Tourism as a Means of Developing Islands: 
Defining the Specific Image of a Tourism Destination 
as perceived by European Tourists

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ABSTRACT

The development of a region is subject to its ability to attract business 
activities and the right blend of people to run them. This ability depends on a number 
of factors and previous research as well as historical evidence show that the region’s 
location is a key factor among them. Hence, islands are at a disadvantage in 
attracting business activities adversely affected by geographical discontinuity and 
they should focus on specific activities. Tourism is such an activity for which 
geographical discontinuity is not a barrier, but on the contrary it may be an 
advantage. Hence, tourism may act as a driving force for the development of islands. 
On the basis of the above, an island may become a competitive tourism destination, 
provided of course that it possesses a number of characteristics.

In previous papers, the Image of a tourism destination has been defined as a 
function of these characteristics and a distinction has been made between Basic and 
Specific Image. The Basic Image of a given tourism destination measures the power 
of this destination to attract and retain both tourists (tourism demand) and tour 
operators/travel agents (tourism supply). This power is based on a common set of 
characteristics satisfying both the tourism demand and the tourism supply side. 
These characteristics have been grouped appropriately so as to define two indicators

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Built Environment and Reachability Indicator (BERI) and Natural Environment Indicator (NEI), which in turn are combined to define the Basic Image. The Specific Images of a tourism destination, on the other hand, measure the degree to which either tourists, i.e. tourism demand, or tour operators, i.e. tourism supply, consider this destination as their best final choice either to visit or to promote.

Our objective in this paper is to define the Specific Image of a tourism destination as perceived by the tourists and compare it to the Basic Image presented in previous papers. Finally, the theoretical findings will be applied to a number of island destinations.

Key Words: Tourism destination, developing islands, factors, image of a tourism destination, tourism demand.

1. Introduction

The majority of studies of regional development seem to agree that the development of a region depends mainly on its ability to attract sustainable business activities. The power that a region has to attract and retain successful business activities depends on what in bibliography has been called the Image of a Region (Angelis, 1990; Angelis and Dimopoulou, 1991; Angelis and Dimaki, 2011). The Image of a region is therefore the function of various factors (Cullingworth, 1969; Hunter and Reid, 1968; Rhodes and Khan, 1971; Townroe, 1971; Townroe, 1979), which could be divided in three main categories: economic, social and environmental.

The term Image has been bibliographically used with a variety of meanings. For some, Image is a sum of beliefs, ideas and impressions. It is the total impression an entity makes on the minds of people and has great influence on the way people perceive and treat things (Dowling, 1998; Dichter, 1985). Marketing literature agrees that Image is important in this process and suggests different types, including projected and received region Images (Kotler et al., 1993). Projected place Images are defined as the sum of ideas and impressions of a place that is available for people’s consideration. Those Images are being received by individuals and influence them during the process of creating their personal Image of a region, according their own needs, motivations, previous experience, preferences and other
personal characteristics (Ashworth and Voogd, 1990; Gartner, 1993; Bramwell and Rawding, 1996).

Recent studies on the attractiveness of a region have focused mainly on industrial investments and as a result, they emphasized on the location of a region, which has proved to be crucial for a region’s development (Bighman and Roberts, 1952; Fromm, 1965; Blonk, 1979; Morlok, 1978; Stubbs, Tyson and Dalvi, 1984). Moreover, the quantitative studies that has been conducted for the Image of several regions (Angelis, 1994; Gaki, 2005), came to the conclusion that isolated regions with geographical discontinuity such as islands present low business activity attractiveness. Due to the fact that this low investment attractiveness is being caused by geographical factors, which are fixed and cannot easily change, previous studies suggest that isolated region’s investment attractiveness can be enhanced by focusing on alternative activities for which location is not of great importance. Competition among places involves the improvement in the features that contribute to the attraction and retention of investment and people - that is to become “sticky places” (Markunsen, 1996; Malecki, 2004).

Tourism is such an activity, where geographical discontinuity may not be a problem but on the contrary, in certain cases, a strong comparative advantage (Koufodontis et al., 2007). International studies about the incentives that make someone travel clearly have clearly proven that geographical isolation could be an attractive factor for the tourism demand. For example, Crompton (1979) mentions that one of the main incentives of tourists is the escape from an ordinary environment for them, in order to feel different than in their everyday life. Moreover, one of the first listings of the factors affecting the tourism demand, which was published by the World Tourism Organization in 1985, includes factors relevant to geographical isolation, such as the need of getting closer to the nature and looking for adventure. Most recent studies also confirm that factors related to isolation can prove to be highly motivating for the choice of a tourism destination. Tourists declare that some of their main motivations to visit a destination are the sense of being “anywhere away from home” and “just the nature and themselves” (Fodness, 1994). Bansal and Eiselt (2004) have also proved that “the search for adventure” is one of the main incentives during decision process of a tourism destination. However, in order for a region to be able to develop tourism activities, it should have a number of
A recent research (Tsoka, Angelis and Dimaki, 2011) has redefined the concept of a Region’s Image for the case of Tourism Destination, based on those factors – other than location – that are the most important and determine the attractiveness of a Tourism Destination and which are common for both tourism demand (i.e. which would pull a tourist to visit a destination) and tourism supply (i.e. which would pull a tour operator or travel agent to sell or promote a destination). Every destination has to provide some basic standards features and services in order to attract and retain both, tourists and tour operators / travel agents. It is common sense that no uniform standards exist. As a result every destination, in order to remain attractive should determine the most suitable standards each time and try to meet them (Kotler et al., 1999). The Basic Image of a given tourism destination measures the power of this destination to attract and retain both tourists (tourism demand) and tour operators/travel agents (tourism supply). This power is based on a common set of characteristics satisfying both the tourism demand and the tourism supply side. These characteristics have been grouped appropriately so as to define two indicators Built Environment and Reachability Indicator (BERI) and Natural Environment Indicator (NEI), which in turn were combined to define the Basic Image. The Specific Images of a tourism destination, on the other hand, measure the degree to which either tourists, i.e. tourism demand, or tour operators, i.e. tourism supply, consider this destination as their best final choice either to visit or to promote.

Our objective in this paper is to define the Specific Image of a tourism destination as perceived by the tourists and compare it to the Basic Image presented in previous papers. Finally, the theoretical findings will be applied to a number of island destinations and the results for the Specific and Basic Images of these destinations will be compared.

2. The concept of the Image of a Tourism Destination
Tourism destinations have been defined in different ways through the extensive literature. In a few words we could define a tourism destination “as an amalgam of products and services available in one location that can draw visitors from beyond its spatial confines” (Murphy, Pritchard and Smith, 2000) or “as a package of tourism facilities and services, which like any other consumer product, is composed of a number of multi-dimensional attributes (Ritchie, 1993). Especially in the case of islands “improved modern transportation, in particular air transport, is crucial as they are only accessible by air and sea” (Bardolet and Sheldon, 2008).

In recent years tourism destination definitions have been enriched with the concept of sustainability. Sustainable tourism destination “is a complex term that has emerged from the need to develop tourism destinations in a sustainable manner, and therefore the need to recognize the efforts to develop destinations accordingly (Foh Lee, 2001). In general “the end result of the adoption of sustainability strategies must include measures for the conservation and protection of environment, as well as land use planning in general. If these strategies are to have a positive impact on the environment, they must incorporate a regulatory framework in relation to the environment” (Rodriguez et al, 2008).

Several studies on the Image of a tourism destination have tried to define that term. In early attempts of definition (Crompton, 1979) “the destination image is an attitudinal concept consisting of the sum of beliefs, ideas and impressions that a tourist holds of a destination”. Latter studies have proved that tourists’ evaluation of a tourism destination image “comprised cognitive, affective and personality dimensions” (Hosany et al., 2006).

Moreover, a critical mass of previous researches has indicated the great importance of measuring the Image of a Tourism Destination in order to develop tourism. According to Selby and Morgan (1996) “the conceptualization and measurement of place image can create new opportunities for destinations seeking to develop tourism. Place image techniques can be used as a policy analysis tool, enabling strengths and weaknesses of the product and its naïve images to be assessed”. With the same point of view, Bigné et al. (2001) stated that “image is a key factor in the hands of destination managers. It is a direct antecedent of perceived quality and satisfaction and of the intention to return and to recommend the destination. It is also a key factor in influencing the choice of holiday destination.
Destination managers should therefore not delay in taking a serious approach to their
image”.

In this paper, Tourism Destination Specific Image – as perceived by tourists - is defined as the power that a tourism destination has to attract and retain tourists (i.e. tourism demand). That Image can also be used as a marketing policy making tool for every island tourism destination, since it consists of a series of factors that reveal the advantages and disadvantages of the destination.

3. Factors Determining the Image of a Tourism Destination

A literature review has provided us with a great variety of suggested factors that seem to determine the Image of a Tourism Destination. Many researchers (Beerli and Martin, 2004; Baloglu and Brinberg, 1997; Baloglu and Mangaloglu, 2001; Chon, 1991; Echtner and Ritchie, 1993; Chi and Qu, 2008; Murphy et. Al., 2000; Lin and Huang, 2009) during the past years have tried to define the most important factors that turn a region into an attractive Tourism Destination.

The most common bibliographically referred factors proved to affect the Image of a Tourism Destination have been collected in an extensive list. The next step was the grouping of those factors in three main categories: economic, social and environmental factors. The final list with the categorized factors has been used for the research design.

Table 1 summarizes the main factors that are mentioned in literature as determining the Image of a Tourism Destination and have been used as a guideline for the questionnaire’s design. Every factor of this table is a variable of the quantitative research. All the variables are going to be tested for their level of significance for a representative sample of European tourists and tour operators/travel agents. The most important common factors for both groups are going to be included respectively in the formation of the appropriate indicators, in order to define the Basic Image of a Tourism Destination. The most important factors mentioned only from tourists are going to be used in order to define the Specific Image of a Tourism Destination from the demand side.

Table 1: Factors determining the Image of a Tourism Destination
<table>
<thead>
<tr>
<th>Economic factors</th>
<th>Social factors</th>
<th>Environmental factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Economic development</td>
<td>Quality of life</td>
<td>Beauty of the scenery and landscape</td>
</tr>
<tr>
<td>Cost / Prices</td>
<td>Gastronomy</td>
<td>Nature</td>
</tr>
<tr>
<td>Value for money</td>
<td>Social interaction (language barriers)</td>
<td>Unspoiled environment</td>
</tr>
<tr>
<td>Quality of services</td>
<td>Hospitality of local residents</td>
<td>Hygiene and cleanliness</td>
</tr>
<tr>
<td>Tax regime</td>
<td>Customs / Local way of life</td>
<td>Atmosphere of the place</td>
</tr>
<tr>
<td>Regulatory framework</td>
<td>Political Stability</td>
<td>Traffic</td>
</tr>
<tr>
<td>Advance of technology</td>
<td>Safety</td>
<td>Climate</td>
</tr>
<tr>
<td>Currency</td>
<td>Religion</td>
<td>Overcrowding</td>
</tr>
<tr>
<td>Intense promotion of the destination</td>
<td></td>
<td>Beaches</td>
</tr>
<tr>
<td>Accessibility (i.e. availability of flights, ferries etc to the destination)</td>
<td></td>
<td>Richness of the scenery</td>
</tr>
<tr>
<td>Geographical Location</td>
<td>Information availability</td>
<td>The feeling of isolation</td>
</tr>
<tr>
<td>Tourism Infrastructure:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Accommodation facilities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Food and beverage facilities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Sports facilities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Other outdoor activities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Shopping facilities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Nightlife / Entertainment (Recreational Activities)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Theme parks</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transportation (i.e. metro facilities, buses etc)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cultural attractions (i.e. concerts, theaters, festivals e.t.c.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Historical attractions (i.e. museums, historical buildings, monuments e.t.c.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>General infrastructure:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Health services (i.e. hospitals, doctors etc)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Telecommunications (i.e. fast internet connections etc)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proximity to the place of your residence</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proximity to any big city</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Availability of many tour packages for the destination</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4. The Research using a representative European sample
The main purpose of this paper is to present the Specific Image of a Tourism Destination as perceived by a representative sample of European tourists. As it will be further analyzed in the next session, it is necessary to define the Basic Image of a destination prior to measuring its Specific Image. For the needs of the present paper a quantitative primary research has been conducted in 500 sampling units (i.e. 400 tourists and 100 tour operators/travel agents) from the 31 European countries (i.e. Belgium, Bulgaria, Czech Republic, Denmark, Germany, Estonia, Ireland, Greece, Spain, France, Italy, Cyprus, Latvia, Lithuania, Luxembourg, Hungary, Malta, Netherlands, Austria, Poland, Portugal, Romania, Slovenia, Slovakia, Finland, Sweden, United Kingdom, Iceland, Norway, Switzerland and Croatia), including additionally tourists from Turkey and Russia, as they play a critical role in the European tourism map.

The demand side sampling units have been approached by personal contact in the departures’ area of Athens International Airport. The outbound flights schedule was used as a sampling frame. The supply side sampling units have been approached by e-mail. The sampling method used was random stratified sampling, using the proportion of the population of each country to the total European population, in order to determine the sampling size of tourists from each country, and the proportion of the tour operators / travel agents operating in each country to the total tour operators / travel agents operating in Europe, as a criterion for the sampling size of travel professionals from each country. A questionnaire has been used in order to collect the data, including questions about the importance of the factors mentioned on the previous section during the choice of an island tourism destination as a place of visiting or promoting.

The participants of the survey were asked to answer the questions trying to recall what attracts them to visit an island destination if they were tourists or to promote an island destination if they were tour operators / travel agents. It is important to mention here that as a tourist is defined any person that has travelled at least once in lifetime, as the survey examines the factors that determine the Image of a Tourism Destination before visiting the destination, i.e. during the decision – making stage. As Beerli and Martin (2004) mention there are differences between the Images perceived by the tourists before and after the visit to a destination.
The questionnaire consists of five units and tests the importance of 47 variables, each of which represents a potential characteristic of a tourism destination. The first part of the questionnaire uses closed questions to collect demographic data for tourists. The second part includes characteristics of a destination that are related to the general development of a region, such as the economic development, the price levels, the currency, the accessibility, the health infrastructure etc. The third part tests features related to the destination’s tourism infrastructure, such as accommodation, historical attractions etc. The fourth part examines social factors, such as political stability, security, religion etc. The fifth part checks the importance of environmental features, such as the beauty of the scenery, the unpolluted environment, the overcrowding etc. All parts from two to five use a 5-degree Likert scale to measure the importance of each factor, where 1=Factor of no importance and 5= Factor of great importance.

Table 2 summarizes the most important common factors with their average weights that affect the Image of an Island Destination for tourists and tour operators / travel agents in Europe. As most important are defined the factors included in the top ten preferences of both samples. It is evident that the factors have been further divided into two groups similarly to the methodology suggested by the authors in a previous pilot research (Tsoka, Angelis, Dimaki, 2011).

Table 2: Most Important common factors with weighted average

<table>
<thead>
<tr>
<th>Most important factors per type</th>
<th>Weights</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Built Environmental and Reachability Factors</strong></td>
<td></td>
</tr>
<tr>
<td>Value for money</td>
<td>4.45</td>
</tr>
<tr>
<td>Services Quality</td>
<td>4.40</td>
</tr>
<tr>
<td>Accessibility</td>
<td>4.35</td>
</tr>
<tr>
<td>Hygiene</td>
<td>4.30</td>
</tr>
<tr>
<td>Security</td>
<td>4.25</td>
</tr>
<tr>
<td>Accomodation Infrastructure</td>
<td>4.20</td>
</tr>
<tr>
<td><strong>Natural Environmental factors</strong></td>
<td></td>
</tr>
<tr>
<td>Beauty of scenery</td>
<td>4.35</td>
</tr>
<tr>
<td>Nature</td>
<td>4.00</td>
</tr>
<tr>
<td>Unpolluted Environment</td>
<td>4.00</td>
</tr>
</tbody>
</table>
Table 3 summarizes the additional important factors appealing mainly to European tourists for the formation of an Island’s Image. In the next section these factors are going to be used in order to construct the Specific Image function as perceived by European tourists.

Table 3: Most Important demand side factors with weighted average

<table>
<thead>
<tr>
<th>Most important factors per type</th>
<th>Weights</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Built Environmental and Reachability Factors</strong></td>
<td></td>
</tr>
<tr>
<td>Historical Attractions</td>
<td>4.02</td>
</tr>
<tr>
<td><strong>Natural Environmental factors</strong></td>
<td></td>
</tr>
<tr>
<td>Sense of escaping (unordinary environment)</td>
<td>4.08</td>
</tr>
</tbody>
</table>

5. Modeling the Specific Image of an Island as perceived by tourists

5.1 Modeling a Tourism Destination’s Basic Image

The growth or decline of a tourism destination depends on its power to «pull» both tourists willing to visit it and tour operators/travel agents willing to promote it; this pulling power depends on what we call the **Image of a Tourism Destination**. Tourists and tour operators/travel agents choose a given destination on the basis of their perception of the destination's relative attractiveness (i.e. of its relative advantages or disadvantages). Their choice is therefore a function of a multitude of factors economic, social and environmental. At each time instant the destination «sends out» its Image and depending on its impact on the people (both tourists and tour operators/travel agents) the destination may be considered attractive or non attractive. One may also argue that since people "receiving" the image of the destination belong to various distinct groups (i.e. experienced tourists, inexperienced tourists, professionals of tourism e.t.c.) and are sensitive to different factors; the impact of the destination’s Image on the members of each particular group will be different (Kotler et al., 1999).

Whilst this argument is plausible literature and evidence suggest that all groups react similarly to a basic set of factors; more precisely, a set of minimum standards, largely common to all groups, must be satisfied if the destination is to be considered as a potential choice by any of them. Every destination must provide some basic standards of services to attract and retain both tourism demand and
tourism supply and therefore keep the system in an economic equilibrium. Admittedly, no uniform standards exist. Hence, every destination, in order to be/remain attractive, should determine the standards pertaining each time and try to meet them (Kotler et al., 1999).

To reconcile these two views we refine the concept of a destination's Image by introducing the following two concepts: the Basic Image and the Specific Image.

The **Basic Image** of a given destination measures the degree to which the region satisfies a set of basic criteria, common for both tourists and tourism professionals. A destination satisfying those criteria is considered by all groups as worth a closer examination and as a potential final choice.

The **Specific Image** of a given destination, as perceived by a particular group of people, measures the degree to which people belonging to that particular group consider the region as their best final choice. This Specific Image, however, although a function of specific factors appealing mainly to members of that group, is primarily a function of the Basic Image.

The study of the mechanisms governing the shaping and the changes of a destination’s Basic Image is a task of imperative importance. Apart from simplifying the analysis of a destination’s behaviour, the Basic Image, as an overall measure of its attractiveness and performance, has the following two advantages:

i. It gives an early warning of any potential danger of decline.

ii. It gives the "true" picture of the destination and helps decision makes to detect the causes and not only the symptoms of any existing problems.

An early and correct diagnosis of a problem is perhaps the biggest step towards its solution. In the case of regional development, however, the seeds of decay are usually planted during a period of prosperity and no action is taken against them until it is too late. Ironically, the very state of being an attractive place may unleash forces that ultimately unravel the attractiveness of a place. Many places experience a period of growth, followed by a period of decline, and the fluctuations may be repeated several times. Therefore, a monitoring device, which will alert us at the first sight of danger, is a tool of great importance (Kotler et al., 1999).

The concept of Basic Image of a region has been defined and discussed in full detail in some earlier papers (Angelis, 1981,1990; Angelis & Dimopoulou, 1991; Angelis & Dimaki, 2011). In a recent paper presenting a pilot survey (Tsoka, Angelis
& Dimaki, 2011) the concept of a region’s Basic Image has been redefined in order to construct the Basic Image of a Tourism Destination. Summarising its findings – which have been further improved by the full scale survey conducted for the current paper – we could say that the Basic Image of a Tourism Destination may be expressed as a function of two conflicting Indicators, the Built Environment & Reachability (BERI) and the Natural Environment (NEI). Hence,

$$\textit{Basic Image} = \phi (\text{BERI, NEI})$$

The Built Environment and Reachability Indicator (BERI), which expresses the quality of destination’s infrastructure - both general and tourism - as well as the prices and the value for money of the servicers offered, is a function of two sub indicators:

- **Tourism Infrastructure Sub-indicator**: this sub-indicator is a non linear transformation of the relative Tourism Infrastructure Index, which covers accommodation availability (number of hotels, rooms, hostels per km$^2$), the quality level (number of luxurious hotels, i.e. 4* and 5* per km$^2$) and its relation to the prices charged (last year’s average room rate compared to current average room rate) for the services offered.

- **General Infrastructure Sub-indicator**: this sub-indicator is a non linear transformation of the relative General Infrastructure Index, which encompasses the accessibility conditions (number of airport and maritime passengers and number of airports, ports and marines per km$^2$), the level of the destination’s public hygiene (number of notifiable diseases per habitant) and the sense of security (number of crimes committed and of police officers per habitant).

The Natural Environment Indicator (NEI), which expresses the quality of natural environment scenery and the level of pollution at a destination, is also a function of two sub indicators:

- **Pollution Sub-indicator**: this sub-indicator is a non linear transformation of the relative General Infrastructure Index, which quantifies the proportion of areas left unpolluted (number of blue flags in beaches per km of coastline).
- **Natural Scenery sub-indicator**: this sub-indicator is a non linear transformation of the relative General Infrastructure Index, which measures the proximity to the nature (protected areas of biodiversity per km²) combined with the natural beauty of the scenery (the proportion of coastline to total geographical area).

Those sub indicators and their conversion into the respective indicators are given in Table 4.

At this point, it should be mentioned that the growth of a destination may be expressed both in absolute or relative terms. In the latter and most interesting case, the development pattern of a given destination is compared to that of a hypothetical destination, which is referred to as the “typical” destination and expresses, as far as possible, an average of the main destination of a similar type to that under study. Hence, all the factors affecting its images (Basic and Specific) should be expressed in relative terms, as compared to the corresponding values of the “typical” destination. In this study as a “typical” destination we define the “typical” island of the European South. A first effort to estimate the value of the “typical” island’s Indicators has been made, which will be further improved in the future.

### Table 4: The BERI and NEI of destination $i$

<table>
<thead>
<tr>
<th>$IND^1_i$: The BER Indicator of region $i$</th>
<th>$IND^2_i$: The NE Indicator of region $i$</th>
</tr>
</thead>
<tbody>
<tr>
<td>$Sb_{1}^1$: The Tourism Infrastructure Sub indicator of destination $i$</td>
<td>$Sb_{1}^2$: The Pollution Sub indicator of destination $i$</td>
</tr>
<tr>
<td>$Sb_{2}^1$: The General Infrastructure Sub indicator of destination $i$</td>
<td>$Sb_{1}^2$: The Natural Scenery Sub indicator of destination $i$</td>
</tr>
</tbody>
</table>

A clear overview of the variables affecting an island destination’s Basic Image as perceived by tourists and their conversion through sub indices, relative sub indices, relative indices and sub indicators into indicators and finally into the tourism destination Basic Image, is given in Table 5.
Table 5: Conversion of the variables affecting the Basic Image of a Tourism Destination $i$

<table>
<thead>
<tr>
<th>Indicators of destination $i$</th>
<th>Sub indicators of destination $i$</th>
<th>Relative Indices of destination $i$</th>
<th>Relative Sub indices of destination $i$</th>
<th>Sub indices of destination $i$</th>
<th>Variables</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tourism Infrastructure</td>
<td>Tourism Infrastructure Index</td>
<td>Relative Prices Sub index</td>
<td>Prices Sub index</td>
<td>Last Year’s Same Period Average Room Rate</td>
<td></td>
</tr>
<tr>
<td>Sub indicator $(SBI_{i1})$</td>
<td>$(RI_{i1})$</td>
<td>$(RSI_{i1})$</td>
<td>$(SI_{i1})$</td>
<td>Current Average Room Rate</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Relative Quality Sub index</td>
<td>Quality Sub index</td>
<td>Luxury Hotels</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>$(RSI_{i1})$</td>
<td>$(SI_{i1})$</td>
<td>Area</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Relative Accommodation Infrastructure Sub Index</td>
<td>Accommodation Infrastructure Sub Index</td>
<td>Tourism Accommodation Establishments</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>$(RSI_{i1})$</td>
<td>$(SI_{i1})$</td>
<td>Area</td>
<td></td>
</tr>
<tr>
<td>Built Environment and Reachability Indicator $(IND_{i})$</td>
<td>General Infrastructure Sub indicator $(SBI_{i2})$</td>
<td>General Infrastructure Index $(RI_{i2})$</td>
<td>Accessibility Sub Index $(SI_{i2})$</td>
<td>Area</td>
<td></td>
</tr>
<tr>
<td></td>
<td>General Infrastructure Sub indicator $(SBI_{i2})$</td>
<td>$(RSI_{i2})$</td>
<td>$(SI_{i2})$</td>
<td>Airport Passengers</td>
<td></td>
</tr>
<tr>
<td></td>
<td>General Infrastructure Sub indicator $(SBI_{i2})$</td>
<td>$(RSI_{i2})$</td>
<td>$(SI_{i2})$</td>
<td>Maritime Passengers</td>
<td></td>
</tr>
<tr>
<td></td>
<td>General Infrastructure Sub indicator $(SBI_{i2})$</td>
<td>$(RSI_{i2})$</td>
<td>$(SI_{i2})$</td>
<td>Area</td>
<td></td>
</tr>
<tr>
<td></td>
<td>General Infrastructure Sub indicator $(SBI_{i2})$</td>
<td>$(RSI_{i2})$</td>
<td>$(SI_{i2})$</td>
<td>Airports</td>
<td></td>
</tr>
<tr>
<td></td>
<td>General Infrastructure Sub indicator $(SBI_{i2})$</td>
<td>$(RSI_{i2})$</td>
<td>$(SI_{i2})$</td>
<td>Area</td>
<td></td>
</tr>
<tr>
<td></td>
<td>General Infrastructure Sub indicator $(SBI_{i2})$</td>
<td>$(RSI_{i2})$</td>
<td>$(SI_{i2})$</td>
<td>Ports</td>
<td></td>
</tr>
<tr>
<td></td>
<td>General Infrastructure Sub indicator $(SBI_{i2})$</td>
<td>$(RSI_{i2})$</td>
<td>$(SI_{i2})$</td>
<td>Area</td>
<td></td>
</tr>
<tr>
<td></td>
<td>General Infrastructure Sub indicator $(SBI_{i2})$</td>
<td>$(RSI_{i2})$</td>
<td>$(SI_{i2})$</td>
<td>Marine</td>
<td></td>
</tr>
<tr>
<td></td>
<td>General Infrastructure Sub indicator $(SBI_{i2})$</td>
<td>$(RSI_{i2})$</td>
<td>$(SI_{i2})$</td>
<td>Area</td>
<td></td>
</tr>
<tr>
<td></td>
<td>General Infrastructure Sub indicator $(SBI_{i2})$</td>
<td>$(RSI_{i2})$</td>
<td>$(SI_{i2})$</td>
<td>Notifiable Diseases</td>
<td></td>
</tr>
<tr>
<td></td>
<td>General Infrastructure Sub indicator $(SBI_{i2})$</td>
<td>$(RSI_{i2})$</td>
<td>$(SI_{i2})$</td>
<td>Population</td>
<td></td>
</tr>
<tr>
<td></td>
<td>General Infrastructure Sub indicator $(SBI_{i2})$</td>
<td>$(RSI_{i2})$</td>
<td>$(SI_{i2})$</td>
<td>Crimes Committed</td>
<td></td>
</tr>
<tr>
<td></td>
<td>General Infrastructure Sub indicator $(SBI_{i2})$</td>
<td>$(RSI_{i2})$</td>
<td>$(SI_{i2})$</td>
<td>Population</td>
<td></td>
</tr>
<tr>
<td></td>
<td>General Infrastructure Sub indicator $(SBI_{i2})$</td>
<td>$(RSI_{i2})$</td>
<td>$(SI_{i2})$</td>
<td>Police Officers</td>
<td></td>
</tr>
<tr>
<td></td>
<td>General Infrastructure Sub indicator $(SBI_{i2})$</td>
<td>$(RSI_{i2})$</td>
<td>$(SI_{i2})$</td>
<td>Population</td>
<td></td>
</tr>
</tbody>
</table>
Evidence suggests (Angelis & Dimaki, 2011) that the Basic Image function is non-linear and that its graph is discontinuous. The general mathematical theory of discontinuous and divergent behaviour from continuous underlying forces is called Catastrophe Theory (Thom, 1975; Zeeman, 1973). The theory is derived from Topology and is based upon some new theorems in the geometry of many dimensions, which classify the ways in which discontinuities may occur, in terms of a few archetypal forms called elementary catastrophes (Poston and Stewart, 1996). Although the underlying mathematics are difficult and the proofs of the theorems involved complicated, the elementary catastrophes themselves are relatively easy to understand and can be used effectively, even by non-experts in the subject (Angelis and Dimopoulou, 1991). Catastrophe theory was developed and popularized in the early 1970’s. After a period of criticism, it is now well established and widely applied (Rosser, 2007). Today, the theory is very much alive and numerous nonlinear phenomena that exhibit discontinuous jumps in behavior have been modeled by using the theory, for instance in chemistry (e.g Wales, 2001), in physics (e.g. Aerts, 2003), in psychology (e.g. Van der Mass et al., 2003) in clinical studies (e.g. Smerz and Guastello, 2008) and in the social sciences (e.g. Smith et al., 2005; Dou and Ghose, 2006; Huang, 2008).

Table 6 summarizes the elementary catastrophes in the case where a process is expressed through one behaviour variable depending on one up to four control variables.

In the case of a process, for example, whose behaviour depends on two control variables it is sufficient to know that a theorem exists giving the qualitative shape of a 3-dimensional surface, which shows all possible ways in which a discontinuity in the
behaviour may occur. The two control variables are usually referred to as normal and splitting factor respectively and the three dimensional graph as the Cusp Catastrophe Surface.

Table 6: Some Elementary Catastrophes

<table>
<thead>
<tr>
<th>Number of Behavior Variables</th>
<th>Number of Control Variables</th>
<th>Type of Catastrophe</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>Fold</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>Cusp</td>
</tr>
<tr>
<td>1</td>
<td>3</td>
<td>Swallowtail</td>
</tr>
<tr>
<td>1</td>
<td>4</td>
<td>Butterfly</td>
</tr>
</tbody>
</table>

Returning to the present case, it is reminded that the Basic Image of a destination has been defined as a function of two conflicting indicators. Hence, according to Catastrophe Theory, the value \( x \), of a destination’s Basic Image, at each point in time, is given as a solution of the equation:

\[
x^3 - bx - a = 0
\]

with,

\[
\begin{align*}
a &= m(\alpha - \alpha_0) + (\beta - \beta_0) & \text{if } m \leq 1 \quad \left( \text{i.e. } \theta \leq \frac{\pi}{2} \right) \\
b &= (\alpha - \alpha_0) - m(\beta - \beta_0) \quad \text{and}
\end{align*}
\]

\[
\begin{align*}
a &= (\alpha - \alpha_0) + (1/m)(\beta - \beta_0) & \text{if } m > 1 \quad \left( \text{i.e. } \theta > \frac{\pi}{2} \right) \\
b &= (1/m)(\alpha - \alpha_0) - (\beta - \beta_0)
\end{align*}
\]

Equation (1) is referred to as the Basic Image Equation and its graph is qualitatively equivalent to the Cusp Catastrophe Graph (Figure 1). The variables \( \alpha, \beta \) express the values of the two Indicators, while \( \alpha_0, \beta_0 \), express the values of those two Indicators for the “typical” region. The point \( (\alpha_0, \beta_0) \) corresponds to the vertex of the cusp, while \( m = \tan \theta \) represents the slope of the cusp axis and expresses the relative weights attached to each one of the two indicators in defining the Basic Image. For the purposes of this work, the values of all Indicators lie in the interval \([0,1]\), whereas the value of its Basic Image lies in the interval \([-1,1]\). The value of the "typical" destination's Basic Image is 0. Hence, positive Basic Image indicates an attractive destination that may be considered as a potential final choice.
by both tourists and tour operators/travel agents. It should be noted that $a$ and $b$ of the Basic Image Equation (equation (1)) coincide with $IND_1^1$, $IND_2^2$ of Table 4.

Figure 1: The Cusp Catastrophe graph in the case of Basic Image

5.2 Defining an island’s Specific Image from the tourism demand side
The Specific Image of an island, as perceived by European tourists, measures the degree to which the tourists consider that island destination as their best final choice. As already mentioned, the Specific Image apart from being a function of the specific factors appealing mainly to members of that group is primarily a function of the Basic Image of the destination. In the previous section, the historical attractions of a destination and the sense of escaping from the ordinary environment have been mentioned as those specific factors influencing the choices of the tourists. Hence, the Specific Image of a Tourism Destination is the linear function of the following variables:

\[ \text{Specific Image} = \varphi (\text{BI, Historical Attractions RSI, Sense of Escaping RSI}) \]

The value of the Specific Image lies in the interval [0,2]. Thus, a Specific Image higher than 1 indicates an attractive destination that may be considered as a potential final choice by European tourists.

The Historical Attractions Relative Sub Index measures the number of sites with historical interests (i.e. number of museums, archaeological sites and monuments per km2). The Sense of Escaping Relative Sub Index expresses a relation between the size of an island and its distance from the nearest city centre. More specifically, the smaller an island is and the more isolated from city centres, the higher is the sense of escaping from the ordinary environment that offers.

The Island Destination Specific Image function, as already defined, may prove a very useful marketing tool for both local authorities and business firms, as it expresses the expectations of tourists from any island destination and it measures the degree to which each destination fulfils them in reality. The local authorities may use the Specific Image in order to monitor the development of the various destinations, get an early warning of any potential problems they may face and take the necessary measures to prevent them. The business firms on the other hand, may use the Tourism Destination Specific Image in order to follow the development of various destinations, assess their potential for future growth and take the proper location and investment decisions.

6. Application of the Proposed Model
The methodology presented in the previous section is now used for the estimation of the Basic and the Specific Image of two island destinations; Canary Islands in Spain and Crete in Greece.

Canary Islands are a Spanish archipelago located just off the northwest coast of mainland Africa. The Canary Islands constitute a Spanish autonomous community comprising seven islands (Gran Canaria, Tenerife, Fuerteventura, Lanzarote, La Palma, La Gomera, El Hierro) and six small islets. They cover a total geographical area of 7,446 square kilometers and their coastline length equals to 1,491 kilometers. Canary Islands’ capital is shared by the cities of Santa Cruz de Tenerife and Las Palmas de Gran Canaria. Their climate is tropical with high temperatures and heavy rain falls. Their economy is mainly based on tourism, which equals to almost 32% of GDP (Organization of Tourism in the Canary Islands, 2013).

Crete is a Greek island of the Aegean Sea located almost 160 km south of Greek mainland and is divided in four prefectures: Heraklion, Chania, Lasithi and Rethymno. The city of Heraklion is the capital of the island. With a geographical area of 8,261 square km and 1.046 km of coastline, Crete is the biggest island in Greece and the fifth biggest in the whole Mediterranean Sea. The climate is considered to be Mediterranean, but with higher temperatures and humidity levels due to Crete’s proximity to South Africa. The island’s economy is primarily based on agriculture, despite its intense tourism sector development (Greek National Tourism Organization, 2013).

For those two destinations, secondary data had been collected concerning the components of the variables (such as area, population, hotels, luxury hotels etc) and they have been used in order to measure their Basic Images (latest statistics from European Union Statistics, Spanish Statistics Company and National Greek Statistics Company).

The values of their Basic Images, as perceived by both the tourism demand and supply side, according to the latest published statistics, are presented in Table 7. In the same table, the values of two indicators, from which the Basic Image is derived, are also shown.

Table 7: The Basic Image of Crete and Canary Islands
As it can be seen, Crete and Canary Islands are two attractive destinations both for tourists and tour operators/travel agents, since their Basic Image value is positive. Moreover, both destinations show satisfying scores in both Indicators, i.e. the Built Environment and Reachability Indicator and the Natural Environment Indicator. The better Basic Image of Crete derives from the fact that Crete has better scores in both Indicators compared to Canary Islands. These scores come mainly as a result of Crete’s advantage in nature and unspoiled environment, its value for money accommodation infrastructure and its superiority in hygiene and security. This could mean that tourists and tour operators would choose Crete primarily for its unique natural environment, its luxurious hotels and its significantly lower crime and disease rates. On the other hand, they would choose Canary Islands for their higher accessibility, mainly in terms of flights available to the destination.

The values of their Specific Images, as perceived by European tourists (tourism demand) are presented in Table 8. The Basic Image in the following table is presented moderated in order to fit in the value range of the Specific Image [0,2].

<table>
<thead>
<tr>
<th></th>
<th>BUILT ENVIRONMENT AND REACHABILITY INDICATOR</th>
<th>NATURAL ENVIRONMENT INDICATOR</th>
<th>BASIC IMAGE OF THE TOURISM DESTINATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crete</td>
<td>0.52649</td>
<td>0.46744</td>
<td>0.608</td>
</tr>
<tr>
<td>Canary Islands</td>
<td>0.45566</td>
<td>0.42536</td>
<td>0.456</td>
</tr>
</tbody>
</table>

By taking a closer look at the Specific Images of the two destinations and comparing them with the respective values of their Basic Images, we can see that the superiority of Crete compared to Canary Islands is maintained in the perception of
tourists as well. This derives as a result of the stronger Basic Image of Crete and its variety in historical attractions, which is one of the factors appealing to tourists. On the other hand, Canary Islands offer the sense of isolation that tourists have declared to consider very important for their final destination choice, but this does not seem to be enough to overcome the attractiveness of their competitive destination.

Based on the above we can assume the power that has the Basic Image, i.e. the common factors affecting the perceptions of both tourists and tour operators, in the formation of the Specific Image of a destination and the final choice of tourists. This means that in the process of planning the tourism policy of a destination, the improvement of the common factors affecting the tourism demand and tourism supply choices should primarily be taken into consideration. A Basic Image of a destination indicating low attractiveness is very unlikely to change radically in the case of a specific group, i.e. in the value of the Specific Image. However, a destination that is commonly considered to be attractive needs to find ways to improve its attractiveness in order to better serve the needs of specific groups of people. The factors defining the Specific Image of a destination could be used as a successful guide for the continuous improvement of the services provided by a destination to its tourists and for the satisfaction of their special needs.

7. Conclusions and Suggestions for Further Research

In earlier studies of the authors the concept of a destination’s Basic Image has been defined as the function of those common factors that attract both tourists (i.e. tourism demand) and tour operators / travel agents (i.e. tourism supply) in this destination. A first attempt of measuring the Basic Image of a destination based on a pilot research has been made.

This paper has presented a European research in order to measure more appropriately the Basic Image of an Island Destination and also to define the concept if a destination’s Specific Image. More precisely, the special factors affecting the Specific Image of a Tourism Destination as perceived by European tourists have been defined and the Specific Image function of Tourism Destination has been suggested. At the last section the paper implemented the Basic Image and the Specific Image function in two island destinations, Crete in Greece and Canary
Islands in Spain, quantified the Images of those destinations and compared the results.

Its main scientific contribution is the fact that it manages to revise and to quantify the concept of the **Basic and Specific Image of a Tourism Destination**, emphasizing in the tourism demand (i.e. tourists) view and creating a function defined by the most important factors affecting their perceptions for a destination. If used correctly and proactively, the proposed concepts of Basic and Specific Image of Tourism Destination could be the future path to development for every island and could improve significantly the attractiveness of any destination, by indicating the pathway to a successful niche marketing strategy which would better satisfy the needs of specific groups.

An area of further research could be to test the factors affecting the Image of the Tourism Destination, by selecting a global sample including tourists from non-European countries as well or by using different data collection methodology i.e. focus groups instead of questionnaire. Comparing the results of the two approaches would be very interesting. Another area of further research would be to revise the Specific Image of a Tourism Destination for alternative types of tourism such as conference tourism, medical tourism, agricultural tourism etc. or for different groups of tourists based on demographic characteristics such as age, sex, nationality, income etc.

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