fail in doing so and consequently show symptoms of decline, and eventually they disappear as a tourism destination and need to reorient their economy to other activities.

The impact and consequences of tourism cannot be prevented, and, unfortunately, besides the positive impacts, the tourism activity might also cause negative impacts on the local community, on the environment and even on the tourism destination itself.

Therefore, the tourism activity needs to be planned and managed with the objective of minimizing these negative impacts and accentuating the positive impacts<sup>6</sup> taking into account that, unfortunately, one characteristic of the impacts caused by the tourism activity is that they are multi-faceted, and therefore, difficult to plan for and manage.

The impact made by tourism depends mainly in two factors: on the one hand the volume of tourists and on the other hand the profile of the tourist (length of stay, tourism activity, mode of transport, travel arrangement).

Economic impacts of tourism, according to literature review, seem to be positive, and more effective than other industries in generating employment and income, and furthermore, creating secondary rounds of economic activity.

On the contrary, the social impacts of tourism are – in many cases – perceived as negative: for instance, when the cultural distinctions between residents and tourists from more prosperous countries and regions are strongly marked, local culture and customs may be exploited to satisfy the visitor, sometimes at the expense of local pride and dignity.

| Writer(s)                     | Issue/Impact  |
|-------------------------------|---|
| Mathieson and Wall (1982)     | Tourism modifies the internal structure of the community, dividing it into those who have/have not a relationship with tourism/tourists.  |
| Krippendorf (1987)            | Tourism has colonialist characteristics robbing local populations of autonomous decision-making.  |
| Allen et al (1988)            | Lower/moderate levels of tourism development are more likely to be beneficial.  |
| Crompton and Sanderson (1990) | Employment in tourism demands flexible working patterns which is eroding gender segregation.  |
| Urry (1991)                   | There are more opportunities for women in tourism, which provides many with a greater degree of economic independence.  |
| Harrison (1992)               | Tourism provides new opportunities and instigates social changes.   |
| McKercher (1993)              | Preference for investment in profit centres (e.g., swimming pools) rather than cost centres (e.g., sewage systems).   |
| Sharpley (1994)               | Employment opportunities and the presence of visitors lure younger people to areas of tourism development. Conversion in retail sector to souvenir outlets. Tourism improves quality of life through improvements to infrastructure.  |
| Burns and Holden (1995)       | Tourism provides socioeconomic benefits at one extreme and dependency and reinforcement of social discrepancies at the other extreme. Biggest problem is congestion/overcrowding. Pressure for change is politically intracultural initiated by entrepreneurs or politicians in response to community pressure. |

**Figure 3** Key Social Impacts of Tourism Development.

In other cases, the so-called demonstration effect of prosperity amid poverty may create a desire among local people to work harder or to achieve higher levels of education in order to emulate the way of life of the tourists.

And, eventually, when they fail to achieve it, a sense of frustration may provoke hostility against the tourist.

However, most of the socio-cultural negative impacts of tourism are related to the degree of intensity of tourism development. Findings from several studies<sup>7</sup> show evidences of a direct relationship between tourism density and residents resentment towards tourism.

In the present time, tourism destinations face a situation that has never occurred before: they become so popular that the tourists' flows collapse certain territories in certain periods of time, and, as a result, congestion problems appear accompanied by a sense of worsening of the tourist experience and a rejection of the local population towards the visitors.

| Writer(s)                 | Issue/Impact  |
|---------------------------|---|
| Doxey (1975)              | Irridex model: worsening cumulative effect of host attitudes toward tourists                                |
| de Kadt (1979)            | Nature of contact with tourists can influence attitudes/behavior/values towards tourism                     |
| Mathieson and Wall (1982) | Tourism is a source of revenue for the church   |
| Pizam et al (1982)        | Perceived safety and security maybe affected  |
| Murphy (1985)             | Tourism is a potential determinant of crime   |
|                           | The young locals are most susceptible to the demonstration effect caused by tourism                         |
|                           | Languages are learnt through the demonstration effect   |
| Krippendorf (1987)        | Real understanding/communication is seldom produced by tourist-host interaction                             |
| Ryan (1991)               | Erosion of the local language/dialect   |
| McKercher (1993)          | There is always likely to be a certain degree of conflict due to incompatible demands of tourists and hosts |
| Sharpley (1994)           | Tourism instigates social interaction within host community   |
|                           | Tourism contributes to the preservation of religious and historic buildings                                 |
|                           | Hosts adopt foreign languages through necessity   |
|                           | Hosts develop stereotypical attitudes towards tourists  |
|                           | Commodification of religion and resulting conflict  |
| Burns and Holden (1995)   | Hosts develop coping behaviors and avoid contact with tourists wherever possible                            |
| McIntosh et al (1995)     | Mixing socially is the most favorable situation   |
|                           | Resentment is generated by the economic gaps arising between the host and tourist                           |
|                           | Local resentment is generated by inflated prices  |

**Figure 4** Key Social Impacts of Tourist-host Interaction.

These situations are caused by several reasons and are so new and unexpected that the governments and tourism administrations do not know yet very well how to react.

The question formulated in sight of this scenario is the following: are successful tourism destinations really destined to disappear or to lose competitiveness as a result of their own success, or is it possible to take some actions to fight this situation?

## Causes of congestion of tourism destinations and tourism sites

Congestion of tourism destination appears as a result of the confluence of several factors simultaneously. The following are the more significant factors:

1. Success in marketing campaigns: Tourism is a highly competitive industry in which destinations fight to attract an increasing number of visitors, and, moreover, with substitution among destinations being pervasive, competitive advantage requires the ability to effectively manage all components of the tourism system to ensure success is achieved.<sup>8</sup> Consequently, one of the main causes of congestion is precisely the success of tourism destinations on attracting and retaining visitors.
2. Increasing access to the travel and tourism market: In the beginning of the tourism phenomenon, only aristocrats and very healthy people could afford the expenses of travelling. As the tourism industry developed over the years, the Tour Operators and the packaged holidays made travel more and more affordable, and, recently, the appearance of low cost airlines and the increasing competition among destinations have brought prices down and made tourism economically accessible to a vast part of the population.
3. Ease of the process of reservation and payment of transport and

accommodation. Irruption of technology has made comparison of rates, reservations and payment of travel and tourism services easier than ever.

4. International Tourism resources catalogue: Information and Communication Technologies have also contributed to spread the existence and the knowledge of tourism attractions and sites from all over the world as well as the different travel options to reach them.

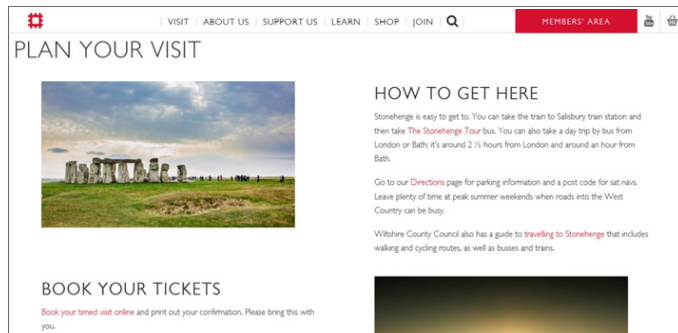


Figure 5 Stonehenge.



Figure 6 Use of game of thrones as an attraction resource. Source: Tourism Ireland.

5. The influence of films and television: The appearances of destinations in films or TV programmes have boost arrivals to certain destinations. Studies show that this fact directly affects both the destination image and the desire to travel.<sup>9</sup> In some particular cases, the increase in number of visitors has been as high as 50% and the economic impact has been also remarkable comparing to the Figures 1-11 before the destination was broadcasted on film or TV series.<sup>10</sup>
6. Viralization in the social networks: Travellers broadcast in their social networks profiles information and videos of their visits to places or sites, and some of them get viral with fast spreading that creates unexpected problems for destinations.<sup>11</sup>
7. Vacation Rental Platforms: This alternative to the accommodation in hotels consisting in renting individual houses to tourists for short stays has revolutionized the hospitality and the housing sectors. Airbnb, one of the major players of this sector, was created in 2008 and nowadays is valued \$ 30 billion, as much as two hospitality giants combined (Hilton and Hyatt).
8. Changes of destinations chosen by tourism demand due to lack of

safety: Certain destinations' lack of safety for diverse reasons such as war, terrorist attacks, medical emergencies, natural disasters, etc. makes the demand flows change to other destinations with safer situations, referred to as shelter tourism destinations.<sup>12</sup>

| Hospitality Company           | Valuation/Market Cap |
|-------------------------------|----------------------|
| AccorHotels                   | \$11.28 billion      |
| Airbnb                        | \$30 billion         |
| Choice Hotels International   | \$2.64 billion       |
| Hilton Worldwide              | \$23.33 billion      |
| Hyatt Hotels Corp.            | \$6.87 billion       |
| InterContinental Hotels Group | \$8.29 billion       |
| Marriott International        | \$17.8 billion       |
| Wyndham Worldwide             | \$7.56 billion       |

Figure 7 Airbnb's valuation. Source: Google Finance.

- ✓ A terrorist incident has an immediate repercussion in the tourism activity that consists in a demand's pronounced reduction. According to the Travel Industry Association of America (2003), after the 11s terrorist attacks 375,000 jobs in the tourism sector disappeared in the USA.
- ✓ After an incident, tourism demand can recover relatively quickly, although the immediate consequences might last between one and two years. Although growth is recovered, business levels previous to the incident will only be reached later on.
- ✓ When an event happens in a certain destination, tourists tend to orient demand to other destinations. Long haul travel is more affected than short haul.
- ✓ Coastal and island destinations in general are negatively affected. However, coast is preferred over islands.
- ✓ Impact generated after a crisis dose not distribute homogeneously. Those countries with solid cultural and heritage oriented resources such as Italy and Egypt show a strong resilience to any kind of conflict.

Figure 8 Adapted from: "El Efecto de los Atentados del 11-S Sobre el Turismo en España".

## Expected Standards of behaviour after extraordinary events

(in general and in September 11 attacks in particular)

**Effects of excess of tourism:** The situation described above has signified the apparition of new words, such as the following:

- ✓ Over tourism: refers to the excess of tourists visiting a certain area
- ✓ Gentrification: changes of use of houses in parts of the city to accommodate tourists instead of residents
- ✓ Tourism aversion: a sense of rejection to tourists, seen as invaders of local population privacy, customs and culture

The effects of tourism congestion can be observed in four types of tourism:

1. Natural tourism destinations
2. Cultural and heritage oriented destinations

3. Urban tourism
4. Consolidated coastal tourism destinations

In the following pages we can see some examples of these situations.

1. **Natural tourism destinations:** Over-exploitation of resources. Risk of reaching the point of no return due to excess of visitors. Examples: Holbox, Great Reef Barrier.
- a. Holbox is a little Mexican island that was once a paradise, with clean and unspoiled nature and natural life that passed from 500 inhabitants in 1990 to over 4000 visitors and residents in 2017 and, with the same water and electricity infrastructure. The island is near to collapse and the Mexican government has finally taken the determination of taking actions.<sup>13</sup>



Figure 9 Overcrowded Venice.

- b. In a similar situation is the Great Barrier Reef, in Australia with a massive size, but also exceptionally fragile. Vast tracts of the reef have become bleached by pollution and the abuses of too many tourists, and a recent oil spill has decimated the ecosystem. Without proper care, the Great Barrier Reef could disappear within a generation.<sup>14</sup>
2. **Cultural heritage oriented destinations:** Risk of over exposure of art, culture and heritage. Worsening of tourist experience. Example: Vatican Sistine Chapel. Special attention need to be paid to these kinds of destinations, because they are very fragile. Heritage places inevitably attract high levels of tourism interest and activity. World Heritage listing is almost guaranteed to result in a huge increase in tourism interest. Tourism pressures represent one of the greatest threats to the settings of monuments and sites.<sup>15</sup>

The Vatican Museums: the number of visitors to the Vatican has nearly doubled in the last 10 years, hitting a high of 4.2 million in 2006, and has resulted in the overcrowding of a structure originally built to accommodate a Renaissance papal court, not up to 20,000 visitors at a time.<sup>16</sup> Between enormous tour groups and rowdy school-trippers, a visit to the Vatican Museums can become "more of a traumatic than an artistic experience for tourists,"

Some of the measures taken by local authorities have consisted in raising the admission and shrinking the opening hours. Vatican tourism organizations also think that longer queues would discourage visitors from entering to the museums.

3. **Urban tourism:** citizens feel that their cities are not a place to live but a sort of stage of a theme park for short breaks visitors. It also implies a fight for an affordable housing for residents and a loss of local traditions and customs. It appears tourism aversion from local population<sup>17</sup> Examples: Venice, Barcelona.
- a. The Venice syndrome: Venice is sinking into the sea, and equally, it is drowning in tourists (21 million in 2015t). 20 years ago 125,000 people lived there, but the permanent population is now less than half that, and by some estimates actual Venetians will have disappeared completely by 2030.<sup>18</sup>

Venice presents an outrageous scenario that is gradually destroying the original city: Stately homes converted into luxury hotels, privately-owned flats converted into bed and breakfast establishments, public space sold to private institutions, sky-high prices for a square metre of property (about 12,000 Euros per square meter) and the inhabitants of Venice buckling under the stress of tourism.<sup>19</sup>

- b. The city of Barcelona: The success of Barcelona as a destination is unquestionable. Since the beginning of the 90s, this ancient city has seen its supply of hotel rooms increase by 158% (from 26,191 in 1993 to 67,567 in 2013) and triple its tourists (2.4 million in 1993 to 7.5 in 2013), transforming neighbourhoods of the city to accommodate tourists and with positive side effects for many residents and local economy.

However, many citizens and groups have begun to be unhappy, or look warily at tourists, raising their voices over the installation of new hotels, taking note of the passivity of urban policy not mitigating the gentrification of many streets...<sup>20</sup> the residents feel that Barcelona is losing the sense of city and it is transforming to a sort of living museum where inhabitants are being changed by visitors.

On top of that, 58% of the tourists visiting Barcelona (although overall they rank the quality of the city with 8.6 over 10) complain about tourism congestion in most sites of the city.<sup>21</sup>

4. **Consolidated coastal tourism destination:** scarcity of resources, tourism congestion (roads, cities, and beaches), lack of places to live due to change of use of houses for short stays rentals.<sup>22</sup> Tourism aversion appears even though is known that tourism is the main source of income. Examples: Balearic Islands
- a. **The Balearic Islands: the cases of Mallorca and Ibiza:**

Mallorca is part of the Balearic Islands, an archipelago with a population of 1 million inhabitants that in 2015 received over 13 million tourists. The islands show signs of saturation, with a summer population growing at a path of 33%, the Balearic Islands reached their visitors record on August 2016 with a population of 2.057.244.<sup>23</sup>

Mallorca is one of Spain's leading tourism destinations but the scarcity of some resources such as water or the sense of saturation of the capital (Palma de Mallorca) and some of the most visited beaches and attractions in the peak months, as well as some voices raising against the (too elevated) number of visitors are starting to be a problem that need a solution.



**Figure 10** Tourism aversión in Mallorca. REUTERS/Enrique Calvo. 23/05/2016.

The case of Ibiza is similar to the case of Mallorca, but worsened with the problem of the impossibility of finding an accommodation for collectives such as doctors, policemen, teachers, due to a complete lack of housing, which is dedicated exclusively in short term rentals.<sup>24</sup>



**Figure 11** Two people sleeping in the roof of a car in a street of Ibiza. Cristina Martinez Escandell 02/06/2016.

## DIAMOND MODEL: A theoretical framework for the sustainable development of tourism

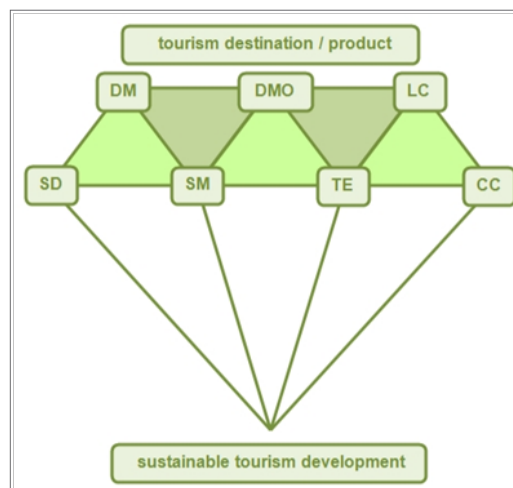
The DIAMOND MODEL is a sustainable tourism development model that intends to serve as a tool for DMOs to provide independent information to support unpopular decisions of restricting the number of visitors for the sake of a sustainable development of tourism.

Using this model, decisions related to the control of the visits of a tourism destination are taken relying on objective arguments and criteria rather than on personal intuitions or political parties' interests. The objective of such decisions has to be the achievement of an adequate development of the tourism activity that does not jeopardize the future of the tourism product itself.

The seven key elements that compound the DIAMOND MODEL are presented gathering academic literature that illustrates each one of them and using both some models created already 20 years ago but still valid and recent concepts and approaches in the management of tourism regions. The model comprises the relevant elements that need to be taken into consideration for the sustainable development of tourism, as well as the relationships among them.

The diamond was the Figure chosen to represent the model because:

- It is a very hard material, in correlation to the tourism resilience
- It is something precious; it has a lot of value and needs to be protected
- It is transparent, and, as the different shapes and faces of the diamond, new elements can be added to the model.



**Figure 12** DIAMOND: a sustainable tourism model.

The above part of the (Figure 12) is reserved for the name of the tourism destination or tourism attraction and, on the opposite side down below, all lines converges in the diamond's sharp end, representing the goal pursued: the sustainable development of the tourism activity.

Continuing with Figure 13-14, immediately underneath the tourism destination's name, seven relevant elements can be found. The three elements located on the right side are key elements, whereas the three elements located on the left side are ways of action, being in the middle the body responsible of the destination / attraction.



**Figure 13** Correlation of key elements initials.

## DIAMOND MODEL: the seven elements for a sustainable development of tourism

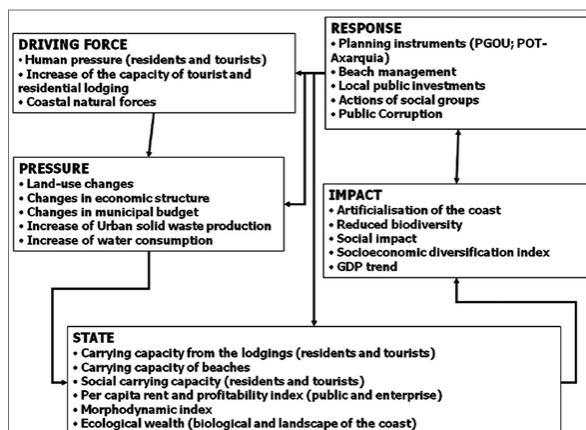
**Carrying capacity** (of a destination, from the tourism development perspective): The World Tourism Organization (WTO) proposes the following definition of the carrying capacity: “The maximum number of people that may visit a tourist destination at the same time, without causing destruction of the physical, economic, socio-cultural environment and an unacceptable decrease in the quality of visitors’ satisfaction”.<sup>25</sup>

At a theoretical abstract level, carrying capacity can be defined as the number of user unit use periods that a recreation/tourist area can provide each year without permanent natural/physical deterioration of the area’s ability to support recreation and without appreciable impairment of the visitors’ recreational experience.<sup>26</sup>

Early definitions of carrying capacity concentrated on a unidisciplinary/one dimensional perspective; however, recent interpretations underline the need for a multidimensional approach combining quantitative and qualitative aspects.

An approach that also must observe the three different types of carrying capacity: environmental, physical and perceptual (or psychological).<sup>27</sup>

The analysis of carrying capacity is a basic technique widely used to define the capability of an area to accept the maximum level of development of an activity (tourism, agriculture, industry, etc). As there are differences between activities it is appropriate to define carrying capacity according to specific uses. In this respect carrying capacity is site specific and use specific.<sup>28</sup>



**Figure 14** Carrying capacity assessment for tourist destination.

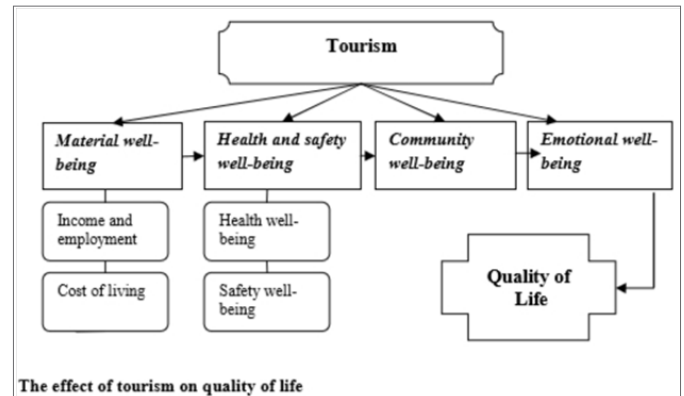
Different theoretical models to define the carrying capacity of a given tourism destination<sup>29</sup> are found in the literature review.

Taking into consideration the observations pointed above, the most adequate model must be chosen according to the specific characteristics of the studies tourism destination.

## Resident community quality of life

Many authors have studied the link between tourism and quality of life of the resident community. For instance Kim, Uysal and Kirgy<sup>30</sup> have created a theoretical model that links community

residents’ perceptions of tourism impact (economic, social, cultural, and environmental) with residents’ satisfaction with particular life domains (material well-being, community well-being, emotional well-being, and health and safety well-being) and overall life satisfaction (Figure 15).



**Figure 15** Kim, Uysal and Kirgy theoretical model.

Others, as Acha-Anyi<sup>31</sup> defend that, although the degree of impacts may differ between communities, according to the Social Exchange Theory (SET), support for tourism development among community residents will depend on the perceived benefits of tourism development to both individual community members and the community as a whole.

Acha-Anyi study illustrates that community support for tourism is not a spontaneous occurrence but rather the result of a well thought-out process, and that, as part of the tourism development process from the beginning, local communities’ perceptions and views should be taken into consideration.

**Tourist experience** is crucial for the success of a destination. Nowadays, organizations tend to be customer centric, and to implement strategies oriented to customer experience, as the optimal way to gain competitive advantage.

Attention has long been paid in the tourism literature to particular perspectives on the tourist experience, including demand factors, tourist motivation, typologies of tourists and issues related to authenticity, commoditization, image and perception. However, as tourism has continued to expand in both scale and scope, and as tourists’ needs and expectations have become more diverse and complex in response to transformations in the dynamic socio-cultural world of tourism, so too have tourist experiences.<sup>32</sup>

Products and services in a destination as well as interactions with hosts are dependent on each other to create the overall travel experience.<sup>33</sup> Several factors such as hospitality of locals, conditions of attractions / sites, global number of tourists visiting, etc play an important role on how the travellers experience the destination they visit.

These three key elements identified in the DIAMOND model are directly linked

among them. The literature review reveals other elements also interrelated as, for instance the elements identified by Muller (Figure 16,17), whose five elements of his pentagon must be balanced in order to result in sustainable tourism.<sup>34</sup>

In a tourism destination development over time take part various factors such as types of visitors, tourist experience, impacts on destination, involvement of locals and occurrence of new tourist cycles. And in this process, the motivation that drives tourists and what the destination has to offer are two ends that get connected.<sup>35</sup>

**DMO (Destination Management Organization):** according to UNWTO<sup>36</sup> is the coordinated management of all the elements that make up a destination (attractions, access, marketing, human resources, image and pricing). It takes a strategic approach to link-up very separate entities for the better management of the destination.

Among the responsibilities of a DMO are not only the promotion and marketing tasks, but also, and more important, the development of the destination.

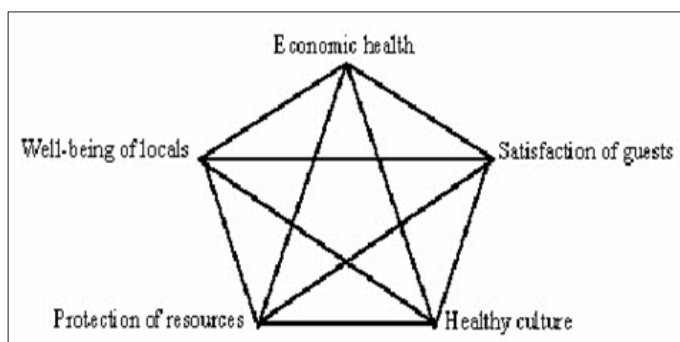


Figure 16 Tourism development's magic pentagon. Source: Muller, 1994.

Destination Management Organization's role should be to lead and coordinate activities of many organisations and interests working towards a common goal and under a coherent strategy. DMOs generally fall into one of these categories:<sup>37</sup>

- National Tourism Authorities (NTAs) or Organizations (NTOs), responsible for management and marketing of tourism at a national level.
- Regional, provincial or state DMOs (RTOs), responsible for the management and/or marketing of tourism in a geographic region
- Local DMOs, responsible for the management and/or marketing of tourism based on a smaller geographic area or city/town.

Traditionally, governments have played an important role in the development and promotion of tourism destinations, but the complexity and fragmentation of the tourism sector implies the participation of a variety of public and private actors, leading more and more commonly to mixed bodies of destination management.<sup>38</sup>

There are several options for destination management governance which range from a purely public authority structure to a purely private sector partnership, finding in between the two ends, mixed solutions of public – private partnerships.<sup>39</sup>

The DMO is sometimes subjected to varied pressures (interests of the political party in the government, private companies' interests, etc.) that might influence the decisions on the management of the tourism destination (e.g. avoid unpopular decisions in order not to lose number of votes).

These pressures from stakeholders of the entity may produce decisions that are taken having in mind a short term or a given sector benefit, rather than a benefit of the entire destination on the long term.

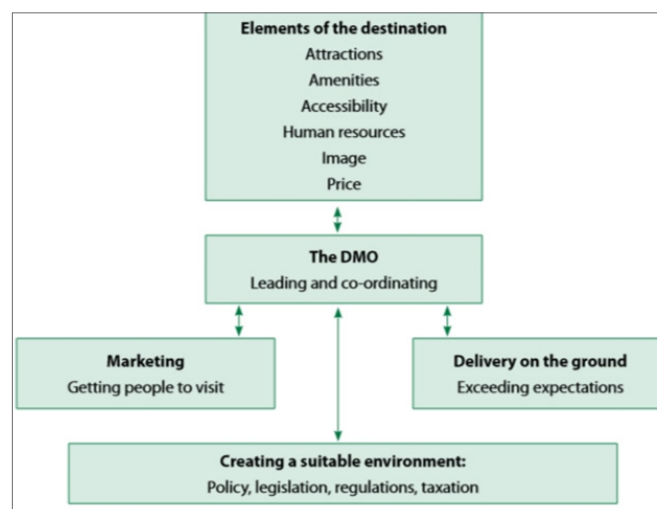


Figure 17 DMO responsibilities. UNWTO: A Practical Guide to Tourism Destination Management.

**Seasonality management:** There is a rich academic literature approaching seasonality, an issue that has been defined by some as inextricably linked to tourism and with transitory and seasonal nature factors that determine tourism flows.<sup>40</sup>

Seasonality can be defined as the systematic, although not necessarily regular, intra-year movement caused by changes in the weather, the calendar, and timing of decisions, directly or indirectly through the production and consumption decisions made by the agents of the economy.<sup>41</sup>

This temporal imbalance in the phenomenon of tourism implies an uneven distribution of the use of the resources over time (one of the most pervasive problems with outdoor recreation and tourism), causing inefficient resource use, loss of profit potential, strain on social and ecological carrying capacities, and administrative scheduling difficulties.<sup>42</sup>

One of the most comprehensive studies of the factors influencing seasonality in tourism is the work of Butler and Mao<sup>43</sup> who established that seasonality has two dimensions: natural (physical) and institutional (social and cultural), involving both the origin and destination regions (Figure 18).

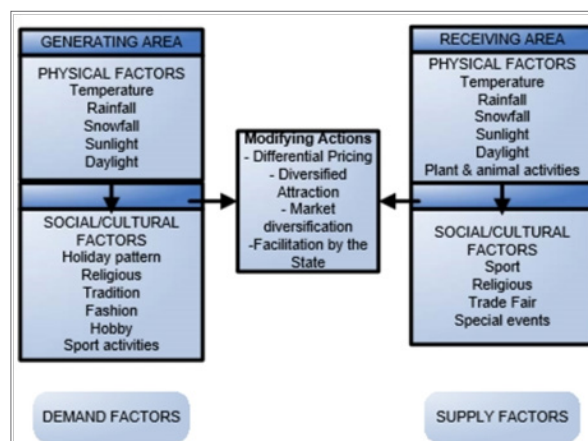


Figure 18 Factors of seasonality in Tourism. Butler and Mao model (1997).



**Figure 19** Adapted from Seasonality in the tourism industry: impacts and strategies.

Natural seasonality relates to temporal variations in natural phenomena, while Institutionalised seasonality is more complex as it is based on human behaviour and consumer decision-making.<sup>44</sup>

Main statistical findings of an article from the Eurostat online publication “Tourism trips of Europeans”,<sup>45</sup> focusing on the seasonal pattern of tourism demand in the European Union (EU) are the following:

From the environmental perspective, seasonality has a positive effect, provided that the diminution in the number of visitors allows the territory, and the species living in it to recover naturally, as well as bringing key elements (as water consumption or waste generation) back to normal levels (considering only residents, not visitors).

Seasonality implies the necessity to supply infrastructure, services, accommodation and attractions to the tourists that visit the destination in peak periods. This leads to an inefficient use of these elements that are completely underused in off-peak times.

However, there is an element of predictability associated with seasonality. Consequently, it is possible for managers to anticipate many of its impacts and to implement strategies to adjust to any negative effects.<sup>46</sup>

Possible strategies to act against seasonality are, among others, the following: variations in the product mix, diversifying the market, price differentials or state-initiated measures.<sup>47</sup>

**Demand management:** Demand management consists in distributing the demand in a more rational way all over the year. Is directly linked with seasonality and, it implies basically three main actions:

- ✓ extend the high / medium season
- ✓ attract more visitors during the low season and,
- ✓ somehow, limit the number of visitors in peak times

Variations in tourism demand are mainly caused by one (or several) of the causes shown in Figure 19. Accordingly, attention needs to be paid to these natural, institutional or cultural causes to try to create strategies to combat them. For instance, Butler and Mao<sup>48</sup> identified 4

modifying actions to react to seasonality / changes in tourism demand:

- **Differential pricing:**
  - ✓ Higher prices in peak periods to decrease saturation
  - ✓ Discounts and promotions in low season to increase visits
  - ✓ Special offers for groups (e.g. retired persons)
- **Diversified attraction:**
  - ✓ Organizations of events (concerts, festivals, fashion, cinema...)
  - ✓ Facilities development (public transport, public amenities)
  - ✓ Diversify into niche products or services
  - ✓ Complement with services addressed (also) to locals
- **Market diversification:**
  - ✓ Marketing campaigns (multi-segment approach): to attract different markets in different seasons
  - ✓ Align with tour operators or travel agents to sell products/services
  - ✓ Determine the optimal segment mix
- **Facilitation by the state**
  - ✓ Loans or subsidies by government to develop local products or services
  - ✓ Environmental regeneration initiatives
  - ✓ Improve and expand regional infrastructure
  - ✓ Facilitate local business networks and partnerships

**Smart destinations:** The objective of this DIAMOND model way of action is the use of the current technology to collect information on the visitor patterns and help DMO to avoid congestion and improve tourist experience. Advances in connectivity, the arrival of web 2.0 and the ever-increasing use of mobile devices and social networks has had a huge impact on tourism, making it one of the most profoundly changed sectors.<sup>49</sup> As a result, tourism destinations have to adapt to the demands of the new traveller, and deliver personalized experiences before, during and after the travel.

A Smart Tourism Destination, according to the Spanish Tourism Administration is an innovative space consolidated on the basis of land and cutting edge technology infrastructure. A commitment to the environmental, cultural and socio-economic issues of its habitat, equipped with an intelligence system which can capture information in a procedural fashion, analyses and grasps events in real time, with the aim of facilitating the visitor's interaction with the surroundings, and decision making for the destination managers, increasing its efficiency and substantially improving the quality of tourist experiences (...) as we can see, the importance of innovation, technologies and sustainability prevail - all of them - at the service of the visitor.<sup>50</sup>

In the “during” period of the travel is when smart destinations concept can be used, providing a two way real time information system with benefits for both, visitors and DMOs. To implement this, two fundamental dimensions must be considered:

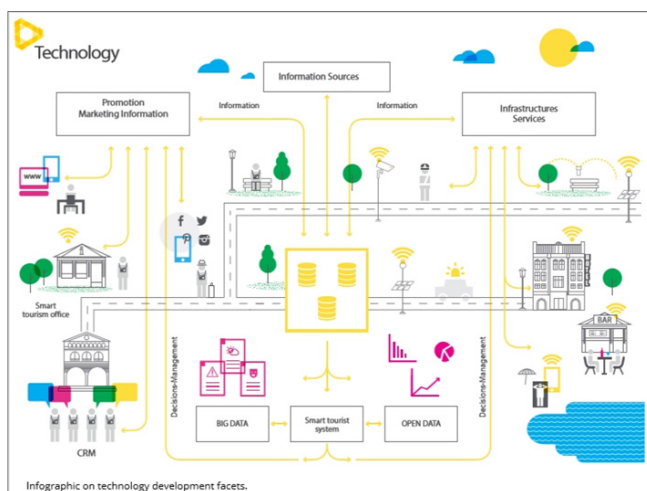
- The sensorization of the location itself, which produces information, helps recollection and transmission of data between objects, feeds high capacity storage systems and streamlines the analysis that fully feeds the system.
- The creation of an integral mobility solution geared towards facilitating the integration of the visitor with the destination through different technologies and allowing the flow of information between different devices and solutions.<sup>51</sup>

With the Smart Tourism Destinations technology, DMOs can obtain useful information from the big data / open data platforms to support the decision making process and even react in real time. These platforms are able to transform data into knowledge and present numerous opportunities for management systems and tourism intelligence.

Figures 20,21 illustrates the technological ecosystem that needs to be implemented in the tourism destination to be able to use the benefits explained above.



**Figure 20** Seasonality in tourism demand. Eurostat, Statistics explained. 2015.



**Figure 21** Smart Destinations Report: building the future. Segittur.

## Sustainable development of tourism: principles and indicators

The DIAMOND MODEL needs to be used aligned with a strong commitment of the tourism authority of the country or the region on the implementation of the principles of sustainable tourism, which are referred to by UNWTO as:

- Make optimal use of environmental resources that constitute a key element in tourism development, maintaining essential ecological processes and helping to conserve natural heritage and biodiversity.
- Respect the socio-cultural authenticity of host communities, conserve their built and living cultural heritage and traditional values, and contribute to inter-cultural understanding and tolerance.
- Ensure viable, long-term economic operations, providing socio-economic benefits to all stakeholders that are fairly distributed, including stable employment and income-earning opportunities and social services to host communities, and contributing to poverty alleviation.

Sustainable tourism should not be regarded as a separate component of tourism, as a set of niche products, but rather as a condition of the tourism sector as a whole, which should work to become more sustainable.<sup>52</sup>

## Aims for sustainable tourism

The implementation of a strategy of Sustainable Tourism needs to have a multidisciplinary approach that seeks a balance with all the players in the tourism industry, and the DMO must continuously monitor the performance of the management on the region, being the best way for doing so, the implementation of sets of indicators. Criteria which constitute good indicators<sup>53</sup>

- 1 ECONOMIC VIABILITY:** To ensure the viability and competitiveness of tourism destinations and enterprises, so that they are able to continue to prosper and deliver benefits in the long term.
- 2 LOCAL PROSPERITY:** To maximize the contribution of tourism to the prosperity of the host destination, including the proportion of visitor spending that is retained locally.
- 3 EMPLOYMENT QUALITY:** To strengthen the number and quality of local jobs created and supported by tourism, including the level of pay, conditions of service and availability to all without discrimination by gender, race, disability or in other ways.
- 4 SOCIAL EQUITY:** To seek a widespread distribution of economic and social benefits from tourism throughout the recipient community, including improving opportunities, income and services available to the poor.
- 5 VISITOR FULFILMENT:** To provide a safe, satisfying and fulfilling experience for visitors, available to all without discrimination by gender, race, disability or in other ways.
- 6 LOCAL CONTROL:** To engage and empower local communities in planning and decision making about the management and future development of tourism in their area, in consultation with other stakeholders.
- 7 COMMUNITY WELLBEING:** To maintain and strengthen the quality of life in local communities, including social structures and access to resources, amenities and life support systems, avoiding any form of social degradation or exploitation.
- 8 CULTURAL RICHNESS:** To respect and enhance the historic heritage, authentic culture, traditions and distinctiveness of host communities.
- 9 PHYSICAL INTEGRITY:** To maintain and enhance the quality of landscapes, both urban and rural, and avoid the physical and visual degradation of the environment
- 10 BIOLOGICAL DIVERSITY:** To support the conservation of natural areas, habitats and wildlife, and minimize damage to them.
- 11 RESOURCE EFFICIENCY:** To minimize the use of scarce and non-renewable resources in the development and operation of tourism facilities and services.
- 12 ENVIRONMENTAL PURITY:** To minimize the pollution of air, water and land and the generation of waste by tourism enterprises and visitors.

**Figure 22** UNWTO and UNEP, 2005.

The UNWTO Guidebook<sup>54</sup> (2004) is the most comprehensive resource on this topic, and the result of an extensive study on indicator initiatives worldwide. The publication describes over 40 major sustainability issues, ranging from the management of natural resources, to satisfaction of tourists and host communities, or climate change. For each issue, indicators and measurement techniques are suggested with practical information sources and examples, as well as procedures to develop destination-specific indicators and applications in different destination types. Figures 22-24 is an example of indicators for a traditional coastal (sun & beach) tourism destination:

|  |
|--|
| <ul style="list-style-type: none"> <li>• Objective and scientific calculation procedures</li> <li>• Related to political objectives and in the public interest</li> <li>• Useful on different levels: political decisions, research, general public</li> <li>• Clear and easily understood by non-specialists</li> <li>• Comprehensible in all their complexity</li> <li>• Comparable with indicators in other places</li> <li>• Comparable over time</li> </ul> |
|--|

**Figure 23** Criteria for the creation of good indicators on sustainable tourism.

| KEY INDICATORS OF SUSTAINABILITY (BALEARIC ISLANDS) |                                     |                            |
|---|-------------------------------------|----------------------------|
| Nº  | INDICATOR NAME                      | INDICATOR TYPE             |
| 1   | Human pressure index                | demographic, pressure      |
| 2   | Seasonality in tourism              | demographic, pressure      |
| 3   | Job stability                       | socio-economic, state      |
| 4   | Evolution of wages                  | socio-economic, state      |
| 5   | Access to housing                   | socio-economic, state      |
| 6   | Number of vehicles in use           | socio-economic, pressure   |
| 7   | Beaches: tourist use and saturation | socio-environmental, state |
| 8   | Accommodation capacity              | demographic, pressure      |
| 9   | Protected natural areas             | environmental, response    |
| 10  | Urban water consumption             | environmental, pressure    |
| 11  | CO2 emissions                       | pressure, environmental    |
| 12  | Residual waste recycling            | environmental, response    |

**Figure 24** Measuring Sustainability in tourism in the Balearic Islands, CITTIB. 2003.

## Conclusions and recommendations

Tourism is a very positive activity for the development of villages, cities, regions or countries and nowadays it has become a key driver for socio-economic progress in nations worldwide. It is one of the major sectors in international trade (3<sup>rd</sup> sector after oils and chemicals) and one of the main wealth creators for many developing countries.<sup>55</sup>

On the other hand, tourism also has a number of negative aspects:

- Tourism is currently accounting for around 5% of global CO<sub>2</sub> emissions.

- Generates local pollution of land and water from poor treatment of solid and liquid waste by tourism businesses and tourist activities.
- Accommodation businesses are often major users of non-renewable and precious resources, such as land, energy and water.
- Poorly sited tourism development and inappropriate activities can be very damaging to biodiversity in sensitive areas.
- Tourism can imply threats to social and cultural traditions and values
- Poor working conditions are sometimes found in the sector.<sup>56</sup>

Tourism as a phenomenon has been studied for over forty years, practically since it became a major economic activity and many studies and research works focussing on the benefits, the impacts and the influences of tourism can be found in the academic literature.

Tourism activity has been constantly growing, even in the economic recessions, and future trends forecast made by international tourism experts show that tourism will keep on growing to a fast rhythm.

However, symptoms of expiration of the present tourism model have revealed, and situations of tourism congestion have appeared in different parts of the world, as well as feelings of rejection to tourists as a result of the saturation of destinations.

The paper has reviewed the causes of this situation, as well as its effects, illustrating them with examples of each typology and their respective characteristics.

Tourism destinations face the difficult challenge to adapt to the new rules of international tourism, and for the sake of survival, evidences show that the optimal way to ensure an adequate long term strategy is based the concept of Sustainable Development of Tourism.

Definition of Sustainable Tourism is understood as the “Tourism that takes full account of its current and future economic, social and environmental impacts, addressing the needs of visitors, the industry, the environment and host communities”.<sup>57</sup>

Sustainability principles refer to the environmental, economic, and socio-cultural aspects of tourism development, and a suitable balance must be established between these three dimensions to guarantee its long-term sustainability.<sup>58</sup>

In some regions, tourism accounts for a relevant percentage of their GDP and employment, and the long term sustainability of their main source of income is vital for them.

Therefore, in those regions, a sort of agreement of state should be signed by all the tourism stakeholders (the different political parties, hotel group associations, local business associations, representatives of the residents, naturalists, etc) in order to act in a coordinate way searching for a long term common benefit of the community as a whole instead of defending their particular interests<sup>59</sup>.

Within this framework, the paper presents the DIAMOND MODEL for Sustainable Development of Tourism. The DIAMOND MODEL is proposed as a tool to help those countries or regions elaborate a long term strategy and stick to that strategy regardless of which political party is in the power.

The first recommendation is to create a Destination Management Organization with any of the different possible forms presented in the paper (from pure public to pure private). The DMO must be a trusted and strong body with decision making capacity and representation of all stakeholders of the tourism sector.

The following step would be the selection of a multidisciplinary group of experts (or renowned institutions with expertise in different fields) to undertake the actions.

Lastly, having in mind the principles of sustainable tourism, the recommended strategy should at least carry out the following points, with the help of the DIAMOND MODEL as a theoretical model for action:

- Determine the tourism carrying capacity of the destination (or region) as a whole, as well as of special sensible areas within the destination. Elaborate the key indicators of the most relevant issues affecting tourism.
- Give voice to the residents associations to let their opinion be taken into consideration (as members of the tourism ecosystem)
- Undertake sociologic studies to identify the impacts suffered by the locals
- Undertake major surveys on tourist satisfaction to know their opinion
- Convert the data gathered from all these studies into knowledge.
- Applying the intelligence information obtained, elaborate an action plan for all the relevant issues detected. (Continuously update the action plan).
- Take into consideration the influence and impacts of the seasonality (apparently something inherent to tourism) and choose the ways to react.
- Use the demand management techniques used in the private companies in order to manage the flow of demand in benefit of the destination.
- Implement the Smart Destination technology to obtain useful reliable and in real time information to be able to react to the tourism demands.

\*Note that, like in real diamonds, more shapes and items can be added to the DIAMOND if needed.

## Acknowledgment

This paper was originally presented for the PM4SD European Summer School 2016: Project Management for Sustainable Development Leadership and Governance for Sustainable Tourism, held in Akureyri, Iceland. The abstract of the paper was published in the event's publication.

Thanks to Silvia Barbone (Managing Director of FEST, Foundation for European Sustainable Tourism) for giving me the opportunity to participate in PM4SD events and to Ólöf Ýrr Atladóttir (Director General Icelandic Tourist Board and Vice President of European Travel Commission) for her patience and help.

## References

1. Dudovskiy John. The Ultimate Guide to Writing a Dissertation. *Research Methodology Net*. 2015.
2. UNWTO: Why tourism?.
3. Proença Sara, Soukiazis Elías. Tourism as an Economic Growth Factor: A Case Study for Southern European Countries. *Sage Journals*. 2008;14(4):791–806.
4. Mason Peter. Tourism impacts, Planning and Management. *Routledge*. 2016;254.
5. Butler Richard. Mature tourist destinations: can we recapture and retain the magic? *RUA*. 2012;19–36.
6. Archer Brian, Chris Cooper, Lisa Ruhanen. Global Tourism. *Elsevier: William F. Theobald*. 2005;79–102.
7. Brunt Paul, Courtney Paul. Host Perceptions of Socio Cultural Impacts. *Annals of Tourism Research*. 1999;23(3):493–515.
8. Cohen Erik. The Sociology of Tourism: Approaches, Issues and Finding. *Annual Review of Sociology*. 1984;10(1):373–392.
9. Bornhorst Tom JR, Brent Richie, Lorn Sheehan. Determinants of tourism success for DMOs & destinations: An empirical examination of stakeholders' perspectives. *Tourism Management*. 2010;31(5):572–589.
10. <http://www.english-heritage.org.uk/visit/places/stonehenge/plan-your-visit/>
11. Hudson Simon, Youcheng Wang, Sergio Moreno Gil. The influence of a film on destination image and the desire to travel: a cross-cultural comparison. *International Journal of Tourism Research*. 2011;13(2):177–190.
12. Maddeaux Sabrina. How Game Of Thrones-inspired tourism became a lucrative travel trend. *National Post*. 2017.
13. Pinchefskey Carol. The Impact (Economic and Otherwise) of Lord of the Rings/The Hobbit on New Zealand. 2012
14. Braithwaite Alyssa. Swiss town overrun by “semi-naked” tourists after video goes viral. 2017.
15. Bernardí Cabrer Borrás, Y David Iranzo Pérez. El Efecto De Los Atentados Del 11-s Sobre El Turismo En España. *Estudios de Economía Aplicad*. 2007;25(1):365–386.
16. Brandoli, Javier. Holbox: el colapso del paraíso. *EL Mundo*. 2017.
17. Nelson Brian. 15 Travel destinations being ruined by tourism. *Mother Nature network*. 2010.
18. Guidebook for tourism congestion management at natural and cultural heritage sites. UNWTO. 2005.
19. Povoledo, Elisabeta. Vatican take steps to control overcrowding. 2007.
20. Bellafante, Ginia. How much tourism is too much? *New York Times*. 2017.
21. Atkinson, Nathalie. *National Post*. 2013.
22. Mourby Adrian. Can Venice save itself from its own popularity? *CNN*. 2017.
23. Jurado Navarro, Enrique. The saturation of the tourist destinations. Barcelona exports its model to the south. *The Economic Journal*. 2015.
24. Survey on City of Barcelona Tourism Activity. 2016.
25. Hunt, Elle. Tourism kills neighbourhoods: how do we save cities from the city break? *The Guardian*. 2017.
26. Vicens, Miguel. Tourism Saturation Data: the summer population grows at a path of 33%. *Diario de Mallorca*. 2017.
27. Méndez, Tomás, Turismo y Sociedad, Última Hora. 2017.
28. UNEP/MAP/PAP. 1997.

29. Coccossis HN, Parpairis A. Some Observation on the Concept of Carrying Capacity. Straaten (eds). 1992.
30. Defining, Measuring and Evaluating Carrying Capacity in European Tourism Destinations” University of the Aegean. Department of Environmental Studies. 2002.
31. Marsiglio Simone. On the carrying capacity and the optimal number of visitors in tourism destinations. *Tourism Economics*. 2016;1–15.
32. Kyungmi Kim Author Vitae, Muzaffer Uysal Author Vitae M. Joseph Sirgy; *Tourism Management*. 2013;527–540.
33. Acha-Anyi P Nkemngu. Quality of life and tourism impacts: a community perspective. *African Journal of Hospitality Tourism and Leisure*. 2015;4:1.
34. Philip Stone. University of Central Lancashire. Tourist Experience: Contemporary Perspectives. 2011.
35. Williams Christine, and John Buswell. Service Quality in Leisure and Tourism, OXON CABI Publishing. 2003.
36. Miller Graham, Twining-Ward Louise. Monitoring for a Sustainable Tourism Transition. The challenge of developing and using Indicators. *Cabi publishing*. 2005.
37. Christaller cited in Manson. In: Manson P. Tourism impacts, planning and management. 2<sup>nd</sup> ed. Oxford: Butterworth- Heinemann. 2008;26.
38. UNWTO: a practical Guide to Tourism Destination Management. 2007.
39. Innova Management Innova Netgrup, SL. 2012.
40. UNWTO: A Practical Guide to Tourism Destination Management. 2007.
41. Commons J. Managing Seasonality in Peripheral Tourism Regions: The Case of Northland, New Zealand. In Baum T and Lundtrop S (eds.). 2001;153–172.
42. Hylleberg S. *Modelling Seasonality*. Oxford, UK: Oxford University Press. 1992.
43. Manning RE, Powers L. Peak and Off Peak Use: Redistributing the Outdoor Recreation/Tourism Load. *Journal of Travel Research*. 1984;23(2):25–31.
44. Butler RW. Seasonality in Tourism. *Advances in Tourism Research Series. Roudledge*. 2011;5–22.
45. Christine Lee, Sue Bergin-Seers, Graeme Galloway, et al. Sustainable Tourism Cooperative Research Centre .Australia. 2008.
46. Lee Christine, Sue Bergin-Seers, Graeme Galloway, et al. Seasonality in the tourism industry: impacts and strategies. Cooperative Research Centre for Sustainable Tourism. Australia. 2008.
47. [http://ec.europa.eu/eurostat/statistics-explained/index.php/Seasonality\\_in\\_tourism\\_demand](http://ec.europa.eu/eurostat/statistics-explained/index.php/Seasonality_in_tourism_demand)
48. Getz D, Nilsson P. Responses of Family Businesses to Extreme Seasonality in Demand: The Case of Bornholm, Denmark. *Tourism Management*. 2004;25:17–30.
49. Witt SF, Moutinh L. *Tourism Marketing and Management Handbook*. London, New York, Prentice Hall. 1995.
50. Butler R, Mao B. Seasonality in Tourism: Problems and Measurement. In Murphy P, (ed.), *Quality Management*, Chichester, New York, Wiley. 1997.
51. Smart Destinations Report: building the future. Segittur. Madrid. 2015.
52. Antonio López de Ávila, Susana García. Destinos Turísticos Inteligentes, Harvard Deusto Business Review (n.º 224). 2013.
53. UNWTO for the European Commission. Sustainable Tourism for Development Guidebook. 2013.
54. Moffat 1996, Hanley 1999 and Van der Bergh & Verbruggen 1999.
55. Indicators of Sustainable Development for Tourism Destinations: A Guidebook, United Nations World Tourism Organization. 2004.
56. United Nations World Tourism Organization
57. Enhancing capacities for Sustainable Tourism for development in developing countries. European Commission / UNWTO
58. UNWTO
59. *Making Tourism More Sustainable - A Guide for Policy Makers*, UNEP and UNWTO, 2005;11–12.